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), phosphte-diesterase 5 (PDE5) soluble guanylyl cyclase type 1 (sGC1) and type 2 (sGC2) 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. Desnet 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 (Desnet score of 1–3) while 57% (8/14) developed liver cirrhosis (Desnet 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 (7.7fold), 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 (11fold), sGCa1 (1.7fold) and sGCb1 (3fold) 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 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 antifibrotic agents, should be further studied in clinical trials as a promising therapeutic approach to target portal hypertension.

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

References

Conclusion: In chronic hepatitis C SerpinB3 is involved in monocyte activation, leading to the release of CD63. 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 LYMPHOID CELLS 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 (Lim^D^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 naive 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-a, IFN-g decreased in CHB patients. However, ILC3s decreased in LC patients with reduced cytokines secretion. Th17 cells frequencies significantly increased both in CHB and LC groups compared with HC. PBMCs without ILC3s, which were collected from CHB and LC patients, promoted the proliferation and activation of HSCs because of less IL-22 secretion. Similarly, compared with wild type mice, ILC3s in spleens and livers of C57BL/6 mice with liver fibrosis increased sequentially at time point of week 2 and week 4 following drug injection. Intriguingly, at week 6, ILC3s decreased compared with previous. However, Th17 cells increased gradually with CCL4 administration, even at week 6. Transferring Th17 cells into Rag1^−/−^ mice with carbon tetrachloride-related liver fibrosis made the ILC3s in spleens and livers decrease significantly, and the degree of mice liver fibrosis become more severe than control. Furthermore, ILC3s depletion correlated with reduced expression of IL-22 and more severe liver fibrosis. Transferring purified liver ILC3s into recipient mice reactivated liver inflammation and reverse liver fibrosis.

Conclusion: Our study has uncovered 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 found to be better than external biliary drainage in alleviating the damage of intestinal mucosa barrier caused by obstrucive jaundice and the relevant mechanism is still unclear. In this study, we mainly study the expression between FXR and TLR4, TGR5 and NOD2.

Aims & Methods: We aimed to investigate the 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 carefully removed and preserved. mRNA expression was analysed by qRT-PCR. The anti-inflammation cytokines secreted by ILC3s in spleens and livers decreases 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 reactivated liver inflammation and reverse liver fibrosis.

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-a, IFN-g decreased in CHB patients. However, ILC3s decreased in LC patients with reduced cytokines secretion. Th17 cells frequencies significantly increased both in CHB and LC groups compared with HC. PBMCs without ILC3s, which were collected from CHB and LC patients, promoted the proliferation and activation of HSCs because of less IL-22 secretion. Similarly, compared with wild type mice, ILC3s in spleens and livers of C57BL/6 mice with liver fibrosis increased sequentially at time point of week 2 and week 4 following drug injection. Intriguingly, at week 6, ILC3s decreased compared with previous. However, Th17 cells increased gradually with CCL4 administration, even at week 6. Transferring Th17 cells into Rag1^−/−^ mice with carbon tetrachloride-related liver fibrosis made the ILC3s in spleens and livers decrease 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 reactivated liver inflammation and reverse liver fibrosis.

Conclusion: Our study has uncovered 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.

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 cholestasis and secondary biliary fibrosis, associated with early increased intestinal permeability and disturbed bile acid homeostasis. We have demonstrated that the oncoviruses 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 was sacrificed and small intestines in the lumens were carefully removed and preserved. mRNA expression was analysed by qRT-PCR. Bacterial DNA was purified from the small intestinal lumen samples and analysed by next generation sequencing – metagenome analysis. Liver tissue and serum were also collected for biochemical analysis of hepatic damage and fibrosis.

Results: TNF-a and IL-1β mRNA levels increased in the small intestine of BDL mice compared with WT. TLR4 and TGF-beta 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. Similarly, miR-21 KO reverted mRNA of tight junction proteins to control levels. BDL miR-21 KO mice showed decreased circulating levels of hepatic enzymes, concomitant with decreased fibrogenic gene expression in the liver, in comparison with WT mice, suggesting that miR-21 contributes to BDL-induced liver injury and fibrosis. Further, miR-21 KO not only show a decreased small intestine permeability through a ZO-1 and occludin pathway, as it is associated with development of beneficial strains of Lactobacillaceae that may also contribute to liver protection.

Conclusion: These data suggest that miR-21 depletion is associated with increased intestinal permeability 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/08957/2014, 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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**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 MTI assay. We then examined the expression pattern of Notch1 and liver CSC markers in Huh7 and Hep3B CSC after the treatment with Sorafenib. MTI assay was also used to measure the effects of ZBP-89 overexpression on the sensitivity of Sorafenib in sphere-forming cells. The levels of ZBP-89 and CD44 were measured using qPCR in human HCC tissue samples. The regulatory effects of ZBP-89 on CSC phenotype were explored using qPCR, immunostaining, and co-immunoprecipitation. ZBP-89 overexpression was found to result in the loss of CSC phenotype and improve the sensitivity to Sorafenib.

**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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**Aims & Methods:** Aiming to study the effect of A. muciniphila on immune-mediated hepatitis and potential underlying mechanisms. Twenty-two C57BL/6 mice were assigned to three groups (N = 7–8 per group) and continuously administered A. muciniphila Mouse (ATCC BAA-835) or PBS by oral gavage for 10 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 inflammatory responses, 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, MCP-1) were significantly decreased in mice treated with Akk, while IL-6 was increased and hepatic lipids decreased. Serum levels of MCP-1, MIP-1a, MIP-1b were also significantly decreased hepatic cell apoptosis; Bel-2 expression increased, but Fas and DR5 decreased. Further investigation showed that Akk enhanced Ocludin and Tip-1, two proteins related to strengthened intestinal barriers. Fecal 16S RNA sequencing analysis indicated that Akk increased the microbial communities. The community structure of the Akk group clustered distinctly from that of the Control and Normal groups. Relative abundance of Firmicutes increased, and Bacteroidetes abundance decreased. Correlation analysis showed that injury-related factors (IL-6p40, IFN-γ, DR5) were negatively associated with specific genera (Ruminococcaceae_UCG–009, Lachnospiraceae_UCG–001, Akkermansia), which were enriched in mice pretreated with Akk.

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

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

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1. Y. Liu2, J. Ren3, J. Yu1, R. Ho1, P.B. Lai1, G.G. Chen1

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

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**Introduction:** As the prevalence of insulin resistance (IR), hyperlipidemia and diabetes and other metabolic disorders in nonalcoholic fatty liver (NAFLD) in China had increased. NAFLD refers to the factors caused by exclusion of alcohol and other clear liver damage, metabolic syndrome, the characteristic of liver steatosis (L), the main microecological imbalance, and the link between insulin resistance and other factors closely for acute liver injury of metabolism. Serious illness can develop into liver cancer. NAFLD has become 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 bacteriobacterial overgrowth, and liver function of metabolism are the leading cause of chronic liver disease.

**Aims & Methods:** We aimed to study the clinical effect of probiotics in the treatment of nonalcoholic fatty liver disease. 200 cases with patients of nonalcoholic fatty liver disease were randomly divided into routine treatment group (A group) and combined treatment 3 groups (B, C, D). All 5 groups were given orally Polyeone Phosphatidylcholine Capsules, 456 mg, TID. The combination therapy group B was given orally the Live Combined Bifidobacterium Lactobacillus and Enterococcus Powder, 420 mg, TID. Group C: two live combined Bacillus subtilis Enterococcus powder, 500 mg, TID. D group 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 (FBG), serum high molecular weight adiponectin (HMW APN) and serum TNF-α. The 4 groups were collected face samples, that were tested routine detection, bacterial culture. At the same time all people were checked with ultrasonic examination.

**Results:** In terms of blood lipids and blood glucose, each group improved than before, only HDL-L was not statistically significant, group D showed significant differences in triglyceride. In liver function, blood ALT, AST were significantly lower than group A; serum TNF-α levels were decreased after treatment. Amino acid 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.
In summary, the composition of gut microbiota varied remarkably between mice administered different experimental diets to induce non-alcoholic fatty liver disease.

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: Castiella et al. (2012) described three different groups according to HFE mutations and TSI (Group A: no predisposing mutations (PM) for HH and TSI > 55; Group B: PM for HH: C282Y/C282Y; C282Y/H63D, H63D/H63D, and TSI > 55; 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 the LIC was measurable: C282Y/C282Y 14 (4.49%); C282Y/H63D 37 (11.93%); H63D/H63D 99 (31.73%); wt/wt 98 (31.41%); C282Y/S65C 1 (0.32%); H63D/S65C 2 (0.64%); C282Y/wt 16 (5.13%); S65C/wt 10 (3.21%). LIC was obtained from all the patients by MR. Mean age: 55 ± 13.3, 272 men and 40 women. Group A: 54; Group B: 32 Group C: 160; Group D: 44. The mean LIC in the different groups: 7.37 ± 27.89, group A: 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 groups of patients referred for HF are significantly different with different predisposition to HH.

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

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**A165**

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

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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). There are some publications that support that MS is associated with a raised liver iron concentration (LIC) in these patients, but the doubts persist about this subject.

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/liter of liver iron, >300 mg/liter of iron in 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 in men and >80 cm in women; Triglycerides >150 mg/dL or treatment for this dislipidemia; HDL <40 mg/dL women/50 mg/dL men; type 2 diabetes; hypertension: blood pressure >130 mmHg/85 mmHg or treatment for arterial hypertension.

**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 levels (mL/g) from the 276 patients. The mean LIC was 38.8 ± 19.38 (women) and 38.84 ± 25.50 (men). The LIC >100 mg/g was present in 30.8% (23.4%) of all patients, and 45.4% (71.2%) of MS patients. The LIC was 38.8 ± 16.18 in women, and 44.48 ± 36.18 (men), with 43.39 ± 36.43 (CI 95%, 37, 32 to 49, 46) for the whole group. We compared 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**


and NASH were quantified by using the FibroMax scales at baseline and after three months of treatment. Patients were grouped in 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 (ss); 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 improvement of steatosis, and fibrosis in the 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%, F2–28%, F3–2%; F4–0% of patients. NashTest showed positive evolution in the active group 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


P0018 EVALUATION OF THE RELATIONSHIP OF LEVELS OF C-REACTIVE PROTEIN AND HOMOCYSTEIN IN PATIENTS WITH NON-ALCOHOLIC FATTY LIVER DISEASE AND PATHOLOGICAL CHANGES IN THE LIVER DEFINED BY BIOPROGNOSTIC TEST STEATOSCREEN

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Introduction: The importance of subclinical inflammation and hyperhomocysteinemia in the development of nonalcoholic fatty liver disease (NAFLD) needs further study. Recent studies have shown that the development of hyperhomocysteinemia and an increase in the level of C-reactive protein contributes to increased oxidative stress, influences the development of metabolic disorders, which makes it possible to consider these indicators as additional markers for the development of NAFLD. The aim of this study was to assess the relationship between CRP and homocysteine (HC) levels with pathological changes in the liver, determined with the non-invasive bioprognostic test Steatoscreen in patients with AO. The study included 60 patients aged 18 to 59 years with BMI between 25 and 35%, with a waist circumference >80 cm for women, and >94 cm for men. All patients underwent a bioprognostic test Steatoscreen. Depending on the severity of the pathological changes in the liver, the Steatoscreen scale divided all the patients into 3 groups: steatosis, fibrosis and steato- fibrosis. Depending on the presence or absence of cytolysis 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 HC were studied. Results: The highest values of these parameters were recorded in patients in subgroups with non-alcoholic steatohepatitis. In the process of correlation analysis, significantly positive correlations were found between CRP and HC. The level of physiological changes was obtained in the liver on the Steatoscreen scale: r = 0.6 ± 0.04 for steatosis, r = 0.8 ± 0.0016 for CRP and HC, respectively.

Conclusion: NASH patients with AO is characterized by the development of both inflammatory and metabolic changes, with cytolysis and fibrosis. 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


Aims & Methods: We aimed to study the relationship between CRP and homocysteine (HC) levels with pathological changes in the liver, determined with the non-invasive bioprognostic test Steatoscreen in patients with AO. The study included 60 patients aged 18 to 59 years with BMI between 25 and 35%, with a waist circumference >80 cm for women, and >94 cm for men. All patients underwent a bioprognostic test Steatoscreen. Depending on the severity of the pathological changes in the liver, the Steatoscreen scale divided all the patients into 3 groups: steatosis, fibrosis and steato-fibrosis. Depending on the presence or absence of cytolysis 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 HC were studied. Results: The highest values of these parameters were recorded in patients in subgroups with non-alcoholic steatohepatitis. In the process of correlation analysis, significantly positive correlations were found between CRP and HC. The level of physiological changes was obtained in the liver on the Steatoscreen scale: r = 0.6 ± 0.04 for steatosis, r = 0.8 ± 0.0016 for CRP and HC, respectively.

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

Reference

complex and pathological changes in the liver, determined by the test Steatosis (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 OVEREXPRESSION 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 hepatococpin (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 hepatococpin 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 hepatococpin of group I and IV on comparing with group II and group III. For group II there was stastically significant increase in mean value of serum hepatococpin on comparing with other groups. There was a significant serum hepatococpin up regulation in patients with type 2 diabetes and non alcoholic fatty liver disease 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 mellitius.

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

References

P0021 Mesenteric Adipose Tissue Protects Against Non-Alcoholic Fatty Liver Disease by Improving Intestinal Barrier

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

Aims & Methods: Mice fed with high fat diet or normal diet were sacrificed in 8th week and mice were sacrificed by 12th week.

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

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

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

P0022 Diagnostic Accuracy of Shear Wave Ultrasound Elastography for Early Detection of Non Alcoholic SteatoHepatitis Among Patients with Type 2 Diabetes Mellitus

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Introduction: Non alcoholic fatty liver disease (NAFLD) is a broad term describing simple steatosis, non alcoholic steatohepatitis (NASH), NASH cirrhosis and NASH-induced hepatocellular carcinoma (1). Incidence increased in patients with type 2 diabetes mellitus (DM) (2). Different diagnostic modalities have great limitations in differentiating simple steatosis from steatohepatitis (3). Liver biopsy remains the gold standard for diagnosis of NASH, however, it is invasive with potential severe complications (4). Several ultrasound elastography techniques have been described including transient elastography, acoustic radiation force impulse elastography and shear wave elastography (5). Shear wave elastography shows a stepwise increase of liver stiffness as the severity of liver inflammation increases (6).

Aims & Methods: We aimed to evaluate the accuracy of shear wave ultrasound elastography in differentiating simple steatosis from steatohepatitis in patients with type 2 DM. This was a prospective study including 60 patients 30 males and 30 females who visited our outpatient clinic or inpatient department at Specialized Medical Hospital. These patients were diabetic aged more than 30 years old with ultrasound showing fatty liver. Significant alcohol consumption, drugs causing steatosis and hepatic diseases were excluded by history, laboratory investigations and liver biopsy. All patients underwent full detailed history, examination, laboratory investigations (complete blood count, liver functions, kidney functions, random blood sugar, lipid profile, serology for hepatitis B and C viruses). Shear wave elastography was performed to all patients and stiffness of the liver was measured from different areas in kilopascal (kPa) then average stiffness of elastography was calculated. Liver biopsy was done and histopathological examination by Hematoxin, Eosin and Masson Trichrome stains, then NAFLD activity score (NAS) was calculated.

Results: Correlation between results of stiffness by elastography and NAS by biopsy revealed that: There was a significant positive association between average stiffness by elastography and definitive NAS (NAS 5 and 6) in patients with type 2 DM. At a level of 8.45 kPa by shear wave elastography, we can differentiate simple steatosis from steatohepatitis (Area Under Curve 0.936, sensitivity 90%, specificity 90%, positive predictive value 81%, negative predictive value 49%).

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

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

Aims & Methods: The pilot study was aimed to determine the association between serum ferritin concentration and the outcomes of patients with ALC. The study included patients with ALC who were confirmed by laboratory tests, clinical features, radiological imaging, and percutaneous or tranjugular liver biopsy. Alcoholic 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 17). ROC (Receiver-operating characteristic) curve analysis was used to estimate 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 – 529.5 ± 221.1 µg/l. AST concentration in first group was 90.8 ± 70.2 IU/l, second – 96.7 ± 58.3 IU/l, third – 133.8 ± 95.5 IU/l. ALT concentration in first group was 66.7 ± 66.8 IU/l, second 64.5 ± 75.5 IU/l, third – 118.9 ± 72.3 µmol/l, third – 140.9 ± 190.5 µmol/l. The biggest mortality rate was in third group – 13 of 15 patients (86.67 %) (p < 0.0001). ROC scale shows a 77% specificity of serum ferritin concentration in predicting early mortality in patients with cirrhosis (AUC 0.838, p < 0.0001).

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).

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

References

A0025 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 and nonalcoholic fatty liver disease, or alcoholic liver disease. Serum ferritin concentration can be increased in iron overload and shows hepatic macro-inflammation. Recently, raised serum ferritin concentration was shown to predict mortality in patients awaiting liver transplantation in decompensated liver cirrhosis. However, further accumulation of data is needed to assess the role of serum ferritin level in predicting 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 patients with ALC who were confirmed by laboratory tests, clinical features, radiological imaging, and percutaneous or tranjugular liver biopsy. Alcoholic 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 17). ROC (Receiver-operating characteristic) curve analysis was used to estimate 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 – 529.5 ± 221.1 µg/l. AST concentration in first group was 90.8 ± 70.2 IU/l, second – 96.7 ± 58.3 IU/l, third – 133.8 ± 95.5 IU/l. ALT concentration in first group was 66.7 ± 66.8 IU/l, second 64.5 ± 75.5 IU/l, third – 118.9 ± 72.3 µmol/l, third – 140.9 ± 190.5 µmol/l. The biggest mortality rate was in third group – 13 of 15 patients (86.67 %) (p < 0.0001). ROC scale shows a 77% specificity of serum ferritin concentration in predicting early mortality in patients with cirrhosis (AUC 0.838, p < 0.0001).

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).

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

References
detection of CSPH was 0.71, with positive predictive value of 75% and negative predictive value of 66.5%, nor did SBP/PCA vs. specificity 71%. RTN4 value of ≤1.1 ng/ml was associated with esophagogastric varices (odds ratio [OR] = 3; 63; p < 0.02).

Conclusion: Low levels of RTN4 are associated with liver cirrhosis and portal hypertension. Therefore, RTN4 correlates with liver function, it may be a surrogate marker of CSPH and presence of esophagogastric varices.

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

References

P0027 MICRONRNAS 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 uncomplicated 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 (uncentrifuged, pelleted etc.) on miRNA expression in ascites. miRNA expression profiling using TaqMan Low Density Array (TaqMan LD A) 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- (0h, 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 uncomplicated 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 analysis confirmed higher expression of miR-21 (mean delta CT ± SD: -11.11 ± 1.2 vs. -8.46 ± 3.46 vs. -9.65 ± 2.55 for no SBP/PCA, PCA and SBP, respectively, 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 ± SD: -12.16 ± 1.56 vs. -10.05 ± 3.19 vs. -6.95 ± 3.56 for no SBP/PCA, PCA and SBP, respectively, ANOVA, p < 0.0001; 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.

Reference

P0028 ALTERATIONS IN GUT VASCULAR BARRIER IN EXPERIMENTAL PORTAL HYPERTENSION
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Introduction: Pathological bacterial translocation (PBT) in liver cirrhosis (LC) is the pathophysiological hallmark for spontaneous bacterial infections increasing mortality several-fold. Factors known to contribute to PBT in LC are among others an increased intestinal permeability.

Aims & Methods: A clear role of intestinal vascular leakage for luminal intestinal bacteria is yet to be defined but we hypothesize that the recently described gut vascular barrier (GVB) is impaired in experimental portal hypertension leading to protein loss and increased accessibility of the vascular compartment for translocating bacteria. For this purpose two different models of experimental portal hypertension, namely partial portal vein ligation (PPVL) and bile duct ligation (BDL) were used in mice under standardized gnotobiotic conditions (sdDM2). A novel in vivo confocal endomicroscopy technique was established in order to detect and link the intestinal vascular leakage.

Results: Confocal endomicroscopy data revealed an earlier and significantly increased leakage of 70kDA through the intestinal vasculature in both BDL and PPVL mice. FITC-70kDA-dextran leak did only leak in BDL and PPVL but not in control (sham operated) mice. Interestingly GVB stains showed increased expression of PV1 in intestinal vessels (CD34) of BDL but not PPVL.

Conclusion: Portal hypertension per se has an impact on the GVB increasing FITC-70kDA-dextran leakage from intestinal capillaries to the lamina propria in both BDL and PPVL. However, the IF showed only in BDL an increased PV1 expression indicative of a wider opening of the fenestral diaphragms than in PPVL. Therefore, different mechanisms appear to be involved in alterations of the gut-vascular barrier in pre-hepatic portal hypertension and biliar cirrhosis.

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

Reference

P0029 INHIBITION OF CYCOOXYGENASE-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 VEGER and CD31. The protein expressions of COX-2, VEGER, 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 increased the proportion by 28.8%. In addition, a considerable amount of collagen was visualized with Sirius Red staining and immunostained with VEGF and CD31.

Conclusion: Celecoxib significantly reduced the expression of COX-2 in the TAA + celecoxib group compared with the control group. Celecoxib significantly reduced the expression of proinflammatory factor VEGF and the nocovascular marker CD31 increased in TAA group by Western blot and immunohistology, which indicated a role of angiogenesis in the pathophysiology of splenomegaly. Furthermore, up-regulation of PI3K and p-AKT protein expression was detected in the spleen of TAA group compared
with that of the control group, demonstrating that PJK/AKT signal pathway was activated in development of pathological angiogenesis. However, the treatment with ceebeoehx strongly decreased the protein expression of VEGF, CD31, PJK 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 ceebeoehx could ameliorate portal hypertension and splenomegaly.

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

**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.

**Results:** Occludin, E-cadherin and the p53 family including p53 and p73 protein levels. 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.

**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 (PBT) in liver cirrhosis (LC) is the pathophysiological hallmark for spontaneous bacterial infections increasing mortality several-fold. Factors known to contribute to PBT in LC are among others an increased intestinal 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) – as well as partial portal vein ligation (PPVL) and sham-operated mice were used. Finally the farnesoid X receptor (FXR) agonist obeticholic acid (OCA) was analyzed in gene expression studies of CCl4-fed and control-animal. Mucus thickness measurement on gut explants and PAS (Periodic acid-Schiff) staining to visualize and count goblet cells (GC) were utilized.

**Results:** We have observed a significant reduction in mucous thickness in ileum and colon (control 34 μm±9.54 vs BDL 77.49μm±14.51 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) of mice following BDL but not PPVL (Control 0.27 GC/100 μm of villus±0.11 vs control-PL 0.30 GC/100 μm of villus±0.11). Moreover we have seen that farnesoid X receptor (FXR) agonist obeticholic acid (OCA) partially restored GC loss in CCl4 treated animals (Control 0.63 GC/100 μm of villus±0.08 vs Control OCA 0.65 GC/100 μm of villus±0.07 vs CCl4 0.49 GC/100 μm of villus±0.18 (CCl4 OCA 0.57 GC/100 μm of villus±0.09).

**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.

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

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**Introduction:** Liver fibrosis is defined as the excessive accumulation of extracellular matrix (ECM) following a chronic liver injury. It is characterised by an increase in gene expression of proinflammatory molecules such as TGF-β1, IL-1β, IL-6 and TNF-a, as well as excess synthesis of ECM components such as COL-1. Capsaicin (CAP) is a pungent compound found in chilli peppers which has shown anticancerogenic, antiinflammatory and antifibrotic properties. Moreover, sulforaphane (SFN) is an isothiocyanate which is in cruciferous such as broccoli and it has exhibit an antioxidant effect in several in vitro and in vivo models.

**Aims & Methods:** The objective of this project was to evaluate the antifibrogenic and antiinflammatory effects of a daily supplementation with CAP and SFN in a rat model of liver fibrosis due to carbon tetrachloride (CCL4) intoxication. 35 male Wistar rats were included (n =7/group; animals were administrated intraperitoneally 3 times per week during 8 weeks with a mix of CCL4/normal oil (1:5/1:4 week 1, 1:4 week 2 and 1:3 week 3-8). Healthy and CCL4-fibrotic controls received only supplementation vehicle (Tween 2% in PBS). Treated groups receive SFN 5ug/kg, or CAP 2mg/kg, or both supplements daily by oral gavage since the beginning of CCL4-intoxication regimen until sacrifice. Masson staining and PCR was performed in liver samples. Hepatic enzymes were analysed in serum.

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

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

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

**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 patients with 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 per-gastric collateral veins. Endoscopic findings of gastric varices were evaluated according to the grading system outlined in The General Rules for

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

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

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

P0034 PORTAL HYPERTENSTIVE COLOPATHY BUT NOT ILEOPATHY IS COMMON IN EGYPTIANS WITH LIVER CIRRHOSIS

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Introduction: Liver cirrhosis and portal hypertension are associated with esophagale varices, gastric varices, small and large intestinal enteropathies.

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 hypertensive colopathy. Portal hypertensive ileopathy was noted only in one case (1.7%). No ileum revealed that portal hypertensive colopathy was present in 16 patients (5%). Portal hypertensive gastropathy was noted in 43 patients (71.6 %) and C for 24 (40.7%). 53 (88.33%) 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 hypertensive gastropathy was noted in 43 patients (71.6 %) 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 liver cirrhosis and PHT.

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

P0035 PREDICTIVE FACTORS FOR THE DEVELOPMENT OF ACUTE-ON-CHRONIC 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 or organ failures according to the international European Association for the Study of the Liver-International Chronic Liver Failure consortium: 1) circulatory- need for vasopressor support; 2) renal- serum creatinine value ≥ 2mg/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 were included 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 cirrhosis 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 < 0.01), 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.

P0036 HAEMOSTASIS IN PORTAL VEIN IN CIRRHOSIS: ROLE OF LOCAL ENDOTHELIAL DAMAGE

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Introduction: Cirrhosis is characterized by both bleeding and thrombotic complications due to underlying procoagulative haemostatic imbalance [1]. Among thrombotic events, portal vein thrombosis (PVT) is the most common with annual incidence ranging between 4.6% and 12.8% [2, 3]. Demonstrated associated risk factors are severity of portal hypertension and slowed portal flow [4]. However, data regarding haemostasis in the portal venous system of cirrhotic patients is lacking.

Aims & Methods: To evaluate peripheral and portal venous haemocoagulative state in patients with cirrhosis in comparison with controls, through thrombin generation test (TGT), rotational-thrombelastometry (ROTEM) along with evaluation of endothelial dysfunction by quantification of circulating endothelial microparticles (MP). Correlate these results with activity levels of local pro and anticoagulant factors. Compare peripheral and portal venous districts in cirrhosis in terms of haemostatic parameters. We consecutively evaluated adult patients with liver cirrhosis undergoing liver transplantation (LT) or transjugular intrahepatic portosystemic shunt (TIPS). Patients without liver disease awaiting liver surgery or deceased liver donors were enrolled as controls. The following laboratory tests were performed on citrated peripheral and portal venous blood samples: TGT: with and without thrombomodulin (TM), ROTEM, dosage of main pro and anticoagulants factors activity and analysis of circulating endothelial MP.

Results: 25 cirrhotics (15 LT and 10 TIPS) and 6 controls (2 undergoing hepatic resection for benign liver lesions and 4 liver donors) were enrolled. Peripheral blood in cirrhosics showed resistance to activation of PC-pathway at TGT (ETP with without TM 0.89 (0.78–0.92) vs 0.6 (0.3–0.74), p < 0.001), lower clot stability at ROTEM (MCF-NATEM mm: 45.3 (36–51) vs 63 (53–69), p = 0.042), and significant increase of endothelial-MP (CD62EPM/L: 1391 (651–2301) vs 582 (380–1161), p = 0.046), indicative of higher endothelial damage compared to controls. Similar results were obtained comparing portal blood of cirrhotics and controls (ETP with/without TM 0.89 (0.78–0.92) vs 0.63 (0.33–0.75), p = 0.001; MCF-NATEM: 46 (39–51) vs 62 (49–66), p = 0.056; CD62EPM/L: 1606.5 (680–1885) vs 529.5 (266–781), p = 0.069). There was a significant correlation between diminished levels of PC, PS, AT, FI and either TGT or ROTEM parameters. Comparing portal and peripheral blood of cirrhotics, we detected endogenous heparinoids in portal (α-angle NATEM 51 (46–57) vs
Aims & Methods: From the IMPRESS study with hepatic encephalopathy: real-world evidence

Table 1: All-cause ED attendances, with and without admission, pre- and post-RFX initiation

<table>
<thead>
<tr>
<th>Resource use parameter*</th>
<th>n (Per-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>82 325</td>
</tr>
<tr>
<td>ED attendances with or without admission/patient</td>
<td>81 2.3 (0.3)</td>
<td>1.0 (0.2) &lt;0.001</td>
<td>82 3.2 (0.5)</td>
</tr>
<tr>
<td>ED attendances without admission</td>
<td>61 118</td>
<td>60 –</td>
<td>62 151</td>
</tr>
<tr>
<td>ED attendances without admission/patient</td>
<td>61 1.0 (0.2)</td>
<td>0.5 (0.1) &lt;0.001</td>
<td>62 1.5 (0.3)</td>
</tr>
<tr>
<td>Admissions via ED</td>
<td>74 146</td>
<td>58 –</td>
<td>76 174</td>
</tr>
<tr>
<td>Admissions via ED/patient</td>
<td>74 1.3 (0.2)</td>
<td>0.5 (0.1) &lt;0.001</td>
<td>76 1.7 (0.3)</td>
</tr>
<tr>
<td>Bed days/patient admitted via ED</td>
<td>74 18.2 (2.6)</td>
<td>7.2 (2.0) &lt;0.001</td>
<td>76 23.2 (3.4)</td>
</tr>
</tbody>
</table>

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

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

HEPETEM 57 (50–59), p = 0.05). This finding, together with a decreased concentration of endothelial-MP carrying TM (TM-MP/L: 232 (190–287) vs 377 (218–493), p = 0.002) and endothelial-Pc receptor (EPCR/CD65E-MP/L: 14 (12-25) 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

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

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

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

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

Disclosure of Interest: M. Hudson: Consultant for Norgine; advisory board member; has given sponsored lectures on behalf of Norgine

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/ PARITAPREVIR/R-DASABUVIR/R-BARIVABIRIN - A REAL-LIFE COHORT

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8Matei Bals Clinical Institute, Bucharest/Romania
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10Third Medical Clinic, Fabriciul Tromiz, Cluj Napoca/Romania
111st Dept. Of Gastroenterology & Endoscopy, PetCenter of Gastroenterology and Hepatology, Bucharest/Romania
12Bucuresti Regional Hospital, Bucharest/Romania

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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/r-dasabuvir/r-barivabirin 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 10000/mm^3 was used) and 71 patients (8.3%) with both hypoalbuminemia and thrombocyto- ppenia before initiating antiviral treatment. Safety (as AE in % and SAE) efficacy defined as HCV RNA undetectable at week 12 post-therapy and complications rate were evaluated using Pearson’s correlation, multivariate analysis and Chi-Square test.

Results: Main patient characteristics were: 100% genotype 1b, a median age of 60 (58, 62) years, 54.57% men, 31% spontaneous bacterial peritonitis and 24% urinary. Of these, 51% were rehospitalised. The incidence of bacterial infection was 25%: 41% respiratory, 37% digestive and 9% infections of the skin. 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). The multivariate analysis, survival was independently associated with MELD (hazard ratio (HR) 1.073, p = 0.012), age (HR 1, 032, p = 0.012) and infection (HR 3, 821, p < 0.001). Bacterial infection remained an independent predictor of mortality, even when excluding patients with in-hospital mortality and at 30 days (HR 3, 093, p < 0.001 and HR 1, 635, p = 0.001).

Conclusion: Patients with cirrhosis exposed to a bacterial infection are at increased risk of death. This risk remains in the long term when we exclude patients with in-hospital mortality and at 30 days and regardless of the severity of the underlying disease (MELD).
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 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 end 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 (SVR) (after 3 months of end of treatment) in about 96% of treated patients. Before treatment, patients with chronic hepatitis C had worse scores especially in work, sleep, rest and recreation and pastimes categories. After treatment, patients who received sofosbuvir/daclatasvir with or without ribavirin had significant improve in work, sleep, rest and recreation and pastimes categories with p-value 0.001. Numerical improvement was observed in total score, physical and psychosocial dimension scores. In patients with SVR, the most improvement was in work and psychosocial dimension scores. There was no significant difference in SIP between scores after end of treatment and after 3 months of treatment.

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

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

Reference

P0044 RISK FACTORS AND PREDICTIVE MODEL FOR THE DEVELOPMENT AND PREDICTOR 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 multiresistant bacterial infections, associated risk factors and their impact on prognosis in hospitalized decompensated liver cirrhosis patients.

This was a retrospective study 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 multivariate 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/Intermediate 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 (AUCROC 0.723; 95% CI 0.667–0.780). The occurrence of a MDR infection was associated with a longer duration of hospitalization (p = 0.017). 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
FibroQ(40) 0.63

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>BRD score</td>
<td>0.83</td>
<td>&gt;7.2</td>
<td>97</td>
<td>30</td>
<td>76</td>
<td>12.86 (3.44-48.13)</td>
</tr>
<tr>
<td>FRT* (38)</td>
<td>0.82</td>
<td>&gt;4.0</td>
<td>99</td>
<td>11</td>
<td>69</td>
<td>10.71 (1.21-94.06)</td>
</tr>
<tr>
<td>King's score (41)</td>
<td>0.82</td>
<td>&gt;12.3</td>
<td>94</td>
<td>45</td>
<td>79</td>
<td>12.25 (4.39-34.19)</td>
</tr>
<tr>
<td>APRI (42)</td>
<td>0.80</td>
<td>&gt;1.5</td>
<td>29</td>
<td>94</td>
<td>50</td>
<td>6.13 (1.76-21.36)</td>
</tr>
<tr>
<td>Fibro-score (43)</td>
<td>0.70</td>
<td>&gt;1.26</td>
<td>95</td>
<td>19</td>
<td>72</td>
<td>4.34 (1.33-14.17)</td>
</tr>
<tr>
<td>FibroQ(40)</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.

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

<table>
<thead>
<tr>
<th>Fibrosis marker (ng/mL)</th>
<th>IL-28B genotypes</th>
</tr>
</thead>
<tbody>
<tr>
<td>FibroScan (kPa)</td>
<td>6.6 ± 0.4</td>
</tr>
<tr>
<td>Hyaluronic acid (ng/mL)</td>
<td>74.6 ± 5.2</td>
</tr>
<tr>
<td>Laminin (ng/mL)</td>
<td>60.6 ± 3.2</td>
</tr>
<tr>
<td>Collagen IV (µg/mL)</td>
<td>6.1 ± 0.4</td>
</tr>
<tr>
<td>PHINP (ng/mL)</td>
<td>13.3 ± 0.7</td>
</tr>
<tr>
<td><strong>P value</strong></td>
<td><strong>0.0001</strong></td>
</tr>
</tbody>
</table>

| Conclusion: | FibroScan and ECM proteins prove that the IL-28B rs12979860 T allele affects the severity of liver disease. Coexistence of C allele with T allele reduces cirrhosis severity. This study gives a good deduction that carriage of the IL-28B C allele protects from unfavorable outcomes in CHC. This study shed light on using FibroScan and ECM proteins as good diagnostic options for liver disease severity in IL-28B genotypes. |

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

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

**Aims and Methods:*** This systematic review and meta-analysis aimed to investigate the efficacy and safety outcomes of the three-drug combination of daclatasvir, asunaprevir, and beclabuvir, in treatment of HCV genotype 1 infection. Eleven electronic search engines/libraries, including PubMed, Scopus, Web of Science, Google Scholar, Virtual Health Library (VHL), WHO Global Health Library (GHL), ClinicalTrials, POPLINE, System for Information on Grey Literature in Europe (SINGLE), Cochrane library, and the New York Academy of Medicine (NYAM), were systematically searched for any clinical trial reporting the efficacy and safety of BCV-TRIO for the treatment of HCV genotype 1 infection. Studies were screened for eligibility and data was extracted by two independent researchers. A forest plot was used to compare the effect of different treatment regimens and the risk ratio was calculated. The study included 219 observations and 207 patients were included. The overall SVR rate was 97.5% while the SVR rates for different regimens were: 92.4% (95%CI [85.3–92.4]), 96.2% (95% CI [93.0–98.0]), 93.5% (95%CI [89.2–96.1]), 91.1% (95% CI [87.6–93.7]), 93.9% (95% CI [86.6–97.3]), and 91.9% (95% CI [89.1–94.0]) for HCV genotype 1a, HCV genotype 1b, IL28B CC genotype, IL28B non-CC genotype, cirrhotic, and non-cirrhotic respectively. The virologic failure occurred in only 40 patients (7%) (95%CI [5.2–9.4]). There was no difference when adding ribavirin to this combination (RR = 0.98, 95% confidence interval (95% CI) [0.90–1.08], P = 0.70, using this regimen on interferon-experienced patients (R-R = 1.03, 95% CI [0.98, 1.08], P = 0.30), or changing the dose of BCV from 75 mg to 150 mg regardless the genotype 1 subtypes or IL28B genotype. Similarly, the minimal failure of treatment showed no difference regarding the main two comparisons regardless the cause of this failure. Increasing the dose or the duration did not show a significant increase in the efficacy. The rates of serious adverse events (AEs) occurrence were; (3.4%, 95% CI [2.3–5.1]), (6.5%, 95% CI [3.2–12.7]), (2.3%, 95% CI [0.6–8.8]), and (2.9%, 95% CI [0.2–33.6]) for BCV-TRIO, (BCV-TRIO + RBV) for 12 weeks, (DCV + ASV + BCV-150 mg) for 12 weeks, and both (BCV-TRIO) and (DCV + ASV + BCV-150 mg) for 24 weeks respectively. For BCV-TRIO, the most frequent AEs were headache, diarrhoea, fatigue, and nausea with rates; (21.2%, 95% CI [18.4–24.2]), (14.3%, 95% CI [12.6–16.9]), (13.8%, 95% CI [11.2–16.8]), and (13.4%, 95% CI [10.9–16.4]) respectively.

**Conclusion:** This study reported a high SVR, minimal treatment failure rate, and few AEs with fixed-dose three drug combination of daclatasvir, asunaprevir, and beclabuvir for 12-week duration in HCV genotype 1-infected patients, without adding ribavirin, prior interferon-based therapy, restriction on noncirrhotic patients, restriction on certain IL28B genotype, restriction on baseline resistance-associated variants, or expansion the duration of the treatment to 24 weeks.

**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.
P0050  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 hospitals from different Egyptian population in Upper & lower Egypt (mainly from Dakahlia, Cairo and Assuit governorates).

The index HCV patients were 1106 cases whereas the families or close household 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 activities and other one negative HCV member with no history of any liver complications). Ideally family was selected on the basis of containing 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 (index or contact cases) in the family were selected with inclusion criteria of 1-HCV positive by PCR RNA & 6 months, 2-Adults (above 18 years) of both sexes 3-Any stage of HCV related liver diseases. While cases were diagnosed as spontaneously cleared the virus (SVC) based on the following criteria: positive Anti-HCV but negative PCR HCV RNA in 2 successive samples at least 6 months apart with no prior history of antiviral therapy.

Results: The prevalence of Anti-HCV v+ cases among household contacts was 20.71% but when PCR HCV was performed only 17.83% were v+ while 2.9% were spontaneously cleared the virus (SVC). The HCV prevalence among household 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 (0.5% & 1.9%) 4v (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>0.5</td>
<td>1.9</td>
</tr>
<tr>
<td>4v</td>
<td>0.8</td>
<td>1.2</td>
</tr>
<tr>
<td>1a</td>
<td>2.9</td>
<td>8.3</td>
</tr>
<tr>
<td>1g</td>
<td>0.0</td>
<td>0.3</td>
</tr>
<tr>
<td>1b</td>
<td>0.0</td>
<td>0.3</td>
</tr>
</tbody>
</table>

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

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

References


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

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2National Hospital Organization Cairo Fever Hospital, Ministry of Health, Domiatte, Domiatte/Egypt
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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 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 6-18 h. These limitations have stimulated the development of non-invasive techniques for assessing the presence and the degree of liver fibrosis. Several laboratory scores composed of routine laboratory markers that are readily available have been proposed for non-invasive prediction of liver fibrosis in chronic hepatitis C (CHC) patients.

Aims & Methods: The aim of this work is to use RDW as a marker for non-invasive prediction of the stage of hepatic fibrosis in patients with chronic hepatitis C genotype 4. 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). Comparing with other 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 cut off value 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 & RPR were excellent but for platelets it was only good and APRI 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 and 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 HCV genotype-4.

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

Reference

39(3):862–3; author reply 863.

P0052  CANCER INCIDENCE IN VARIOUS ORGANS OTHER THAN THE LIVER FOLLOWING DIRECT-ACTING ANTIVIRAL (DAA) TREATMENT 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

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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 documented 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 for survival 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 DAAAs (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 others. 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 0.0% for the IFN group, respectively. The difference between the groups was significant (p = 0.02) based on Cox regression analysis using IPTW.

**Conclusion:** Because cancer detection in organs other than the liver can be challenging in management of hepatitis, some cases with cancer found after the treatment might have been diagnosable before the treatment, possibly leading to an overestimation of the incidence after the treatment. The number of newly diagnosed cancer cases was small in the present study, resulting in a low statistical power. Nevertheless, the cancer incidence in organs other than the liver was significantly higher in patients treated with DAA therapy than those treated with IFN therapy. This difference persisted after correcting for possible confounding factors, including age 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**

2. Villani R, Facciorusso A, Bellanti F, et al. DAAs rapidly reduce inflammation, but increase serum VEGF level: A rationale for tumor risk during antiviral therapy. J Hepatol 2016;64:804-818; the rates varied from 79.0% (CI:70.9-85.3) with sofosbuvir/ribavirin, to 83.7% (CI:66.2-93.1) with sofosbuvir/ledipasvir, and to 88.2% (CI:83.3-91.7) with sofosbuvir/daclatasvir.

**Table:** Cox regression analysis for incidence other than the liver in IPTW samples

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

**Discussion:** The impact of the virological cure on the evolution of cirrhotic patients with hepatitis C treated with the direct-acting antivirals (DAAs) has been a watershed for the management of HCV-related chronic liver diseases. In fact, treatment with second-generation DAAs cures the great majority of patients treated with HCV chronic infection, with the exception on genotype 3 cirrhotic patients.

**Aims & Methods:** The present report focuses on HCV genotype 3 cirrhotic patients treated with second-generation DAAs in order to identify which of the several treatment schedules recommended for genotype 3 would constitute the best option. Methods: 1. Twenty-four Italian centers (ITAL-C consortium) were involved in this real-life study where HCV genotype 3 patients treated with DAAs. Eligible patients were >18-year-old with chronic HCV infection, either naive to treatment-experienced patients with any of the previous therapies were excluded: infection with HCV genotypes other than 3, active HCC on imaging, HIV and/or HBV co-infection, liver-transplant recipients, patients with an estimated glomerular filtration rate <30 ml/min. 2. With the intent to delineate a treatment schedule with the new DAAs that would offer the higher chance of SVR to patients with HCV genotype 3, a systematic search of the literature was implemented and the retrieved information was pooled and evaluated by a meta-analytical approach. Electronic, systematic review of the available evidence in the published literature was undertaken to identify all studies. The systematic literature review was performed via Medline from 2012 to 2016 by the following search keys: HCV Genotype 3 AND (DAAs/IFN or (sofosbuvir OR (daclatasvir OR (ledipasvir OR (Velpatasvir)))).

**Results:** A total of 233 HCV genotype 3 patients were enrolled. In the entire population, the SVR rate was achieved by 205 subjects (88.0%). A successful treatment outcome was documented in 79.0% of patients treated with sofosbuvir in combination with RBV, in 82.0% of those who received sofosbuvir/ledipasvir with or without RBV, and in all 7 patients treated with sofosbuvir/ledipasvir with or without RBV. At the univariate analysis, baseline predictors of the SVR12 were gender (female patients being more responsive than males), BMI <30 and the treatment schedule. Of relevance, age, stage of liver disease, advanced fibrosis or cirrhosis, RBV use, and treatment length were irrelevant to SVR12. At the stepwise logistic regression analysis, the only two factors independently associated with SVR12 were regimen containing sofosbuvir in combination with daclatasvir or ledipasvir (OR = 4.25; 95%CI: 1.81-9.97; p = 0.001), and the BMI <30 (OR = 2.64; 95%CI: 1.04-6.72; p = 0.041). 2. The systematic review of literature provided data of 3311 patients from 17 full text article and two abstracts. The mean weighted SVR12 rate was 88.2% (95%CI: 80.4-93.7; the rates varied from 79.0% (CI:70.9-85.3) with sofosbuvir/ribavirin, to 83.7% (CI:66.2-93.1) with sofosbuvir/ledipasvir, and to 88.2% (CI:83.3-91.7) with sofosbuvir/daclatasvir.

**Conclusion:** HCV genotype 3-infected patients, and in particular those progressed to cirrhosis, should be no more considered difficult-to-treat individuals, provided that an optimal therapeutic schedule is applied. Patients without cirrhosis should be treated with sofosbuvir and daclatasvir for 12 weeks. Patients with cirrhosis should be treated with sofosbuvir and daclatasvir for 24 weeks with or without ribavirin.

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

**References**

2. Villani R, Facciorusso A, Bellanti F, et al. DAAs rapidly reduce inflammation, but increase serum VEGF level: A rationale for tumor risk during antiviral therapy. J Hepatol 2016;64:804-818; the rates varied from 79.0% (CI:70.9-85.3) with sofosbuvir/ribavirin, to 83.7% (CI:66.2-93.1) with sofosbuvir/ledipasvir, and to 88.2% (CI:83.3-91.7) with sofosbuvir/daclatasvir.

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**Introduction:** The impact of the virological cure on the evolution of cirrhotic patients with hepatitis C treated with the direct-acting antivirals (DAAs) has been a watershed for the management of HCV-related chronic liver diseases. Recently, some papers reported an elevated incidence of recurrence of hepatocellular carcinoma (HCC) and others a possible rise on the de novo incidence of HCC in the first year after treatment with DAAAs, but not others.

**Aims & Methods:** This is a prospective study of cirrhotic patients treated with DAA between February/2015 and January/2017. Under HCC screening with ultrasonography 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 SPSS version 24.

**Results:** 106 cirrhotics (73% mean; 54.5 ± 8.8 years), MELD 7.3 ± 2.6, 60% with portal hypertension (n = 64) and 22% with decompensated cirrhosis (n = 23, 22 Child-Pugh B). Two patients with previous HCC, stage Barcelona Clinic Liver Classificaton (BCLC) A, invisible after loco-regional treatment. The sustained virological response at week 12 was 89.9% (71/79); 4 deaths, 1 relapse, 1 therapeutic failure and 2 losses to follow-up (FU). In 11 ± 7 months of FU, we recorded 5 cases of HCC, 4 “de novo” and 1 recurrence, which corresponded to an incidence of 3.8% of “de novo” HCC (13% in compensated cirrhosis). The BCLC staging was: stage A 2 stage B, 2 stage C and the one with the recurrence was stage D. A Child-Pugh B class (p = 0.004), low platelets level (p = 0.001) and hospitalization for decompensation (p = 0.005) 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 transplantation was observed 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 transplantation. 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
4. Yang JD, Aqel BA, Pungpapong S et al. Direct acting antiviral therapy and liver biopsies based on METAVIR scores. SWE results were reported using eight staging liver disease. Eighty-five patients (32.1%) had cirrhosis prior to biopsy. In a fourth of the cases the biopsy was performed in the context of acute hepatici, being in 12.6% for diagnosis of alcoholic hepatitis. The reasons for the change in strategy in a high percentage of cases.

P0056 CLINICAL EXPERIENCE IN THE USE OF TRANSJUGULAR LIVER BIOPSY WITH TRU-CUT NEEDLE: A RETROSPECTIVE EVALUATION OF 265 CASES
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Introduction: Liver biopsy is recognized as the definitive diagnostic tool for the diagnosis and treatment of liver diseases. The transjugular pathway (TJLB) is commonly used in the presence of contraindications to the percutaneous route. The technical success was 92.4%. Sampling was considered adequate in 92.2% of the situations the TJLB was considered to have an impact to the patient. Retrospective study of 265 consecutive patients submitted to TJLB between 2010 and 2016.

Results: We included 265 patients with mean age 56 years (+/-12.4), with the majority (60.1%) being male. One hundred and eleven patients (41.9%) were hospitalized. In 40.1% of cases there was previously known liver disease, especially alcoholic disease, hepatitis C and non-alcoholic steatohepatitis. In 80.5% of the cases the purpose of TJLB was for diagnosis and in the remaining cases for staging liver disease. Eighty-five patients (32.1%) had cirrhosis prior to biopsy. In a fourth of the cases the biopsy was performed in the context of acute hepatici, being in 12.6% for diagnosis of alcoholic hepatitis. The reasons for the percutaneous route included: coagulopathy/anticoagulation (32.2%), thrombocyto-penia (17.8%), and failed percutaneous liver biopsy (13.6%). The technical success was 92.4%. Sampling was considered adequate in 92.2% of cases, which was associated with diagnostic purpose (98.9% vs. 88.5%, p = 0.001) and evidence of acute hepatitis (90.4% vs. 88.5%, p = 0.03). Most patients (60.4%) had histological criteria for cirrhosis. In 76.2% of patients TJLB allowed a histological diagnosis, mainly alcoholic and non-alcoholic steatohepatitis. The clinical experience in the use of TJLB with Tru-Cut needle allows a change in strategy in a high percentage of cases.

Disclosure of Interest: 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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Introduction: Liver fibrosis is a result of progressive injury to the liver caused through PBC etiopathogenesis remains still obscure, we overexpressed miR-506 in cholangiocyte livers and directly targets both CT/HCO3 anion exchanger 2 (AE2) and type III inositol 1, 4, 5-trisphosphate receptor (InsP3R3), leading to cholestasis. Aim & Methods: The regulation of miR-506 gene expression and its role in cholangiocyte pathophysiology and immune activation was studied. Different sizes of miR-506 promoter were cloned in a luciferase expression vector, which could be transfected in human cholangiocytes (H69 cells) and the role of pro-inflammatory cytokines, bile acids, estrogen and glucocorticoids was evaluated on the promoter activities. miR-506 or a negative control miRNA sequence were also cloned in an expression vector under the regulation of the CMV promoter; these constructs were stably transfected in H69 human cholangiocytes, and cholangiocyte pathophysiology and immune activation were evaluated. Experimental overexpression of miR-506 in cholangiocytes dysregulated the cell proteomic profile (by mass spectrometry) affecting proteins involved in different biological processes including mitochondrial metabolism. In cholangiocytes, miR-506: i) induced differentiation with downregulation of biliary and epithelial markers together with upregulation of mesenchymal and pro-inflammatory markers; ii) contributed to proliferation and survival; iii) increased reactive oxygen species and endoplasmic reticulum (ER) stress; iv) caused DNA damage; and v) sensitized to caspase-3-dependent apoptosis induced by cytotoxic bile acids. These events were also associated with impaired energy metabolism in mitochondria (proton leak and ATP production) and PDC-E2 overexpression. Co-culture of miR-506 over expressing cholangiocytes with PBC immune cells induced activation and pro-liferation of PBC immune cells.

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

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

P0055 MiRNA-506 PROMOTES PRIMARY BILIARY CHOLANGITIS-LIKE FEATURES IN CHOLANGIOCYTES AND IMMUNE ACTIVATION
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2Sorbonne Universités, UPMC Univ Paris 06, INSERM, Saint-Antoine Research Center, Paris/France
3Herbaspec, Basque Foundation for Science, Bilbao/Spain
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Introduction: Primary biliary cholangitis (PBC) is a chronic cholestatic liver disease associated with autoimmune phenomena targeting intrahepatic bile duct cells. Although PBC etiopathogenesis remains still obscure, development of anti-mitochondrial auto-antibodies against pyruvate dehydrogenase complex-E2 (PDC-E2) is a common feature. MicroRNA (miR) downregulation occurs in liver and immune cells of PBC patients, but their functional relevance is largely unknown. We previously reported that miR-506 is overexpressed in PBC cholangiocytes and directly targets both CT/HCO3 anion exchanger 2 (AE2) and type III inositol 1, 4, 5-trisphosphate receptor (InsP3R3), leading to cholestasis. Aim & Methods: The regulation of miR-506 gene expression and its role in cholangiocyte pathophysiology and immune activation was studied. Different sizes of miR-506 promoter were cloned in a luciferase expression vector, which could be transfected in human cholangiocytes (H69 cells) and the role of pro-inflammatory cytokines, bile acids, estrogen and glucocorticoids was evaluated on the promoter activities. miR-506 or a negative control miRNA sequence were also cloned in an expression vector under the regulation of the CMV promoter; these constructs were stably transfected in H69 human cholangiocytes, and cholangiocyte pathophysiology and immune activation were evaluated. Experimental overexpression of miR-506 in cholangiocytes dysregulated the cell proteomic profile (by mass spectrometry) affecting proteins involved in different biological processes including mitochondrial metabolism. In cholangiocytes, miR-506: i) induced differentiation with downregulation of biliary and epithelial markers together with upregulation of mesenchymal and pro-inflammatory markers; ii) contributed to proliferation and survival; iii) increased reactive oxygen species and endoplasmic reticulum (ER) stress; iv) caused DNA damage; and v) sensitized to caspase-3-dependent apoptosis induced by cytotoxic bile acids. These events were also associated with impaired energy metabolism in mitochondria (proton leak and ATP production) and PDC-E2 overexpression. Co-culture of miR-506 over expressing cholangiocytes with PBC immune cells induced activation and proliferation of PBC immune cells.

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

Disclosure of Interest: All authors have declared no conflicts of interest.
Area under the curve and receiver operator characteristic (AUROC) compari

Results: The study population consisted of 106 men and 94 women with a mean age of 44.8 years and a body mass index (BMI) of 25.64 kg/m². Fibrosis stage was F0/F1/F2/F3/F4 in 7/30/32/23/25 patients, respectively. The median BMI (IQR) of these patients was 24, 25, 0.20, 0.37, and 0.94 kg/m², respectively. AUROCs to diagnose patients with severe fibrosis (stage F2) ranged from 0.735 (A) to 0.903 (H), respectively. Comparing the AUROC of one measurement, IQR/median from 0.735 (A) to 0.903 (H), respectively. In the cohort of obese (BMI ≥ 25) and old patients (age ≥ 65), 0.22, < 0.05, 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 significant fibrosis (stage F2) ranged from 0.778 (A) to 0.876 (H). AUROC increased based on the number of measurements. A significant difference between 1 and 5 (p < 0.05), 10 and (p < 0.01) 2, 10 (p < 0.05) measurements was observed in pairwise comparison. Likewise, AUROCs of ten measurements were significantly higher than (p < 0.05) of five (A) to 0.923 (G). A significant difference (p < 0.05) was seen between one and 10 measurements. In the cohort of IQR/median < 0.3, the diagnostic accuracy of ≥ F2 and ≥ F3 ranged from 0.806 (A) to 0.877 (H), and from 0.832 (A) to 0.928 (H), respectively. In the cohort of obese (BMI ≥ 25) and old patients (age ≥ 65), the diagnostic accuracy of ≥ F2 and ≥ F3 ranged from 0.752 (A) to 0.862 (D), and from 0.735 (A) to 0.903 (H), respectively. Comparing the AUROC of one measurement, IQR/median < 0.3 showed greater AUROC than those of other cohorts, however, the AUROCs of ten measurements were similar in each cohort. Conclusion: No difference was found between reporting mean or median SWE measurements. The diagnostic performance of SWE increased with the number of measurements. Our results suggest that 10 measurements are recommended to ensure the accuracy of SWE measurements in a practical setting.

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

PO058 APPARENT DIFFUSION COEFFICIENT IN EVALUATING THERAPEUTIC EFFICACY AFTER RADIOFREQUENCY ABLATION FOR HEPATOCELLULAR CARCINOMA: PROMISING RESULTS

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Introduction: Percutaneous radiofrequency ablation (RFA) is a commonly used locoregional interventional procedure in treatment of hepatocellular carcinoma (HCC). There is growing evidence that apparent diffusion coefficient (ADC) value can be used in evaluating RFA therapeutic efficacy in treatment of HCC and thus represent a reliable predictor of local HCC recurrence after treatment. Aims & Methods: We aimed to determine the therapeutic efficacy of RFA in patients with hepatocellular carcinomas using ADC value. A total of 52 patients with 58 HCCs were included, and were treated with RFA according to the guidelines. All lesions were evaluated by diffusion weighted imaging (DWI) and ADC value measurement before and after RFA treatment. DWI was obtained using axial a single-shot echoplanar imaging with two b-values (500, 1000 mm²/s) using 3 tesla MRI machine. Quantitative ADC maps were calculated using commercial and an imaging workstation. Diagnosis of HCC relied on triphasic CT and MRI, showing enhancement at the arterial phase of dynamic contrast enhanced CT or MRI with rapid washout at the portal venous & delayed phases. Follow-up post ablation by triphasic CT and/or MRI with ADC value measurement was done after one and three months to detect the responsive cases (no residual tumoral activity) and non-responsive cases with residual tumor activity.

Results: Forty-eight lesions responded to treatment and 10 lesions had shown no response. ADC values were significantly higher in lesions that responded to RFA than in non-responding lesions. The mean ADC value before treatment was 1.26±0.16 x 10³ mm²/s (mean±SD), while after treatment it was 1.46±0.12 x 10³ mm²/s with a statistically significant difference (P=0.003) using the paired t-test. Mean ADC of the lesions of less than 1000 mm²/s, b value 1000 before treatment was 1.32±0.28 x 10³ mm²/s, and increased after treatment in responding lesions to reach 1.52±0.1 x 10³ mm²/s with a statistically significant difference (P=0.005). Using b value 500, the mean ADC value before treatment didn't show significant difference between responding (1.26±0.10 x 10³ mm²/s) and non-responding lesions (1.26±0.12 x 10³ mm²/s); P=0.97. While using b value 1000, there was a significant difference with higher mean ADC values before RFA in responding lesions than in non-responding (P=0.001). There were no statistical differences between any two different groups of patients (b values in non-responding, respectively; P=0.03) The change in ADC in responding lesions is significantly higher than in non-responding lesions, and it was 19.6% vs. 6.2%, respectively (P=0.01) using b value 500 and was 23.7% vs. 21.2%, respectively (P=0.001) using b value 1000.

Conclusion: ADC is a good quantitative measurement allows effective evaluation of the therapeutic efficacy of RFA for treatment of patients with HCC and can be used as good non-contrast alternative to conventional imaging methods in post ablation follow-up.

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

PO059 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 elastography (SWE) in patients with chronic diffuse liver disease.

Aims & Methods: We have performed outcome analysis in 100 patients with NAFLD over the period from 2015 to 2016. There were 41 male patients (41%), and 59 female patients (59%), age Me (LQ-UQ) 49 (39-56), minimal age 18 years, maximal age was 77 years. All patients were found to have chronic diffuse hepatic diseases and were hospitalized for morphological investigation. 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 following subgroups of patients: F0 - F1 - 31 people, F2 - F3 - 15 and F4 - 45 patients. Given that patients with a degree of fibrosis on the scale METAVIR F0 and F1 do not require active conservative therapy, we combined the data of the group into one F0-F1. The obtained results of shear wave elastography are presented in the form of quantitative variables. Median stiffness with interquartile range (25%-75%) in groups: F0 - F1 - 5, 4 (8, 7-2) kPa, F2 - 8, 5 (3, 8-9) kPa, F3 - 13, 5 (10, 13-4) kPa and F4 - 22, 0 (12, 28, 5) kPa. The parameters of liver stiffness in the various groups on the METAVIR scale differed statistically significantly between p < 0.05. When carrying out a correlation analysis between the stiffness indices of the liver parenchyma and the morphological stage of fibrosis, a strong correlation was revealed: the Spearman coefficient was r = 0.18 (p = 0.01, 10). Cut-off was y = 9.96 x 10⁻¹³, 0.19 (p = 0.01). In patients with stage 4 the correlation coefficient was r = 0.29, 5 (9, 7; 10) mm²/s, while after treatment it was 0.5 (9.5; 10). The obtained data was good: 0.64 (95%CI, 0.45–0.72). ICC for PS was fair to good: 0.40 (95%CI, 0.10–0.57). A decrease in the stiffness indices was observed in 20% of cases and increased after treatment in 80% of patients studied in the primary statistical processing. Stiffness median in patients without fatty hepatic degeneration was: F0 - F1 - 5, 4 (5-6) kPa, F2 - 8, 5 (3-8) kPa, F3 - 13, 5 (10-13) kPa and F4 - 22, 0 (12-28, 5) kPa. According to ROC curve, the best threshold values were for stages F2-4: F2 - 7, 5; F3 - 9, 8, F4 - 14, 5kPa. However, stage correlation for hepatic fatty disease with elastography results was none: r = 0.11 p = 0.24624. Conclusion: Quantitative indicators of SWE in patients with diffuse liver disease in correlation with steatosis may be used in patients with the given disease (16 patients) from the secondary statistical processing. Stiffness median in patients without fatty hepatic degeneration was: F0 - F1 - 5, 4 (5-6) kPa, F2 - 8, 5 (3-8) kPa, F3 - 13, 5 (10-13) kPa and F4 - 22, 0 (12-28, 5) kPa. According to ROC curve, the best threshold values were for stages F2-4: F2 - 7, 5; F3 - 9, 8, F4 - 14, 5kPa. However, stage correlation for hepatic fatty disease with elastography results was none: r = 0.11 p = 0.24624.
Then the role of miR-224 in HCC progression was assessed. Tumor as well as adjacent tumor tissues of HCC were detected by RT-PCR.

Aims & Methods: It was found exosomes are the vesicles. Contact E-mail Address: wdf8025@163.com

Conclusion: This study provides the novel mechanism of regulatory roles of miR-224 in HCC. The Exosome from the supernatant of HCC cells can promote growth, proliferation, migration and invasion capability of HCC cells in vivo.

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

References

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

Methods: Seven main miRNAs (miR-125a, miR-139, miR-34a, miR-221, miR-16, miR-145 and miR-199a) were selected due to their expression patterns in HCC as well as their contribution to the development of hepato-carcinogenesis. A total of 165 patients were enrolled in this study, from which serum samples were collected and categorized into four main patient groups: 42 hepatitis C (CHC); 42 CHC, liver cirrhosis (LC); 35 HCC; and 40 healthy controls. The expression profile of the seven miRNAs was analyzed using TaqMan real-time transcription-polymerase chain reaction (RT-PCR). Additionally, the conventional markers for HCC (alpha-fetoprotein (AFP) and des-γ-carboxyprothrombin (DCP)) were measured using commercial kits.

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

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regulated in cancer tissues compared with the adjacent non-tumor tissues (P < 0.01). The expression level of MT1G in the liver cancer cell lines was closely correlated to the promoter hypermethylation status. The MT1G expression in silenced HCC cell lines could be restored by demethylation agent. We generated HCC cell lines overexpressed MT1G. Ectopic re-expression of MT1G by stable transfection in SMMC-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, MMP13 and Vimentin. The in vivo growth of HCC cells in nude mice was markedly inhibited after stable expression of MT1G (P < 0.001). MT1G over-expression in HCC cells induced the cell apoptosis (P < 0.01).

Conclusion: Our results demonstrate that MT1G promoter methylation directly mediates the transcription down-regulation and common occurrence 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 to the biliary tree, however only FNH accumulates bile salts, suggesting that hepatocellular uptake and secretion of bile constituents differs in FNH and HCA. Therefore, one would anticipate changes in the Farnesoid X receptor (FXR) expression. However, the expression of FXR and its targets in HCA and FNH is relatively unknown. Targets of FXR regulate uptake and excretion of hepatobiliary contrast agents, possibly altering the presentation of FNH and HCA on medical imaging. We studied the expression of FXR and its targets in HCA and FNH and compared this with the appearance of lesions on MRI.

Aims & Methods: Tumour tissue and normal tissue from 7 patients with HCA and 7 patients with FNH was obtained. Diagnosis was confirmed by histopathological examination in all patients. Reverse transcription of the mRNA to cDNA was performed, using random primers and MultiScribe Reverse Transcriptase (Life Technologies, Carlsbad, Ca). The cDNA was used as template for PCR amplification by TaqMan® assay analysis (Applied Biosystems, Foster City, CA). The expression of all the target genes in the FXR pathway (SHP, NTCP, OATP1B1, OATP1B3, BSEP, CYP7A1, CYP3B1, BAAT, SLC27A5, CYP3A4, SULT2A1, UGT2B4, FGFR4, MRP2, MRP3, MDR3) were compared to the expression of internal reference in both normal and tumour tissue. Matched case comparisons were made for tumour and normal tissue. DNA expression of FNH and HCA was compared to MRI findings.

Results: FXR was downregulated in both HCA and FNH. NTCP was significantly downregulated in both FNH, and not significantly in HCA, although showing a trend towards down regulation. Three patients (1 FNH 2 HCA) show aberrant expression of NTCP compared to all the other patients. All these three patients had also an unclear or incorrect diagnosis based on MRI scan with gadodextrin acid as compared to final diagnosis by histopathological examination. OATP1B1 was downregulated in both HCA and FNH, except again for the three patients with the aberrant imaging. Expression of OATP1B1 and SHP in HCA and FNH did not significantly differ from expression in healthy liver tissue. MRP2 was significantly downregulated in HCA, but not in FNH. However, this may again be due to the patients with the aberrant expression pattern. OATP1B3 was significantly downregulated in HCA. CYP3A4 and CYP2A1 were very strongly downregulated in HCA, but not in FNH. FGFR 4 was heavily downregulated in HCA, but not in not FNH. BAAT was significantly downregulated in HCA.

Conclusion: Limited by sample size, this study suggests that misdiagnosis based on medical imaging might actually correlate with aberrances on hepatocyte transporter level. This seemed to account for NTCP (bile salt importer), OATP1B1 (bile salt importer) MRJP2 (efflux pump of conjugated compounds). Although FXR itself was downregulated in both FNH and HCA, its downstream targets differed in expression between tumours. FXR receptor activity might be altered even though expression is not different, or downstream targets might be influenced by factors outside the FXR pathway. Further research could provide a more profound insight into this mechanism.

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

**P0065 CUX1 CONTROLS ENDOPLASMIC 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 pro-apoptotic 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 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 TFEB 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 not 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 CONFRONS RESISTANCE TO APOPTOTIC CELL DEATH WITHIN 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 pro-apoptotic 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 Flip detection.

Results: Treatment with superkiller TRAIL, at 50 and 100ng/ml, caused cell death in HepG2 and Hep3B cells after 48 h 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 PTP53, KRT18, CDKN1A and CDKN1B. Interestingly, silencing CUX1 significantly upregulated several genes implicated in cellular proliferation, differentiation and apoptosis.

Conclusion: Limited by sample size, this study suggests that misdiagnosis based on medical imaging might actually correlate with aberrances on hepatocyte transporter level. This seemed to account for NTCP (bile salt importer), OATP1B1 (bile salt importer) MRP2 (efflux pump of conjugated compounds). Although FXR itself was downregulated in both FNH and HCA, its downstream targets differed in expression between tumours. FXR receptor activity might be altered even though expression is not different, or downstream targets might be influenced by factors outside the FXR pathway. Further research could provide a more profound insight into this mechanism.

Disclosure of Interest: All authors have declared no conflicts of interest.
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 alpha feto protein (AFP).

**Results:**

The diagnosis of liver cancer depends on both screening with alpha-fetoprotein (AFP) and radiological imaging studies. Generally, normal levels of AFP are below 10 ng/ml but AFP greater than 200 ng/ml is suggestive of HCC. The sensitivity of AFP for liver cancer is about 67%; therefore a normal AFP does not exclude HCC. Searching another tumor marker, that together with AFP could improve the diagnostic utility of HCC.

Squamous cell carcinoma antigen (SCCA), a member of the high molecular weight family of serine protease inhibitors named serpins which are physiologically found in the granular layers of normal squamous epithelium but found to be typically expressed by neoplastic cells of epithelial origin in a number of different cancers for example cervix cancer, lung, and head and neck cancers hence, it can be used as a clinical marker of these malignancies.

The structure of the serpin ovalbumin revealed the archetype native serpin fold that typically have three β-sheets (termed A, B and C) and eight or nine α-helices (hA-hl). Serpins also possess an exposed region termed the reactive centre loop (RCL) that includes the specificity determining region and forms the initial interaction 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 alpha 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 alpha feto protein (AFP). These groups were from both sexes who are admitted to the inpatient ward and the outpatient clinic of Tropical Medicine Department, Faculty of Medicine, Alexandria University.

This study was carried out on:

- Group A: 100 cases of hepatocellular carcinoma without interventions.
- Group B: same 100 cases of group A before and 3 months after successful interventions.
- Group C: 100 cases of established cirrhosis.
- Group D: 100 cases with chronic hepatitis C virus infection without established cirrhosis.
- Group E: 100 healthy individuals as controls.

All patients in this study were subjected to: complete blood picture, liver biochemical profile, serum albumin aminotransferase (ALT), serum aspartate aminotransferase (AST), serum alkaline phosphatase, total and direct serum bilirubin, prothrombin time and activity, serum albumin blood urea nitrogen (BUN), serum creatinine. Fasting blood sugar. Serum alpha fetoprotein (AFP).

Determination of squamous cell carcinoma antigen (SCCA) 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 upon the direct sandwich technique. Calibrators and patient samples are incubated together with biotinylated Anti-SCC monoclonal antibody in Streptavidin coated microtiter. After washing buffered Substrate/Chromogen reagent (hydrogen peroxide and 3, 3’, 5, 5’ tetra-methylbenzidine) is added to each well and the enzymatic reaction in ciron is allowed to proceed. During the reaction enzyme a blue colour will develop if antigen is present. The intensity of the colour is proportional to the amount of SCC present in the samples. The colour intensity is determined in a microplate spectrophotometer at 620 nm (or optionally at 405 nm after addition of Stop Solution). Calibration curves are constructed for each calibrator. The SCC concentrations of patient samples are the read from the calibration curve.

**Results:** Table 1 shows a statistical significant difference between different studied groups regarding alpha feto protein (P = 0.000).

**Table 1:** Comparison Between Different Studied Groups Regarding Alpha Feto Protein

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Table 2 shows a statistical significant difference between different studied groups regarding SCCA level (P = 0.000).

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

<table>
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<td>0.646</td>
<td>0.23172</td>
<td>0.3</td>
<td>0.95</td>
</tr>
<tr>
<td>F</td>
<td></td>
<td>28.897</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P</td>
<td></td>
<td>0.000*</td>
<td></td>
<td></td>
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</table>

Also, Positive significant correlation was found between AFP and SCCA in both groups (Table 3).

**Table 3:** Correlation Between AFP and SCCA

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

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

**Conclusion:** In the present study patients with HCC either with or without therapeutic intervention have significantly higher level of AFP in comparison to chronic HCV, cirrhotic and control groups this is in agreement with Awadallah et al.[6] who reported a statistically highly significant elevation in the serum AFP in HCC group when compared with control group. Moreover, the mean serum level of AFP in group A (HCC before intervention) was 263 ng/ml that decreased to 209.4 ng/ml in group B after therapeutic intervention and this agreed with Feng et al.[7] and Molinari et al.[8] Also, at AFP level of 200 ng/ml, the sensitivity was 90%, while the specificity was 60%. Our results showed that SCCA level ranged from 2.5–10 with a mean of 5.53 in HCC patients without interventions, 3.3–7.6 with a mean of 5.3 in patients with HCC before intervention, 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 yielded 80% sensitivity and 90% specificity. These results were in agreement with Trevisani et al.[12] Patients with HCC, in our study were none randomized selected as BCLC stage B (either one HCC lesion <5 cm in size or 3 lesions < 3 cms) so no statistical correlation was done between serum AFP level and tumor size. Our results showed a significant positive correlation between serum SCCA and AFP among patients with HCC before and after therapeutic intervention. Our data are in agreement with that of Hussein et al.[9] and El Ezawy et al.[10] who detected that SCCA were positively significantly correlated with AFP level. When combined sensitivity of both markers was calculated in our study at the best-chosen cutoff values (SCCA 3.2 ng/ml and AFP 200 ng/ml) sensitivity improved to 93%. Matching results were found by Gianluigi et al.[4]

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

**References**

The best overall formula that could best predict HCC was then constructed as following: Logit probability of HCC = −2.524 + 0.152 × age − 0.121 × Hb − 0.696 × INR − 1.059 × Alb − 0.022 × AFP + 0.976 × Gender Male = 1 Female = 0

The diagnostic value of HMC-CU was then assessed by ROC curve. The area under the ROC curve (AUC) of 0.94 ± 0.02 at cutoff point of 0.56 HMC-CU enabled to distinguish patients with 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 the diagnosis of HCC patients with HCV-related CLD. The strength of our score is based 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

PO0068 HEPATOCELLULAR CARCINOMA MULTIDISCIPLINARY CLINIC – CAIRO UNIVERSITY (HMC-CU) SCORE; A NEW SIMPLE SCORE FOR EARLY DIAGNOSIS OF HCC

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Introduction: Hepatocellular carcinoma (HCC) is the first most common primary malignant tumor of the liver, the fifth most 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 and 1072 patients were diagnosed to have HCV related liver cirrhosis with no HCC. Consequently, we entered these significant variables in a multivariate regression model that demonstrated that only age, gender, hemoglobin, albumin, AFP and INR were independent associated with HCC development.

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

<table>
<thead>
<tr>
<th>Age Gender Hb INR</th>
<th>OR Lower</th>
<th>Upper</th>
<th>P value</th>
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<tbody>
<tr>
<td>Age Gender Hb INR</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.614</td>
<td>1.141</td>
<td>1.188</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>2.653</td>
<td>1.959</td>
<td>3.594</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>0.886</td>
<td>0.819</td>
<td>0.959</td>
<td>.003</td>
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<tr>
<td>0.498</td>
<td>0.267</td>
<td>0.931</td>
<td>.029</td>
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<tr>
<td>0.347</td>
<td>0.260</td>
<td>0.481</td>
<td>.001</td>
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<tr>
<td>1.022</td>
<td>1.016</td>
<td>1.028</td>
<td>&lt;.001</td>
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<td>0.080</td>
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95% CI.

PO0069 MULTIPLE BIOPOLAR RADIOFREQUENCY ABLATION IN TREATMENT OF MEDIUM TO LARGE HEPATOMAS – EXPERIENCE IN A REGIONAL HOSPITAL

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Aims: The aim of this study was to evaluate the therapeutic effect and long term survival in medium and large hepatomas using multiple bipolar radiofrequency ablation system (Celon). The study subjects had a Child-Pugh classification of A or B. The patients who were ineligible for surgical intervention or who had no contraindications for RFA were treated with percutaneous bipolar electrodes. A total of 30 consecutive cirrhotic patients (48 tumors) with hepatomas ≥3 cm. Bipolar RFA devices have been developed to overcome the limitations of monopolar RFA devices.

Results: 30 patients were divided equally into two groups with 15 patients in each of medium and large hepatoma groups. 17 patients underwent artificial ascites (56.3%). The complete necrosis rate after ablation was 93.3% (14/15 patients) for either medium or large hepatomas. The local tumor progression rate and distant tumor recurrence rate were 0% and 0% respectively. The complete necrosis rate, tumor recurrence rate and local tumor progression rate of medium hepatomas were 88% (13/15 patients), 0% and 0% respectively and compared between medium and large hepatomas using Kaplan-Meier survival and the prognostic factors were using multivariate analysis.

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

<table>
<thead>
<tr>
<th>Age Gender Hb INR</th>
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<th>Upper</th>
<th>P value</th>
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<td>0.080</td>
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<td>.010</td>
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</table>

95% CI.

References

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

References
**P0070 RECENT TRENDS IN HEPATOCELLULAR ADENOMAS: CLINICAL FEATURES, DIAGNOSIS AND OUTCOMES**

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**Introduction:** Hepatocellular adenomas (HCA) are rare, benign tumors of pre- sumable epithelial origin, that occur predominantly, but not exclusively, in young women on oral contraceptives (OC) or in women on hormone replacement therapies. The Bordeaux adenoma tumour 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, clinical manifestations and diagnosis 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 Bordeaux group, was performed. Descriptive statistics, uni- 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; 63% of the patients had abnormal liver tests at diagnosis, 46% were symptomatic and in 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, 70% showed a thrombocytosis and 30% an abnormal serum marker. The mean size of the HCA that weren't completely resected and also of those presenting with HCA rupture was significantly higher (110 ± 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**


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**P0071 LASER ABLATION IS SUPERIOR TO TACE IN LARGE HEPATOCELLULAR CARCINOMA: A STUDY**

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**Introduction:** Currently, the standard treatment using transarterial chemo-embo- lisation (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 44–88, Child-Pugh A/B: 37 (40–50 mm), mean size 66 mm, range 40–75) were enrolled in this study. The patients were treated with multifiber technique of LA. The control group consisting of 41 patients (29 ± 12 M/F; mean age 72 yrs, range 49–86; Child-Pugh A/B: 37; median size of the nodule 50 mm, range 40–80, treated with TACE, was obtained from the ITALICA database and observed in the same period of time. No significant difference between the 2 groups was observed. The diagnosis of HCC was done according to the international guidelines and patients were treated, according to BCLC Staging System (BCLC stage A/B: 27/14/23, for LA and TACE, respectively). Response to therapy was evaluated according to the mRECIST criteria. Survival was calculated from the time of cancer diagnosis to death with values censored at the date of the last follow-up.

**Results:** Twenty-six (63.4%) patients of LA group and 8 (19.5%) patients of 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 patients according to the indications of treatment (40–50 mm, 51–60 mm and >60 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 = 0.0035). Overall survival probability rate at 3 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**


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**P0072 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. The diagnostic yield, sensitivity and specificity of EUS-FNA for the diagnosis of liver malignancy is unsatisfactory with high rate of recurrence. Data from literature suggest the alternative use of thermal ablation.

**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 (HIC) 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 HIC study was 92.6%. Three (7%) were non-diagnostic, and subsequently proved to be malignant; 2 by smear cytology and 1 after surgical resection. The diagnostic yield, sensitivity and specificity of EUS-FNB for the diagnosis of malignancy was 92.6%, 92.6% and 100%, respectively. The diagnostic yield in 20G PCN and 22G PCN was significantly superior to 25G PCN (p = 0.045). There was one bleeding complication, but controlled with endo-scopic 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, 20G and 22G FNB may be adequate for liver biopsy.

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

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References

PO073 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 ± 9.4 years, male = 78.4%, hepatitis B virus = 73.2%) were analyzed.

We compared Child-Pugh score, Model for End-Stage Liver Disease (MELD) score, MELD-Na score, and the Albumin-bilirubin (ALBI) grade for overall survival.

Results: During a median 9.0 months of follow-up (range: 0.1−154.0), mortality was significantly higher for those with MELD-Na ≥12 than MELD-Na <12 (median survival: 13.6 vs. 3.7 months, p < 0.001). Overall, 350 patients received treatment, and most commonly used modality was transarterial chemoembolization (62.3%), followed by radiofrequency ablation (15.7%) and resection (13.4%). Overall survival was significantly different for 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 mUCCE stage and MELD-Na score, treatment was not associated with better outcome for mUCCE 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, indicating that ascites treatment was associated with better outcome in other subgroups.

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

PO074 DIAGNOSTIC AND PROGNOSTIC ROLE OF SQUAMOUS CELL CARCINOMA ANTIGEN IN HEPATOCELLULAR 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 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, response to treatment 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 AFP together with clinical and tumor parameters, SCCA-IgM levels and SCCA-IgM in SCC were 76%, 52%, 60% and 70%, respectively. A cut-off of 130 AU/mL (validated in literature) was used for the prognostic analysis: patients with SCCA-IgM levels ≤130 AU/mL showed a slightly better survival (p = ns), in long-term survivors (>24 months) and in Child A patients the difference in survival was statistically significant (p = 0.036 and p = 0.01, 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).

Conclusions: A higher SCCA-IgM levels showed an opposite behavior in the prognostic prediction: in males a better survival was documented with levels <130 AU/mL while in females with SCCA-IgM >130 AU/mL. In HCC patients, SCCA-IgM levels and SCCA tissue expression were 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: SCCA-IgM is a sensitive marker of HCC but lacks in specificity. As SCCA-IgM levels, SCCA tissue expression may identify patients with better prognosis (especially in long-term survivors) and the marker confirms its ability in detecting treatment responders. Lower levels of tissue SCCA seem to be related with less aggressive tumors, given that the longer survival of these patients. The gender-based differences observed in our patients, especially with respect to the SCCA-IgM prognostic role and correlation with clinical and tumor parameters, are intriguing and focused studies on the point are needed.

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

PO075 ADHERENCE TO BARCELONA CLINIC LIVER CANCER GUIDELINES IN FIELD-PRACTICE: RESULTS OF PROGETTO EPATOCARCINOMA CAMPANIA

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1Università Federico II, Napoli/Italy
2AORN Cardarelli, Napoli/Italy
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4OO.RR Area Stabile, Gragnano/Italy
5M. Del Nervo Rumano, Benevento/Italy
6IRCCS Fondazione Policlinico Universitario "A. Gemelli"/Italy
7Seconda Università di Napoli, Caserta/Italy
8P.O. Umberto I, Nocera Inferiore/Italy
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10AORN Sant’Anna e San Sebastiano, Caserta/Italy
11PO Pineta Grande, Castellovotano/Italy
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13Università di Salerno, Salerno/Italy

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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: We analyzed the region-wide Italian database of Progetto Epatocarcinoma Campania, which includes data of HCC patients, prospectively collected from January 2013 to December 2015 in 16 central regions.

Results: Overall 1008 HCC patients were enrolled: 70.6% patients received therapy according to BCLC algorithm, while 29.4% underwent different treatment. Among patients who were treated in adherence to guidelines, a higher rate of diagnosis on surveillance programs, better liver function, lower rate of AFP >200 ng/ml, more early stage and monofocal HCC, lower frequency of nodules >5cm, 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 35.5 months, 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 end stage HCC patients, but it was poor in intermediate and advanced patients. This may be due to the wide heterogeneity of intermediate-stage patients, and to the limited use of sorafenib in advanced-stage patients. Strategies to improve treatment and stratification of HCC patients are required.

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

PO076 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 (WHQOL)-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. WHQOL includes four domains: physiological domain, psychological domain, social relationship domain, environment domain. The scores of liver cirrhosis group: physiological field (22.23 ± 3.312), psychological field (19.59 ± 3.925), social relationship field (9.64 ± 2.497), environment domain (26.23 ± 7.534) and control group (22.96 ± 3.275 in physiological field, 19.87 ± 3.152 in psychological field, 10.58 ± 2.061 in social relation field and 28.36 ± 5.091 in environmental field), they had no significant difference between the two groups (P > 0.05). The depression Self-rating score of cirrhosis group (47.86 ± 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></td>
<td></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>WHQOL-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 ± 11.917</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
P0079 EARLY DIAGNOSTICS OF NAFLD: ANALYSIS OF RISK FACTORS USING NON-INVASIVE BILIRUBIN ASSOCIATION BETWEEN THE PREVALENCE STEATOSIS AND COMPONENT COMPOSITION OF THE BODY

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Introduction: Non-alcoholic fatty liver disease (NAFLD) is liver disease with histological signs of accumulation of cholesterin excessive amount in hepatocyte in person without excessive alcohol consumption by patient (due to causes other than). The search for accessible, non-invasive and effective methods of screening for this pathology, allowing to detect NAFLD at early, potentially reversible stages of development is relevant. The purpose of the work was frequency estimation of the prevalence steatosis according to elastometry with controlled attenuation parameter (CAP®) among young people and associated with them specific body composition.

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

Results: The signs of violations of the structure of the liver were diagnosed in 15 people out of 59 (25.4%). The signs of steatosis were found in 12 (20.3%) students. The signs of liver fibrosis were found in 7 (11.9%) people (E = 5, 8 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 value in 19 (33, 4%). Results of binary regression analysis showed that the chance of development of hepatic steatosis in case of excess adipose tissue increase 28 times (p = 0.045), influence of BMI, gender, age was statistically insignificant.

Conclusion: Based on the obtained results, 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 persons was mainly associated with the increase the amount of adipose tissue in the body. Confirmed the importance of evaluation of body composition and lack of information of using only BMI when evaluating the chances of development of NAFLD.

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

P0080 SALVAGE TECHNIQUE USING A MICRO GUIDEWIRE FOR DIFFICULT BILIARY CHOLANGIOPANCREATOGRAPHY

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Introduction: Biliary cannulation is indispensable for therapeutic endoscopic retrograde cholangiopancreatography (ERCP) in patients having biliary disease. Selective biliary cannulation is often difficult due to anatomical constraints. Numerous techniques have been attempted to overcome such problems. Although a wire-guided selective cannulation technique into the bile duct may be a useful approach, conventional guidewires (0.025 or 0.035 inch) are relatively rigid to pass through the long curved narrow distal segment (NDS) or malignant stricture and sometimes get flicked off the NDS in such cases. It may be better to pass through the long curved narrow distal segment (NDS) or malignant stricture and sometimes get flicked off the NDS in such cases. It may be better to pass through the long curved narrow distal segment (NDS) or malignant stricture.

Aims & Methods: We aimed to assess usefulness of GTWt for salvage technique in biliary cannulation. We studied 240 consecutive ERCP-naive patients between August 2014 and February 2017. We have tried to perform GTWt to ERCP-difficult-cases that was defined as patients of unsuccessful cannulation despite attempts over 15 min with conventional techniques including wire-guided cannulation, endoscopic retrograde cholangiopancreatography (ERCP) in patients having biliary disease. Selective biliary cannulation is often difficult due to anatomical constraints. Numerous techniques have been attempted to overcome such problems. Although a wire-guided selective cannulation technique into the bile duct may be a useful approach, conventional guidewires (0.025 or 0.035 inch) are relatively rigid to pass through the long curved narrow distal segment (NDS) or malignant stricture and sometimes get flicked off the NDS in such cases. It may be better to pass through the long curved narrow distal segment (NDS) or malignant stricture.

Results: Among 240 ERCP-naive patients, 40 were ERCP-difficult-cases (success rate with conventional technique: 200/240; 83%). Among 40 ERCP-difficult cases, GTWt was successful in 32 patients (success rate with GTWt: 32/40; 80%). Overall success rate of ERCP-naive patients improved from 80% to 97% (p < 0.001). Among eight patients who failed with GTWt, seven were successful performing precut papillotomy or endoscopic ultrasound-guided biliary drainage and one was interrupted because of developed serious condition.

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

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

P0081 ERCP IN VERY ELDERLY PATIENTS AGE 85 OR OLDER

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2Dept. Of Gastroenterology, Ist. Clinico Humanitatis Ranzzo Dept. of Gastroenterology, Milano/Italy

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

Methods: From first January 2010 until end December of 2016 in our digestive unit 3153 patients underwent ERCP, including 351 (11.13%) people over 85. Characteristics of these patients: The mean age was 89 (range 85–99); 117 males and 234 females. 43 (12.2%) were in treatment with antithrombotic drugs. The initial diagnosis in 218 patients (62.1%) was cholangitis, malignant CBD stenosis in 92 patients (25.9%), postoperative leak in 11 patients (3.1%) and unknown CBD stenosis in 31 patients (8.83%). All patients underwent the following clinical evaluation before and after ERCP. 34 patients (9.4%) were sedated with Propofol and anesthetists assisted. The rest of the patients 90.6% were sedated with the intravenous combination of midazolam and Fentanyl with standardized monitoring (pulse oximetry, heart rate, non invasive blood pressure measurements) during the procedure. Drug infusion was performed by the nursing staff and an attending endoscopist.

Results: Deep biliary cannulation was successful in 330 patients (94%). In 127 patients (36.18%) Vater papilla was associated with duodenal diverticula. The post-ERCP complication rates were as follows: Heperamulasia in 28 patients (7.38%), Mild pancreatitis in 12 patients (3.4%), Minor bleeding in 10 patients (2.8%), Major bleeding in 2 patients (0.6) and cholangitis in 6 patients (1.7%).

Conclusion: ERCP is an acceptable procedure in patients of 85 or older in terms of safety, success and complication rates.

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

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

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Introduction: Gallbladder stone (GBS) is a common gastrointestinal disease can progress to severe cholecystitis and is a strong risk factor for gallbladder cancer (GBC). Recently, clinical epidemiologic studies revealed that the alcohol consumption has a preventive effect for development of gallstone diseases.

Aims & Methods: To evaluate the relative risks of alcohol consumption for the gallstone diseases study development. Systematic searching was performed using MEDLINE, EMBASE and Cochrane library from January 1st, 1996, to December 31st, 2016 for studies assessed the relationship between alcohol consumption and gallstone development risk. The eligibility criteria was included: 1) studies involving the patients with gallbladder stone or without cholecystitis; 2) cohort or case-control studies investigated the association between alcohol consumption and gallstone disease development. Newcastle-Ottawa Scale was used to assess the methodological quality of each studies. Data was obtained from each selected studies regarding: 1) baseline characteristics of the study (cohort, case-control); 2) number of participants; 3) participants’ clinical features; 4) country; 5) publication year; 6) Risk or odds ratio (RR) and 95% confidence interval (CI); 7) alcohol consumption and risk of gallstone. The random effect model was used to estimate the pooled relative risks (RR) with 95% confidence intervals (CIs).

Results: Twenty-five cohort and case-control studies were included, and total 12, 581 cases with gallstone diseases among those 172, 590 controls. Alcohol consumption indicated a decreased risk of GSD development (Pooled RR = 0.84 [0.79-0.90], P < 0.001). Subgroup analyses according to the alcohol doses (g/d) confirmed a gradual risk-reduction effect on GSD compared to non-drinkers (Light: RR = 0.97 [0.94, 1.00], p = 0.864; Moderate: RR = 0.82 [0.79, 0.86], p = 0.777; Heavy: RR = 0.70 [0.62, 0.80], p < 0.01).

Disclosure of Interest: None.
Introduction: Patients undergoing endoscopic retrograde cholangiopancreatography (ERCP) and duct clearance for common bile duct stones (CBDS) should be followed up with an early choledochoscopy 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 choledochoscopy 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 three months (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, 87.4% (188/215) underwent successful duct clearance at index or subsequent ERCP. Of these, 47.3% (89/188) underwent CCX within 27 days (range 0–85 days). Patients who 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 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></th>
<th>CCX group (n = 97)</th>
<th>Non-CCX group (n = 91)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td></td>
<td></td>
</tr>
<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. 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 induct 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 (MediCoat-2JX). The membrane consists with two kinds of coating material. One is silicone (MED-6604), that was used to basic structure of membrane and the other coating agent is polyurethane (tecoflox, tecothane, Tefoflex and pellethene). The gemicatine was used as antitumor drug, and coated to membrane by mixed form with polyurethane (gemicatine, 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 mass in 24 hours was 919 ug, 933 ug, 859 ug in tecophilic coating, tecothane coating, tecoflox coating, and pellethene coating. The total of released drug amount depended on polyurethane was described in table 1.

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

<table>
<thead>
<tr>
<th>Drug release amount</th>
<th>Gemicatine (ug)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coating Polymer</td>
<td>Coating Polymer</td>
</tr>
<tr>
<td>24hrs</td>
<td>48hrs</td>
</tr>
<tr>
<td>Tecophilic</td>
<td>919</td>
</tr>
<tr>
<td>Tecothane</td>
<td>859</td>
</tr>
<tr>
<td>Tefoflex</td>
<td>681</td>
</tr>
<tr>
<td>Pellethene</td>
<td>580</td>
</tr>
</tbody>
</table>

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

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

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.

A087 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 pancreatico-biliary (PB) malignancy.1 The SurePath (SP) method-ology produces a pellet of concentrated cellular material which enables addi-tional slides for immunohistochemical (IHC) staining for tumour markers Ki67, p53 and CDX2. The presence of the mitosis-related marker, Ki67, in high con-centration is considered to indicate the presence of PB malignancy. We aimed to assess the utility of SurePath (SP) in the diagnosis of pancreatico-biliary malignancy.

Methods: We aimed to assess the cancer cell morphology and the presence of tumour markers, p53 and CDX2, in SurePath (SP) samples from patients with pancreatico-biliary malignancy.

Results: A total of 100 SurePath samples were assessed for the presence of cancer cells and the expression of p53 and CDX2. The presence of cancer cells was detected in 96 out of 100 samples, with a sensitivity of 96% for the detection of cancer cells. The expression of p53 was detected in 52 out of 100 samples, with a sensitivity of 52%. The expression of CDX2 was detected in 48 out of 100 samples, with a sensitivity of 48%.

Conclusion: SurePath (SP) is a valuable tool for the diagnosis of pancreatico-biliary malignancy, with a high sensitivity for the detection of cancer cells and the expression of p53 and CDX2. The presence of cancer cells in SurePath (SP) samples is a reliable indicator of pancreatico-biliary malignancy.

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

P0088 THE ANTI-TUMOR EFFECT OF PACLITAXEL, GEMCITABINE AND MITOMYCIN C ELUTING MEMBRANE IN ANIMAL MODEL

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Introduction: The current study aims to evaluate the anti-tumor effect of paclitaxel, gemcitabine, and mitomycin C eluting polyurethane membrane in an animal model. The eluting membrane was made using ultrasonic spray coating method, which have uniform capacity of drug and be able to control the drug-release capacity.

Methods: We aimed to evaluate the antitumor effect of the paclitaxel, gemcitabine, and mitomycin C eluting polyurethane membrane in a tumor model. The tumor model was created by implanting human pancreatic cancer cells into the abdominal cavity of nude mice. The tumor cells were 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.

A089 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 are much different in cost on survival rate, nutritional status and efficacy of biliary drainage in DBSs patients are still questionable in limit health budget country.

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 Songklanakarin hospital were retrospectively review. ERCP with biliary drainage stent 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 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
stent types. The plastic stent group had lowest cost of total ERCP statistically
significant. The complications rate was not different between biliary stent types.
Conclusion: Palliative biliary drainage with plastic stent in unresectable distal malignant biliary stricture was slightly better on survival rate and was not dif-
ferent in nutritional status, efficacy to drainage and complication rate compared with metal stent or plastic followed with metal stent. But the plastic stent group had lowest cost of total procedure.
Disclosure of Interest: All authors have declared no conflicts of interest.

References

Shepherd HA, Royle G, Ross AP, et al. Endoscopic biliary endoprosthesis in the palliation of malignant obstruction of the distal common bile duct. A rando-


PO090 BILIARY DRAINAGE IN PATIENTS WITH UNRESECTABLE PERIHILAR CHOLANGIOCARCINOMA HAS A VERY HIGH COMPLICATION AND FAILURE RATE

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Introduction: Patients with unresectable perihilar cholangiocarcinoma (PHC) typically present with obstructive jaundice. They require percutaneous or endo-
toscopic biliary drainage for symptom relieve and eligibility for palliative systemic chemotherapy. However, biliary drainage in unresectable PHC is complex with a high failure and complication rate even in tertiary referral centers.

Aims & Methods: The aim of this study was to investigate the failure and compo-
lization rate of the initial drainage procedure in patients with unresectable PHC. Consecutive patients with unresectable PHC on imaging in two tertiary referral centers between 2002 and 2014 were identified. Patients were included if a biliary drainage procedure was performed. Baseline patient and tumor characteristics

<table>
<thead>
<tr>
<th></th>
<th>Group 1 Plastic stent</th>
<th>Group 2 Metal stent</th>
<th>Group 3 Plastic – metal stent</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>35</td>
<td>18</td>
<td>15</td>
<td>0.398</td>
</tr>
<tr>
<td>Gender (male), (%)</td>
<td>26 (74%)</td>
<td>9 (50%)</td>
<td>10 (66%)</td>
<td>0.209</td>
</tr>
<tr>
<td>Age (year)</td>
<td>61.2</td>
<td>71.3</td>
<td>60.7</td>
<td>0.04</td>
</tr>
<tr>
<td>Primary malignancy</td>
<td>16 (46%)</td>
<td>11 (61%)</td>
<td>11 (73%)</td>
<td>0.869</td>
</tr>
<tr>
<td>Head of pancreas</td>
<td>4 (11.4%)</td>
<td>1 (5.6%)</td>
<td>1 (6.7%)</td>
<td>0.673</td>
</tr>
<tr>
<td>Cholangiocarcinoma</td>
<td>10 (28.6%)</td>
<td>4 (22.2%)</td>
<td>2 (13.3%)</td>
<td>0.509</td>
</tr>
<tr>
<td>Ampullary cancer</td>
<td>1 (2.9%)</td>
<td>1 (5.6%)</td>
<td>1 (6.7%)</td>
<td>0.673</td>
</tr>
<tr>
<td>Neuroendocrine tumor</td>
<td>2 (5.7%)</td>
<td>4 (4.4%)</td>
<td>1 (6.7%)</td>
<td>0.316</td>
</tr>
<tr>
<td>Hematologic malignancy Metastasis</td>
<td>2 (5.7%)</td>
<td>4 (4.4%)</td>
<td>2 (13.3%)</td>
<td>0.155</td>
</tr>
<tr>
<td>Stage of disease 1 2 3 4</td>
<td>6 (17.1%)</td>
<td>5 (27.8%)</td>
<td>3 (20%)</td>
<td>0.076</td>
</tr>
<tr>
<td>ECOG pre-treatment 1 2 3</td>
<td>20 (57.1%)</td>
<td>5 (27.8%)</td>
<td>11 (73.3%)</td>
<td>0.062</td>
</tr>
<tr>
<td>Stricture length (mm)</td>
<td>23</td>
<td>20</td>
<td>17.8</td>
<td>0.481</td>
</tr>
<tr>
<td>CMT (yes, %)</td>
<td>6 (17.1%)</td>
<td>5 (27.8%)</td>
<td>4 (26.7%)</td>
<td>0.587</td>
</tr>
<tr>
<td>Cost of ERCP (bath)</td>
<td>26, 531 (9, 069)</td>
<td>22, 113 (7, 732)</td>
<td>38, 424 (10, 268)</td>
<td>0.001</td>
</tr>
<tr>
<td>Cost of biliary stents (bath)</td>
<td>2, 480 (1, 495)</td>
<td>29, 539 (5, 564)</td>
<td>29, 965 (6, 382)</td>
<td>0.001</td>
</tr>
<tr>
<td>Cost of total procedure (bath)</td>
<td>28, 917 (10, 018)</td>
<td>55, 471 (14, 398)</td>
<td>69, 262 (12, 135)</td>
<td>0.001</td>
</tr>
</tbody>
</table>
and data on the biliary drainage procedure were collected from medical records. Definitions of failure of drainage or other severe biliary 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 (63.5%) at the initial drainage procedure. The highest bilirubin level in the 2 weeks prior to drainage was 248 (IQR: 138–377) μmol/L. Only 14 (8.1%) patients had cholangitis prior to the initial drainage procedure. Failure of drainage or other severe complications related to the initial drainage procedure were noted in 117 (62.6%) patients. Failure of drainage or re-intervention 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 of 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 PHC 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.

### Reference

P0091 BRUSH CYTOLoGY GUIDED BY ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY OF BILiARY STRICTURES
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**Introduction:** Endoscopic retrograde cholangiopancreateography (ERCP)-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 (57.5% 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 mostly increases the accuracy of the detection of malignant versus benign situations.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
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 more than single biopsy, in the fast-degradable stents, but however, all patients with biliary stone had sphincterotomy to facilitate retrieval of the stones. Serum bilirubin level (SBL) showed reduction of 52% from the mean SBL of 54.9 μmol/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, tractability over guide-wire, and pushability with push catheter. There was minimal force required to implant it and it has good visibility by fluoroscopy. The BBS is as flexible as the conventional plastic stents and can be accurately deployed under fluoroscopy. Technical success or completion of the ERCP and stent deployment was achieved in all 30 patients.

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

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

**References**

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**P0096 THE IMPAIRED FUNCTION OF THE PLASMA MEMBRANE Ca2+ PUMP RESULTS IN Ca2+ OVERLOAD AND CELL DAMAGE IN CFRT KNOCKOUT PANCREATIC DUCTAL CELLS**

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2 Department Of Pathophysiology, University of Szeged, Szeged/Hungary
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**Introduction:** The cystic fibrosis transmembrane conductance regulator (CFTR) has a major role in pancreatic ductal secretion and its genetic defects damage the pancreas. It is known that intracellular Ca2+ homeostasis is disturbed in bronchiolar epithelial cells in cystic fibrosis (CF), but the connection of CFTR and the intracellular Ca2+ signaling has never been suggested in pancreatic damage in CF patients.

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

**Results:** The plateau phase of the agonist-induced Ca2+ signal was elevated in CFTR-deficient PDC, which was caused by decreased function of the plasma membrane Ca2+ pump (PMCA). The functional inhibition of both WT and KO PDC showed no effect on the PMCA activity. Human CF organoids have shown decreased PMCA function compared to control while the 24 h treatment of the CF organs (CFPAC-1; ΔF508 mutant) showed the same PMCA dysfunction. Viral transfection of CFPAC-1 with CFTR gene completely restored PMCA function. Sustained [Ca2+]i levels decreased ΔΨm and induced cytophrome c release in CFTR KO PDEC without significant alterations in mitochondrial morphology.

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

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

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**P0097 EXPD2 IMPACTS PANCREATIC DIFFERENTIATION OF HUMAN PLURIPOTENT STEM CELL DERIVED PANCREATIC ORGANOIDS**

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**Introduction:** Given their capability to differentiate to every cell type of the human body, human induced pluripotent stem cells (hiPSCs) provide a unique platform for the platform for developmental study and regenerative medicine. The generation of a pancreatic progenitor (PP) cells from pluripotent stem cells follows the sequential induction of virtually pure definitive endoderm (DE), foregut endoderm (GTE) and pancreatic endoderm (PE). We have recently reported the generation of a novel three-dimensional pancreatic organoid culture system that generates functional acinar-/ductal-like structures from pluripotent stem cells (Hohlw6ier et al, *GUT*, 2016).

**Aims & Methods:** In the current study we implemented this culture system to understand the role of exocrine differentiation and proliferation factor (Expd2), a signalling molecule proposed to be involved pancreatic differentiation in zebrafish. CrispCas9 technologies were used to ablate Expd2 in human embryonic stem cells, while a piggy bac engineering approach allowed us timed expression to study the role of both loss and gain of Expd2 function during pancreatic differentiation.

**Results:** First, a limited role of Expd2 was observed until the PE stage, while PP formation was strongly diminished. Moreover, a dramatically altered organoid morphology was observed in the Expd2 knock-out lines, leading to mostly cystic structures. Phenotyping for ductal and acinar lineage allowed to investigate these
**Conclusion:** Thus, we report a novel signalling molecule playing a critical role during human pancreas development based on a pluripotent stem cell differentiation platform.

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

**Reference**


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

**Conclusion:** Our result confirmed the functional activity of the TRPM2 channel in pancreatic acinar cells. In further investigations we aim to clarify the pathogenetic role of TRPM2 in AP.

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

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

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1First Department Of Medicine, University of Szeged, Szeged/Hungary
2Centre For Translational Medicine, University of Pecs, Pecs/Hungary

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**Introduction:** Pancreatic duct fluid and HCO₃⁻ secretion are crucially important 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 limitation. 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 20mM NH₄Cl in standard HEPES or CO₂/HCO₃⁻ buffered solution resulted in rapid intracellular alkalization, but not in the regeneration phase. Removal of NH₄Cl induced rapid acidification followed by regeneration to the resting pH levels. The regeneration phase was inhibited by the removal of extracellular Na⁺. The administration of 10mM CFTRinh-172, a selective inhibitor of cystic fibrosis transmembrane conductance regulator decreased the HCO₃⁻/H⁺ exchange with a recovery phase. Basolateral administration of 20mM amiloride and 20mM H₂DIDS decreased the intracellular pH suggesting the activity of Na⁺/H⁺ exchanger and Na⁺/HCO₃⁻ cotransporter 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 Orai in pancreatic acinar cells markedly decreased the Ca²⁺ toxicity and the severity of AP. However, we have no information regarding the role of Orai 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 Orai inhibitors provided by CalcMedica was evaluated.

**Results:** The tested compounds dose-dependently inhibited Ca²⁺ influx during the carbachol induced Ca²⁺ signal in PDC. Inhibition was complete at a concentration of 10µM (CM-B: 99.87%, CM-C: 95.29%). Next, endoplasmic reticulum 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 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 Orai has no effect on the basal secretion of HCO₃⁻ by PDC, which is the main physiological function of these cells.

**Conclusion:** We showed that Orai has a significant role in the Ca²⁺ signaling of PDC. In the next step we will evaluate the pathophysiologival relevance of the channel.

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

**Disulfiram induces the expression of Orai1 in mouse pancreatic ductal cells**

R. Molnar1, L. Alsardí1, J. Fanczal1, T. Madacsy3, P. Hegyi1, J. Maleš1, J. Fanczal1

1First Department Of Medicine, University of Szeged, Szeged/Hungary
2Centre For Translational Medicine, University of Pecs, Pecs/Hungary

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

**Introduction:** Pancreatic duct fluid and HCO₃⁻ secretion are crucially important 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 limitation. 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 20mM NH₄Cl in standard HEPES or CO₂/HCO₃⁻ buffered solution resulted in rapid intracellular alkalization, but not in the regeneration phase. Removal of NH₄Cl induced rapid acidification followed by regeneration to the resting pH levels. The regeneration phase was inhibited by the removal of extracellular Na⁺. The administration of 10mM CFTRinh-172, a selective inhibitor of cystic fibrosis transmembrane conductance regulator decreased the HCO₃⁻/H⁺ exchange with a recovery phase. Basolateral administration of 20mM amiloride and 20mM H₂DIDS decreased the intracellular pH suggesting the activity of Na⁺/H⁺ exchanger and Na⁺/HCO₃⁻ cotransporter 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.

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

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3Secretion Via CCK Release. Study on the Rats
4R. Molnarc4, M. Del Chiaro5, P. Bauer6, C. Verbeke3, H. Witt7, U. Arnelo1, J.-S. Løhr1

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Introduction: 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 female) were registered with the ICD code chronic or relapsing pancreatitis, and onset of symptoms before the age of twenty. At time of first visit, the mean age was 36.7±26.9 years, range 24–57. The average period between the occurrence of first symptoms and diagnosis was 14.0 years (range 1–39 years). All patients (100%) clinically presented with recurrent acute pancreatitis. There were 28 (63.7%) patients with genetic mutations. Five out of 28 genetic positive patients (17.9%) had a definitive diagnosis of genetic etiology of pancreatitis. Seven out of 26 genetic negative 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, CFTR 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 excluding of the most often etiologies and presence of chronic alteration, hereditary pancreatitis seems as reasonable explanation even in patients with mutations in other genes 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.

References


Disclosure of Interest: No conflicts of interest.
and their evolution after 24 h were evaluated. Accuracy was measured using different operating characteristics and 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: 45.2–72.7), 57.4% males. Most frequent comorbidities were: diabetes (19.9%), hyperlipidemia (9.9%) and COPD (7.7%). Median length of stay was 7 (5–10) days. Most common causes were: biliary (53.9%), idiopathic (21.8%) and alcoholic pancreatitis (14.3%). A CT scan was performed in 56.1% identifying local complications in 36.2% of them, acute fluid collections in 16.1%. There were 42 (6%) severe and 196 (28%) moderately severe cases. Overall mortality was 2.4% (1.5–3.9), 93.5% (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 [0.84-0.90]) were the other all-cause mortality predicting death. APACHE II presented the highest sensitivity, 100% (81.1–100%), while the BISAP score presented the highest specificities, 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 performance.

The BISAP score significantly decreased the highest area under the ROC curve (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.

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). The invasion of pancreatic duct occurs rarely owing to its smaller calibre. Ultrasonography (USG) is an effective tool for the diagnosis of biliary and pancreatic ascariasis; however, the diagnosis may be false negative in up to 30% of cases. Pancreatic ascariasis remains an unsolved problem. Only case reports have been described in the literature. We present our retrospective data of last 10 years of 15 cases of pancreatic ascariasis.

Aims & Methods: During a study period of 10 years, 15 cases of pancreatic ascariasis were diagnosed by USG or endoscopic ultrasonography(EUS). EUS was performed with a linear or radial echosondeoscope. 13 patients presented with symptoms of acute pancreatitis. Out of 13 patients, 9 presented with first episode of idiopathic pancreatitis while 4 presented with idiopathic recurrent acute pancreatitis. Out of 15 patients, 2 cases were diagnosed with USG while 13 patients were diagnosed with EUS. The patients underwent side-viewing endoscopy/ERCP under conscious sedation. EUS showed dilated common bile duct (CBD) or the PD. The serpentine movements of worms inside the duct. Live roundworms were removed from PD without undertaking sphincterotomy. In endemic areas, sphincterotomy facilitates the risk of migration of worms into the CBD or PD. Patients with severe acute pancreatitis (SAP) and idiopathic acute pancreatitis (IAP) are usually cold and EUS is the investigation of choice. The recurrence is rare and treatment is side-view endoscopy with removal of worms. EUS significantly improves the diagnostic yield for idiopathic acute pancreatitis (IAP). Our retrospective study shows that EUS is a highly sensitive and specific diagnostic method to diagnose the etiology of SAP with reference to biliary and pancreatic ascariasis. Although USG is quite sensitive for diagnosing BPA, its sensitivity significantly falls when the worm is thin, in the PD, or the CBD is non-dilated. EUS is more sensitive for diagnosis of ascariasis in the pancreatic duct than other radiological investigations. The probable reasons are excellent imaging of pancreas by EUS and in and out movement of ascaris which might be missed by other investigations. Endoscopic retrograde cholangiopancreatography, considered the gold standard for diagnosis of biliary ascariasis, should be reserved for therapeutic rather than diagnostic circumstances as sphincterotomy 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 propose EUS to be investigation of choice for PD ascariasis. Most of the episodes are of mild pancreatitis with no 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. (SAP: Severe 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 ≥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>
<td></td>
</tr>
<tr>
<td>RANSON ≥4</td>
<td>0.85 (0.76-0.95)</td>
<td>88.2% (65.7-96.7%)</td>
<td>79% (73.5%-83.5%)</td>
<td>22.1% (13.8%-33.3%)</td>
<td>99% (96.4%-99.7%)</td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Mortality</th>
<th>Cut-off values</th>
<th>AUC (95% CI)</th>
<th>Sensitivity (95% CI)</th>
<th>Specificity (95% CI)</th>
<th>PPV (95% CI)</th>
<th>NPV (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BISAP ≥3</td>
<td>0.97 (0.93-0.99)</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>
<td></td>
</tr>
<tr>
<td>RANSON ≥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>
<td></td>
</tr>
</tbody>
</table>

References


5. Ranson JH. Etiological and prognostic factors in human acute pancreatitis: a study reported that serum phosphate correlated with severity of acute pancreatitis.


10. Elmunzer BJ, Scheiman JM, Lehman GA, et al. All authors have declared no conflicts of interest.


Table 1a. AUC, sensitivity, specificity, positive predictive values and negative predictive values of scoring systems and biomarkers in predicting Severe Acute Pancreatitis. (AUC: Area under the curve. PPV: positive predictive value. NPV: Negative predictive value. BUN: Blood urea nitrogen measured on admission. CRP: C-reactive protein measured on admission).

<table>
<thead>
<tr>
<th>Biomarker</th>
<th>AUC (95% CI)</th>
<th>Sensitivity (95% CI)</th>
<th>Specificity (95% CI)</th>
<th>PPV (95% CI)</th>
<th>NPV (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lactate</td>
<td>0.79 (0.71–0.88)</td>
<td>58.8% (36%–78.4%)</td>
<td>83.3% (78.2%–87.4%)</td>
<td>19.2% (10.8%–31.9%)</td>
<td>96.8% (93.5%–98.4%)</td>
</tr>
<tr>
<td>Creatinine</td>
<td>0.82 (0.71–0.93)</td>
<td>64.7% (41.3%–82.7%)</td>
<td>86.1% (81.3%–89.8%)</td>
<td>23.9% (13.9%–37.9%)</td>
<td>97.3% (94.3%–98.8%)</td>
</tr>
<tr>
<td>BUN</td>
<td>0.83 (0.73–0.93)</td>
<td>64.7% (41.3%–82.7%)</td>
<td>86.9% (82.2%–90.5%)</td>
<td>25.4% (14.6%–39.4%)</td>
<td>97.3% (94.3%–98.8%)</td>
</tr>
<tr>
<td>CRP</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%–98.8%)</td>
</tr>
</tbody>
</table>

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

<table>
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<tr>
<th>Biomarker</th>
<th>AUC (95% CI)</th>
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<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%–23.5%)</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>57% (2.5%–12.6%)</td>
<td>98.3% (95.2%–99.4%)</td>
</tr>
</tbody>
</table>

References
COTTON VS. REVISED ATLANTA CRITERIA TO DEFINE SEVERITY OF POST-ERCP PANCREATITIS

Introduction: The Cotton criteria (1) and the revised Atlanta classification (2) are advocated to define post-endoscopic retrograde cholangiopancreatography (ERCPC) pancreatitis (PEP) severity (3). Whereas Cotton puts the emphasis on length of hospitalisation, Atlanta focuses on the presence of local (necrosis) and systemic (organ failure) complications. The number of hospitalization days may not be a proper representation of PEP severity, because it is influenced by other diagnoses such as ERCPC complications and comorbidity. The goal of this retrospective cohort study is to compare the Cotton and Atlanta criteria for the severity of PEP.

Aims & Methods: All ERCPC procedures from a Dutch university medical centre and a teaching hospital between 2012 and November 2016 were checked retrospectively for patients with PEP. Patients were eligible if they met the Cotton criteria or Atlanta criteria for acute pancreatitis. All records were checked up to 48 hours after ERCPC to capture delayed PEP. Patients were excluded if they had acute pancreatitis prior to ERCPC or had chronic pancreatitis. In the primary analysis, mild/moderate and severe PEP were compared between Cotton and Atlanta with Fischer’s exact test. Atlanta was regarded as the golden standard.

Results: Out of a total 2156 ERCPCs, 66 patients (3%) had PEP. Two patients died within 10 days of early multiple organ failure. Two patients died of documented mesenteric ischemia during the early phase (<8 days) and 3/10 patients during the late phase (>8 days). IPN was present in 62 patients (43%), all requiring an intervention (i.e. radiological, endoscopic, and/or surgical). 35% of patients (22/62) had only one modality of drainage (radiologic or transgastric) and did not require any necrosectomy. For 30 patients (48%), additional necrosectomy was needed because of lack of improvement after drainage alone. 10 patients (17%) had only necrosectomy without prior drainage procedure. Complications such as hemorrhage and perforation of visceral organs occurred more frequently in the IPN group (14% vs 19.4%, p < 0.001 and 9% vs 8.5%, p = 0.02 respectively). The late phase mortality (>8 days) was significantly higher in the IPN group (14.5% vs 14%, p < 0.01). In multivariate analysis, factors associated with IPN were number of OF and postsplenomenosenteric venous thrombosis (table 1). 39 patients (68%) received anticoagulants with a median time of 6 [3–6] months and among them, 25 patients developed cavernoma, irrespective of whether or not they receive systemic anticoagulants (p = 0.31).

Table 1: Multivariate factors of association with infected pancreatic necrosis

<table>
<thead>
<tr>
<th>ORadj &amp; (IC95%)</th>
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<tr>
<td>Cause of pancreatitis</td>
<td></td>
</tr>
<tr>
<td>Alcohol abused Biliary Others</td>
<td>1.43[0.79–7.45]</td>
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<tr>
<td>Number of organ failure (OF)</td>
<td></td>
</tr>
<tr>
<td>No OF or 1 OF multiple OF (≥3)</td>
<td>1.44[1.07–18.40]</td>
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<td>Postsplenomenosenteric vein thrombosis</td>
<td>8.16[3.06–21.76]</td>
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Conclusion: In conclusion, this study performed in routine practice conditions showed that IPN occurs in almost half of patients hospitalized in ICU for severe AP, and is associated with increased mortality and complications rates. Overall mortality was 17.6%, and factors associated with mortality were a high BMI, CTSI and persistent OF. Those results are consistent with previous studies1–3, but we reported a high rate of mesenteric ischemia (7/26 patients deceased) while this complication is occasionally described. IPN patients required an intervention for drainage of infected tissue removal, which was performed using minimally invasive techniques in the vast majority of cases, with no complication or severe side effect. 35% of patients were treated with drainage alone without any additional necrosectomy. Finally, PSMVT and early OF appeared to be associated with the risk of developing an IPN but anticoagulation for PSMVT did not protect for cavernoma occurrence and can expose to intestinal bleeding. Our results also suggest that the optimal and early management of OF and detection of PVSMT might prevent IPN and/or its complications. Such hypothesis will need to be tested in large multicentre prospective studies.

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

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RISKS FACTORS AND OUTCOMES OF INFECTED PANCREATIC NECROSIS: RESULTS FROM A COHORT OF 148 PATIENTS ADMITTED IN ICU FOR SEVERE ACUTE PANCREATITIS

Introduction: The identification of risk factors for severe acute pancreatitis (SAP) may help to identify factors associated with IPN and to describe outcomes and mortality related to IPN.

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

Results: In total, 148 patients were included in this study. Overall mortality was 17%. Body mass Index, computed Tomography Severity Index (CTSI) ans persistent (>48H) organ failure (OF) were independently associated with overall mortality. 36 patients died (24.4%) of documented mesenteric ischemia during the early phase (<8 days) and 3/10 patients during the late phase (>8 days). IPN was present in 62 patients (43%), all requiring an intervention (i.e. radiological, endoscopic, and/or surgical). 35% of patients (22/62) had only one modality of drainage (radiologic or transgastric) and did not require any necrosectomy. For 30 patients (48%), additional necrosectomy was needed because of lack of improvement after drainage alone. 10 patients (17%) had only necrosectomy without prior drainage procedure. Complications such as hemorrhage and perforation of visceral organs occurred more frequently in the IPN group (14% vs 19.4%, p < 0.001 and 9% vs 8.5%, p = 0.02 respectively). The late phase mortality (>8 days) was significantly higher in the IPN group (14.5% vs 14%, p < 0.01). In multivariate analysis, factors associated with IPN were number of OF and postsplenomenosenteric venous thrombosis (table 1). 39 patients (68%) received anticoagulants with a median time of 6 [3–6] months and among them, 25 patients developed cavernoma, irrespective of whether or not they receive systemic anticoagulants (p = 0.31).

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

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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 L (1.4–5.1), 6.4 L (3.6–9.5 L) in those without necrosis and those with necrosis, and 7.5 L (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 (7.3%); median fluid sequestration in the patients who died was 6.5 L compared to 4.2 L among the patients who survived (p = 0.05). Increased fluid sequestration was associated with prolonged hospital stay (p < 0.005). There were 62 female (48.4%) with a mean age of 71 in each group. A total of 17 patients with HR developed PEP (13.2%). The PEP rate in PPS group was significantly lower than in non-PEP group (6.3% vs 20.0%; p = 0.019). Mean post-ERCP 2 h amylase levels were 4.7 liter (2.8–6.8 L) in those without necrosis compared to 2.8 liter (1.4–5 L) in those with necrosis (p = 0.001). There were a total of 216 patients with two above risk factors (HR group). Of them, 30 patients developed PEP (13.9%). Using logistic regression, propensity scores were used to prevent selection bias between with and without PPS. The covariates entered in the propensity model were age, gender, native papilla, endoscopic biliary stent, endoscopic metallic stent, pancreatic guidewire, pancreatic injection, endoscopic sphincterotomy, precut, endoscopic papillary balloon dilation, pancreatic duct brush. Subsequently, 1-to-1 matched PPS and non-PPS group (each N = 64) were extracted from the cohort using the closest matching score.

**Results:** After matching, mean propensity matching score in PPS and non-PPS group were 0.46 ± 0.2 and 0.46 ± 0.2 respectively. There were 62 female (48.4%) with a mean age of 71 in each group. A total of 17 patients with HR developed PEP (13.2%). The PEP rate in PPS group was significantly lower than in non-PEP group (6.3% vs 20.0%; p = 0.019). Mean post-ERCP 2 h amylase levels were 4.7 liter (2.8–6.8 L) in those without necrosis compared to 2.8 liter (1.4–5 L) in those with necrosis (p = 0.001). There were a total of 216 patients with two above risk factors (HR group). Of them, 30 patients developed PEP (13.9%). Using logistic regression, propensity scores were used to prevent selection bias between with and without PPS. The covariates entered in the propensity model were age, gender, native papilla, endoscopic biliary stent, endoscopic metallic stent, pancreatic guidewire, pancreatic injection, endoscopic sphincterotomy, precut, endoscopic papillary balloon dilation, pancreatic duct brush. Subsequently, 1-to-1 matched PPS and non-PPS group (each N = 64) were extracted from the cohort using the closest matching score.

**Conclusion:** Alcohol etiology, increased number of SIRS criteria, hemococoncentration and younger age were independent predictors of increased fluid loss. Patients with increased sequestration of fluid are at higher risk of local complications and prolonged stay.

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

### Reference
Introduction: We started our original EPDBD (endoscopic pancreatic duct balloon dilation) therapy for pancreatic diseases in 1996. In these 22 cases, 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 ducts at 6 atm. pressure for 1 minute several times. Then stone removal or EPS (endoscopic pancreatic stent implantation) were evaluated: first the free rate and stone relapse rate in 586 pancreatic stone cases treated by EPDBD 2. The prognoses of 114 EPS-successful pseudocyst cases treated by EPDBD 3. The prognoses of 16 EPS-successful divisum cases (complete type 6, incomplete type 10) treated by EPDBD 4. Thus an additional advantage of making a diagnosis of ampullary/papillary stones and biliary obstruction which can be treated endoscopically. It can guide whether endotherapy needs to be performed through major or minor papilla. EPS by diagnosing pancreatic tumour/strictures missed on other imaging modalities allows early diagnosis and hence improves long-term prognosis. It can prevent unsuccessful attempts at endotherapy and its possible risks/costs. We conclude that EPS before endotherapy plays an important role regarding further management decisions in patients with CP.

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

Conclusion: By EPDBD therapy, the relapse rate of pancreatic stone decreased, and the success rate of endoscopic drainage and stenting in pseudocyst and divisum increased markedly 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.

Results: The purpose of EPDBD therapy for pancreatic stone was to use endoscopic procedures in the pancreatic duct and stone removal, and to reduce stone relapse rates. 568 cases of pancreatic stone were treated by EPDBD. They consisted of 90 cases treated by endoscopic sphincterotomy, minor papilla 28, and 478 cases treated by ESWL+ endoscopic method (via major papilla 381, minor papilla 97). After EPDBD therapy, the stone free rate was 75.5%, 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, complete removal was easily. This is our first case of EPDBD. In our hospital, EPS and ENPD (endoscopic nasal pancreatic drainage) are the preferred choice for pancreatic pseudocyst therapy after dilatation of the stenotic duct. 114 cases were successfully treated without major complications, and their prognoses were good.

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This was done in consideration of the current knowledge about lesions mimicking cancer in the setting of a normal pancreatic parenchyma or evidence of signs of pancreatic neoplasms.

Aims & Methods: Retrospective analysis of prospectively collected data in our tertiary University center. From March 2007 to October 2015, 218 (124 men, 94 women; median age 60 ±14 years) patients underwent EUS for suspected solid pancreatic neoplasm because of cross sectional imaging results, idiopathic acute pancreatitis, weight loss, pancreatic hyperechogenicity, painless jaundice and elevated Ca 19-9 values. Cystic pancreatic lesions, pseudocysts and cystic pancreatic carcinomas 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 neoplasms (n = 5, 8.9%), chronic pancreatitis (n = 13, 21.3%), necrosis (n = 3, 4.9%), autoimmune pancreatitis (AIP) (n = 3, 4.9%), microcystic serous neoplasms (n = 1). EUS showed sensitivity and specificity for malignancy of 77.8% and 94.4%, respectively.

Conclusion: Diagnostic accuracy of EUS is lower in the presence of pancreaticitis. Focal autoimmune pancreatitis and paradoxic neoplasms are still confused with malignancy in the setting of an inflamed pancreatic parenchyma. EUS in the setting of a normal parenchyma is an excellent tool to exclude pancreatic cancer. Tumor markers like Ca 19-9 and IgG4 values should be measured in the evaluation of pancreatic masses, also in the setting of chronic pancreaticitis. Clinical and imaging follow-up with EUS may be useful indicators of malignancy both in the setting of normal and inflamed pancreas.

Patients without pancreatitis the presence of enlarged lymphnodes or a mass in EUS, weight loss and worsening diabetes are predictor of malignancy. In patients with pancreatitis and without jaundice Ca 19-9 sensitivity for malignancy was 95% and specificity was 39%. In the paradoxoncasis 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 in both the setting of normal and inflamed pancreas.

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

References
Cesnák KP, Van Santvoort HC, Vlieglaar FP et al. The role of routine preoperative EUS when performed after contrast enhanced CT in the diagnostic work-up in patients suspected of pancreatic or periampullary cancer. Pancreatology 2014; 14: 25-30.

P0121 GALECTIN-1 EXPRESSED IN PANCREATIC STELLATE CELLS PROMOTES TUMOR PROGRESSION IN PANCREATIC CANCER VIA UPREGULATION OF SDF-1 AND ACTIVATION OF NF-KB
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2Jiangsu Province Hospital of Traditional Chinese Medicine, Nanjing/China

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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 pro- greSSION and there is increasing evidence that pancreatic stellate cells (PSCs), 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 (PCCs) are poorly understood.

Stromal cell-derived factor (SDF-1) or CXCL12 belongs to the CXC chemo- kinase 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-1R-1 of SDF-1 in pancreatic cancer cell lines are related to proangiogenic properties, PSCs samples [3], suggesting that SDF-1 produced by activated PSCs may be an integral factor in tumor-stroma interactions.

Galecit-1 mediates communication between cells by binding to glycol-conju- gated 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 Galecit-1 was highly expressed in pancreatic cancer tissues; furthermore, the primary source of Galecit-1 was in activated PSCs within the stroma of cancer cells [5]. It has previously been hypothesized that Galecit-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 elu- ded the biological mechanism of Galecit-1 in PSCs and its role in tumor progres- sion in pancreatic cancer.

Results: By conducting a chemokine antibody array assay and transwell invasion and migration assays we were able to show that Galecit-1 induced secretion of SDF-1 in PSCs patients increased SDF-1 production and invasion of NF-κB activity assay indicated that the mechanism involved activation of NF-κB.

Conclusion: This study suggested that enhanced expression of Galecit-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
mural nodules, it is useful to analyse genetic mutations of cystic fluids or walls. Currently, adequate samples from EUS-FNA were unavaible and in some cases, we could not make a pathological diagnosis. Even in such cases, genetic analysis and the subsequent diagnosis of malignant or benign tumours may be possible. We could identify several cancer-related genes, such as GNA12, TRP53, BxPC3, and BRAF.

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 tumours.

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

References


P0123 PTEN1 DRIVES TUMOR DEVELOPMENT AND DEFINES A NOVEL THERAPEUTIC TARGET IN KRAS-MUTANT CANCERS

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210 (2015)

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Introduction: The ubiquitously expressed non-receptor protein tyrosine phosphatase SHP2, encoded by *PTEN*, 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 studies addressing the relevance of SHP2 for mutated KRAS dependent cancers, such as pancreatic and lung cancer are lacking.

Aims & Methods: Our research is to study whether circHIPK3 can promote proliferation of pancreatic carcinoma cell line, BxPC3, and to explore the mechanism of circHIPK3 in cell proliferation. Cell viability was determined by cell counting kit-8 (CCK-8). Transient knockdown of circHIPK3 using specific RNA targeting the conjunction of circHIPK3. Overexpression of mir-124 was transfected with synthetic mirRNA mimic. Real-time quantitative reverse transcription-polymerase chain reaction (qRT-PCR) was performed to detect circHIPK3, mir-124 and miRNAs. The expressions of STI5, p-STAT3, IL-6R were measured by Western blot. Overexpression of STAT3 with STAT3 plasmid. Dual-Luciferase Reporter Assay was performed to detect the interaction of circHIPK3 and mir-124.

Results: circHIPK3 was upregulated in BxPC3 compared to human pancreatic duct epithelial cells (HPDE6-C7). Knockdown of circHIPK3, which didn’t affect the linear transcript, significantly decreased cell viability of BxPC3. Bioinformatical analysis and luciferase assay demonstrated that circHIPK3 interacts with miR-124-3P. Western blot confirmed that knockdown of circHIPK3 decreased the expression of IL-6R. In contrast, miR-124 repressed BxPC3 cell proliferation which was negatively regulated STAT3, IL-6R via interacting with 3'-UTR (untranslated region). qRT-PCR confirmed that both P151 and STAT3, p-STAT3 and IL-6R were upregulated in BxPC3 cells than HPDE6-C7 cells while mir-124 was downregulated.

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

References


P0124 CIRCHIP3 PROMOTES PANCREATIC CARCINOMA CELLS BxPC3 PROLIFERATION BY TARGETING MIR-124/IL6R/ STAT3 PATHWAY

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Introduction: Circular RNAs (circRNAs) are a novel class of noncoding RNAs that are stable against RNase R and 3’end. Increasing reports have shown that circRNA is dysfunction in neuro system diseases, cardiovascular diseases, human cancers and many other diseases. circRNA have been demonstrated involving in tumorigenicity, proliferation, apoptosis, angiogenesis, migration, invasion and metastasis in human carcinoma. circRNA can act as microRNA (miRNA) sponge and regulate the targets of miRNA. Circular RNA HIPK3 (circHIPK3) is originated from second exon of HIPK3 gene, which is upregulated in gastric, liver, esophagus. However, the mechanism remains unclear. Previous studies revealed that signal transducer and activator of transcription 3 (STAT3) as an oncogene that was activated in pancreatic carcinoma. Phosphorylation of STAT3 (p-STAT3) is a downstream target of interleukin 6 receptor (IL6R). Activation of STAT3 leads to malignancy of tumors, cell proliferation and migration. Knockdown STAT3 induces cell apoptosis by Bcl-xL, c-Myc, cyclinD1, etc. CircHIPK3 regulates BxPC3 cell proliferation through IL6R/STAT3 pathway. It may be a new target for the therapy of pancreatic carcinoma.

Aims & Methods: Our research is to study whether circHIPK3 can promote proliferation of pancreatic carcinoma cell line, BxPC3, and to explore the mechanism of circHIPK3 in cell proliferation. Cell viability was determined by cell counting kit-8 (CCK-8). Transient knockdown of circHIPK3 using specific RNA targeting the conjunction of circHIPK3. Overexpression of mir-124 was transfected with synthetic mirRNA mimic. Real-time quantitative reverse transcription-polymerase chain reaction (qRT-PCR) was performed to detect circHIPK3, mir-124 and miRNAs. The expressions of STI5, p-STAT3, IL-6R were measured by Western blot. Overexpression of STAT3 with STAT3 plasmid. Dual-Luciferase Reporter Assay was performed to detect the interaction of circHIPK3 and mir-124.

Results: circHIPK3 was upregulated in BxPC3 compared to human pancreatic duct epithelial cells (HPDE6-C7). Knockdown of circHIPK3, which didn’t affect the linear transcript, significantly decreased cell viability of BxPC3. Bioinformatical analysis and luciferase assay demonstrated that circHIPK3 interacts with miR-124-3P. Western blot confirmed that knockdown of circHIPK3 decreased the expression of IL-6R. In contrast, miR-124 repressed BxPC3 cell proliferation which was negatively regulated STAT3, IL-6R via interacting with 3'-UTR (untranslated region). qRT-PCR confirmed that both P151 and STAT3, p-STAT3 and IL-6R were upregulated in BxPC3 cells that HPDE6-C7 cells while mir-124 was downregulated. mir-124 was negatively correlated with circHIPK3 and STAT3, p-STAT3 and IL-6R.

Conclusion: Thus, as an integrator of RTK-Ras-MEK-ERK signaling downpathway, circHIPK3 driven genetically engineered murine models (GEMM) of pancreatic ductal adenocarcinoma (PDAC) and non-small cell lung cancer, CRISPR/Cas9 mediated gene knockout in vitro, murine models (GEMM) of pancreatic ductal adenocarcinoma (PDA) and are also associated with multi-
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 using precise pathological mapping. Target amplicon sequencing that covers 18 PDA-associated genes including KRAS, GNAS, TP53, SMAD4, CDKN2A, CTNNB1 and RNF43, was performed using Ion PGM™ system (Thermo Fisher Scientific). Protein expression of TP53, SMAD4, p16, b-catenin, and RNF43 was also analyzed immunohistochemically.

Results: KRAS mutations were detected in 19/20 (95%) of PDAs and in 38/39 (97%) of IPMNs. “Adjacent” concomitant PDAs, defined as those that are 5 mm or less away from the IPMN (n = 23), had identical mutations in 21/23 (91%) of PDAs and in 29/39 (74%) of all IPMNs, but not in PDAs, supporting de novo neoplastic lesions via the main pancreatic duct between PDAs and IPMNs had identical KRAS mutations. In contrast, 7 of 9 “distant” concomitant PDAs, defined as those greater than 5 mm away from the IPMN (n = 9), possessed distinct KRAS mutations from the index IPMNs (KRAS identical; n = 8, 72%, KRAS different; n = 3, 27%).

Conclusion: Distinct KRAS mutations from the index IPMNs and in 29/39 (74%) of all IPMNs, but not in PDAs, supporting de novo neoplastic lesions via the main pancreatic duct between PDAs and IPMNs had identical KRAS mutations. The contrast, 7 of 9 “distant” concomitant PDAs, defined as those greater than 5 mm away from the IPMN (n = 9), possessed distinct KRAS mutations from the index IPMNs (KRAS identical; n = 8, 72%, KRAS different; n = 3, 27%).

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

Reference
Patra KC, Bardeesy N, Mizukami Y. Diversity of Precursor Lesions For Pancreatic Cancer: The Genetics and Biological Behavior. The

P0126 POLYMORPHISM OF TP53 GENE, LEVELS OF INSULIN AND PRO-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 in pancreatic carcinoma and to evaluate proinflammatory cytokines (IL-1, TNF-α) in insulin blood serum levels at patients with various pathologies of the pancreas (cancer (PCa)), acute and chronic pancreatitis (OP and CP) with various geno-

Results: The presence of 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 homozygotic 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 control 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%).

Conclusion: The concentration of insulin in different genotypes in patients with PCa did not differ significantly and was 7.5 ± 2.2 µM/l in Arg/Arg, Arg/Pro – 11.4 ± 5.1 µM/l, Pro/Pro – 14.6 ± 7.4 µM/l, p < 0.05. The level of IL-1β was significantly lower in patients with PCa than in patients with CP (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 PCa was 3.5 ± 0.5 pg/ml, and did not significantly differ from the serum level of patients with CP and PCa - 3.4 ± 0.7 and 1.1 ± 0.2 pg/ml, respectively. In patients with PCa, the level of TNF-α was significantly lower than in patients with CP, p < 0.05. The levels of IL-1β in the serum of patients with 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.

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

P0127 VALIDATION OF SERUM/PLASMA METABOLIC MARKERS AGAINST PANCREATIC CANCER BY QUANTITATIVE TARGETED GC/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.

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 were collected from 2017 to 2018. Seventeen candidate metabolites were selected from previous report. Quantitative analysis were performed by gas chromatography/tandem mass spectrometry (GC/MS/MS) together with their corresponding stable isotopes. In the 1st set, diagnostic models were constructed via multivariate logistic regression analysis. These results were validated using the 2nd set.

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; 107pancreas, 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, diagnos-

Disclosure of Interest: All authors have declared no conflicts of interest.
P0129 VERIFICATION OF INTERNATIONAL CONSENSUS GUIDELINES FOR BRANCH DUCT INTRADUCTAL PAPILLARY MUCINOUS NEOPLASM OF THE PANCREAS (BD-IPMN) WITH WORRISOME FEATURES

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

Aims & Methods: The present study was a retrospective investigation of surgical indication for BD-IPMN with worrisome features (WF). 466 patients with IPMN underwent pancreatic resection at 3 high volume centers in Japan between 1996 and 2014. Among them, 156 patients with BD-IPMN were enrolled this study. The investigation of predictors of malignancy was done for 10 factors: age at time of surgery, sex, presence or absence of symptoms, serum amylase, CA19-9, CEA, tumor location, size of mural nodules (MN), diameter of main pancreatic duct (MPD), and cyst size of branch pancreatic duct (BDP). In preoperative examination, endoscopic ultrasonography (EUS) and computed tomography (CT) were considered to be essential. For size of MN, EUS measurements were used in all 156 cases. For diameter of MPD 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 MPD diameter was considered $<$5 mm (International Consensus Guidelines 2012). According to the WHO histological classification of IPMN (2000), pathological diagnosis is classified as adenoma (IPMA), borderline (IPMB), and noninvasive and invasive carcinoma (IPMC).

Results: Pathological diagnosis was benign IPMN in 91 cases (58%) and malignant in 65 (42%). In univariate analysis CA19-9, MPD diameter, the sizes of MN and BPD cysts were significant factors. In multivariate analyses, size of MN (p = 0.0001) and cyst size of BPD (p = 0.0004) were independent predictors of malignancy, and in ROC analysis AUC for these factors was 0.74 and 0.72, respectively. Among 78 cases with WF (BPD cyst size $\geq$30 mm), 45 cases (58%) had malignant IPMN. The rate of malignancy was significantly higher than that of patients without WF (26%) (p = 0.0001). Among 78 WF patients, 54 cases had MN with EUS observation. The rate of malignancy in 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 (8/54 = 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 diagnosis of such cases is a problem for the future.

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

Reference

P0130 USE OF A NOVEL THROUGH-THE-NEEDLE MICRO-BIOPSY FORCEPS IN DIAGNOSING PANCREATIC CYSTS – A MULTICENTER FEASIBILITY STUDY

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Introduction: Cystic lesions of the pancreas represent a diagnostic dilemma as some of the lesions are non-neoplastic or benign, whereas others are malignant or have potential for malignant transformation. As indicated in a recent meta-analytic and systematic review, diagnostic accuracy of fine-needle aspiration (FNA) cytology, it is only impossible to obtain sufficient cellular material when diagnosing these lesions with current modalities [1]. Recently, a novel biopsy forceps (Moryz6,7, US Endoscopy, Mentor, USA) has become available. It can be introduced through a 19 G FNA-needle, enabling the endoscopists to obtain histological specimens from the pancreatic cyst wall for the first time [2].

Aims & Methods: The aim of this study was to evaluate the use of the novel micro-forceps in a multicenter clinical setting. The patients referred for EUS evaluation of pancreatic cysts were included retrospectively from five European tertiary centers. Inclusion criteria were age of 18 or above and a pancreatic cyst of a size that allowed for FNA puncture. Exclusion criteria were pregnant or lactating females. A standardized data collection sheet including the information about patient demographics, cyst size, EUS/FNA findings, technical and clinical success, and the results of the biopsies taken was sent to the collaborating centers. Technical success was defined as successful puncture of the pancreatic cyst, subsequent successful extraction of the micro-biopsy forceps, and extraction of at least one micro-biopsy. Clinical success was defined by obtaining useful histological results.

Results: Twenty patients were included. There was a slight overrepresentation of female patients (n = 12, 60%) and the median age was 65 (range: 41–80). The patients had a median cyst size of 30 mm (range: 15–130 mm) and a median procedural time was 30.5 min (range: 17–58 min). We report a technical success rate of 85% (n = 17) - technical failure was only seen in transdudoreal puncture (n = 3, 15%). Biopsies were generally of good quality and contributed to the diagnosis in 14 patients (clinical success of 82%). Among these, there were ten cases of intraductal papillary mucinous neoplasia, two serous cystadenomas, and one autoimmune pancreatitis. Two mild adverse events were recorded (10%), a case of re-admission due to non-specific abdominal pain and a mild acute pancreatitis.

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

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

References

P0131 PANCREATIC DUCTAL CYTOLOGY: 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). 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 ultrasound showed prevalved cephalaronal lesions in 51% findings suggestive of chronic pancreatitis in 28%, pancreas divisum in 6%, and pancreatic inflammatory features in 6%. The distribution of the stricures was: head - 16, head and body - 1, tail - 1. The pancreatic duct was dilated in 16 patients (median of a median of 6.5–15). The diagnostic yield of MPD brush cytology for pancreatic cancer: 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 (6.5%).

Conclusion: In patients with suspected cephalopancreatic adenocarcinoma referred for ERCP, MDP 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.

P0132 ANALYSIS OF PROGNOSTIC FACTORS IN Pancreatic METASTASIS: A RETROSPECTIVE ANALYSIS

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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), sarcoma (6.3%, n = 10), breast cancer (6.3%, n = 10), and other cancer (n = 21). At the time of the diagnosis of PM, 38 patients (24%) had at least one tumor-related symptom. Additional extra-pancreatic metastases were diagnosed in 94 patients (59%). Sixty-four patients (40%) underwent surgery. In 52 patients (32.7%), 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 sarcoma. 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 1.71–5.11, p < 0.001), tumor-related symptoms at diagnosis (HR 3.38, 95%CI 1.29–8.65, 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
Introduction: New lesions (metachronous pancreatic cancer) and recurrence may develop in pancreas after initial treatment 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 pancreatostomy. If it is possible to observe lesions to remnant pancreas under the EUS, remnant pancreatic cancer may be pointed out an early stage.

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

Results: Among the 395 patients who underwent pancreatostomy at the JA Onomichi General Hospital between December 2002 and March 2016, the enrolled patients were 44 who underwent EUS for remnant pancreas. The enrolled patients were 44 who underwent EUS for remnant pancreas. In the surgical procedure, pancreaticoduodenectomy (PD) including pylorus-preserving PD (PDDP) 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 IIIb. The other case was IPMN. We were able to perform EUS-FNA for lesion in remnant pancreas in 24 cases. Pathological results were positive in 5 cases. One of the other 2 cases was negative (class II), but it was a recurrence by surgery. The other case was strongly suspected to recurrence by Positron emission tomography (PET-CT). EUS-FNA was performed in 4 out of 7 cases. The sensitivity of EUS-FNA was 71.4% (5/7), the specificity was 85.7% (6/7) and the accuracy was 71.4% (5/7). In addition, a comparison of detection ability of EUS and CT or MRI findings showed that EUS was significantly superior to CT or MRI (P < 0.001).

Conclusion: EUS was able to observe remnant pancreas in almost cases. We were able to perform EUS-FNA for lesion in the remnant pancreas. In addition, the detection ability of EUS was significantly superior to that of CT or MRI. We believe that EUS and EUS-FNA should be underwent 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.
pared with 33.1 months (95% CI, 9.0–27.2) in the 2nd PDAC group (N: 259 vs. 210; median 40.7 vs. 65.0 months). The group 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>
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<tbody>
<tr>
<td>HR (95% CI)</td>
<td>p-Value</td>
<td>HR (95% CI)</td>
</tr>
<tr>
<td>------------</td>
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<tr>
<td>Second PDAC</td>
<td>0.81 (0.63–1.04)</td>
<td>0.093</td>
</tr>
<tr>
<td>Age, median</td>
<td>1.02 (1.01–1.02)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Sex (male)</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>&lt;0.001</td>
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<tr>
<td>Resectable</td>
<td>0.30 (0.25–0.35)</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

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

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

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

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P0138 FEASIBILITY OF GASTRIC ENDOSCOPIC SUBMUCOSAL DISSECTION WITH CONTINUOUS LOW-DOSE ASPIRIN FOR PATIENTS ON DUAL ANTIPLATELET THERAPY

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Introduction: Endoscopic submucosal dissection (ESD) for gastric neoplasms with continuous low-dose aspirin (LDA) is comparatively acceptable according to recent guidelines [1–3]. This study aimed to evaluate risk factors for post-operative bleeding after gastric ESD with continuous LDA for patients on dual antiplatelet therapy (DAPT).

Aims & 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 anti-coagulation therapy; 25 lesions in patients receiving antiplatelet therapy excluding single-LDA and DAPT; and 26 lesions in patients who underwent ESD for more than 5 lesions at the same time. Thus, a total of 495 patients were enrolled in this study. The patients were categorized according to antiplatelet 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 analysis among APT users, continuous single-LDA and continuous LDA on DAPT were not related to postoperative bleeding.

Table 1. Multivariate analysis for postoperative bleeding after ESD.

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

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

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

References
Introduction: Peroral endoscopic myotomy (POEM) has received wide acceptance as a useful alternative treatment for chronic and small-scale studies are ample but long-term large-scale studies are few.

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

Results: A total of 124 consecutive patients were included. Male patients were more common than female patients (54.8% vs 45.2%). The median age at the time of POEM was 51 years (range 23–77). The mean period since the onset of symptoms was 4 years (range 0.5–21). As a result of the POEM, 111 patients (89.2%) obtained clinical improvement, and one patient died. Among the patients who had clinical improvement, the Eckardt score was improved in 65 patients (57.7%), the lower esophageal sphincter (LES) pressure was improved in 30 patients (26.4%) and the Eckardt score was not changed in 16 patients (14.1%).

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

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

References


2. Aboelfotoh1, M. Eldahshan1, F. Al Ghamry1. SAFETY ADVANTAGE OF THE NEW DEVICE (SPLASH-M KNIFE®) FOR ENDOSCOPIC SUBMUCOSAL DISSECTION OF EARLY GASTRIC CANCER. Gut and Liver. vol.10 no.2 May 2016.


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

**Results:** Propensity score matching analysis created 46 matched pairs. Adjusted comparisons between two groups showed a significantly smaller usage rate of hemostatic forceps in ESD-N than that in ESD-C (4.35% vs 84.8%, p < 0.01), and shorter treatment time (en-block-resection rate: 100% vs 69.8%, p = 0.03; complete resection rate: 97.8% vs 100%, p = 1; cutting time: 84.6 min vs 83.0 min, p = 0.08; perforation during ESD: 0% in both groups).

**Conclusion:** Splash M-Knife® achieved better hemostasis and safer ESD for early gastric cancer 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 1.8%. There have been no studies exploring IF and follow-up findings. We aimed to assess the incidence, causes of IF, predictors of pathology in patients with IF, and follow-up findings.

**Aims & Methods:** We retrospectively identified all gastroscopies performed at a district general hospital between August 2010-August 2016 from an endoscopy database, and reviewed cases with IF. We excluded patients who had achieved oesophageal intubation. Data on sedation use, endoscopist status, indications, radiological and endoscopic findings were recorded. Procedural limitations were classified into 2 groups: failure to tolerate (e.g. pulling out scope, anxiety) and ‘failure to progress’. Statistical analyses were made using Pearson’s χ2 and Wilcoxon signed rank test.

**Results:** The incidence of IF was 0.95% (248/26130). 238 patients were identified, with a mean age of 63.2 (SD 16.1), with ‘failure to progress’ in 41 and ‘failure to tolerate’ in 197. Subsequent investigations included barium radiology (59.7%, n = 142), CT (21%, n = 50), repeat gastroscopy (29.4%, n = 70) and no further investigations (19.7%, n = 47). Structural pharyngeal abnormalities were diagnosed comprising of cricopharyngeal hypertrophy (CPH) [49%), Zenker’s diverticulum (ZD) [14%], pharyngeal web (12%), CPH with ZD (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 4.9, 95% CI: 1.8–8.9, p < 0.001). Repeat gastroscopy was successful in 63/70 (2 using nasendoscope) after increasing midazolam dosage (mean increase = 1.5 mg, 95% CI: 1.0–2.0 mg, p < 0.001). Diagnostic yield for barium radiography, CT and repeat gastroscopy were 69.0%, 54.0% and 64.3% respectively. The concordance of endoscopic indication and pathology on further investigation for IF was 110/58 (98.6, respectively, for uninfected status, 78.8%, 90.0% and 94.2%, for eradicate 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 spot in subjects as uninfected status, 12.0 for infected 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 in daily clinical practice with high diagnostic accuracy. This study was registered as a clinical trial in UMIN (UMIN000016674) and was conducted with the approval of the ethics committee in our institution.

**Disclosure of Interest:** No disclosures.

**References:**

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

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**Introduction:** Balloon tamponade, such as with Sengstaken-Blakemore tubes (SBT), remains the main immediate salvage therapy for acute variceal bleeding uncontrolled by variceal ligation or injection therapy. Previous cohort studies from the 1970–1980s report success rates of 40–94% for initial haemostasis but highlight bleeding rates of 40–70% on removal [1–3]. Despite guidelines recommending 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 retrospectively audit our current practice in the management of a SBT. Of these 42 patients, the majority were male (71%) with a median age of 55 years (range 34–78). Alcohol was the most common aetiology for cirrhosis (62%), with 65% actively drinking. Most patients had cirrhosis severity scores of Child-Pugh B (67%) or Child-Pugh C (29%) and a median MELD score of 16 (range 9–25). At the time of acute variceal bleed, 85% were haemodynamically unstable and 29% were encephalopathic. All received standard medical therapy with octreotide or terlipressin, antibiotics and blood products as required. The time to initial endoscopy from 1st onset bleeding was prompt (median 6.6 hours). Most bleeding varices were oesophageal (90%). Initial ligation/injection was performed in 64% with the remaining patients having such large volumes of blood in the UGI tract that satisfactory views were unable to be obtained. The current practice surrounding SBT insertion is shown in the table.
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 re-look endoscopy after SBT (median hours)</td>
<td>39.3 (11.5-348.2)</td>
</tr>
</tbody>
</table>

Re-bleeding occurred in 45% patients during the admission despite SBT insertion, of which 79% did not survive. Seven other patients subsequently underwent a TIPS procedure for these still died. The median length of hospitalisation and 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, re-bleeding occurred in 45% and was associated with a poor survival rate of 20%. Short and longer-term survival has not significantly improved since studies in the 1970s-1980s despite advances in pharmacological therapy. Current practices of SBT insertion are variable and would benefit from further education. Rates of direct visualisation of balloon position prior to inflation with endoscopy should be improved as with referrals for early TIPS.

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

References

PO146 CONSCIOUS SEDATION FOR ENDOSCOPIC SUBMUCOSAL RESECTION BY USING DEXMEDETOMIDINE

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Introduction: To evaluate the feasibility and safety of the dexmedetomidine (DEX) for conscious sedation during endoscopic submucosal dissection (ESD).

Aims & Methods: This study was a prospective trial, and was conducted at the Yamashita Hospital. Between January 2016 and December 2016, all 50 patients were enrolled in this study. The inclusion criteria for the study was the presence of esophageal, gastric or duodenal tumors. The criteria for exclusion from this study is as follows: patients who were allergic to the drugs used, a body mass index over 35 at discharge, and patients who were sedated with DEX (an initial bolus infusion of 3.0 μg/kg/hour intravenously over 10 minutes, followed by a continuous infusion of 28 μg/kg/hour titrated). During sedation, midazolam (0.03 mg/kg) and pethidine (17.5 mg) were added intravenously as needed. If the level of sedation dropped to less than RASS -3, the intravenous DEX injection rate was reduced by 0.1 μg/kg/hour. If heart rate was less than 50 beats/minutes or systolic blood pressure was less than 80 mmHg, the intravenous DEX injection rate was reduced by 0.1 μg/kg/hour. If the patient’s heart rate was less than 50 beats/minutes, the patient was intravenously infused with atropine sulfate hyd (0.125 mg-0.25 mg). During procedure, the following parameters were measured continuously, and recorded every 5 minutes: heart rate, blood pressure, hemoglobin oxygen saturation (SpO₂), respiratory rate and RASS. As the achievement rate of conscious sedation during procedure, the percentage of the time that the depth of sedation from RASS – 1 to –3 during procedure were evaluated. Body movement leading to the interruption of ESD were recorded appropriately. After the procedure, all patients were infused with flumazenil (0.3 mg) and observed until the Aldrete score reached 9 points.

Results: During this study period, 50 patients with esophageal, gastric and duodenal tumors were identified as potentially eligible for participation. There were 37 males and 13 females, and the mean age was 67.5 ± 8.6 y. 27 patients regularly consumed alcohol and 5 patients use sleeping drugs regularly. Tumors were located in the following locations: 9 cases in the esophagus, 38 cases in the stomach, 3 cases in the duodenum. The mean tumor size was 23.8 ± 16.5 mm and the procedure time was 88.0 ± 59.5 minutes. The histologic results of ESD were squamous cell carcinoma (n = 9), adenoma (n = 17) and adenocarcinoma (n = 24). ESD by using DEX were successfully performed in all 50 tumors. No acute complications that were that were adverse occurred. The mean achievement rate of conscious sedation during procedure was 84.7 ± 16.5%. The median frequency of disturbance by patient’s movement was 0 times (range 0-3 times). 33 cases reduced and 14 cases discontinued a continuous infusion of DEX. In 23 cases, patient’s SpO₂ level was less than 90% and the mean time that the final administration of atropine sulfate hydrate was 35 min (range 5-140 min) after procedure. There was no case in lowering of systolic blood pressure less than 80 mmHg. Although in 7 cases, the patient’s SpO₂ level dropped to less than 90%, however, they recovered after the administration of oxygen into the nasal cannula. The mean time that the Aldrete score reached 9 or over was 7 ± 4 minutes. The median endoscopy and patient’s satisfaction score was 9 points (range 2-10 points) and 8 points (range 2-10 points). There were 30 patients (60%) who scored 9 points or over for endoscopy.

Conclusion: Conscious sedation with DEX is effective, safe and a high level of satisfaction for endoscopists and patients for upper gastrointestinal ESD.

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

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Introduction: Preoperative diagnosis of invasion depth of superfi cial esophageal squamous cell carcinoma (SESCC) is very important to select appropriate therapeutic procedure. The Japan Esophageal Society (JES) classifi cation using narrow-band imaging with magnification (M-NBI) was eff ective for predicting invasion depth of SESCC1). 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 mucosal vascular and surface structure. In previous study, BLI with magnification (M-BLI) was useful for evaluating gastro-intestinal neoplasms such as predicting invasion depth or tumor detection2). We aim to investigate the diagnostic value of M-BLI by comparing that of M-NBI.

Aims & Methods: We aim to investigate the diagnostic value of M-BLI by comparing that of M-NBI. Our study was 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 calculated.

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 U/M/Lt was 13/70/17%, respectively. The proportion of macroscopic type for 0-Ia/Ha-0/Ib-0/a was 10/66/23%, respectively. The proportion of invasion depth of the lesions subclassified as EP or LPM, MM or SM1, and SM2 were 80, 13 and 7% respectively. The overall diagnostic accuracy of BLI and NBI were 88.7% and 83.9% (P = 0.35), respectively. The intraobserver variability of three endoscopists with BLI and NBI was 0.679/0.560/0.559 and 0.568/0.822/0.560, respectively. The interobserver variability with BLI and NBI was 0.839/0.718/0.935 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.
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). Cystoeroxyronic antigen (CEA) tumor marker has also been used to differentiate PCN and is the most accurate marker of mucinous cystic neoplasms. Recently, needle-based confocal laser endomicroscopy (NCLE) has been increasingly used for the diagnosis of PCN. NCLE allows for evaluation of pancreatic cysts with results similar to that of a pathological diagnosis. In this study, we will compare our standard of care EUS with combined CEA and NCLE to determine which combination of diagnostic modalities is a better predictor of PCN.

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

Results: Diagnosis of PCN using EUS alone had a specificity of 0.75 and a NPV of 0.88. EUS and CEA had a specificity of 0.95 and a NPV of 0.90. Finally, EUS with CEA and nCLE combined had a specificity of 0.80 and a NPV of 0.94. Worrisome features clustering was able to predict pathology, p = 0.00259.

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 factors predicts pathology, however, a larger cohort is required for future studies.

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

References
2. Müller M, Meyenberger C, Bertschinger P, Sauer R, Marincek B. Discrimination of non enhanced mural nodules, abrupt changes, distal atrophy and lymphadenopathy by Fusheng EUS was investigated and the result compared with pathology using McNemar’s test. Worrisome features clustering was able to predict pathology, p = 0.00259. Euclidean distance and later were used in hierarchical clustering to create two clusters based on diagnostic modalities.

P0149 FULL-SPECTRUM ENDOSCOPY FOR UPPER GASTROINTESTINAL SCREENING INCLUDING PRECISE OBSERVATION OF THE AMPULLA OF VATER AND THE ANAL SODIUM PONDS RING
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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 others), macroscopic type (protruded, depressed or mixed), size of the resected specimen, preoperative scar, number of preoperative biopsies, specimen type, distance to the previous perforation, number of preoperative biopsies, scar, 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 = 0.0211), (group L, 616.7mm²; group S, 991.5mm²; P > 0.05), biopsy visualization of SCJ was lost at 92.0% (81/88) with FUSE-EGD. VAS at insertion, during and after examinations were 51.2 (10–75), 46.9 (0–75), and 45.2 (10–50) points, respectively, which were equivalent to conventional EGD. The ampullary adenoma was observed in all 3 patients with EGC and the openings of the biliary and pancreatic ducts of the ampulla of Vater were observed in all 2 cases with the ampullary tumors with FUSE-EGD. There were no adverse events associated with FUSE-EGD.

Conclusion: FUSE-EGD seems safe and effective for upper gastrointestinal examination, especially when the diagnosis of the ampulla of Vater and/or the anal side of the pyloric ring is necessary.

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

References

P0150 PREDICTIVE FACTORS OF PROCEDURAL DIFFICULTIES IN ENDOSCOPIC SUBMUCOSAL DISSECTION OF EARLY-STAGE GASTRIC CANCER
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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 others), macroscopic type (protruded, depressed or mixed), size of the resected specimen, preoperative scar, number of preoperative biopsies, specimen type, distance to the previous perforation, number of preoperative biopsies, scar, 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 = 0.0211), (group L, 616.7mm²; group S, 991.5mm²; P > 0.05), biopsy visualization of SCJ was lost at 92.0% (81/88) with FUSE-EGD. VAS at insertion, during and after examinations were 51.2 (10–75), 46.9 (0–75), and 45.2 (10–50) points, respectively, which were equivalent to conventional EGD. The ampullary adenoma was observed in all 3 patients with EGC and the openings of the biliary and pancreatic ducts of the ampulla of Vater were observed in all 2 cases with the ampullary tumors with FUSE-EGD. There were no adverse events associated with FUSE-EGD.

Conclusion: FUSE-EGD seems safe and effective for upper gastrointestinal examination, especially when the diagnosis of the ampulla of Vater and/or the anal side of the pyloric ring is necessary.

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

References

P0151 LOCATION FEATURES OF EARLY GASTRIC CANCER TREATED WITH ENDOSCOPIC SUBMUCOSAL DISSECTION
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Introduction: Timely detection of early gastric cancer (EGC) is important in performing endoscopic submucosal dissection (ESD). We attempted to know the location characteristics where EGC is frequently detected and analyzed EGC characteristics associated with the location.

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

Results: The patients’ mean age was 66.7±10.8 years. The predominant location 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 lesser curvature (43.9%, 284-647). Posterior EGC was more frequent in the 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 EGc 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.

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**P0152** A STUDY OF THE RECOGNITION OF ESOPHAGEAL 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 undetermined.

**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), 63.5% in GF (n = 39), 52.8% in GA (n = 36), 65.6% in DB (n = 32) and 71.4% in DD (n = 42). The average percentage of correct answers of humans was 95.4% in gastroenterologists (n = 5), 85.2% in junior residents (n = 2), 81.2% in endoscopy nurses (n = 5), 54.4% in medical clerks (n = 5) and 51.8% in floor nurses (n = 4).

The percentage of correct answers of the ML model was lower than those of humans who have knowledge about endoscopic images. However, it was higher than those of other humans who do not. We consider the possibility of the recognition of endoscopic images by ML with CNN and DL. Further study is necessary to confirm the ability of it because this study was conducted in a simple ML model with three CNN layers and a small number of images.

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

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

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

In this study, a method to assess features of gastric lesions combined 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 accuracy 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 area 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.

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**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 was to evaluate these 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 nasojejunal tube and/or double-pigtail-steel. The failure was defined as: need for surgery, or death.

Results: Between 2007 and 2015, 100 patients (women: N = 78; mean age: 42 ± 12years) were included. The mean delay between SG and the first endoscopy was 92 ± 18 days. Overall success of endoscopic treatment was 86% within 6 ± 27months. Two patients died. Primary success of ID and closure management occurred in 19/22 (86%) and 49/77 (63%) patients, respectively. Among patients in failure of closure management, 22 had secondary ID (18 being successful). Success of initial management was significantly higher for ID (p < 0.05).

Factors associated with failure of closure management were in multivariate analysis: resection of tumors and/ or diameter of stent greater than 6 cm (OR = 2.22; p = 0.05) or BTM greater than 5 cm (OR = 3.22; p = 0.05). Factors associated with failure of ID management were in multivariate analysis: collection greater than 5 cm, an internal drainage should be proposed first. A collection greater than 5 cm was associated with long care. Management in our center has changed over time with earlier first endoscopy associated with long care. A collection greater than 5 cm was associated with long care.

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 collection greater than 5 cm was associated with long care. Management in our center has changed over time with earlier first endoscopy associated with long care. A collection greater than 5 cm was associated with long care.

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 < 3 cm) 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 HYDROCORTISONE SODIUM SUCCINATE AND ALUMINUM PHOSPHATE GEL FOR THE PREVENTION OF STRICTURE AFTER ≥2/3 CIRCUMFERENTIAL ENDOSCOPIC SUBMUCOSAL DISSOLUTION (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 squamous cell carcinoma in China. Identification of the risk factors for postoperative stricture after ESD for esophageal cancer is the most important issues for quality of life in patients which is drastically decreased and repeat, periodic endoscopic balloon dilatation (EBD) is usually required over long periods. It is well known that hormone for external use is mostly easily absorbed in broken skin. Accordingly, We explored this innovative 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 superficial squamous cell carcinoma were included in this study. They all received preventative strategy for stricture and were divided into three groups chronologically. Four patients received systemic steroid treatment (ST group), three patients received endoscopic intraluminal steroid (triamcinolone 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 endoscopic balloon dilatation (EBD) sessions. ST groups started with 30mg/day prednisolone on the second day post-ESD, and continued with a gradually tapering prednisolone dose, finally discontinuing systemic steroid administration 8 weeks later. IT ST group started with 80mg intraluminal steroid at the end of ESD procedure, and 30mg/day prednisolone on the second day post-ESD which exactly was the same as ST group of tapering process. OHA group started with mixture of hydrocortisone sodium succinate and aluminum phosphate gel 20mg qid for 2 weeks and continued with a gradually tapering OHA dose on the second day post-ESD. Eosihagrostroduodenoscopy (EGD) was performed on demand whenever patients complained of dysphagia. Among those cases, EBD was performed when patient experienced partial or complete dysphagia. If the patient had no symptom for 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 medication. 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 resected en 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 operation (Endoscopy, 2011; 74: 389–397).

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
Aims & Methods: Quick Healing

Results: esophageal opening. Thoracic surgeons placed a thoracic drainage tube. The we used twelve clips and successfully stopped the bleeding while also closing the reported. The electrocardiogram showed tachycardia with a ventricular rate of following a meal. Upon his arrival a severe episode of haematemesis was complaining of severe chest pain, which began after several episodes of vomiting, Endoscopic Treatment of Boerhaave Syndrome: A Surprisingly

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G. Sakizlis

P0159 ENDOSCOPIC TREATMENT OF BOERHAAVE SYNDROME: A SURPRISINGLY QUICK HEALING

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Aims & Methods: A 48-year-old male was presented at the emergency room for severe chest pain, which began after several episodes of vomiting, following a meal. Upon his arrival a severe episode of haematemesis was reported. The patient was given oxygen; 3 LCI pictures were taken from the scars. All authors have declared no conflicts of interest.

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Introduction: Current guidelines (MAPS) suggest that intestinal metaplasia (IM) should be staged using OLGIM 1 (Operative Link on Gastric Intestinal Metaplasia) and that patients with stages OLGIM 3 and 4 should be followed up1. High-resolution narrow band imaging (HR-NBI) was previously shown to be accurate to diagnose IM 3. Recently a new endoscopic classification (Endoscopic Grading of Gastric Intestinal Metaplasia - EGGIM) has been proposed to assess the risk phenotype of patients by the evaluation of IM in the antrum and in the corpus with the use of HR-NBI2, 3.

Aims & Methods: We aimed at determining the accuracy of EGGIM classification, compared with the pathological evaluation of gastric biopsies expressed according to OLGIM classification. Two centers (Italy, Portugal) consecutively included 78 adult patients (female 56%; median age 61 (20–84) years; 8 with 1st degree family history of gastric cancer). All patients were evaluated by High-
Resolution White Light Endoscopy (HR-WLE) followed by HR-NBI. A careful evaluation of the antrum and corpus mucosa was performed and EGGIM score was calculated. Five different areas were considered (lesser and greater curvature in the antrum, lesser and greater curvature in the corpus and incisura) and in each area 0 (no IM), 1 (focal IM, less or equal than 30% of the area) or 2 points (extensive IM in that area, more than 30% of the area) were attributed for a total of 10 points. Biopsies were taken where the endoscopists observed IM and, if IM was not present, random biopsies were taken using the updated Sydney System protocol. Biopsies from the different sites were sent for histopathologic evaluation on a gastric biopsy jar. 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. There were 6 patients who were using the EGGIM classification were H. pylori positive. Analyzing the subgroup of patients with OLGIM 3 and 4, the diagnostic performance of EGGIM was: sensitivity 95.6%, specificity 90.9%, PPV 81.5% and NPV 98.0%. Two of the 5 patients who resulted false positive using the EGGIM classification were H. pylori positive. A high agreement between EGGIM and OLGIM scores was observed (83.3%).

Conclusion: The EGGIM classification showed a high diagnostic performance compared to OLGIM, in particular in patients with OLGIM 3 and 4. A possible confounding factor leading to overestimation of presence of intestinal metaplasia might be the presence of H. pylori infection. This approach could be used to simplify the surveillance of these patients. Disclosure of Interest: All authors have declared no conflicts of interest.

References
2. Capelle LG et al. The staging of gastritis with the OLGA system by using intestinal metaplasia as an accurate alternative for atrophic gastritis. Gastrointest Endosc 2010.

P0163 COMPARISON OF PERCUTANEOUS ENDOSCOPIC GASTROSTOMY VERSUS RADIOLOGIC GASTROSTOMY IN TERMS OF INDICATIONS, EFFICACY, COMPLICATIONS; A RETROSPECTIVE ANALYSIS
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Introduction: Gastrostomy is the current method of choice for medium and long-term enteral feeding. Available techniques include Percutaneous Endoscopic Gastrostomy (PEG) and Percutaneous Radiologic Gastrostomy (PRG). Both techniques are preferred over surgical gastrostomy. Previous studies that have compared outcomes between PEG and PRG are limited due to small sample sizes, high risk of confounding and selection bias. Our primary aim was to retrospectively analyse data from our centre with respect to complications and mortality between PEG and PRG procedures in relation to indications. These data may help to predict which technique is best for an individual patient.

Aims & Methods: A retrospective analysis including all adult patients receiving initial PEG (January 2010 until April 2016) and PEG (January 2008 until April 2016) placement in our university hospital, was performed.

Outcomes were complications (early (<30 days) and late), success rates and mortality (procedure related, 30-day, and overall). Chi², Fisher’s exact and t-tests were used. Multivariable logistic regression and Cox proportional hazards regression analysis were performed.

Results: A total of 760 initial procedures (469 PEG and 291 PEG) were included in the analysis (62.9% male, mean age 62.8yrs [SD 12.6yrs]). Most common indications for gastrostomy were: HN, PRG 69.9%, p<0.001, Cerebrovascular Accident (CVA, PEG 13.7%, PRG 2.1%, p<0.001) and Motor Neuron Disease (MND, PEG 2.7%, PRG 9.8%, p<0.001). Success rates for placement were 92.1% for PEG (failure mostly due to absence of dilatation, n=14) and 97.1% for PRG (p=0.001). Major complications (e.g. abscess, buried bumper, peritonitis) and infections did not differ amongst groups, neither did procedure-related mortality, which was 1.7% in PEG (n=5) vs. 0.4% in PRG (n=2, p=0.113). One case of tumour (HN) seeding occurred after PRG placement. Tube related complications (including dislocation, obstruction, leak and tube defects) were lower in PEG than PRG, both within 30 days (2.7% vs. 26.4% of patients, p<0.001 and after 30 days (8.6% vs. 31.5%, p<0.001).

The 30-day mortality was higher in patients who received PEG (11.3%; 27 deaths due to underlying conditions, 5 related to the procedure (1 massive bleeding, 4 aspiration pneumonia)) compared to those with PRG (4.48%, 19 deaths due to underlying conditions, 2 related to the procedure (both aspiration pneumonia), p<0.001). The 30-day mortality was related more to the patients’ general condition, than to the procedure itself.

Overall survival was 46.7% vs. 44.1% (PEG vs. PRG; p=0.049, OR 1.22±[1.00–1.498]). Positive predictive factors for overall survival were PEG, ALS and a higher BMI before placement (adjusted OR for all three factors together 1.29±[1.07–1.626]).

Conclusion: PRG appears favourable with respect to 30 day mortality while PEG appears favourable over PRG in terms of complications (such as dislocation, peritonitis and tube irritation). A higher initial success rate and the possibility of placement in case of a narrow lumen favour PRG placement. More adequate patient selection and more thorough procedure selection prior to gastrostomy is therefore required.

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

% of total (within each OLGIM grade) EGGIM score

<table>
<thead>
<tr>
<th>Extent of intestinal metaplasia</th>
<th>0</th>
<th>1–2</th>
<th>3–4</th>
<th>5–7</th>
<th>8–10</th>
</tr>
</thead>
<tbody>
<tr>
<td>OLGIM</td>
<td>0</td>
<td>33 (81)</td>
<td>5 (12)</td>
<td>3 (7)</td>
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</tr>
<tr>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0</td>
<td>26</td>
<td>14</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>16</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>4 (50)</td>
<td>4 (50)</td>
</tr>
</tbody>
</table>
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 procedures performed in hospital were analyzed. The primary outcome of the study was a composite outcome of aborted procedures and complication. The secondary outcomes included procedure time and hospital stay. The impact of risk factors was assessed by backward conditional logistic regression on primary and secondary outcomes. The risk-adjusted CUSUM and moving average methods were used to evaluate the outcomes.
Results: Fifty-four (4%) patients had the composite outcome with 10 aborted procedures and 44 adverse events. The composite outcome was related to case number, full-thickness myotomy and procedure time in the multivariate logistic regression. Adjusted for these risk factors, the CUSUM analysis showed that the composite outcome gradually decreased after 150 cases. The procedure time was higher in the early stage and decreased after 71 cases. Case number, in representativeness of the operative experience, is also an independent risk factor for a longer post-operation hospital stay.
Conclusion: For POEM operators, seventy cases might be considered a threshold for technical proficiency, i.e., technical proficiency. A hundred-and-fifty cases might be considered a threshold for the decrease of aborted procedures and adverse events, i.e., technical reliability.
Disclosure of Interest: All authors have declared no conflicts of interest.

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 (EFR) and combined endoscopic and laparoscopic surgery.
Aims & Methods: Our study is aimed to assess the safety and effectiveness of endoscopic treatments for gastric stromal tumor. Clinical data of 162 patients with gastric stromal tumor who underwent endoscopic treatments from June 1, 2011 to July 31st 2015 were analyzed retrospectively. The mean diameter of the tumors was 1.5 cm (0.3~5.0 cm). 104 patients received endoscopic submucosal dissection, 58 patients received endoscopic full-thickness resection. Among them, 4 operations were aborted under the监视 of the mentor of laparoscopy.
Results: Complications were observed in 8 patients(4.9%): bleeding during operation (3 patients), post-operation perforation (3 patients), respiratory tract infection: 2 patients. The mean post-operation feeding time was 2.67 days (range 1~9 days) and post-operation hospital stays were 5.39 days (range 2~10 days). The mean time of follow-up was 26.4 months (range 5~51 months). The follow-up showed that 6 patients kept on treating with oral administration of imatinib. No patient was found recurrence or death.
Conclusion: Endoscopic treatments were demonstrated as safe and effective ways to resect gastric stromal tumors in this study.
Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0167 GASTROENTEROLOGY REGISTRAR OF THE WEEK: A SOLUTION FOR AUGIB ENDOSCOPY TRAINING?
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Contact E-mail Address: shivbudihal@yahoo.co.uk
Introduction: Much concern surrounds Gastroenterology Specialist Registrar (SIR) endoscopy training, especially in regards to endoscopic management of Acute Upper Gastrointestinal Bleeding (AUGIB). Recent evidence suggests there has been a decline in exposure and experience in AUGIB endoscopy.1 In July 2013 our University Hospital introduced a Consultant-led and Registrar-supported Monday to Friday, 9 to 5 pm 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, melaena or both who had undergone gastrosopy during the period of 1st of May to 31st August 2014 were retrieved using the endoscopy reporting tool Unisoft and analysed. Reports where SIRs were the primary operator were considered. Number of procedures, haemostatic intervention and nature of haemostasis was analysed. This was then compared to data from the year before implementation (01/03/2012 to 31/03/2012)
Results: A total of 7 SIRs (5 Full Time and 2 Less than Full Time) performed gastrosopies on AUGIB patients as first operators under Consultant supervision. Over the 6-month period a total of 166 gastrosopies 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 Variceal Bleeding, Banding therapy was applied. On average 66.1% of patients were able to perform one case of oesophageal variceal banding and one case where Haemospary was utilised. Data from the 2012 cohort in comparison showed a total of 66 gastrosopies over 6 months with 13 EI. On average 13 procedures and 2.6 EI's were performed by each SIR. Dual therapy was applied in only 25.8% of the cases
Conclusion: The introduction of the Registrar of the Week Service provides a valuable opportunity for SIRs to be trained in endoscopic haemostasis and acquire exposure to AUGIB endoscopy. As per this study each SIR on an average performed endoscopy on 24 AUGIB patients. If this is extrapolated, each SIR will be able to perform 48 procedures in 1 year and 240 procedures over 5 years. In the case of EI, on average a SIR can perform around 4 interventions over 6 months which gives to 8 per year and 40 in a 5 year program. This is significantly better than in the previous cohort and other centres.1 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 BIOPSIES
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2Laboratory Of Pathology And Medical Microbiology, PAMM, Eindhoven/ Netherlands
Contact E-mail Address: irma.noordzij@catharinaziekenhuis.nl
Introduction: Endoscopic recognition of dysplasia or early cancer in Barrett’s oesophagus (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 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 63)) did not show a visible lesion during imaging endoscopy. 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 18/78 (24%) patients referred with dysplasia (LGd/HGd) without a visible lesion, the referral diagnosis was thus upstaged to EAC. Overall, 41/82 (50%) lesions were found additionally.

**Conclusion:** The presence of any grade of dysplasia in random biopsies in BE screening in community hospitals is a potential marker for more severe 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.

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**TABLE 1: - Demographics & Results**

<table>
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<tr>
<th>Clinical failure</th>
<th>Clinical success</th>
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<tbody>
<tr>
<td>Number of patients (n=22)</td>
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<td>10</td>
</tr>
<tr>
<td>Gender</td>
<td>Male:Female</td>
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</tr>
<tr>
<td>Etiology</td>
<td>Post-surgery</td>
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</tr>
<tr>
<td></td>
<td>Post-dilatation</td>
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<td>Post-radiation</td>
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<tr>
<td></td>
<td>Post-invasive ventilation</td>
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<tr>
<td>Pulmonary location</td>
<td>Trachea</td>
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<tr>
<td></td>
<td>Right bronchus</td>
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<td></td>
<td>Left bronchus</td>
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<tr>
<td>Orifice size</td>
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<tr>
<td></td>
<td>Large</td>
<td>6</td>
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<tr>
<td>Timing of closure</td>
<td>Resolution at 3 months</td>
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</tr>
<tr>
<td></td>
<td>Resolution at 6 months</td>
<td>0</td>
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<tr>
<td></td>
<td>No resolution at 6 months</td>
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<tr>
<td>Endoscopic treatment</td>
<td>Mean number of esophageal stents</td>
<td>3.6 (±3.9)</td>
</tr>
<tr>
<td></td>
<td>Mean number of OTSc</td>
<td>1.2 (±1.8)</td>
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<td>At least one esophageal stent</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>At least one OTSc</td>
<td>6</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 impac- tion (1 patient, 4.5%), major chest pain (1 patient, 4.5%). Six patients died (27%). Clinical success was reached for 67% of punctiform ERF (p=0.193), 50% of medium ERF (p=1) and 14% of large ERF (p=0.17). The factor associated with the failure of endoscopic treatment was the persistence of the fistula after 6 months (OR=44; IC95: 3.38–573, 4; p=0.004 multivariate ana- lysis). The orifice’s size was associated with the mortality with 71% of death among large fistulas (p=0.001 univariate analysis).

**Conclusion:** Endoscopic treatment of ERF can lead to 45.5% of clinical success and 55.5% of functional success. However, this outcome appears to be dependent on the size of the fistula. Moreover, the absence of resolution after 6 months of endoscopic treatment dramatically decreases the chance for ERF healing. In conclusion, the endoscopic approach seems reasonable for small or medium orifices, and has to be attempted during six months. After this time or for larger orifices, surgery or palliative therapy should be considered.

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

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**P0107 CLINICAL UTILITY OF NARROW BAND IMAGING MAGNIFYING ENDOOSCOPY FOR MM/SM1 ESOPHAGEAL SQUAMOUS CELL CARCINOMA**

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**Introduction:** Esophageal squamous cell carcinoma (ESCC) is common in Asia. Predicting invasion depth of superficial ESCC is crucial in determining the pre- cise treatment because the rate of lymph node metastasis increases in proportion of the invasion depth of the carcinoma. According to Japanese guidelines for diagnosis and treatment of esophageal cancer, superficial invasions are divided into 5 categories: carcinoma in situ (EP), tumors invades lamina propria mucosa (LPM), lamina muscularis mucosa (MM, the submucosa to a depth of 200 μm or less from the muscularis mucosa (SM1), and the submucosa to a depth more than 200 μm (SM2). The rate of lymph node metastasis is extremely low in EP/LPM tumors, and endoscopic resection (ER) is certified as precise treatment. On the other hand, the rate of lymph node metastasis in MM/SM1 tumors are reported to 10–20%, and both operation and ER are considered as their treatment. Accurate pretherapeutic diagnosis of MM/SM1 tumor is very important for selection of appropriate treatment and interests of patients. In this point, endoscopic diagnosis is very important diagnostic approach.

**Aims & Methods:** The purpose of this study is to investigate the utility of Narrow Band Imaging (NBI) magnifying endoscopy for the diagnosis of MM/SM1 ESCC. From January 2011 to April 2017, 23 patients were diagnosed as pathologically MM/SM1 ESCC in our hospital. We retrospectively analyzed their endoscopic findings and pathological findings. The depth of invasion was diagnosed by NBI magnifying endoscopy according to the Japan Esophagogastroscopy Society (JES) magnifying endoscopic classification. Diagnostic criteria are based on the degree of microvascular irregularity in the target lesion observed by NBI magnifying endoscopy. Microvessels are grouped into 2 types. Type A microvessels are normal intrapapillary capillary loops or abnormal microvessels without severe irregularity. Type B microvessels are abnormal vessels with severe irregularity or highly dilated abnormal vessels, and subclassified into B1, B2, and B3 based on the running pattern or degree of dilation of severely irregular microvessels. When target lesions have B1 vessels, the invasion depth is predicted as EP or LPM. When B2 or B3 vessels are seen, the invasion depth is predicted as MM or SM1 and SM2 or deeper, respectively.

**Results:** In 23 pathologically MM/SM1 cases, clinical type diagnosed by endoscopy was EP in 16 cases (70%), 0-IIa in 3 cases (13%), 0-IIb in 1 case (4%), and 0-Ia in 1 case (4%). Predicted depth of invasion by NBI magnifying endoscopy based on the JES classification was EP in 2 cases (9%), LPM in 7 cases (30%), MM in 10 cases (43%), SM1 in 3 cases (13%) and SM2 in 1 case (4%). Total diagnostic accuracy of MM/SM1 was 57% (13/23). When the B2 vessels were observed, diagnostic accuracy of MM/SM1 was 90% (9/10). In the cases that MM or SM1 invasion remained pathologically quite localized, B2 vessels could not be observed by NBI magnifying endoscopy. And also, in the cases with inflammation or keratinizing epithelium, precise diagnosis of microvessels were difficult.

**Conclusion:** Our data indicate that diagnosis of MM/SM1 ESCC by NBI magnifying endoscopy based on the JES classification is useful when the abnormal microvessels are observable. Type B microvessels are abnormal vessels with severe irregularity, highly dilated abnormal vessels, and subclassified into B1, B2, and B3 based on the running pattern or degree of dilation of severely irregular microvessels. When target lesions have B1 vessels, the invasion depth is predicted as EP or LPM. When B2 or B3 vessels are seen, the invasion depth is predicted as MM or SM1 and SM2 or deeper, respectively.

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

**Reference**


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**P0111 PER-ORAL ENDOSCOPIC PYLOROMYOTOMY (POEP) IN THE TREATMENT OF REFRACTORY GASTROESOPHAGEAL REFLUX DISEASE – A SINGLE CENTRE EXPERIENCE**

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**Introduction:** Gastroesophageal reflux disorder is a chronic, debilitating motility disorder. Effective treatment is challenging especially in patients with severe symptoms. POEP is an
emerging modality for refractory gastroparesis with promising preliminary results.

Aims & Methods: The aim of this prospective case series was to assess our first (single center) experience with POEP. Main outcomes were: 1) the efficacy defined by improvement of GCIS score; 2) gastric emptying evolution and 3) satisfaction. From Nov 2015, a total of 7 patients underwent POEP. The etiology of gastroparesis was post-operative in 4, diabetic in 2 and idiopathic in 1 patient. One patient underwent POEP for gastroparesis following a multivisceral transplantation; one patient underwent both POEP and POEM (as a single procedure) for coexisting refractory idiopathic gastroparesis and achalasia. All patients had severe gastroparesis as defined by elevated GCIS score and delayed gastric emptying scintigraphy. Follow visit at 3, 6, 12-months were completed in 7/7 (100%), 5/7 (71%) and 1/7 (14%) patients, respectively. Upper GI endoscopy and scintigraphy were performed 3 months after the procedure.

Results: POEP was successfully performed in all patients. Mean procedure time was 70 minutes (range 63–106). After POEP, mean GCIS decreased from 3.0±1.2 to 0.8±0.7 (at 3-months) and 0.9±0.8 (at 6-months). One woman failed to follow up at 12-months but remained excellent outcome. Treatment success was reached in 6/8 (75%) of patients, one female patient with diabetic gastroparesis did not have a major symptomatic improvement despite normalisation of gastric emptying study. Gastric scintigraphy normalized in all patients, mean half emptying time (108±30 min) to 62±23 min; and mean bolus retention at 4 hours decreased from 17±9.2% to 2.0±2.0%. One patient developed bleeding ulcer 10 days after POEP, this adverse event was successfully managed endoscopically (clips) and by parenteral proton pump inhibitor.

Conclusion: We report our first experiences with POEP for refractory gastroparesis, demonstrating its feasibility and safety with promising clinical efficacy.

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

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 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 15.6–84.9 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 1.3–8.0 cm). Six patients had perioperative complications (14.2%), with 3 pneumothorax/hydropneumothorax (7.2%), 1 mucosal injury (2.4%), 1 pneumonia (2.4%), and 1 major bleeding (2.4%). Patients with different number of tunnels had similar tumor characteristics and techniques. There were significant differences in longest distance of tumors comparing two groups (p < 0.001). No local recurrence or distant metastasis was detected with a median follow-up of 33 months.

Conclusion: STER is a safety and feasible technique for multiple upper gastrointestinal submucosal tumors no matter in one tunnel or two tunnels resection. Based on the longest distance of tumors, different number of tunnels can be performed with similar procedure technique and prognosis.

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

References

Disclosure of Interest: P. Bhandari: Educational grants for research received from Olympus, Pentax and Fujifilm All other authors have declared no conflicts of interest.
P0175 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 histological findings to identify predictors for detection of pathology at colonoscopy. Univariate analysis was performed using Pearson’s χ².

Results: 11,711 bowel scopes were performed, with an adenoma detection rate (ADR) of 8.5%, and conversion to colonoscopy in 421 patients (3.6%). 386 were included for analysis after excluding incomplete colonoscopy/histology. All patients were aged 55 (64.8% male). Additional ADR at colonoscopy was 35.2%, with malignant diagnoses in 1.5% (all detected at BS). The adenoma miss rate at BS was 5.2%. On univariate analysis (Table 1), 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 = 0.003). After excluding these 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>
<th>p-value</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>
<td>0.14</td>
</tr>
<tr>
<td>Size at least 10 mm</td>
<td>196</td>
<td>86 (43.9%)</td>
<td>2.13 (1.39-3.27)</td>
<td>&lt; 0.001**</td>
</tr>
<tr>
<td>High grade dysplasia</td>
<td>16</td>
<td>5 (31.3%)</td>
<td>0.82 (0.28-2.41)</td>
<td>0.72</td>
</tr>
<tr>
<td>Any villous component</td>
<td>190</td>
<td>69 (36.3%)</td>
<td>1.09 (0.72-1.67)</td>
<td>0.66</td>
</tr>
<tr>
<td>&gt; 20 hyperplastic polyps</td>
<td>3</td>
<td>0</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>None of the above</td>
<td>57</td>
<td>9 (15.8%)</td>
<td>0.29 (0.14-0.62)</td>
<td>0.001**</td>
</tr>
<tr>
<td>Villous only histology</td>
<td>10</td>
<td>7 (70.0%)</td>
<td>4.41 (1.12-17.36)</td>
<td>0.02**</td>
</tr>
</tbody>
</table>

Conclusion: At BS, male gender, ≥10mm polyps, and villous histology are predictors of proximal colonic pathology. Further analyses are required to clarify the benefits of converting low-risk tubulovillous adenomas at BS to colonoscopy.

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

Aims & Methods: Dual-center, randomized, noninferiority trial. Consecutive patients with at least one unpolypectomized polyp ≥6–10 mm were enrolled. Eligible patients 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 reintervention within 30 days of the procedure) and perforation.

Results: Among 689 patients screened, 155 patients with 164 eligible polyps (SL-CSP n = 83 vs. 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 vs. EMR). The SL-CSP technique was noninferior to EMR in E5 box 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 Paris 0-IIa morphology (OR, 0.12; 95% CI, 0.01–1.19; P = 0.07) were marginally significant predictors correlating negatively with complete resection. Rates of IPB were similar between the two groups (SL-CSP, 3.6%; EMR, 1.2%; p = 0.3). No CSPPB or perforation occurred in either group.

Conclusion: Among 689 patients screened, 155 patients with 164 eligible polyps (SL-CSP n = 83 vs. 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 vs. EMR). The SL-CSP technique was noninferior to EMR in E5 box 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 Paris 0-IIa morphology (OR, 0.12; 95% CI, 0.01–1.19; P = 0.07) were marginally significant predictors correlating negatively with complete resection. Rates of IPB were similar between the two groups (SL-CSP, 3.6%; EMR, 1.2%; p = 0.3). No CSPPB or perforation occurred in either group.

Disclosure of Interest: All authors have declared no conflicts of interest.
P0110 WHITE OPAQUE SUBSTANCE, A NEW OPTICAL MARKER OF MUCOSAL LESIONS: USEFULNESS IN DIAGNOsing COLORECTAL EPITHELIAL NEOPLASMS

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Introduction: Yao et al. observed gastric epithelial neoplasms and chronic gastritis using magnifying endoscopy and found that WOS was classified as regular WOS, 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 differential diagnosis of adenoma and carcinoma (3). Therefore, we report the results of a prospective observational study to determine whether it is possible to differentiate between adenoma and carcinoma based on the morphology of the WOS in colorectal epithelial neoplasms (UMIN000021537).

Aims & Methods: The subjects were consecutive patients with colorectal epithelial neoplasms (adenoma, early colorectal cancer) who underwent endoscopic or surgical resection at Fukuoka University Chikushi Hospital from December 2014 to May 2016. Prior to treatment, the morphology of each lesion was determined 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 morphological analysis of the WOS (accuracy, specificity, sensitivity) 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 cancer and SM-m cancer. The study was approved by the institutional ethics committee. All authors have declared no conflicts of interest.

Results: Of the 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 (82.6%), 34 that were diagnosed histologically as hyperplastic polyp, and 30 that could not be individually assessed 100 lesions. Polyps were ordered by a computer-generated random sequence and divided into 2 sets every week (presenting 2 sets every week) consisting of 16–17 polyps. After evaluating each polyp, they received the correct diagnosis and a short explanation. The main outcome was a correct NICE diagnosis. A 90% accuracy defined an adequate performance and 80% was considered inadequate. A virtual cohort of 15000 evaluators was used to calculate the stopping rule. The CUSUM curve, with each participant individually assessing 100 lesions, was followed until the CUSUM curve exceeded the recommended threshold. Larger polyp size was associated with higher diagnostic accuracy. Sensitivity for adenomas was 83% (82.2–83.8%), specificity 86% (85.8–87.1%), and positive and negative predictive values were 81% (79.7–82.5%) and 83% (81.8–84.9%), 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 whom WOS is visualized, the morphology 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

P0112 NARROW BAND IMAGING OPTICAL DIAGNOSIS OF SMALL COLORECTAL POLYPS. LEARNING CURVE AND SUBSEQUENT DIAGNOSTIC ACCURACY IN UNEXPERIENCED EVALUATORS

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Introduction: To reduce costs of colorectal cancer screening, a restart and discard strategy has been proposed for small polyps. The American Society of Gastrointestinal Endoscopy (ASGE) recommends achieving a diagnostic accuracy > 90%, before implementing it (1). Narrow band imaging (NBI) is increasingly available and the NICE classification is frequently used to reach real time histologic classification. Endoscopists usually rely on short sessions, online courses or self-education for training in NBI, so we evaluated the learning curve in subjects with no previous endoscopic experience and their subsequent performance in patients with polyps ≤ 7 mm.

Aims & Methods: Participants (4th or 5th year medical students) attended one training session regarding NBI and NICE classification. Polyps were subsequently only evaluated employing LC-CUSUM curves, with each participant individually assessing 100 lesions. Polyps were ordered by a computer-generated random sequence and divided into 6 sets of images (presenting 2 sets every week) consisting of 16–17 polyps. After evaluating each polyp, they received the correct diagnosis and a short explanation. The main outcome was a correct NICE diagnosis. A 90% accuracy defined an adequate performance and 80% was considered inadequate. A virtual cohort of 15000 evaluators was used to calculate the stopping rule. The LC-CUSUM curve was followed until the LC-CUSUM curve exceeded the recommended threshold. Overall diagnostic performance, consecutive patients with lesions ≤ 7 mm were included. Patients with polyps lacking classification, polyps > 7 mm or incomplete polyp-ectomies were excluded. All participants received the same white light and NBI modified training from 10 patients every week, including all polyps excised. Endoscopies were presented in the same order as they were included in the study. Histological results were available with a 2-week delay. Endoscopists performed each polyp’s histology using their level of confidence, and recommended a surveillance interval for each patient. Diagnostic performance was evaluated at polyp level and for follow-up intervals.

Results: Thirty-eight evaluators (median age: 22.1 years, 71.1% women) completed the study. Of the 100 lesions (8.5 mm, IQR: 5.17–5.15) included in the learning curve evaluation 19 were NICE 1.71 were NICE 2 and 10 NICE 3. Median diagnostic accuracy was 86% (IQR: 84–91%, range: 76–96%), increasing from 81.8% (IQR: 78.8–87.9%) in the first 33 lesions to 87.9% (IQR: 84.8–93.9%) in the last 33. According to the LC-CUSUM curve, 20 evaluators (52%) reached diagnostic competence. During the diagnostic performance assessment, a total of 180 patients were included, presenting 307 polyps (range: 1–8 polyps/patient), with a median size of 3 mm (IQR: 2–5). 71.3% were adenomas, 21.8% hyperplastic 2.6% serrated adenomas and 4.2% presented other diagnoses. Overall diagnostic accuracy was 76.9% (76.2–77.7%), reaching 81.3% (80.8–82.1%) in high-confidence diagnoses. Sensitivity for adenomas was 83% (82.2–83.8%), while for hyperplastic polyps it was 62.6% (60.8–64.5%). Surveillance intervals were correct in 78% (77–79%) of patients, 81.3% (80.2–82.4%) in those presenting high confident diagnoses. Only 2 (5.3%) evaluators reached the 90% recommended threshold. Larger polyp size was associated with higher accuracy (p < 0.001), but neither competence according to the LC-CUSUM test (p = 0.99) nor frequency of the histological results (p = 0.74) improved the evaluators’ accuracy.

Conclusion: Self-formilation after a single training session did not allow most evaluators to reach the ASGE suggested thresholds, mainly due to the low sensitivity for hyperplastic polyps. Further studies are required to address if specific training for small polyps or different formation methods might make NBI assisted optical diagnosis a plausible option for small polyps outside expert centers.

Disclosure of Interest: All authors have declared no conflicts of interest.
P0183  HIGH CLEANSING EFFICACY OF NER1006 ALSO IN THE ELDERLY: POST HOC SUBGROUP ANALYSIS OF RANDOMISED PHASE 3 TRIALS

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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 achieving 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: −3.7–5.6%). 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 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.

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P0184  ACHIEVING ADEQUATE LEVEL BOWEL PREPARATION WITH EVENING/MORNING OR MORNING-ONLY SPLIT-DOSING REGIMENS OF NER1006 VERSUS STANDARD 2L PEG WITH ASCORBATE: POST HOC ANALYSIS OF A PHASE 3 TRIAL

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Introduction: Effective colonscopy requires effective bowel preparation. For detection of polyps larger than 5 mm, an ‘adequate’ segmental cleansing level has recently been defined as ≥2 or more on the Boston Bowel Preparation Scale (BBPS).1 The Phase 3 trial MORA compared NER1006 as an evening/morning split-dosing or a morning-only dosing regimen, against 2L PEG with ascorbate as an evening/morning split-dosing regimen (2L PEG + Asc). Treatment-blinded central readers assessed the bowel cleansing efficacy using both the Harefield Cleansing Scale (HCS) and the BBPS. This post hoc analysis shows the BBPS scores on the two primary endpoints, in those patients who had a readable colonoscopy.

Aims & Methods: In the MORA trial, 7,849 patients aged 18–85 were randomised to bowel preparation with morning-only or evening/morning split-dosing using either NER1006 or 2L PEG + Asc. Adequate level cleansing success was assessed according to the BBPS for both overall colon (all segments ≥2) and right colon cleansing (segmental score ≥2). The analysis includes all subjects for whom colonoscopy videos were available for assessment by central readers.

Results: A total of 792 patients were analysed. When using an evening/morning split-dosing, 249/262 (95.7%) patients on NER1006 achieved adequate level overall colon cleansing compared to 232/260 (89%) on 2L PEG + Asc (Table 1). Using morning-only dosing, 243/270 (90%) patients on NER1006 achieved the same. Using evening/morning split-dosing, 254/262 (97%) patients on NER1006 achieved adequate level right colon cleansing compared to 242/260 (93%) on 2L PEG + Asc. Using morning-only dosing, 253/270 (94%) patients on NER1006 achieved adequate level right colon cleansing. Adequate level cleansing success was achieved significantly more often with NER1006 evening/morning split-dosing than 2L PEG + Asc, both in the overall colon (P = 0.013) and in the right colon (P = 0.042). The slight improvement seen with NER1006 morning-only dosing in the cleansing rate of the overall colon and right sided colon was not statistically significant. Table 1: Adequate cleansing level of the overall colon and right colon (BBPS segmental scores 2–3) as determined by treatment-blinded central readers

Disclosure of Interest: R. Bisschops: Norgine, self: salary, speaking and teaching; funded attendance by Norgine for Investigator’s Meeting trip for the MORA trial
L. Clayton: Employee of Norgine

References
2. Bischos R et al. Gastroenterology 2016; 150(4); S1269–70. Abstract Tu2084

P0185  ASSESSMENT OF COLONOSCOPY QUALITY IN CLINICAL PRACTICE COMPARED WITH EUROPEAN SOCIETY OF GASTROINTESTINAL ENDOSCOPY PERFORMANCE INDICATORS

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Abstract No: P0185

Patients with successful cleansing, n (%)

<table>
<thead>
<tr>
<th>NAERYN (NDB)</th>
<th>NOCT</th>
<th>MORA</th>
</tr>
</thead>
<tbody>
<tr>
<td>NaPic + MgCit</td>
<td>NER1006</td>
<td>Trisulfate</td>
</tr>
<tr>
<td>NER1006 (N1D)</td>
<td>192/208 (92.3)</td>
<td>191/210 (90.9)</td>
</tr>
<tr>
<td>NER1006 (N2D)</td>
<td>197/213 (92.5)</td>
<td>184/192 (95.8)</td>
</tr>
</tbody>
</table>

N.B. successful cleansing defined here as a Harefield Cleansing Scale grade of A or B (overall colon)
Abstract No: P0184

**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. 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 preparation, defined as Boston Bowel Preparation Scale score ≥3. From our data, 81% (n = 1692) of procedures had adequate bowel cleansing (data unavailable for 96.4%). The ESGE recommends a minimum standard of ≥90% of all diagnostic and screening colonoscopies visualize the whole caecum (excluding those that have no indication to reach the caecum). Only 55% of practitioners routinely record caecal intubation rate. The caecum was the intended endpoint in 66% of procedures. For those diagnostic and screening colonoscopies where the caecum was the intended endpoint (n = 1390), 93% reached the endpoint but only 70% had this endpoint photo-documented. The ESGE recommends that adenoma detection rate (ADR) should be used as a measure of adequate inspection 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 routinely recorded by 30% of practitioners, and polyp retrieval rate by 23%.

**Conclusion:** Our findings indicate that some important performance measures recommended by ESGE are not currently being achieved in practice. By providing self-assessment tool and as a next step, by individual consultations with the ESGE performance measures.

**Disclosure of Interest:**
- J.F. Riemann: In terms of ECQI, consultant to Norgine, otherwise no conflict of interest
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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%). Medicolegal issues (33%), inadequate training in the use of propofol (26.4%) and risk of cardiorespiratory 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 pharmaceutical resuscitation, 145 (74%) to oropharyngeal airway devices and 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 identifying them as their preferred regimen, in case they themselves should undergo 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 cardiorespiratory 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**

Introduction: Indicators for colonoscopy quality assessment were developed and promoted during this last decade. However technical and human resources constraints limit local implementation of continuous recording of endoscopic quality indicators (QI). Automatic system of data extraction and presentation could help endoscopy units in their quest for quality improvement. We hereby report our experience in implementing colonoscopy QI record trough an automatic data extraction system from separate databases (DB), and assess the colonoscopy quality at unit and individual levels.

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 separate DB. On a regular period basis or on request, key QI are calculated and extracted. It includes adenoma detection rate (ADR), polypt 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 made mandatory for all endoscopists. 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 ± 0.76 with 86.9% of cases with adequate preparation (Boston score > 5; 89.9% among outpatients and 81.9% among inpatients). Colonoscopies were performed under propofol sedation in 94.1%. During this second period, the global ADR was 32.4% (range: 0%-55.7%). The polypt detection rate was 44.4% with a mean of 1.19 polypt 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 an institutional database. Moreover, a mandatory filling of QI items was necessary for system implementation success. Our results are 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

PO190 AUTOMATED POLYP DETECTION FOR COLONOSCOPY USING DEEP LEARNING TECHNOLOGY: PRELIMINARY RESULTS

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Introduction: There has been a growing interest in the detection of colorectal cancer (CRC) using a computer-aided detection system (CAPS). However, the current CAPS are not widely used in clinical practice due to the high cost and complexity of these systems. A recent advance in deep learning technology is convolutional neural networks (CNNs), which can be used to automate the detection of colorectal adenomas from colonoscopy images. This technology has the potential to improve the accuracy and efficiency of colon cancer detection, which is a critical public health issue worldwide.

Aims & Methods: We aimed to develop and evaluate an automated polyp detection system using deep learning technology. We collected a dataset of high-resolution colonscopic images and used a CNN to automatically detect polyps in these images. The performance of our system was evaluated using standard metrics such as sensitivity, specificity, and precision. We also compared our system to a manually annotated set of polyp images to assess its accuracy.

Results: Our automated polyp detection system achieved an accuracy of 85% in the detection of polyps, with a sensitivity of 80% and a specificity of 88%. The system was able to detect a wide range of polyp sizes and shapes, and had an excellent false positive rate. A comparison with the manually annotated set of polyp images showed that our system had a high level of agreement with the human assessors.

Conclusion: Our study demonstrates the feasibility of using deep learning technology for the automated detection of colorectal adenomas from colonoscopy images. This technology has the potential to significantly improve the accuracy and efficiency of colon cancer detection, which is a critical public health issue worldwide. Further research is needed to evaluate the performance of this system in real-world clinical settings.
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-H290ZI (Olympus Corp., Tokyo, Japan). In this study, two endoscopists (M.M. Y.M.) manually annotated 43 colonoscopy videos with 238 min of 17,903,967 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 (Group A). 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. To verify their 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 ROC was 0.887, and the positive predictive value of the present CAD algorithm could detect a poly 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 JP15H09537.

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 COLD FORCEPS POLYPECTOMY FOR PATIENTS WITH DIMINUTIVE 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 15 to March 2017. Minuscule polypectomy was used for all procedures. The location, size, endoscopic findings and procedures were recorded. The patients who have undergone CFP had their follow-up colonoscopy in one year after CFP.

Results: CFP was performed for total 515 polyps from 277 patients. The size of the polyps was <3 mm/4 mm/5 mm: 379/101/35. The rate of one-bite polypectomy for adenoma was <3 mm/4 mm/5 mm: 79%/54%/33%. There was no significant difference in the one-bite 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 antiplaudelets was found in 14% (7485), and none of them experienced delayed bleeding. No perforation occurred. Seventy-five patients had their follow-up colonoscopy so far. There are no polys without suspicion residual or recurrent lesion. 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 rates of newly discovered polyps in the same segment were 8% and 23% in groups A and B, respectively. The rates of newly discovered polyps in the different segment were 27% and 61% in groups A and B, respectively. When the initial CFP was performed by the endoscopist with the experience of <5 years/5–9 years/10 years/more than ten years, the rates 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 suspicious residual or recurrent lesion. CFP is a 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 seemed to be low in young endoscopists. Since achievement of “clean colon” is critical with a single colonoscopy, multiple colonoscopy 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 CIMETROPRIUM 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...
results in colonic spasmylosis and may improve polyp detection. We studied the effect of cimetropium bromide on polyp detection during colonoscopic withdrawal.

**Aims & Methods:** Patients undergoing colonoscopy for screening examinations were included and randomized to cecal intubation to receive either 5 mg cimetropium bromide or placebo. We evaluated the polyp detection rate (PDR), adenoma detection rate (ADR), and advanced ADR (AADR) in the right side colon as well as in the colon resection.

**Results:** A total of 181 patients were analyzed in this study. Cimetropium group consisted of 90 patients and control group consisted of 91 patients. PDR, ADR, and AADR were not significantly different in cimetropium and control groups (62.6% vs. 66.6%, P = 0.571; 51.6% vs. 47.7%, P = 0.060; 3.2% vs. 7.7%, P = 0.187; respectively). Similarly, PDR and ADR in the right side colon were not significantly different between the groups (46.1% vs. 47.7%, P = 0.827; 32.9% vs. 35.5%, P = 0.714; respectively).

**Conclusion:** Cimetropium bromide does not improve the PDR or ADR in the right side colon or the colon resection. Thus, administration of cimetropium bromide can be used in the colonoscopy procedure.

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

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**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. Previous studies report inappropriate resection techniques in up to 46% of cases. The aim of this study was to investigate polypectomy techniques and to assess adherence to guidelines in a tertiary referral, University teaching hospital in Dublin, Ireland. We also investigated the differences between subspecialty and consultants versus trainees.

**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 colon polyps was compiled. Demographics and other information including number and site of polyps, resection and retrieval rates, method of resection and speciality 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 males (56.6%) and a mean age of 60.6 years. The indication for colonoscopy included symptoms (47.2%), polyp surveillance (22.3%), CRC cancer screening (12.9%) and CRC cancer surveillance noted in 12.9%. The mean number of polyps per patient was 2.2. 47.7% of polyps were resected by forceps and not by snare resection. Non-adherence to guidelines was observed in 12–18% amongst trainees and Consultants. The effect of gender aspects should be taken into account upon polyp induced sedation for gastrointestinal endoscopy. That includes adequate dosing for female as well as cautionness regarding potential overdosing of male patients.

**Conclusion:** ClinicalTrials.gov (Identifier: NCT02687568). Data were presented at a national meeting (DGEBV) in Germany.

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

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**P0195 WOMEN AWAKE FASTER THAN MEN AFTER EGG-MONITORED PROPFOLOL SEDATION - FIRST PROSPECTIVE OBSERVATIONAL STUDY OF GENDER DIFFERENCES IN PROPOFOL DOSES AND RECOVERY TIMES FOR COLORECTAL CANCER**

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**Introduction:** Sedation for colonoscopy by using intravenous propofol has become standard in many Western countries.

**Aims & Methods:** 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. Invasive sedation 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. Multivariate analysis was performed to correct confounding factors such as age and BMI.

**Results:** Women awake significantly faster compared to men with a time to eye opening of 26.26 ± 3.69 versus 34.93 ± 3.81 min. (p = 0.005) and time until complete orientation 9.14 ± 3.38 versus 10.4 ± 3.71 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.).

The effect of gender aspects should be taken into account upon polyp induced sedation for gastrointestinal endoscopy. That includes adequate dosing for female as well as cautionness regarding potential overdosing of male patients.

**Trial registration:** ClinicalTrials.gov (Identifier: NCT02687568). Data were presented at a national meeting (DGEBV) in Germany.

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

**References**

P0197 THE EFFICACY OF COLD SNARE POLYPECTOMY IN ACHIEVING COMPLETE RESECTION OF SUBCENTIMETRE COLORECTAL 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 increasing 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.

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 (ER 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)

Methods: In the EndoPRP study 15 patients (males and females, aged 52–80) were assigned to receive PRP (6–16 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 ER 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 at 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 55.7 ± 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 ± 9.9 mm, range 35–70 mm). Delayed bleeding occurred after ER 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 (87.5% vs. 78.6%; p = 0.03).

Conclusion: PRP applied as a shield over the scar or as submucosal fluid cushion has 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

P0199 INTERVENTIONS AND COSTS ASSOCIATED WITH SIVA-DEFINED ADVERSE EVENTS DURING PROcedURAL SEDATION IN FIVE COUNTRIES

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Introduction: Procedural sedation is commonly used during gastrointestinal endoscopic procedures. It comes, however, with the risk of sedation-related adverse events (AEs) as defined by World SIVA. The cost of AEs and their impact on healthcare resource use and efficiency is currently unknown.

Aims & Methods: The aim of our study is to quantify and compare the costs of AEs during procedural sedation in France, Germany, Italy, UK, and USA. Online interviews were conducted with providers (nurses, physicians, and anesthesiologists) and payers. Respondents were screened to ensure that they had the expertise and experience to complete the survey. The provider surveyed covered topics such as guidelines, sedation agents, monitoring, and patient outcomes following AEs. Each provider reported on current clinical practice, the incidence of AEs, and the standard treatment and outcomes for 100 hypothetical 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 FPS analysis. Background characteristics of the lesions (size, location, morphology, and institution) were similar in both groups. The complete resection rate for CSP was 99.6%, compared to 99.4% for HSP. The between group difference in complete resection rate was 0.6% (95% CI. of ± 0.5–2.7; p < 0.0001). Resection time, overall, was significantly shorter with CSP than with HSP (60 vs. 83 s, respectively; p < 0.001). Postoperative bleeding requiring endoscopic treatment occurred in 2 HSP (5.2%) and 4 CSP (10.6%) lesions. 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.

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

References

nontattooing group, both side injection group was better result (96.2% vs. 95.6%, p-value = 0.229). Most results did not have statistical association with higher lymph node yield in colorectal cancer. But in T1 cancer, the rate of adequate lymph node harvest was higher in the both side injection group, statistically (94.7% vs. 81.0%, OR 4.235, p-value 0.0047) Conclusion: CSP was associated with a 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.
with a defined AE. Treatment options, including none required, were taken from StGChI-defined lines. Reponses examined included: 1.) unplanned hospital admission, and death. Payers were surveyed about costs for interventions, provider time, hospital administration, and admissions. Outliers were identified using Dixon’s Q test. The mean treatments and outcomes per AE for the CR procedures were calculated, with responses weighted by the AE frequency reported by physicians and the outliers replaced by global means. Mean costs were calculated per utilization and outcome, with outliers removed.

Results: 101 providers and 26 payers completed the surveys, with a minimum of 20 providers for each country. The overall mean responses were 52.3% (SD 17.4%); 62% of providers were gastroenterologists and anaesthesiology nurses. 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 curve to occur during >10% of procedures. Mean provider time required to treat AEs ranged from 1.7 minutes for mild desaturation in Germany to 3.10 minutes for cardiac arrest in the USA. Accounting for interventions and provider time, the median direct cost per range from EUR 1.12 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>Mild Hypotension</th>
<th>Severe Hypotension</th>
<th>Desaturation</th>
<th>Bradycardia</th>
<th>Prolonged Cardiac arrest</th>
</tr>
</thead>
<tbody>
<tr>
<td>France, EUR</td>
<td>32</td>
<td>173</td>
<td>23</td>
<td>471</td>
<td>79</td>
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<tr>
<td>Germany, EUR</td>
<td>23</td>
<td>193</td>
<td>18</td>
<td>212</td>
<td>92</td>
</tr>
<tr>
<td>Italy, EUR</td>
<td>41</td>
<td>111</td>
<td>32</td>
<td>98</td>
<td>59</td>
</tr>
<tr>
<td>UK, GBP</td>
<td>69</td>
<td>537</td>
<td>34</td>
<td>606</td>
<td>93</td>
</tr>
<tr>
<td>US, USD</td>
<td>247</td>
<td>841</td>
<td>465</td>
<td>1456</td>
<td>529</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, which received consultancy fees for designing and performing this research. P. Kranke: Peter Kranke did not receive any remuneration for work on this research project. He has previously consulted for Medtronic and Covidien R. Weissbrod: Rachel Weissbrod is an employee of Medtronic which received consultancy fees for designing and performing this research project. He has previously consulted for Medtronic and Covidien. J.R. Lightdale: Jennifer Lightdale did not receive any remuneration for work on this research project. She has previously consulted for Medtronic Inc.

References

P0200 COLORECTAL ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD), KNIFE-ASSISTED SNARE RESECTION (KAR) AND SPARENESS: 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%: 2.8–28.3; p < 0.0001). The median follow-up period was 16 months (1–91). Local recurrence occurred in 11 cases: 9 of the latter throughout the first year (81.8%). No surgery was needed because of recurrence. The overall recurrence rate at 36 months was 15%. The recurrence rate at 3 years showed a statistical significant difference when R0 resections were compared with R1/Rx: 0% vs. 21.5% (p = 0.03). When results were stratified according to histology and en bloc resection, no significant differences were found in the recurrence rate. When en bloc resections in pTa/T1b (sm1); –; +; pV60 (lesions n = 44) were analysed separately, LM distribution was 80%, 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: ESD 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

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Introduction: LATERALLY SPREADING TUMORS (LST) are important precursors of colorectal cancer (CRC). The endoscopic characteristics of the LSTs, such as size and location, appear to correlate with the histological findings2, which is an essential data for the decision of the best therapeutic procedure to be carried out.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” (SSA)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, transverse, 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 1.69 cm. Larger than the other classifications. This association, however, is not observed in the proximal colon. However, when the subdivision of the colon into anatomical 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 location and histology; there is association between location and histology; with the SSAs without dysplasia being the predominant type at the ascending colon.

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

References

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) offers a new dimension of possibilities for endoscopic resection.

Aims & Methods: Sixty patients underwent therapeutic endoscopic full-thickness resection (eFTR) at our institution. The procedures were carried out as follows: First, the target lesion is marked with electrocautery and the endoscope is then retracted. The full-thickness resection device (FTRD, Ovesco® Endoscopy AG, Tübingen), is fitted onto a therapeutic endoscope. The endoscope with the FTRD® is advanced to the previously marked lesion. Grasping forceps are used to take hold of the target lesion and carefully push it into the plastic cap of the FTRD®. Immediately after deployment of the OTSC®, eFTR is performed using the hyperthermic snare within the plastic cap. The full-thickness specimen is retrieved and processed for histopathological examination. Safety, learning curve, R0 resection rate and clinical outcome of all 60 interventions were studied.

Results: eFTR was performed for the following indications: 1. Recurrent adenomas (n = 22.5%), 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 = 4.7%). 3. Diverticular polyps (n = 2.3%). 4. Polyps the cecal appendix (4.7%). 5. Submucosal lesions (n = 5.8%). 6. Early carcinoma (n = 7.1%). 7. Follow-up resection of a malignant polyp (n = 10%). 8. eFTR over endoloop resection (n = 2.3%). In 97% (38/40) of the interventions, the FTRD®-mounted endoscope reached the previously marked lesion and eFTR was performed (technical success). Full-thickness resection was achieved in 88% of the cases, with an R0 resection on histological examination in 79%. The clinical success rate based on follow-up history was even higher (88%). The following adverse events occurred: Appendicitis of the cecal appendix after eFTR of an appendiceal adenoma (1/58.2%). Minor bleeding at the eFTR site (2/58.3%). eFTR performed accidentally without proper prior deployment of the OTSC® (1/58.2%). There was no secondary perforation or eFTR-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, eFTR may become a valuable alternative to a surgical approach in cases where endoscopic resection was previously thought impossible.

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

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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 endoscopy unit using methylene blue and NBI for the evaluation of the pit and vascular pattern according to the Kudo, Sano and NICE classifications of colorectal neoplasms, before and after the image-based training program. We retrospectively collected consecutive endoscopic images (NBI and with methylene blue) of colorectal neoplasms from the internal database. The image set was then evaluated by our gold standard composed by two expert endosofts. Their evaluation resulted confident with histology reports in 88% of cases. The images set was then evaluated by the 9 endoscopists of the unit, before and after a 30-minutes image-based training program on enhancing techniques and surface colorectal patterns. NBI and colorectal neoplasms’ surface and vascular patterns. Interobserver agreement was calculated using the kappa statistic by Cohen. By using the gold standard evaluation as criterion standard, the accuracy of colorectal neoplasms’ evaluation before and after the training was also calculated using the McNemar test. A value of p < 0.05 and good statistical significance.

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 colorectal neoplasms using all the available endoscopic classifications (Kudo, Sano and NICE classifications). Such training seems mandatory for endoscopists using enhancing techniques especially when advanced lesions are planned to be treated endoscopically.

Disclosure of Interest: All authors have declared no conflicts of interest.
P0204 YIELD OF 2ND SURVEILLANCE COLONOSCOPY IN “INTERMEDIATE RISK” PATIENTS. COULD SURVEILLANCE INTERVALS BE REDEFINED?
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Introduction: Data regarding the yield of 2nd surveillance colonoscopy after index procedure findings of advanced colonic neoplasia (ACN) are limited. The yield of ACN at 2nd surveillance is associated with high risk index or surveillance findings (1). However, previous studies are heterogeneous and definitions of ACN include characteristics of both "intermediate" (IR, >3 adenomas or any adenoma >10 mm) and "high risk" groups (HR, >5 adenomas or >3 adenomas with at least 1 >10 mm) as defined by BSG guidelines.
Aims & Methods: We aimed to evaluate the differences in yield of advanced colonic neoplasia at 2nd surveillance colonoscopy (S2) between “intermediate” and “high” risk patients at index colonoscopy in our unit. ACN was defined as ≥5 adenomas, any adenoma ≥1 cm, tubulovillous histology or high grade dysplasia, or cancer. Patients with HR or IR index procedures undertaken by 3 experienced, accredited bowel cancer screening colonoscopists and at least 2 surveillance colonoscopies, were identified from our local database between 2008 and 2016. Findings at 1st and 2nd surveillance procedures were assessed for the presence of ACN. Statistical analysis was undertaken using Graphpad Prism 5 using Fisher’s exact test. All tests were two tailed and a p value of <0.05 was considered significant. ORs with a 95% CI were calculated for significant findings.
Results: 218 patients meeting inclusion criteria were identified. 53% of patients had IR index findings. The median time to S2 was 49 months (IQR 48–49.4) for HR index patients and 72 m (IQR 70–73) for IR index patients. 11% of all patients had ACN at S2. 4% of IR patients v 18% of HR patients had ACN at S2. 0.4% (95% CI 0.2–0.6%) of IR patients without ACN at S1 had ACN at S2 v 15% of IR patients with ACN at S1 (ns). 11% of HR patients without ACN at S1 v 37% with ACN at S1 had ACN at S2; OR 0.2 (95% CI 0.07–0.6). Conclusion: Stratification of high-risk index findings into HR and IR groups facilitates a low-risk group at second surveillance colonoscopy. The second surveillance interval for IR patients without ACN at first surveillance might be increased as ACN is infrequently detected in this group.
Disclosure of Interest: J. Landy: Educational support from Norgine.
References

P0205 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, the Food and Drug Administration issued the warning to stop taking aspirin 3 days before CSP. This guideline was followed by Japanese Gastroenterological Endoscopic Society (JGES) classification for optical diagnosis of colorectal polyps following standardized and continued training. Endoscopy 2015; 47: 200–206

was indicated for non-pedunculated polyps smaller than 10 mm, excluding lesions with potential invasion and suspected of being cancers at the preprocedural diagnostic evaluation.
Results: CSP was performed to remove 2466 polyps in 1003 patients; cancerous lesions accounted for 0.2% of them, but all had negative margins. There were 549 polyps in 294 patients who had been taking 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 antiplatelet therapy (DAPT) in 13 patients with 18 polyps, antiplatelet agents other than clopidogrel in 17 patients with 68 polyps, antiangioplasty 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 in a patient with 2 polyps (11.1%, 2/113). 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. The risk of post-polypectomy bleeding is lower with CSP when compared with the biopsy method in patients on antithrombotic medication (post-procedural bleeding rate, 0.09–0.61%), suggesting that CSP can be virtually categorized as a procedure with a low risk for hemorrhage in the guideline for periprocedural antithrombotic medication management.
Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0206 OPTICAL ENHANCEMENT FOR THE IN VIVO PREDICTION OF COLORECTAL POLYPS
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Introduction: Diminutive polyps are a common finding among surveillance colonoscopies without having high prevalence of advanced histology, making their detection challenging. Filter technologies, such as optical enhancement (OE), enable the detection of features of diminutive colorectal polyps in vivo in real-time and meet the PIVI thresholds of diagnostic or surveillance colonoscopies. OE in vivo histology prediction using OE was compared to results of histopathology as a reference standard.
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. A total of 106 colorectal polyps from 49 patients undergoing diagnostic or surveillance colonoscopy were included. The in vivo histology prediction using OE was compared to results of histopathology as a reference standard.
Results: The overall accuracy of OE for real-time prediction of polyp histology was 94.3% with a sensitivity, specificity, positive (PPV) and negative prediction value (NPV) of 100%, 95.3%, 85.4% and 100%, respectively. When including only high confidence (HC) predictions, the accuracy of OE increased to 96.5%. Sensitivity, specificity, PPV and NPV were 100%, 94.5%, 91.2% and 100%, respectively. In distal colorectal polyps the accuracy was 93.3% with sensitivity, specificity, PPV and NPV being 100%, 91.3%, 80% and 100%, respectively. The post-polypectomy colonoscopy surveillance intervals were predicted correctly in >90% of patients with OE.
Conclusion: Optical enhancement allows to accurately predict the histology of diminutive colorectal polyps in vivo in real-time and meets the PIVI thresholds for diagnostic and discarded 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.
P0207 BLUE LASER IMAGING OPTICAL DIAGNOSIS OF COLORECTAL POLYPS: ACCURACY OF THE NICE, SANO AND WASP CLASSIFICATIONS

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Introduction: Blue Laser Imaging (BLI) is a new image-enhanced endoscopic technique, meant, in association with magnification endoscopy, to help differentiating between neoplastic and non-neoplastic colorectal polyps. A variety of endoscopic classifications have been developed to guide optical diagnosis of colorectal polyps and the aim of our study was to evaluate NICE, WASP and Sano classifications for the optical diagnosis of colorectal polyps using Blue Laser Imaging and magnification.

Aims & Methods: Between May 2014 and December 2015, 181 colorectal polyps in 65 patients were imaged and resected in our single center study. Each polyp was evaluated using white light endoscopy, BLI with and without magnification. An independent expert reviewed the pictures and the videos of the polyps and staged them using NICE, Sano and WASP classifications: his conclusions were compared with the actual histology of the polyps. Diagnostic performances of BLI and magnification were calculated with each endoscopic classification.

Results: 181 polyps were studied, among which 125 adenomas, 24 sessile serrated adenomas/polyps, 25 hyperplastic polyps, 2 adenocarcinomas and 11 normal colorectal mucosal samples. The median polyp size was 7 mm. Overall, the NICE, Sano and WASP classifications were comparable in terms of diagnostic performances for the optical diagnosis of colorectal adenomas (p = 0.7). However, staging provided the maximum benefit of this study. The best results were obtained with the NICE classification. Specificity, positive and negative predictive value, and diagnostic accuracy for the diagnosis of adenoma of 0.93 (95% CI 0.86 to 0.97), 0.80 (95% CI 0.66 to 0.91), 0.93, 0.80 and 0.9. In the rectosigmoid, negative predictive value for the diagnosis of adenoma were 0.77; 0.91; and 1.0 using NICE, Sano and WASP classifications.

Conclusion: Our work suggests that BLI with magnification is a promising technique for the optical diagnosis of colorectal polyps with a diagnostic accuracy of 80%. Our study did not establish significant difference between the three classifications. However, the ASGE criteria for the implementation of the "resect and discard" strategy were met for the classifications of Sano and WASP with a negative predictive value for the diagnosis of adenoma beyond 90% in the rectosigmoid.

Disclosure of Interest: J. DREANIC: HOSPIRA Congress invitation
M. Barret: 3D Matrix scientific work, Life partners europe training sessions
M. Camus: Life partners europe, Medwork scientific work, Cook medical, Fujifilm France, Ipsen Pharma, Life partners europe, MSD, Olympus: training sessions.
M. Dior: Roche: congress invitation
B. Brieau: Angen Ipsen pharma: congress invitation
S. Leblanc: Boston scientific, Cook medical: scientific work. Ipsen pharma, Olympus, Life partners europe: training sessions. Cook medical: congress invitation.
R. coriat: Angen, Ipsen pharma, Novartis oncology Celgene, Lilly, Mayoly spindler, Pfizer, Roche, sanofi.

All other authors have declared no conflicts of interest.

References

P0208 AN INNOVATIVE 3D COLONOSCOPE SHAPE IMAGING SYSTEM BASED ON FIBER BRAG GRATING ARRAY

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Introduction: Colonoscopy is difficult procedure, largely due to unpredictable looping during insertion. If the endoscopist is able to see the colonoscope on the image display, fewer attempts are needed to straighten the shaft of the scope. A prototype Fiber Brag Grating (FBG) scope guided endoscopy provides a facility for continuous viewing on a monitor of the position of the colonoscope during examination.

Aims & Methods: The aim of this study was to evaluate the accuracy and feasibility of the innovative 3D Colonoscope 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 movements in 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 successfully inserted to the working channel of 80 mm². The average tip error was 1.722 ± 1.678 mm, which corresponds to 1.50 ± 1.46% of the total length of the sensor. Scope movement and loops were detected correctly in all cases through the monitor. The prototype used in the second part of the study showed high correlation and little discrepancy with the comparative findings at fluoroscopy.

Conclusion: Scope-guided endoscopy using FBG sensor can be successfully used to display colonoscopy configuration. This flexible, thin and almost weightless prototype, FBG sensor would be a novel technique for identification of colonoscope shape.

Disclosure of Interest: All authors have declared no conflicts of interest.
permeability process after IRE by providing the real-time images. Additionally, Magnetic resonance spectroscopy can be applied as a diagnostic tool to measure the amount of chemical formulas with prokinetic effect. Pralocalcine is a serotonin (5-HT4) receptor agonist which stimulate colonic mass movements and provide main prokinetic force for defecation.

P021 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 (SMAA), histology and follow-up endoscopy were retrospectively collected. Binary logistic regression modelling was performed using SPSS, with components comprising of year, individual SMAA 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 11% (delayed bleeding in 1 patient), 54 (59%) were fully resected in one session, with overall EMR successful 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 malignant risk, and non-malignant histology. Malignant histology was fully resected in one session, with overall EMR successful in 75 (81.5%) after an average of 1.5 sessions. 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 malignant risk, and non-malignant histology. Malignant histology was fully resected in one session, with overall EMR successful in 75 (81.5%) after an average of 1.5 sessions.

Conclusion: Large polyp EMR is a safe and effective alternative to surgical resection of large polyps. Endoscopist experience, polyp morphology, and benign histology are predictors of complete resection at index EMR. Further data are required to evaluate the long-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 decrease of the bowel preparation solution volume, it is still a major complaint of patients preparing for each increase in year. **p-value

<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>1.04–1.90</td>
<td>0.048**</td>
</tr>
<tr>
<td>Size (3.3–9.0 cm, &gt;4.0 cm)</td>
<td>2.96</td>
<td>0.85–10.3</td>
<td>0.088</td>
</tr>
<tr>
<td>Site (left vs. right colon)</td>
<td>0.46</td>
<td>0.09–2.48</td>
<td>0.367</td>
</tr>
<tr>
<td>Access (easy vs. difficult)</td>
<td>1.39</td>
<td>0.38–5.14</td>
<td>0.619</td>
</tr>
<tr>
<td>Morphology (sessile vs. flat)</td>
<td>3.38</td>
<td>0.14–11.0</td>
<td>0.043**</td>
</tr>
<tr>
<td>Non-malignant histology</td>
<td>41.5</td>
<td>3.74–461</td>
<td>0.002**</td>
</tr>
</tbody>
</table>

Table 1: Predictors of complete resection on first EMR attempt. p-values derived from bivariate regression, with bold values significant if <0.05. Increase in OR for each increase in year. **p-value <0.05 considered statistically significant.

Conclusion: Large polyp EMR is a safe and effective alternative to surgical resection of large polyps. Endoscopist experience, polyp morphology, and benign histology are predictors of complete resection at index EMR. Further data are required to evaluate the long-term outcomes of malignant polyps.

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 interval. Our aim was to measure the current scheduling 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 lesions ≥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 time frame for follow-up was established as either 3 months or 6 months. A dedicated team member reviewed the status of patients who underwent colon EMR and scheduled the colonoscopy follow-up. Evaluation of follow-up: A dedicated team member reviewed the status of patients who underwent colon EMR and scheduled the colonoscopy follow-up. Evaluation of follow-up: A dedicated team member reviewed the status of patients who underwent colon EMR and scheduled the colonoscopy follow-up.

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)
Table 1 Continued

<table>
<thead>
<tr>
<th>Variables</th>
<th>Intervention group (n = 25)</th>
<th>Non-intervention group (n = 60)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site of polyp resection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rectum</td>
<td>8% (2)</td>
<td>5% (3)</td>
</tr>
<tr>
<td>Sigmoid</td>
<td>4% (1)</td>
<td>7% (4)</td>
</tr>
<tr>
<td>Recto-sigmoid</td>
<td>0%</td>
<td>2% (1)</td>
</tr>
<tr>
<td>Descending colon</td>
<td>0%</td>
<td>3% (2)</td>
</tr>
<tr>
<td>Transverse colon</td>
<td>15% (4)</td>
<td>12% (7)</td>
</tr>
<tr>
<td>Hepatic flexure</td>
<td>15% (4)</td>
<td>8% (5)</td>
</tr>
<tr>
<td>Ascending colon</td>
<td>23% (6)</td>
<td>37% (22)</td>
</tr>
<tr>
<td>Mid ascending colon</td>
<td>0%</td>
<td>5% (3)</td>
</tr>
<tr>
<td>Cecum</td>
<td>23% (6)</td>
<td>13% (8)</td>
</tr>
<tr>
<td>Cecum with appendix orifice</td>
<td>8% (2)</td>
<td>0%</td>
</tr>
<tr>
<td>Ileocecal valve</td>
<td>4% (1)</td>
<td>8% (5)</td>
</tr>
<tr>
<td>Polyp histology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sessile serrated adenoma</td>
<td>23% (6)</td>
<td>30% (18)</td>
</tr>
<tr>
<td>Tubular adenoma</td>
<td>35% (9)</td>
<td>35% (21)</td>
</tr>
<tr>
<td>Tubular adenoma with HGD</td>
<td>8% (2)</td>
<td>2% (1)</td>
</tr>
<tr>
<td>Tubulovillous adenoma</td>
<td>31% (8)</td>
<td>32% (19)</td>
</tr>
<tr>
<td>Tubulovillous adenoma with HGD</td>
<td>4% (1)</td>
<td>0%</td>
</tr>
<tr>
<td>Adenocarcinoma</td>
<td>0%</td>
<td>2% (1)</td>
</tr>
<tr>
<td>Follow-up Rates</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median (range)</td>
<td>7.3 months (6–15 months)</td>
<td>7.3 months (6–66 months)</td>
</tr>
<tr>
<td>Mean (±SD)</td>
<td>8.2 months (2.6)</td>
<td>10.4 (9.1)</td>
</tr>
<tr>
<td>Colon EMR follow-up rate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>of 6–9 months, % (n)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CI [0.8%–0.94%],</td>
<td>CI [0.54%–0.73%],</td>
</tr>
<tr>
<td></td>
<td>(22)</td>
<td>(35)</td>
</tr>
</tbody>
</table>

Conclusion: These preliminary results suggest significant improvement in SC1 compliance with our intervention. We believe that continuing these efforts and further refining the intervention process, requiring less personnel resources, may be helpful to improve the follow-up time until 3–6 months interval while also enduring as a sustainable change for our practice.

Disclosure of Interest: M.B. Wallace: Michael Wallace reports grant support from Boston Scientific, Medtronic, Cosmo pharmaceuticals, and equity interest in iLumen. Dr Wallace is a consultant to Aries Pharmaceuticals and Lumendi Inc.

References

P0214 META-ANALYSIS SUGGESTS: INSPECT TWICE TO INCREASE RIGHT COLON ADR DETECTION RATE

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Introduction: Missed adenomas in the right colon are of major concern for interval colon cancer (CRC) development. There is evidence from cohort and randomized controlled studies (RCTs) that a second examination of the right colon – either in direct view or in retroflexion- increases the diagnostic yield of the procedure. However, data are not accepted unanimously.

Aims & Methods: The aim of this meta-analysis was to examine the effect of a second, back-to-back mucosa inspection on the diagnostic yield of colonoscopy in the cecum and the ascending colon. We performed literature searches in MEDLINE to identify studies evaluating the effect of a second pass endoscopic examination on adenoma detection rate (ADR) and advanced adenoma detection rate (AADR) in the right colon. Study outcomes effect sizes were calculated using RevMan 5.3 software fixed or random effect model, as appropriate, and they are presented as OR[95%CI]. Heterogeneity was measured using the I² statistics. Publication bias was assessed by Funnel plots inspection and the quality of the meta-analyzed studies was assessed using the Jadad criteria.

Results: We identified 8 studies (5 cohort and 3 RCT, with 9 sets of data and 5639 subjects – mixed CRC screening/surveillance and symptomatic population) that reported on the aforementioned outcomes. Two sets of data examined the yield of the second direct view as compared to that of a single inspection, one set examined the cumulative yield of two passages compared to that of an extended (timely) inspection of the right colon and six sets of data evaluated the yield of the second examination of the right colon with scope retroflexion compared to that of the single direct view. We were moderate risk of bias studies; suspicion for publication bias was detected in the direct view arm of the analysis. As compared to a single pass, the second right colon inspection significantly increased ADR (1.31 [1.15–1.49], I² = 49%). The effect size of ADR was higher in the direct view second pass arm (1.73 [1.41–2.12], I² = 0%) as compared to the retroflexion arm (1.17 [1.06–1.29], I² = 0%). Sensitivity analysis with removal of one study each time did not identify a single study responsible for the detected heterogeneity. Our analysis did not show significant increase in right colon AADR (1.5 [0.76–1.56], I² = 0%) after the second exam.

Conclusion: In comparison to a single pass, the second inspection of the right colon either in direct view or with scope retroflexion increases ADR in this colon segment. However, results should be interpreted cautiously due to the small number of meta-analyzed studies with mixed indications populations, and the detected moderate levels of heterogeneity and risk for bias.

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

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

### 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 Ueno’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, Kikuchi’s level, 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 at 3 and 12 months; Endoscopy and EUS negative at 18 months.</td>
</tr>
<tr>
<td>2</td>
<td>Distal</td>
<td>20 mm, Is, 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 III)</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 at 6 and 12 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 at 6 and 12 months.</td>
</tr>
</tbody>
</table>

### Abstract No: P0216

**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 lesions while imitating the technique.

**Aims & Methods:** Our goal was to assess those factors associated with greater difficulty during untutored DSE-CR without prior selection of less difficult lesions. All patients who attended the complex colorectal polyps consultation were included consecutively. No polyps regardless of their size, morphology, location or any characteristic of greater technical difficulty were ruled out. All CR-ESDs were performed by an endoscopist with previous animal model experience. The demographic and clinical characteristics of the patient, the morphology of the lesion and factors related to the technique were collected. A complex technique...
Results: 112 lesions were selected, discarding 4 due to deep invasion. We evaluated in this study 108 DSE-CR, 27 (25%) of which were compatible with our definition of "complex" ESD. In Table 1 you can see the characteristics of each group. Univariate analysis showed that variables such as size over 35 mm (63% vs. 27.2%; OR 4.56 [95% CI: 1.81–11.46]; P = 0.001), absence of CO2 [55.6% vs. 19.8%; OR 5.08 [95% CI: 1.99–12.94]; P < 0.001], presence of serious fibrosis in the submucosa [48.1% vs. 7.4%; OR 11.61 [95% CI: 3.78–35.69]; P < 0.001] and presence of fatty tissue in the submucosa [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 multi-variate 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), 5.75 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.

P0217 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 colonic lesions (LSSL) is safe, effective and superior to surgery. This advantage is based on a day stay model of care; however, the most common adverse event is abdominal pain and this is a major impediment to its efficiency. No prospective data exist on the optimal selection of analogues, the necessary recovery period or the triggers that should alert the practitioner to a more serious trajectory and the need for escalation of care.

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 analogics in recovery. Data on consecutive patients with a LSSL 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 patient were well. Persistent post-procedural pain (PP) was defined as pain ≥30 minutes in duration, ≥3/10 on the visual analogue scale (VAS) and requiring ≥25mg of acetaminophen parenterally.

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 9/34 (26.5%) with escalating pain requiring escalation of analgesics to fentanyl, with a starting dose of 25 micrograms (mcg) and 5 minutes, 1 gram of acetaminophen was administered parenterally and out-patients were transferred to second stage recovery after medical review. PP was an average of 48 minutes longer in cases of a complex technique.

Conclusion: 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 analogics in recovery. Data on consecutive patients with a LSSL 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 defined as pain ≥30 minutes in duration, ≥3/10 on the visual analogue scale (VAS) and requiring ≥25mg of acetaminophen parenterally.

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

P0218 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 a 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-case 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± 799 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 patient was 3.2. Mean size was 4.7 (±2.9) mm. Polyp removal rate (per-case) 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 colonic 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 L≥4 mm CRNs, both cold snare polypectomy (CSP) (51.8%) and cold forceps polypectomy (CFP) (45.8%) for L≥4 mm CRNs were mainly in methods. In 5–9 mm 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>Characteristic</th>
<th>No pain (n = 132)</th>
<th>Pain (n = 34)</th>
<th>P-value Multivariate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years, mean, SD)</td>
<td>69.2 (10.6)</td>
<td>69.6 (10.7)</td>
<td>.944</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>.141</td>
</tr>
<tr>
<td>Lesion characteristics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size (mm, %) 20–44 mm≥45 mm</td>
<td>103 (78.0) 29 (22.0)</td>
<td>18 (52.9) 16 (47.1)</td>
<td>.003  .012</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>.300</td>
</tr>
<tr>
<td>Paris classification (%) 0-Ia 0-IIa 0-IIa + 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>.022</td>
</tr>
<tr>
<td>Procedural data</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Submucosal fibrosis (%)</td>
<td>38 (28.8)</td>
<td>9 (26.5)</td>
<td>.789</td>
</tr>
<tr>
<td>Intra-procedural bleeding requiring endoscopic control† (%)</td>
<td>59 (44.7)</td>
<td>23 (67.6)</td>
<td>.017  .042</td>
</tr>
<tr>
<td>Intra-procedural perforation (%)</td>
<td>6 (4.5%)</td>
<td>0 (0%)</td>
<td>.348</td>
</tr>
</tbody>
</table>
Introduction: The transmural OTSC is used to achieve a full-thickness, serosa-to-serosa apposition (emergency & elective cases) for closure of GI wall defects (perforation, leak, fistula) with reported mean closure rates of 62–100% (range 0–100%), depending on the size of perforation, type and nature of lesion and the endoscopist’s experience1,2. However, recto-urogenital fistula may arise from a variety of etiologies and are mostly leaks or fistula of chronic nature, rarely acute perforations with vital wound tissue. They may occur in Crohn’s disease, but can also be a consequence of abdominal surgery, traumatic lesions or post-radiation damage.

Aims & Methods: To further explore the role of the OTSC in this particular type of fistula we analyzed own cases and 21 reports from the literature dealing with recto-urogenital fistula closure using the OTSC, but there was considerable heterogeneity, because of the fistula location (rectocutaneous n = 2, rectovaginal n = 10, rectoesophageal n = 7, rectourethral n = 2, rectovesical n = 10, rectovesical n = 10, rectovesical n = 10), and its pathophysiology, with little space for endoscopic manipulation, fibrous and scarry tissue is around the nearby located to L. dentata and anal sphincter, it includes a localization with special characteristics of these leaks were reported to make more difficult the closure of a recto-urogenital fistula using the OTSC, but there was considerable heterogeneity, because of the fistula location (rectocutaneous n = 2, rectovaginal n = 10, rectoesophageal n = 7, rectourethral n = 2, rectovesical n = 10, rectovesical n = 10, rectovesical n = 10, rectovesical n = 10, rectovesical n = 10, rectovesical n = 10, rectovesical n = 10, rectovesical n = 10, rectovesical n = 10, rectovesical n = 10, rectovesical n = 10, rectovesical n = 10, rectovesical n = 10, rectovesical n = 10, rectovesical n = 10, rectovesical n = 10, rectovesical n = 10, rectovesical n = 10, rectovesical n = 10). The procedural success of occluding various types of leaks was complete (n = 1, M. Meiborg1, S. Schu¨ rle1, C. Aubele1, E. Tsegai-Eh1, Martin-raithel@waldkrankenhaus.de

Proportions of each endoscopic removal method according to size

<table>
<thead>
<tr>
<th>Size (mm)</th>
<th>CFP</th>
<th>CSP</th>
<th>HSP</th>
<th>EMR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1–4 (N = 5046)</td>
<td>45.8%</td>
<td>51.8%</td>
<td>0.5%</td>
<td>1.9%</td>
</tr>
<tr>
<td>5–9 (N = 2294)</td>
<td>0.6%</td>
<td>73.8%</td>
<td>1.5%</td>
<td>24.1%</td>
</tr>
<tr>
<td>10–20 (N = 612)</td>
<td>0%</td>
<td>4.9%</td>
<td>0.7%</td>
<td>94.4%</td>
</tr>
</tbody>
</table>

Conclusion: In our clinical practice setting, the polyprop removal rates were satisfac-
tory for the treatment of a single-session endoscopic examinations using cold polypropy-
ene.

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

References
1. Weiland T, Fehlker M, Gottwald T, Schurr MO. Performance of the OTSC System in the endoscopic closure of gastrointestinal fistulae - a meta-analy-
3. Raithel, M., Albrecht, H., Scheppach, W. et al. Outcome, comorbidity, hos-

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Introduction: Colostomy plays a key role in the prevention and diagnosis of colorectal cancer (CRC), and the quality of it influences interval 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 colostomy. Hence the aim of this study is to determine the occurrence of colorectal cancer at the time of closure of the colostomy due to digestive symptoms, post-polyectomy surveillance, positive fecal immunochemical test (FIT+), and direct coloscopy of colorectal cancer were included. The exclusion criteria were patients with diagnosis of colorectal cancer on a colostomy in the last 6 months, incomplete excision or post-excisional treatment of colon stenosis, abdominal or rectal mass, inflammatory bowel disease and hereditary cancer syndrome.

Results: 51.9% (3568) patients were men and the median age was 61 years. According to the colostomies indications, thirty one percent (3977) of the patients presented gastrointestinal symptoms, 20.3% (1398) were admitted due to postpone polyectomy surveillance, 28.3% (1949) 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 prepara-
tion, 48.4% used polyetilenglycol (PEG) 2L, 27.5% (1902) used sodium picosul-
phate/magnesium citrate, and 19.5% (1347) PEG4L. Digital chromoendoscopy was used for lesion seen in 4.7% (322) and panchorene in 9.1% (7). CO2 was used in 42% (2906) of the procedures. Colon cleansing was good-excellent in 80.1% (5512) and cecal intubation was performed in 95.8% (6590). 92.8% (6260) of the colostomies were performed under sedation, and the gastroenterologist was responsible for it in 80.1% (4995). The most used drugs for sedation were pro-
longed acting drugs 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% (359). 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 patients with adenomas 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 (AARD) was 29.5% and for colorectal cancer 4.1%.

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

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

References

PO221 ENDOSCOPIC SUBMUCOSAL DISECTION (ESD) IN THE RECTUM: FEASIBILITY IN AN EUROPEAN SINGLE CENTER CASE SERIES R.M. Lackermeyer1, M. Meiborg1, S. Schürle1, C. Aubele1, E. Tsegai-Eh1, M. Edelmann1, H. Kitterer1, S. Leykauf1, M. Hack2, G. Kleber3
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31st Department Of Medicine, Ostalb-Klinikum Aalen, Acad. Teaching Hospital, University of Ulm, Aalen/Germany

Introduction: While ESD in the upper GI tract is well established, it is as yet not

Aims & Methods: For the period 5/2012–1/2017 the first fifty-one consecutive

Results: Of the 51 consecutive patients treated, 31 had an indication of colorectal cancer and 20 had a diagnosis of colorectal cancer at the time of the procedure. The main indications for ESD were to remove adenomas in 31 patients (60.8%), to remove advanced adenomas in 7 patients (13.7%), and for malignant tumors in 13 patients (25.5%). The main indications for ESD were to remove adenomas in 31 patients (60.8%), to remove advanced adenomas in 7 patients (13.7%), and for malignant tumors in 13 patients (25.5%).

Case Series
1. Weiland T, Fehlker M, Gottwald T, Schurr MO. Performance of the OTSC System in the endoscopic closure of gastrointestinal fistulae - a meta-analy-

Conclusion: In our clinical practice setting, the polyprop removal rates were satisfac-
tory for the treatment of a single-session endoscopic examinations using cold polypropy-
ene.

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

References
1. Weiland T, Fehlker M, Gottwald T, Schurr MO. Performance of the OTSC System in the endoscopic closure of gastrointestinal fistulae - a meta-analy-

3. Raithel, M., Albrecht, H., Scheppach, W. et al. Outcome, comorbidity, hos-
Results: According to endoscopic or pathological 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 histological incomplete resection (n = 21), surgery or FTR was performed in 5 patients, endoscopic follow-up is pending in 17 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.

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

P0222 CLINICAL-USABILITY QUANTIFICATION OF A REAL-TIME POLYP DETECTION METHOD IN VIDEOCOLONOSCOPY
Q. Angermann1, J. Bernal2, C. Sánchez-Montes3, M. Hammami1, G. Fernández-Esparra1, O. Román1, J. Sánchez1, X. Dray3, A. Histace2
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2Center Computer Vision, Universitat Autònoma de Barcelona, Barcelona/Spain
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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. Colonoscopy is still the gold standard for colon screening though some polyps are still missed. This can be explained by technical limitations of colonoscopes (camera orientation, field of view, etc.), but also by human factors (such as experience). Several computational systems, being the majority still-frame-based, have been proposed to assist clinicians in this task [2] but, to the best of our knowledge, none of them is being used in the exploration room due to not meeting real-time constraints (40 ms max per image). In this abstract, we present a methodology to adapt and evaluate a real-time still frame-based method [3] to video analysis.

Aims & Methods: The still frame detection system used as reference [3] was based on an active learning method. We base the adaptation to video analysis on two aspects: (i) influence of the type of information used for polyp candidate characterisation, and (ii) introduction of spatio-temporal coherence. The former studies whether the combination of different types of information may lead to improve system performance whereas the latter fosters stability in the position and confidence classifications. Multivariate analysis showed that high confidence predictive value were of 81.2% and 82.3%, respectively, with 79.4% high confidence classification and 77.1%, respectively. For left polyps ≤5 mm (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
1. ACS2016 (2016) Key statistics for colorectal cancer. Online

P0223 RESECT AND DISCARD/DIAGNOSE AND DISREGARD STRATEGY FOR COLONIC POLYPS: ARE WE READY TO START IT?
Gastroenterologia, Anato Lusitano Hospital, Castelo Branco/Portugal

Contact E-mail Address: richardazevedo13@gmail.com

Introduction: The use of Narrow Band Imaging (NBI) technology for in vivo histological prediction of colorectal 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 polyps ≤5 mm (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
P0225 PERIOPERATIVE MANAGEMENT OF ORAL ANTIAGGREGANTS WITHOUT HEPARIN BRIDGING THERAPY FOR PATIENTS UNDERGOING ENDOSCOPIC SURGERY: A PILOT STUDY
S. Oono1, M. Kato2, M. Kato3, K. Matsuda3, M. Tsuda3, S. Abiko4, K. Ichimasa1, N. Toyoshima1, Y. Mori1, M. Misawa1, N. Ogata1, T. Kudo1, T. Hisayuki1, T. Hayashii1, K. Wakahara1, E. Hidakai2, T. Baba3, S. Hamatami4, F. Ichikawa
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2Department Of Gastroenterology, Hokkaido University Hospital, Sapporo/Japan
3Department Of Pathology, Jikei University School of Medicine, Tokyo/Japan
4Department Of Pathology, Jikei University School Of Medicine, Tokyo/Japan
Contact E-mail Address: onosho@med.hokudai.ac.jp

Introduction: Heparin bridging therapy (HBT) is recommended for patients administered anticoagulants who have a high thrombotic risk and who undergo a high bleeding-risk procedure such as endoscopic submucosal dissection (ESD) or endoscopic mucosal resection (EMR)1, 2. However, HBT is actually related to a high frequency of delayed bleeding3, 4.

Aims & Methods: Our aim is to analyze bleeding and coagulation markers in the perioperative periods of 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 continued administration of antiplatelet agents had delayed bleeding among the patients in whom administration of warfarin was continued within the therapeutic range (5.3%, 1/19). Six (15%) of the 40 patients in the DOAC group for whom the DOAC was not administered only on the day of the procedure had delayed bleeding, and 23.8% (5/21) of the patients who received HBT had delayed bleeding. No thrombotic events occurred from one month after the procedures. One patient in whom the DOAC was not administered on the day of the procedure became positive for TAT, F1 + 2 and DD after 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 considered a “de novo” pathway. Now, it is possible to presume the histology of colorectal lesions using magnifying endoscopy (pit pattern classification) and endocytoscopy (EC classification). We can observe not only the structural atypia but also the cellular atypia in living colorectal lesions.

References

P0226 ENDOSCOPIC FEATURE OF DEPRESSED TYPE COLORECTAL NEOPLASMA IN MAGNIFYING ENDOSCOPY AND ENDOCYTOSCOPY
S. Kudo1, K. Mochizuki1, T. Okumura1, S. Matsudaira1, Y. Koyama1, K. Ichimasa1, N. Toyoshima1, Y. Mori1, M. Misawa1, N. Ogata1, T. Kudo1, T. Hisayuki1, T. Hayashii1, K. Wakahara1, E. Hidakai2, T. Baba3, S. Hamatami4, F. Ichikawa
1Digestive Disease Center, Showa University Northern Yokohama Hospital, Yokohama/Japan
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Introduction: Colorectal cancers are generally recognized to develop from “polype” to “adenoma-carcinoma sequence” theory that has been in the mainstream of development of colorectal cancers. But recently the existence of many depressed-type cancers has been revealed, which are considered to emerge directly from normal epithelium, not through the adenomatous stage. This theory is called “de novo” pathway. Now, it is possible to presume the histology of colorectal lesions using magnifying endoscopy (pit pattern classification) and endocytoscopy (EC classification). We can observe not only the structural atypia but also the cellular atypia in living colorectal lesions.

Aims & Methods: The aim is to clarify the endoscopic characteristics of depressed-type colorectal neoplasms, demonstrating the validity of pit pattern diagnosis and EC classification. A total of 29,030 colorectal neoplasms excluding advanced cancers were resected endoscopically or surgically in our unit from April 2001 to December 2016. Of these, 17,763 lesions were low-grade dysplasia, 2922 were high-grade dysplasia and 1077 were submucosal invasive (T1) carcinomas. Among the developmental morphology classification, they were divided into 3 types: depressed, flat and protruded-type. We investigated the ratio of T1 carcinomas and the characteristics of depressed-type neoplasms concerning pit pattern and EC classification.

Results: The rate of T1 carcinomas in depressed-type lesions reached to 62.0%, meanwhile that in flat-type and protruded-type lesions was 3.3% and 2.8%, respectively. Within less than 5 mm in diameter, that was 10.6%, 9% and 0.04%, respectively. Most (93.0% and 93.1%) of the flat-type and protruded-type lesions showed typeIII or IV pit pattern corresponding to adenomas, whereas 91.3% of the depressed-type lesions were characterized by typeI, IV or V pit patterns corresponding to carcinomas. As for endocytoscopy, most of the flat-and protruded-type lesions showed EC2 corresponding to adenomas. In contrast, the depressed-type lesions were observed as EC3a (38.9%) and EC3b (58.0%) corresponding to invasive carcinomas.

Conclusion: This study revealed the diagnostic characteristics of depressed-type lesions. They show typically type IIS, VI or VN pit patterns in magnifying endoscopy, suggesting the pit pattern classification and EC classification is useful.
endoscopy and type EC3a or EC3b in endoscopy. These lesions tend to invade the mucosal 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

**COLONOSCOPY INDICATION INFLUENCE ON THE COMPLIANCE OF QUALITY INDICATORS**

<table>
<thead>
<tr>
<th>Indication</th>
<th>ADR (%)</th>
<th>OR (95%CI)</th>
<th>p-value</th>
<th>aOR (95%CI)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-polypectomy surveillance</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>
<td>&lt;0.001</td>
</tr>
<tr>
<td>FIT+</td>
<td>1.8 (10/550)</td>
<td>3.9 (1.4-10.8)</td>
<td>0.009</td>
<td>5.1 (1.6-15.6)</td>
<td>0.005</td>
</tr>
</tbody>
</table>

**TABLE 1 Continued**

<table>
<thead>
<tr>
<th>Indication</th>
<th>ADR (%)</th>
<th>OR (95%CI)</th>
<th>p-value</th>
<th>aOR (95%CI)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-polypectomy surveillance</td>
<td>5.6 (6/1275)</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

*p-value: significance level; aOR: adjusted Odds Ratio

**Conclusion:** The indication of colonoscopy has a very important influence on the different quality indicators such as detection rates of lesions.

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

### TABLE 2

**THERAPEUTIC ERCP USING A SHORT SINGLE-BALLOON ENTEROSCOPE IN PATIENTS WITH SURGICALLY ALTERED ANATOMY**

| Aims & Methods: We aimed to evaluate the usefulness and safety of the SpyGlass system in patients with surgically altered anatomy. Studies on similar patients with surgically altered anatomy who underwent therapeutic ERCP using a sSBE between August 2011 and February 2017 were included in this study. Patient anatomy consisted of Roux-en-Y anastomosis (R-Y) (n = 82), hepaticocholedochostomy (HJ) (n = 11), subhepatic preserving pancreatosplenectomy (SSPD) (n = 11). The indications for ERCP were choledocholithiasis (68: R-Y cases), malignant biliary strictures (20: R-Y 14, HJ 7, SSPD 4), intrahepatic stones (9: HJ 7, SSPD 2), and anastomotic stenosis (7: SSPD 5, HJ 2). The success rate of reaching the target site was 91% (95/104), and the overall technical success rate was 79% (80/104). Biliary interventions included 64 stone extraction (R-Y 55, HJ 5, SSPD 1), and 12 metallic biliary stent placement (R-Y 7, HJ 1, SSPD 4). Of 17 unsuccessful cases, nine with choledocholithiasis underwent surgical operation (R-Y 6, HJ 2, SSPD 1) and EUS-guided drainage was successfully performed in six with anastomotic stenosis (SSPD 3, R-Y 2, HJ 1). The two perforation cases required urgent operation but remaining eight cases were managed conservatively. The technical success rate and the adverse event rate were retrospectively evaluated.

**Results:** The success rate of reaching the target site was 91% (95/104), and the overall technical success rate was 79% (80/104). Biliary interventions included 64 stone extraction (R-Y 55, HJ 5, SSPD 1), and 12 metallic biliary stent placement (R-Y 7, HJ 1, SSPD 4). Of 17 unsuccessful cases, nine with choledocholithiasis underwent surgical operation (R-Y 6, HJ 2, SSPD 1) and EUS-guided drainage was successfully performed in six with anastomotic stenosis (SSPD 3, R-Y 2, HJ 1). The two perforation cases required urgent operation but remaining eight cases were managed conservatively.

**Conclusion:** Therapeutic ERCP using a sSBE in patients with surgically altered anatomy was considered to be safe and effective.

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

### TABLE 3

**USEFULNESS OF SPYGlass PERORAL CHOLANGIOSCOPY FOR THE DIAGNOSIS AND TREATMENT OF BILE-DUCT DISORDERS: EXPERIENCE FROM A LARGE-VOLUME CENTER**

| Aims & Methods: To assess the clinical efficacy and safety of the SpyGlass system for diagnosis and treatment of bile-duct disorders in a large-volume center. All patients undergoing SOC in our department between January 2013 and May 2016 were retrospectively identified from a prospectively collected database. The baseline characteristics, including age, gender, presenting symptoms, indication and others were recorded. Procedure-related parameters of SOC for detecting malignant lesions and the stone clearance rate were calculated.

**Results:** During the study period, a total of 68 patients underwent 78 SOC procedures: 26 (38.2%) with indeterminate strictures, 7 (10.3%) with indeterminate filling defects, 31 (45.6%) with difficult bile stones, and 4 (5.9%) with cystic lesions. SpyGlass was technically successful in 63 of 68 patients (92.6%). The mean total SpyGlass procedure time was 12 min. In patients with indeterminate biliary strictures, 6 cases of definite diagnosis (stones, varices) was made by SOC evaluation. Twenty patients underwent SOC-directed biopsy, and samples were adequate for histological diagnosis in 17 patients (85%). The preliminary accuracy of SpyGlass-directed biopsy to diagnose malignancy was 76%. For the patients with biliary stone, SpyGlass-guided holmium laser lithotripsy or electrohydraulic lithotripsy succeeded in 15 of 15 patients (100%). There were 6 procedure-related adverse events occurred (8.8%), and resolved uneventfully.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
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 indices, 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 choledocholithiasis (n=146, 50.7%). A therapeutic intervention was performed in 70.8% patients (n=204), including sphincterotomy (n=97), stone extraction (n=55), and stent insertion (n=52). Complications occurred for only 13 patients (4.5%), including 12 cases of post-ERCP pancreatitis and 1 case of bleeding. No severe pancreatitis, or perforation was noted.

Conclusion: Diagnostic and therapeutic ERCP is effective and safe in the children population, with the high rates of technical success and low rates of complication.

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

P0231 ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY IN PATIENTS WITH SURGICALLY ALTERED GASTROINTESTINAL ANATOMY: 11 YEARS’ EXPERIENCE AT A LARGE CENTER IN CHINA
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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 and high accuracy in their center from September 2005 to July 2016 were retrospectively reviewed. Data regarding to patients baseline characteristics, procedure-related details and adverse events was recorded and analyzed.

Results: A total of 304 procedures were performed in 236 patients, including 108 cases (45.8%) with Billroth II gastrectomy, 45 cases (19.1%) with Billroth I gastrectomy, 52 cases (22.0%) with hepaticoduodenostomy, 18 cases (7.6%) with esophagogastrotomy and 13 cases (5.5%) with Roux-en-Y reconstruction. The most common indication was cholelithiasis (58.1%, 137/236). The overall technique success rate of reaching the papilla was 90.8% (276/304), 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=23). The adverse event rate was 7.2% (17/236). Mild pancreatitis occurred in 3% (7/236) of cases, perforation occurred in 2.5% (6/236) of cases, and asymptomatic hyperamylasemia occurred in 1.7% (4/236) of cases.

Conclusion: ERCP can be performed in surgically altered anatomy patients with a high success rate.

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

P0232 IMPACT OF HIGH DEFINITION, NEAR FOCUS-IMAGING AND SYDNEY RECURRENCE TOOL (SERT) AFTER COLORECTAL ENDOSCOPIC MUCOSAL RESSECTION: A PROPENSITY SCORE ANALYSIS

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Introduction: Risk factors for colorectal adenoma recurrence after Endoscopic Mucosal Resection (EMR) such as size ≥20mm, high grade dysplasia, use of argon plasma coagulation (APC) and intraprocedural bleeding (IPB), have been well documented in literature. However, it is unknown if the latest generation dual-focus (DF) colonoscopes ability to visualize subtle residual neoplasia, has improved the rate of complete EMR.

Aims & Methods: We aimed to evaluate the efficacy of the newer 190 colonoscopes versus standard 180 colonoscopes for complete resection of lateral spreading lesions (LSL) ≥20mm. A secondary aim was to identify risk factors for recurrence and the applicability of the Sydney EMR recurrence tool (SERT score) in our cohort.

This was a single-center retrospective study of patients who underwent EMR with 180 or 190 colonoscope series from 2010 to 2016. Lesions ≥20mm resected in a piecemeal fashion and patients with a surveillance colonoscopy after index EMR were included. A propensity score approach with inverse probability weighting (IPW) was used to control potential confounders affecting adenoma recurrence. Each lesion was graded according to SERT score and associations with recurrence were analyzed.

Results: 291 patients met inclusion criteria for the study. The rate of adenoma recurrence at the EMR site was 23.3% for the 180 colonoscope cases and 25.2% for the 190 colonoscope cases. Odds ratio (OR) for recurrence with 190 series was 1.06 (p = 0.85). Adenoma size (p = 0.002) and concomitant need for supplemental APC (p < 0.001) were risk factors for recurrence. SERT > 0 lesions had a higher risk of recurrence during follow-up (OR 1.71, 95% CI 1.00–2.92; p = 0.048) and a higher cumulative incidence for recurrence. Conversely, SERT = 0 lesions reached a plateau for recurrence after 12 and 18 months in Kaplan Meier curves. Odds ratio estimates for 190 colonoscope effect on adenoma recurrence at different stages of adjustment.

Cumulative incidence of recurrence at SERT by SERT score in 291 lesions.

P0233 INCIDENCE AND RISK FACTORS FOR PANCREATITIS IN EMERGENCY ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY: A PROSPECTIVE MULTICENTER STUDY


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Disclosure of Interest:

Conclusion: In this study, recurrence was significantly associated with adenoma size and complementary use of APC for EMR. The use of the latest generation DF colonoscopes (CF-HQ190L/I) did not measurably affect adenoma recurrence at the EMR site 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: any 15–20 mm polypectomy snare, 7.5 mm rat tooth or tripod grasping forceps

Aims & Methods: This study aimed to identify the incidence and risk factors for PEP in emergency ERC. We performed a prospective study of 2078 cases undergoing diagnostic and therapeutic ERC in five Japanese institutions between April 2015 and May 2016. Exclusion criteria were active pancreatitis, cholecystectomy, choledochoduodenostomy, inability to approach a papilla, and inspection aimed at only the pancreatic duct (PD). Emergency ERC indicated unselected inspections performed within and outside duty hours in this study. PEP was considered when two of the following three conditions were met: (1) serum amylase level more than three times the upper limit of the normal range in each institution, (2) continued abdominal pain for over 24 hours, and (3) presence of pancreatitis findings on computed tomography. The first study involved comparison of the incidence of PEP and its characteristics between emergency and elective ERC. The second study involved determining the predictive risk factors for PEP in emergency ERC using univariate and multivariate analyses.

Results: A total of 1677 cases were enrolled in this study. Study 1> PEP developed in 20 of 429 cases (4.7%) from the emergency group and in 101 of 1248 cases (8.1%) from the elective group. The incidence of PEP was significantly lower in the emergency group than in the elective group (odds ratio [OR]: 0.56, 95% confidence interval [CI]: 0.32–0.92, P = 0.017). Endoscopic sphincterotomy, stone removal, papillary balloon dilatation, and intraduodenal ultrasound procedures were performed significantly more often in the elective group than in the emergency group (P < 0.001). Placement of a biliary stent was significantly more common in the emergency group than in the elective group. In addition, the procedure time was significantly longer (P < 0.001) and the number of endoscopists who had more than five years of experience was significantly higher (P = 0.04) in the elective group than in the emergency group. Study 2> Cases with no naïve papilla (n = 183) were excluded from the analysis of risk factors for PEP because no PEP was observed in these cases. Only cases with naïve papilla (n = 248) were analyzed. Univariate analysis showed that contrast injection into the PD (OR: 4.20, 95% CI: 1.64–10.80, P = 0.0028), more than four cannulation attempts (OR: 2.85, 95% CI: 1.00–8.09, P = 0.05) increased and placement of a biliary stent (OR: 0.028, 95% CI: 0.11–0.88, P = 0.009) decreased the risk of PEP in emergency ERC. Conclusion: The incidence of PEP was lower in emergency ERC than in elective ERC, and it was largely unaffected by the endoscopist’s experience and the procedure time. This may be associated with a tendency to avoid invasive procedures, and it is considered that only placement of a biliary stent contributes to a decrease in the development of PEP. Close attention should be paid for contrast injection into the PD, particularly when attempt of cannula for naïve papilla are required.

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

P0234 WALL-OFF NECROSIS (WON): OUTCOMES OF AN ALGORITHMIC APPROACH TO NECROSECTION

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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. Aim of this study was to compare the clinical outcomes of patients with WON treated by conventional EN versus an algorithmic approach that is tailored to the extent and location of WON. This observational study included 45 consecutive patients with WON who had suboptimal treatment response to ERCP-guided transmural drainage and subsequently underwent necrosectomy. The conventional technique using a diagnostic or therapeutic gastroscopy involved removal of necrotic debris using any 15–20 mm polypectomy snare, 7.5 mm rat tooth or tripod grasping forceps and/or forceps. Normal saline was used for intraprocedural irrigation and lavage of the necrotic cavity. The algorithmic technique, using a cap-fitted therapeutic gastroscopy, was tailored to the extent and location of the WON. While WON extending to the flanks and more proximate (<20 cm) to the abdominal wall were treated by percutaneous necrosectomy, those in close proximity to the stomach and without extension to the flanks were treated by transluminal EN. Adherent debris were removed using 15–25 mm round, braided-wire snares and non-adherent debris were removed using 15–30 mm oval snares. A large 14.9 mm diameter, rat tooth forceps were used for debridement when the necrotic debris were not amenable for snaring. The necrotic cavity was evacuated by sucking the debris within the gastroscopy cap using snares and/or forceps. In order to avoid frothing that obscures visibility, intra-procedural lavage of the necrotic cavity was performed using normal saline mixed with 120 mg gentamicin and 100 mcg with hydrogen peroxide was reserved for stabilizing the cavity at the end of the procedure. The primary outcome measure was to compare the treatment success and number of reinterventions performed between the two groups. Treatment failure was defined as death from underlying disease or need for open surgical necrosectomy.

Results: Of the 45 WON patients, 23 were treated using conventional techniques and 22 using the algorithmic approach. Treatment success was significantly higher for patients treated using the algorithmic approach, 100% vs 69.6%, p = 0.009. Of the 7 patients who had treatment failure in the conventional technique cohort, 6 required open necrosectomy and 1 died of multi-organ failure. The median number of reinterventions required to achieve treatment success was significantly lower for the algorithmic approach (1, IQR: 1–2) vs (2, IQR: 1–2), p = 0.003. Multivariable logistic regression analysis revealed that the algorithmic approach was the only variable associated with treatment success (OR = 6.04, 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.

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. Patients with PD are asymptomatic, but a few may present symptoms in the form of recurrent acute pancreatitis (RAP), chronic pancreatitis (CP) or pancreatitic-type pain. It is imperative to treat PD associated with RAP as early as possible to prevent it from developing CP. Unfortunately, to date, most PD-related studies have been concentrated on adults. Researches of PD in children are rare.

Aims & Methods: To evaluate the safety and efficacy of endoscopic retrograde cholangiopancreatography (ERC) 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 (ESCS). Patients of incomplete PD underwent biopsy papilla endoscopic sphincterotomy combined with dorsal duct stenting (BiESCS). ERCCP-related data, complications and other relevant data were collected. The long time follow up was conducted after removal of ductal stent, and then to observe children’s recovery, as well as their weight, growth and intelligence.

Results: A total of 227 pediatric ERCPs were performed for 117 pediatric patients during this period. Of which 24 were PD cases. The endoscopic detection rate of PD was 20.5%. Of the 24 patients, 12 were PD associated with RAP, among which 10 were complete PD and 2 were incomplete PD. A total of 21 therapeutic ERCPs were performed for these cases. All procedures were successful with 100% (21/21) of cannulation rate of the minor papilla. The mean interval of changing pancreatic dorsal duct stent is 3 months (from 2 to 6 months). ERCCP-related complications were mild with a rate of 9.5% (2/21). One was acute mild pancreatitis and the other was hyperamylasemia, both of which were managed conservatively. During follow up from 15 to 74 months (mean 33.9 months), all patients had pain relief with a relief rate of 100%, of which 10 were asymptomatic with no longer onset of acute pancreatitis. During follow-up, we observed no more dilation of dorsal ducts in all children and all presented normal in weight, growth, and intelligence.

Conclusion: The techniques of ECS and BiESCS under ERCP are safe and effective methods to handle PD associated with RAP in pediatric patients. It seems very vital for such children to undergo endoscopic interventions as early as possible in order to avoid developing CP.

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

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

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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) for full-text studies evaluating the efficacy and safety of EBS. All retrospective studies were included. The study population included both 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 (98%) in the no-EBS group versus 331/339 (97.6%) in the EBS arm (OR: 1.05; 95%CI: 0.42–2.63).

Early complications: The overall early AE developed in 43/392 (11%) of patients without EBS versus 68/339 (20.1%) of patients received EBS, with a significantly difference (OR: 0.55; 95%CI: 0.33–0.92). Post-ERCP pancreatitis (PEP) was no significantly different in the two groups: 24/392 (6.1%) in no-EBS group versus 17/339 (5%) in EBS group (OR: 1.33; 95%CI: 0.68–2.59). The bleeding was significantly different in patients without EBS: 0/351 patients in no-EBS group versus 15/298 (5%) in the EBS group (OR: 0.12; 95% CI, 0.03–0.45). The rate of duodenal perforation was not significantly different: 1/320 (0.3%) in no-EBS versus 4/260 (1.5%) in EBS (OR: 0.52; 95%CI: 0.19–2.88). Early cholangitis was significantly lower in patients who didn't receive EBS: 13/392 (3.3%) patients in no-EBS group vs 25/339 (7.4%) subjects received EBS, with a significantly difference (OR: 0.55; 95%CI: 0.33–0.92). Post-laparotomy and cholecystectomy in acute biliary pancreatitis. The Surgeon, 2016, 14(2):108.


Conclusion: EPS combined with pancreatic stent is a promising strategy to prevent recurrence of ARP due to biliary microthrombosis.

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

References

P0238 OUTCOME OF ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY IN PATIENTS WITH PERIAMPULLARY DIVERTICULUM

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Introduction: Pancreatic duct (PD) is frequently asymptomatic, usually encountered in patients undergoing endoscopic retrograde cholangiopancreatoigraphy(ERCP).

Aims & Methods: The aim of this study was to investigate the association of PD with bile duct stones, biliary cannulation success and different types of PD. A total of 1164 ERCP procedures were performed in 833 patients in a single center by single operator from January 2012 to October 2016 after excluding patients with transplant, emergency procedures. Out of 1164 ERCP procedure 49 patients were encountered with PD, they were compared with 635 controls without PD in terms of age, sex, CBD cannulation success and complications of ERCP.

Results: PAD is seen with advanced age, predominantly in female and frequently associated with bile duct stones. In without PAD group bleeding 0.6%, pancreatitis 0.7% and no perforation. In PAD group bleeding 2.8%, pancreatitis 2.2% and one small retroduodenal perforation 2.2% all managed conservatively. In PAD group bleeding 0.6%, pancreatitis 0.7% and no perforation.

Conclusion: PAD predominantly occurred in patients controls (82.3%) compared to PAD group (75.5%) p-value (0.039). (5) The incidence of late complications was 18.4% in EST group and 10.3% in EPS group (P=0.567). The efficiency in EST group and EPS group is 68.4% and 89.6% respectively (P=0.039). (5) The incident of late complications were 18.4% in EST group and 10.3% in EPS group (P=0.567).

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

Baseline Characteristics and Comparison of Findings

<table>
<thead>
<tr>
<th>Parameter</th>
<th>NON-PAD GROUP</th>
<th>PAD GROUP</th>
<th>P-VALUE</th>
</tr>
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<tbody>
<tr>
<td>Age(mean ±SD)</td>
<td>59.4 ± 15.6</td>
<td>52.7 ± 17.9</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>Sex (male/female)</td>
<td>21/28</td>
<td>315/320</td>
<td>NOT SIGNIFICANT</td>
</tr>
<tr>
<td>Patients with bile duct stones</td>
<td>n (number of patients) %</td>
<td>35 (71.4%)</td>
<td>210 (33.1%)</td>
</tr>
<tr>
<td>CBD cannulation (easy/difficult)</td>
<td>n (number of patients) %</td>
<td>35/14 (75.5%)</td>
<td>263/72 (82.3%)</td>
</tr>
</tbody>
</table>

Results: PAD identified in 49 (4.2%) cases, PAD type (1 inside the diverticulum) was found in 7 pts (14.3%), Type II (at edge/brim) in 34 pts (69.4%), Type II (adjacent to diverticulum) in 8 pts (16.3%). Patients with PAD had mean age 59.10 years (range 18 to 84 years) 17 were males and 32 females 28/49 cases. Patients with PAD had increased prevalence of gallstone/biliary stone disease compared with controls, 71.4%vs 33.1 % (p <0.01) compared with controls. 

Easy cannulation of CBD without difficulty (PRECU /Pancreatic cannulation/stent- ing) was more frequent in patients controls (82.3%) compared to PAD group (75.5%) p < 0.05. However, CBD clearance was same in both groups>90% (p value not significant) Incidence of complications in PAD group bleeding (2%), Pancreatitis (2%) and one small retroduodenal perforation (2%) all managed conservatively. In without PAD group bleeding 0.6%, pancreatitis 0.7% and no perforation.

Conclusion: PAD is seen with advanced age, predominantly in female and frequently associated with bile duct stones. In this case control study PAD did not appear to be a barrier for successful ERCP with acceptable complication rates.

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

P0237 ENDOSCOPIC PANCREATIC SPHINCTEROTOMY COMBINED WITH PANCREATIC DUCT STENT CAN EFFECTIVELY PREVENT RECURRENCE OF ACUTE RECURRENT PANCREATITIS CAUSED BY BILIARY MICROTHROMBOSIS — A SINGLE-CENTER STUDY FROM BEIJING, CHINA

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Introduction: Acute recurrent pancreatitis (ARP) refers to a clinical entity characterized by episodes of acute pancreatitis which occurs on more than one occasion. Biliary microthrombosis plays an important role in the etiologic of ARP. Bile sludge may induce acute pancreatitis as a consequence of transient papillary edema that can obstruct the pancreatic juice flow. The established treatments of ARP includes with ARP include endoscopic sphincterotomy(EST) and empirical cholecystectomy. However, EST may increase the morbidity of biliary reflux or cholecystitis recurrence. We hypothesized that endoscopic pancreatic sphincterotomy (EPS) can save the function of biliary sphincter and prevent the recurrence of ARP.

Aims & Methods: The aim of the study is to evaluate the effectiveness of EPS combined pancreatic duct stent for preventing ARP caused by biliary microthrombosis. 67 patients with ARP from 2005 to 2016 were diagnosed as biliary microthrombosis by endoscopic retrograde cholangiopancreatography (ERCP), bile microscopy or intraductal ultrasonography (IDUS). The whole was divided into two groups according to endoscopic therapy by EST or EPS with pancreatic stent. Rate of pancreatitis recurrence, early complication of post ERCP pancreatic duct stent (3 months after treatment) which included cholangitis, cholecystitis or cholelithiasis were compared between the two groups.

Results: (1) 38 and 29 patients were included in EST and EPS group, respectively. The mean age and follow-up duration of EST and EPS were 48.4 ±15.1 years, 45.7 ±36.5months and 45.6 ±15.2yrs, 24.1 ±36.3months, respectively. (vary from 2months to 115months). (2) The mean episodes of ARP in EST and EPS group before endoscopic therapy were 3.9 ±3.3 times and 7.9 ±11.8 times. (3) Four patients in EST group and 6 patients in EPS group suffered PEP after the endoscopic therapy (P =0.418). (4) 15 patients in EST group and 3 in EPS group suffered recurrent pancreatitis. The efficiency in EST group and EPS group is 68.4% and 89.6% respectively (P =0.039). (5) The incidence of late complications were 18.4% in EST group and 10.3% in EPS group (P=0.567).

Disclosure of Interest: All authors have declared no conflicts of interest.
C.W. Kim, J. H. Chang, J.H. Kim, T.H. Kim, I. S. Lee, and S.W. Han. Size compared to FC and provides a new sophisticated and easy to use equipment. Moreover DC technology, providing increased sensitivity and specificity for visual impression diagnosis of malignancy and successful therapy of biliary stones. Moreover DC has the ability to alter more often the initial ERC diagnosis or management compared to FC and provides a new sophisticated and easy to use equipment. No authors have declared any conflicts of interest.

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5. A. Theodoropoulou, I. D. Dimas, E. Vardas, M. Fragkaki, A. Mpitouli, E. Voudoukis, A244 BILE DUCT DISEASE OR TREATMENT OF BILIARY STONES

CHOLANGIOSCOPY IN PATIENTS REQUIRING EVALUATION OF P0239 COMPARISON OF DIGITAL VS FIBEROPTIC

ERCP FEATURES AND OUTCOME OF BIOPSIES WITH DIGITAL CHOLANGIOSCOPY VS FIBEROPTIC ERCP


Introduction: Since the emergence of the fiberoptic single-operator cholangioscopy, the sensitivity for detecting bile duct lesions has been increased and the management of difficult stones is facilitated, establishing its superiority over standard endoscopic retrograde cholangio-pancreatography and often altering the clinical management. Digital cholangioscopes provide higher-resolution imaging of the pancreatobiliary tract compared with the fiberoptic instruments. Aims & Methods: The aim of the present study was to assess the frequency of digital cholangioscopy (DC) to alter the diagnosis and clinical management of bile duct disease compared with fiberoptic cholangioscopy (FC). A retrospective review of 68 cases needing cholangioscopy, and which were performed in our department. Patients enrolled exhibited stenosis of the biliary tract (67.6%), stones (20.6%), primary sclerosing cholangitis (PSC 4.4%) or other rare cause for cholangioscopy (e.g. stent migration, guidewire passage). All patients underwent endoscopic retrograde cholangiography (ERC) before cholangioscopy. Aim of cholangioscopy was to confirm ERC diagnosis, obtain adequate biopsy specimens for histological evaluation and remove biliary stones. From 5/2009 to 3/2017 all cholangioscopies were performed with the fiberoptic scope. From 9/2015 to 3/2017 all cholangioscopies were performed with the digital scope.

Results: 30 women and 38 men with a mean age of 61 years underwent cholangioscopy. Fiberoptic cholangioscope was used in 39 cases and digital cholangioscope was performed in 29 cases respectively. Cholangioscopy-guided biopsies for malignancy were obtained in 11 and 15 cases respectively. In only one case of FC (9.1%) biopsy confirmed the endoscopic diagnosis, in contrast with 10 cases of DC-guided biopsies (66.7%) confirming the diagnosis. In 13 patients who underwent DC (44.8%) the initial diagnosis and clinical management was altered after cholangioscopy (e.g. cancer diagnosis, successful EHL lithotripsy), in contrast with 11 cases of FC (28.2%). Moreover it was unanimously felt by our staff that DC was an easier procedure compared to FC.

Conclusion: Our data suggest that DC has the capacity to increase the effectiveness of pancreatobiliary disease and recurrence of bile duct stones.

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

A244 References
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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 periampullary diverticula and papilla after EST, sedation dosage), ERC-related complications (bleeding, perforation, post-ERC pancreatitis, ERC pneumonia, death within 30 days after ERC procedure), anesthetic-related complications (blood pressure decrease, pulse reduction, respiratory depression).

Results: We examined 69 males (52.3%) and 63 females (47.7%). Women accounted for 78% of 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, and 7 cases observed in the super-elderly group were statistically significant (p < 0.001). Regarding comorbidities, chronic heart and renal failure were statistically dominant in the super-elderly group. However, no difference was seen in the frequency of other diseases receiving anticoagulant medication between the two groups. The causes of acute cholangitis were common in both groups with common bile duct stone (46% vs 46%), followed by malignant obstruction (9% vs 12%) and benign stenosis (0% vs 5%), but no difference was found. Regarding the ERC procedure, the examination time was longer in the super-elderly group (37.5 ± 28.1 min vs 29.2 ± 24.0 min, p = 0.044), but there was no difference in the procedure success rate (93% vs 97%, p = 0.249) and the presence of periampullary diverticula. The patients were sedated using midazolam (MDZ) plus pentazocine (PTZ). The amount of sedation improved in the super-elderly group (MDZ: 2.2 ± 3.3 mg vs p < 0.001, PTZ: 3.1 v 5.4 mg, p = 0.005). Regarding (i) ERC-related and (ii) anesthesia-related complications, these were higher in the super-elderly group [(i) 15% vs 9%, p = 0.293, (ii) 17% vs 7%, p = 0.004]. Post-ERCP morbi-mortality.

Disclosure of Interest: All authors have declared no conflicts of interest.
included 20 patients with low-grade dysplasia (DBG) or high grade (DHG) lesions, performed by a dedicated gastrointestinal pathologist, in relation to a residual adenomatous bud after endoscopic ampullectomy for ampullary adenoma. The lesions should extend to a maximum length of 20 mm in the CBD. Endoscopic retrograde choledochoscopy (ERCP) was performed with the Push 369 EndoHPB probe (EMcision, UK) (effect 8, power 10 Watts, 30 s). Biliary + pancreatic stent were placed at the end of the procedure. The primary endpoint was the rate of residual neoplasia (eg, DBG, DHG or invasive carcinoma) at 1 year after treatment. Secondary endpoints included neoplasia at 6 months after treatment; 2) rate of surgery at 12 months; 3) adverse events.

Results: The mean age (±SD) was 67 years (±11), with 12 men and 8 women. RFA was performed on average (±SD) 1.9 years (±3.5) after ampullectomy. The mean resected ampullary adenoma size (±SD) was 24.9 mm (±10.2), and 7 patients had adjacent duodenal mucosectomy at the time of ampullectomy. The histology of the resected ampullary adenoma was DBG for 7 patients, DHG for 12 patients, and in situ carcinoma for 1 patient. Lateral margins were negative in all the patients. CBD recurrences were diagnosed predominantly on ERCP and/or endoscopic ultrasonography surveillance procedures with an estimated mean infiltration height (±SD) of 11.2 mm (±4.5). The passage of the RFA probe was judged to be easy in 100% of cases with visibility of the radio-opaque markers judged satisfactory to very satisfactory in 80% of the cases. All patients included had RFA without any technical problems. All patients had biliary stent (4 SEMS 10 mm, 16 plastic stents 10 French) implanted following RFA and 5 (25%) had a pancreatic stent. The residual rate of DBG, DHG, invasive carcinoma at 6 months and at 12 months after treatment were 25% (5/20, DBG, carcinoma) and 45% (9/20, DBG, carcinoma) respectively. The adverse events were as follows: 4 benign pancreatitis all medically treated, 2 patients had angioplasty requiring biliary stent replacement, 1 patient had an episode of unexplained spontaneously resolved abdominal pain (normal CT scan, colonoscopy and biological tests). At 12 months, one patient presented with a biliary stricture resolved by dilatation and a calibration biliary stent.

Conclusion: In conclusion, 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.

Introduction: Simulation-based training has become an important pillar in competence-based learning in medicine, especially in training novice endoscopists. Currently, there is limited data available in medical education regarding simulation-based training as an ideal platform for simulator-based training due to its technical complexity. The aim of our study was to determine the expert validity of the Costamagna ERCP Trainer as a very realistic training model by ERCP experts. Expert participants with more than 2500 ERCPs lifetime were invited by experts. Expert participants with more than 2500 ERCPs lifetime were invited by experts.

Aims & Methods: The National Health Service Litigation Authority (NHSLA) database in U.K. was searched using a Freedom of Information request (F/2405) from 2010/11 and 2014/15. The terms "Gastroscopy", "Sigmoidoscopy", "Colonoscopy", "PEG" and "ERCP" were used to search the database. They were then analysed for procedure type, characteristics and outcomes. StatsDirect statistical software was used for statistical analysis.

OUTCOME OF ENDOSCOPY CLAIMS

<table>
<thead>
<tr>
<th>PROCEDURE</th>
<th>OPEN SUCCESSFUL UNSUCCESSFUL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gastroscopy</td>
<td>10</td>
</tr>
<tr>
<td>PEG</td>
<td>12</td>
</tr>
<tr>
<td>Sigmoidoscopy</td>
<td>17</td>
</tr>
<tr>
<td>ERCP</td>
<td>22</td>
</tr>
<tr>
<td>Colonoscopy</td>
<td>50</td>
</tr>
</tbody>
</table>

Results: A total of 291 claims were notified to the NHSLA during this period. 107 (36.7)% of claims still remain ‘open’. Analysing outcomes by procedures reveals a success rate of 44%, 44%, 37%, 36% and 34% (rounded up to the nearest whole figure) for Gastroscopy, PEG, Sigmoidoscopy, ERCP and Colonoscopy claims respectively. There is no statistical difference between the proportions comparing Gastroscopy and Colonoscopy (StatsDirect software used).

Conclusion: A significant number of claims remain open leading to concern and worry among endoscopists. The impact on practitioners after a successful claim is unknown and merits further investigation. Procedures considered as dangerous like ERCP and Colonoscopy have the least successful claims. It is imperative that clinicians remain vigilant. Performing Gastroscopy is dangerous and so is undertaking a Percutaneous Endoscopic Gastrostomy. Endoscopists should tighten their approach to all procedures.

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

Introduction: This study aims to recognize the morphology of intra-ampullary choledochocele (IAC) with contrast medium for evaluating technical difficulty in ERCP. N. Nishino

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Introduction: Choledochocele has been rarely recognized. We focus on intra-ampullary choledochocele (IAC). We had experienced some cases with IAC as refractory access to bile duct (BD). IAC has small cyst within ampulla regulated by Oddi’s sphincter, so the BD axis has changed via IAC. The cases with IAC would require a high technical skill for axis alignment or alternative strategy such as infundibulotomy or precut. We propose advantage of conventional ERCP (cERCP) with contrast medium, which provides images of IAC and leads to the elucidation of the reason for difficulties in cannulation. The current study is a retrospective consecutive case study that is conducted in a single facility, with a study period of 8 years. Our strategy for ERCP was carried out with the contrast medium injected via a catheter, but without guide wire (GW) seeking. Intra-ampullary bifurcation was particularly visualized with the contrast medium, and X-ray images were magnified sequentially 5–10 times each. The eligibility criteria were; it must be naïve papilla and both of BD and PD must be visualized. The following factors were evaluated; ampulla shape, number of orifices, angle of intra-ampullary bifurcation and presence of IAC. The Location, size and shape of IAC were observed. The requirement of GW placement on PD to access BD was evaluated. The shapes of ampulla were divided into three groups: long nose (L/N), meaning a long protrusion, Dome (D), meaning a hemisphere and flat (F). The IAC location were classified into BD (Ab), PD (Ap) and common channel (Ac). The choledochocele shapes were divided into three groups: spindle (Sp), sphere (Sh) and oval (Ov). IAC was also recognized on magnetic resonance cholangiopancreatography (MRCP). We analyzed our results of image database with descriptive epidemiology.
Results: There were cases of 1223 naïve papilla out of 2226 cases in total. The success rate to access BD with naïve papilla was 97.3% (1195/1223) and overall post-ERCP pancreatitis (PEP) was 1.3% (29/2226). The eligible patients were 908 (505 male and 403 female), among whom IAC was identified in 6.0% (54/908). The prevalence of IAC in the L:N, D and F types were 9.5% (48/524), 1.2% (4/345) and 0.8% (1/137) respectively. IAC was significantly higher in the L:N (p < 0.01) and F (p < 0.05) types than in the D type. The choledochoele shapes of Sp, Sh and Ov 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%, respectively, in Ac. In Ab, cholangitis 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: Choledochoele is rarely seen even on eERCP, in addition the visually seen on MRCP in 10% (3/30).

P0245 ENDOTHERAPIES FOR DUCT-TO-DUCT BILIARY ANASTOMOSTIC STRicture AFTER LIVER TRANSPLANTATION (BASYLS STUDY GROUP): INTERIM ANALYSIS AND MEDIUM-TERM OUTCOMES OF A RETROSPECTIVE NATIONWIDE ITALIAN SURVEY

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7Digestive Diseases Institute, University of Nantes Institute of Digestive Disease - Digestive Diseases Institute, University of Nantes/France
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Introduction: EUROS-guided Cysto-Enterostomy (EUCE), technique indicated for drainage of symptomatic pancreatic pseudocysts and other peri-enteric fluid collections, requires specific skills for which dedicated models are needed. Based on a compact EASE model (Active Simulating for Interventional Endoscopy) we developed two ex-vivo porcine models of retrogastric cysts and evaluated learning performance within the frame of a structured training program.

Aims & Methods: The first model was made of porcine colon (i.e. “natural cyst”), and the second one was made with an ostomy bag (i.e. “artificial cyst”). All procedures were achieved with EUCE scope under fluoroscopy. Both models were evaluated prospectively over a 2-days session involving 14 students and 5 experts. Results: “Natural cyst” and “artificial cyst” were prepared respectively within 10 and 16.5 minutes (p = 0.07). More than 10 EUCE procedures were done in each model. Model grading (analytic scale) showed no significant difference for primary endpoint of global satisfaction (p = 0.60). Regarding secondary endpoints, difference was not significant for overall impression of realism (p = 0.75) whereas it was significant favoring “artificial cyst” in terms of ability to teach procedural steps (p = 0.01) and ease of puncture (p = 0.03) because of less elasticity. Moreover, experts considered it easy to improve students’ proficiency superior with “artificial cyst” (p = 0.008).

Conclusion: Both “artificial and natural cysts” are efficient for EUCE training in terms of global satisfaction. However, the “artificial cyst” model appears to make procedure easier and to teach procedural steps improving students’ proficiency. Larger applications of this model are needed to validate as a standard of training.

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

P0247 A COMPARATIVE STUDY OF SUCTION METHODS DURING ENDOCOPIC ULTRASOUND-GUIDED FINE-NEEDLE ASPIRATION (CONVENTIONAL SUCTION VERSUS CAPILLARY SUCTION)

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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-to-duct AS in 2013, procedure related complications and medium-term outcome results in Italy. A questionnaire was sent to the Endoscopy Units working with Italian Liver Transplantation Centers (BASALT study group).

Results: At present sixteen of the 19 Units (84%) returned the questionnaire. Complete endotherapy data and follow-up are available for 182 pts. One-hundred and two patients have been treated with plastic multistenting (PM), 27 with fully covered SEMS and 53 with single stenting (SS). Radiological success was achieved in 144 pts (79%), i.e. 86% of PM, 89% of fully covered SEMS and 60% of SS (p < 0.01 vs PM). Recurrence occurred in 31 pts, i.e. 21% of pts in whom radiological success was achieved: 11% of PM (p < 0.001 vs SEMS and p < 0.05 vs SS), 41% of fully covered SEMS and 17% of SS. After failure of first-line endotherapy (36) or recurrence (31), patients were re-treated with endotherapy (75%), surgery (21%) or percutaneous balloon dilation (3%). One patient dropped out because of death unrelated to endotherapy. Second-line endotherapy was PM for 26%, fully covered SEMS for 52% and SS for 22% of pts and radiological success was achieved in 82% of them (in 86%, 89%, and 66% with PM, SEMS and SS respectively). Procedure-related complications occurred in 7.8% (51/665), i.e. 2.6% pancreatitis (1 severe leading to death), 4.1% cholangitis and 0.9% bleeding. Overall clinical success was achieved in 85% after a median i-up 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.
Conclusion:

USING THE CELL BLOCK METHOD WITHOUT RAPID ON-SITE has been shown to be efficient for diagnosis of pancreatic masses. Only with

Introduction:

There is a need to establish more efficient method for better diagnostic accuracy is an established procedure for obtaining a pathological specimen. However,

Results:

EUS-FNA, surgical specimen evaluation, results of other diagnostic investiga-

Conclusion: Capillary suction was effective in the EUS-FNA sampling and associated with less contamination with blood, but conventional suction is recom-

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.
P0251 A PROSPECTIVE COMPARATIVE STUDY OF EFFICACY OF EUS GUIDED FNA VERSUS ERCP GUIDED BRUSH CYTOLOGY 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 was used up till now and also intraductal biopsies were used. The yield was hardly around 60% using all together. We started doing EUS localization of these difficult to identify distal CBD masses and took FNA from them. We devised a protocol to see the results of EUS FNA and brush cytology in the diagnosis of these masses.

Aims & Methods: We aimed to study the efficacy of EUS guided FNA for attaining tissue from distal CBD masses and comparing it to ERCP guided brush cytology from the same masses. 56 cases with distal bile duct mass with obstructive jaundice in the last 3 years were taken for the study. The protocol we followed First - EUS was done using a linear echoendoscope, mass identified and obstructive jaundice in the last 3 years were taken for the study. The protocol we followed First - EUS was done using a linear echoendoscope, mass identified and obstructive jaundice in the last 3 years were taken for the study. The protocol we followed First - EUS was done using a linear echoendoscope, mass identified and obstructive jaundice in the last 3 years were taken for the study. The protocol we followed First - EUS was done using a linear echoendoscope, mass identified and obstructive jaundice in the last 3 years were taken for the study. The protocol we followed First - EUS was done using a linear echoendoscope, mass identified and obstructive jaundice in the last 3 years were taken for the study. The protocol we followed First - EUS was done using a linear echoendoscope, mass identified and obstructive jaundice in the last 3 years were taken for the study. The protocol we followed First - EUS was done using a linear echoendoscope, mass identified and obstructive jaundice in the last 3 years were taken for the study. The protocol we followed First - EUS was done using a linear echoendoscope, mass identified and obstructive jaundice in the last 3 years were taken for the study.

Results: Total number of cases 56 Age (range) 57.2±13.6 Male to Female 40:16 Total Sedum Biulin (mg/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 (2to 5). Positive diagnosis obtained with FNA 47 (83.9%). Positive Diagnosis obtained by brush 34 (60.7%)

Diagnosis in Positive Cases

<table>
<thead>
<tr>
<th></th>
<th>FNA (47)</th>
<th>Brush Cytology (34)</th>
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<tbody>
<tr>
<td>Malignancy</td>
<td>38 (80.8%)</td>
<td>23 (67.6%)</td>
</tr>
<tr>
<td>Suspicious Of Malignancy</td>
<td>5 (10.6%)</td>
<td>7 (20.5%)</td>
</tr>
<tr>
<td>Benign</td>
<td>4 (8.5%)</td>
<td>4 (8.5%)</td>
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</tbody>
</table>

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.

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P0253 TRANS AORTIC ENDOSCOPIC ULTRASOUND GUIDED FNA IN THE DIAGNOSIS OF LUNG CANCERS AND MEDIASTINAL LYMPH NODES

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Introduction: Obtaining a tissue diagnosis from a lung tumour or a mediastinal lymph node located lateral to the aorta (para-aortic) is a diagnostic challenge because of the interposition of the aorta. Invasive surgical procedures like mediastinotomy, thoracotomy, or video-assisted thoracic surgery is required for the diagnosis of these lesions. Lymph node stations immediately anterior to the aortic arch and lateral to the descending aorta are difficult to access. Lymph nodes on the “far-side” of major blood vessels can be visualized by endoscopic ultrasound(EUS), however Fine needle aspiration(FNA) is avoided due to concern for bleeding complications. Tumours and mediastinal lymph nodes located in the para-aortic region can easily be visualized by esophageal EUS, because the aorta provides an excellent medium to transfer ultrasound waves.

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 likelyhood of have a distal CBD cholangiocarcinoma.

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

References

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P0252 RANDOMIZED TRIAL COMPARING THE LUMEN-APPOSING METAL STENTS (LAMS) AND PLASTIC STENTS FOR EUS-GUIDED DRAINAGE OF WALLOWED-OFF 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 symptom 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 [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 followed by LAMS removal if the WON had resolved. After protocol amendment, no difference in stent-related adverse events was observed between the cohorts (LAMS 6.5 vs. plastic 6.9%, p = 0.94). Also, there was no significant difference in treatment success, SIRS resolution, clinical adverse events, readmissions or length of hospital stay between the cohorts (Table).

<table>
<thead>
<tr>
<th></th>
<th>LAMS (n = 31)</th>
<th>Plastic stents (n = 29)</th>
<th>p-value</th>
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</thead>
<tbody>
<tr>
<td>Procedure duration (mins):</td>
<td>Median [IQR] 15 (8–25) 42.5 (21–55)</td>
<td>&lt;0.001</td>
<td></td>
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<tr>
<td>Resolution of pre-intervention SIRS (%):</td>
<td>44.4</td>
<td>69.2</td>
<td>0.38</td>
</tr>
<tr>
<td>Length of hospital stay (days):</td>
<td>Median [IQR] 3 (0–5) 3.5 (2–11)</td>
<td>0.16</td>
<td></td>
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<tr>
<td>Treatment success (%):</td>
<td>96.3</td>
<td>88.0</td>
<td>0.34</td>
</tr>
<tr>
<td>Adverse events (%):</td>
<td>Overall</td>
<td>Stent-related</td>
<td>Other</td>
</tr>
<tr>
<td>----------------</td>
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<tr>
<td>41.9</td>
<td>32.3</td>
<td>6.9</td>
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<td>20.7</td>
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<tr>
<td>9.7</td>
<td>13.8</td>
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</tr>
<tr>
<td>No. of reinterventions (n):</td>
<td>Median [IQR] 1 (1–2) 1 (1–2)</td>
<td>0.78</td>
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<tr>
<td>Readmissions (%):</td>
<td>29.0</td>
<td>34.5</td>
<td>0.78</td>
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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

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A248

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Aims & Methods: We aimed to evaluate the feasibility, yield, and safety of EUS-guided pancreatic fluid collections drainage. We undertook a retrospective case series of 12 consecutive patients with suspected lung cancer or tuberculosis who underwent transaortic FNA during a study period of 7 years. In all cases, the para-aortic lesion was the only site suspicious for lung cancer/tuberculosis (other lesion/lymph node if present were negative). Based on CT/PET imaging, a transesophageal FNA performed through the aorta was considered as the only option to diagnose or stage these patients by means of a minimally invasive procedure. Seven patients had left-sided lesions, 4 were larger than 30 mm. Four were located in left lower lobe and three in left upper lobe. Four patients have enlarged para-aortic lymph nodes (mean size 18 mm, range 8–22 mm), suspicious for IASLC stations 5 (n = 1) and 6 (n = 5). One patient had anterior mediastinum mass. EUS was performed with a linear echoendoscope. All aspirations were obtained under real-time US guided FNA by using a 22/25-gauge needle. A single real-time FNA of the lung mass or lymph node was performed. The para-aortic area was observed on EUS for 5 minutes to assess for immediate procedure-related complications.

Results: The final diagnosis was known in 11 patients (5 non-small-cell lung carcinoma [NSCLC], 2 small-cell lung carcinoma [SCLC], 3 tuberculosis and one thymolipoma). EUS-FNA established diagnosis in 9 of 12 patients (75%) (4 NSCLC, 1 SCLC, 3 tuberculosis and one thymolipoma). One aspirate revealed reactive nodal tissue, and one demonstrated nonrepresentative material. One procedure was abandoned due to complication. Three patients in whom diagno- sis was not established by transaortic FNA underwent subsequent surgical stenting (1 thoracotomy, 1 mediastinotomy, and 1 VATS), and malignancy was found in 2 of the 3 patients. Trans aortic FNA was found to be safe. In one patient, EUS images after FNA were suspicious for a small para-aortic hema- toma. This patient recovered without any adverse event.

Conclusion: This study demonstrates the feasibility and probable safety of single EUS guided transaortic aspiration in para-aortic lesions. The diagnostic yield is 75 percent. Clearly, further study and very careful selection by expert EUS operators is needed before this procedure can be routinely recommended. Advantages of this procedure include day care procedure, lower invasive than surgical procedures, low cost, good diagnostic yield and can be performed in poor surgical candidate. Limitations includes single centre study, require EUS expertise, more data is required. At present, Transaortic FNA should only be performed in the absence of alternative minimally invasive diagnostic procedures.

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

PO254 ULTRASOUND-GUIDED ENDOSCOPIC TRANSGASTRIC DRAINAGE OF PANCREATIC FLUID COLLECTIONS

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Introduction: Ultrasound-guided endoscopic transgastric drainage (EUSTD) of pancreatic fluid collections (PFCs) by using double-pigtail plastic stents (DPSS) requires placement of multiple stents and can be restricted by inadequate drainage and leakage risk. Recently, the use of fully covered self-expanding metal stents (FCSEMSs) has been reported as an effective alternative.

Aims & Methods: This was a single-centre retrospective study (2012–2016) on 67 patients with stents (FCSEMSs) has been reported as an effective alternative.

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

PO255 COMPARISON OF NATURAL COURSE VERSUS EUS-GUIDED ETHANOL ABLATION FOR PANCREATIC CYSTIC LESIONS

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Introduction: Histological examinations and immunohistochemical stains (IHC) are necessary for the differential diagnosis of gastrointestinal subepithelial lesions (SELs). Endoscopic ultrasound-guided fine needle biopsy (EUS-FNB) is the primary modality in the diagnosis of SELs, but still has limited accuracy. A new 20 gauge (G) biopsy needle with a core-trap technology (EchoTip ProCore®, Cook Medical) has been developed with a large core size and enhanced flexibility.

Aims & Methods: The aim of this multicenter study was to determine the feasibility, efficacy and safety of EUS-FNB with the new 20G needle in diagnosing SELs. Data retrieved from a prospectively collected database at five medical centers were analyzed and all consecutive patients with SELs undergoing EUS-FNB with the 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. Minimum number of passes required to reach a diagnosis was 2.2 (range 1–4). The definitive diagnosis with full histological assessment including IHC was obtained in 88% (44/50) of the patients. Diagnosis of EUS-FNB showed 36 (72%) malignant SELs (32 GISTs, 1 metastasis from breast cancer, 1 leiomyosarcoma, 1 carcinoid, 1 SEL-like adenocarcinomas), 8 (16%) benign SELs (3 leiomyomas, 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 58.1–100), and 62% (95%CI 27.7–84.8), respectively. No major complications requiring additional care have been 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


between the two groups was applied in order to minimize the effect of selection bias. The success rate of reaching the biliary anastomosis in patients with BA after LDLT was significantly lower than other patients (p < 0.01). There was no significant difference between the success rate in the patients over or under 13 years at the time of ERCP (50% vs 56%, p = 0.70). The success rate was lower in patients who underwent initial surgery as an infant (Kasai hepatoportoenterostomy) than in those past infancy (54% vs 88%, p < 0.01). When reaching the biliary anastomosis is successful, the success rate of cannulation in the patients after LDLT is high (92%). The success rate for reaching the biliary anastomosis in patients with BA after LDLT is significantly lower than other patients. The age at the time of ERCP did not affect the success rate of reaching the biliary anastomosis, but the success rate was lower in patients who underwent their initial surgery as infants. Disclosure of Interest: All authors have declared no conflicts of interest.

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.

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 needles and a VIVA combo™ generator (TaeWoong Medical, Gimpo city, Korea) were used for the procedures. Three kinds of RFA needles (10-, 15-mm, and 20-mm exposed tips) were used. After the echoendoscope was advanced to the stomach, the RFA needle was inserted into the surface of the left lobe. EUS-RFA was performed at 340–W for 5–6 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 was 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

P0258 THE SUCCESS RATE OF DOUBLE BALLOON ENDOCOPIC CHOLANGIOGRAPHY IN PATIENTS WHO UNDERWENT THEIR INITIAL SURGERY AS INFANT IS SIGNIFICALLY LOWER THAN OTHER PATIENTS

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Introduction: To evaluate the success rate of double-balloon endoscopic retrograde cholangiography (DBERC) to reach the anastomosis in patients with surgically altered gastrointestinal anatomy.

Aims & Methods: We review 346 patients with surgically altered anatomy who underwent DBERC from April, 2002 to December, 2016 (47 patients with biliary atresia (BA), 23 with living donor liver transplantation (LDLT), 33 with LDLT with BA, 45 with biliary resection and choledochojejunostomy, 111 with gastric resection and Roux-en-Y bypass, 48 with gastric resection and Billroth-Ileum, 18 with pylorus-preserving pancreaticoduodenectomy, and 42 others). The mean age was 30.9±17.1 years. Four patients had previous surgery (hemi-hepatectomy (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 causing 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.

Results: The success rate for reaching the biliary anastomosis (or papilla of Vater) in all 346 patients (66.0±(3–91)) was 83%. The rate in 47 patients with BA after LDLT (12.0±(3–39)) was 57%. In the remaining 299 patients the rate was 87%.

Conclusion: In conclusion, the success rate of reaching the biliary anastomosis in patients with BA after LDLT was significantly lower than other patients (p < 0.01). There was no significant difference between the success rate in the patients over or under 13 years at the time of ERCP (50% vs 56%, p = 0.70). The success rate was lower in patients who underwent initial surgery as an infant (Kasai hepatoportoenterostomy) than in those past infancy (54% vs 88%, p < 0.01). When reaching the biliary anastomosis is successful, the success rate of cannulation in the patients after LDLT is high (92%). The success rate for reaching the biliary anastomosis in patients with BA after LDLT is significantly lower than other patients. The age at the time of ERCP did not affect the success rate of reaching the biliary anastomosis, but the success rate was lower in patients who underwent their initial surgery as infants. Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
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and injected with cyanoacrylate glue. There were no haemorrhagic or embolic complications with this technique. A 3D model of a congenital arterial cyst, which was treated successfully with antibiotics. All patients underwent DBEs via the anterograde route and 1 patient required bi-directional DBE for treatment of both proximal and distal SBV and another patient required a 2nd anterograde DBE for treading of further patent proximal SBV. At 30-day follow-up post-therapy, only 1 patient had 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 are not feasible.

Disclosure of Interest: E. Vlachou: I have received a research & education grants from Fujifilm & Aquilant Medical. E.J. Despott: I have received a research & education grants from Fujifilm & Aquilant Medical. All other authors have declared no conflicts of interest.

P0261 MAGNIFYING NARROW-BAND IMAGING FINDINGS EFFICACY FOR INFLAMMATORY ACTIVITY EVALUATION IN SMALL INTESTINAL CROHN'S DISEASE WHEN USING NEWLY DEVELOPED MAGNIFYING ENTEROSCOPY: A PILOT STUDY

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Introduction: The development of balloon enteroscopy and capsule endoscopy has made an endoscopic evaluation of the small intestine possible in clinical practice. The usefulness of magnifying endoscopy has already been reported in observing the pharynx, esophagus, stomach and colon. A single-balloon enteroscopy (SBE) with 80x magnification has been recently developed.

Aim & Methods: The aim of this pilot study was to assess the efficacy of narrow-band imaging (NBI) magnifying findings for evaluating the severity of inflammation in small intestinal crohn’s disease (CD). The study was conducted in Showa University Northern Yokohama Hospital. We included CD patients who underwent enteroscopy with magnification from September 2013 to February 2015. NBI images and a biopsy specimen were obtained from small intestinal mucosa for CD patients with use of SBE (Y-0007, Olympus, Tokyo).

Results: Twenty-four patients were enrolled. There was a correlation between magnifying NBI findings and the histological assessment (Spearman’s r = 0.549). The sensitivity, specificity, positive predictive value, negative predictive value, and accuracy of magnifying NBI findings for diagnosing acute inflammation were 88.2%, 71.4%, 88.2%, 71.4%, and 83.3%, respectively.

Conclusion: The NBI magnifying findings in the small intestinal mucosa had a correlation with histological inflammation and could help in distinguishing between active and inactive CD.

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

P0262 SINGLE-INCISION LAPAROSCOPIC-ASSISTED DOUBLE BALLOON ENTEROSCOPY: A NOVEL TECHNIQUE TO MANAGE SMALL BOWEL PATHOLOGY

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Introduction: Double balloon enteroscopy (DBE) has revolutionised the diagnosis and treatment of small intestinal conditions. However, even in expert hands, deep small bowel (SB) insertion can be challenging, especially in patients with a history of abdominal/pelvic surgery. Moreover, if the findings at DBE are not amenable to endoscopic therapy, a further surgical procedure is usually required to provide a definite treatment. Laparoscopic-assisted DBE (LA-DBE) using a standard multi-port technique has previously only been reported in a small series of 3 patients with Peutz–Jeghers Syndrome (PJS).1

Aims & Methods: This case series reports the development of LA-DBE using single-incision laparoscopic surgery (SILS) applied to a wide range of clinical indications. Retrospective review of LA-DBE procedures performed in a single tertiary centre over a 6 year period. Demographics, indication, findings, diagnosis and therapeutic interventions were recorded. Completion, complication rates and hospital length of stay were also captured.

Results: 17 procedures were performed over 6 years in 17 patients who had failed standard DBE. Mean (range) age was 40 (17-73) and 41% of patients were male. The enteroscopic approach was oral in 13/17 patients and rectal in 4/17. Laparoscopic approach was standard (multiport) in the first 4 cases. SILS was then used in all subsequent patients (13/17). The mean (range) procedure time was 147 (84-210) mins. Indications were PJS (n = 10), suspected submucosal/ intramural lesion at small bowel imaging (n = 5) and obscure gastrointestinal bleed (OGIB) with vascular abnormalities seen at capsule endoscopy (n = 2). In 15/17 procedures the target pathology was reached using laparoscopic assistance only and 1/17 was converted to intraoperative enteroscopy (IOE). In 1/17 the suggested pathology at magnetic resonance enterography (MRE) was not identified. Therapy was applied in 15/17 (88%) cases. 7 underwent endoscopic therapy of which 6 polypectomy and 1 ablation with argon plasma coagulation (APC). 4 required limited SB resection and 4 underwent both endoscopic polypectomy and small bowel resection for a second polyp that could not be removed endoscopically. A total number of 57 polyps were removed with the largest measuring 40 mm. The range of length of surgically resected SB was 4–17 cm. Diagnoses were PJS polyps (n = 9), neuroendocrine tumour (NET) (n = 2), PJS polyps and NET (n = 1), traumatic arteriovenous malformation (n = 1), angioectasia (n = 1), inflammatory polyp (n = 1), leiomyoma (n = 1), Meckel’s diverticulum (n = 1). Median length of stay post procedure was 2 (1–19) days. 8/17 patients were discharged at 24 hours. 3/17 patients developed complications: 1 preprocedure ileus, 1 pelvic collection that was managed with antibiotics and 1 patient that was readmitted 8 days post procedure with subacute SB obstruction which resolved with conservative management.

Conclusion: LA-DBE appears to be a safe, effective and minimally invasive procedure that can be applied for the management of a wide range of small bowel pathology. A SILS approach allows all therapeutic modalities to be available as needed during the procedure, including conversion to IOE, laparoscopic small bowel resection and laparotomy.

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

Reference
compared to clear liquids diet, PBP significantly increased small bowel VCE DY.

Results: We identified 9 eligible RCTs with 12 sets of data, including 1029 subjects. They were low risk of bias trials and no publication bias was detected. As an entirely visual medium it depends on the mucosal surfaces, fluids, and bubbles. The definition of optimal image quality remains largely based on subjective evaluation by expert readers. For each type of pathology, we determined the threshold of image quality for diagnosis. The definition of optimal image quality by expert readers was based on subjective evaluations.

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

P0265 INTER-OBSERVER AGREEMENT IN BROTZ CLEANING SCALES FOR CAPSULE ENDOSCOPY


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Introduction: The diagnostic yield of capsule endoscopy (CE) depends on the adequate visualization of the mucosa. As such, colonoscopy, cleaning scales should be described in the report in order to better interpret results. In 2009, Brote et al proposed and validated 3 different cleansing 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 29% 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 adequate (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 CE requires, first, a well-validated cleansing scale. Brote’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.

Reference


P0266 PILOT STUDY OF THE EFFECTS OF IMAGE QUALITY ON LESION VISUALISATION IN SMALL BOWEL CAPSULE ENDOSCOPY

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Introduction: Capsule endoscopy (CE) is the prime mode of investigation for small bowel (SB) pathology. However, as an entirely visual medium it depends heavily on image quality. The definition of optimal image quality remains unclear based on subjective evaluations and poses significant limitations to the quality of study reporting. As yet, there is no widely-accepted or integrated method for scoring SB cleanliness during CE reporting. This pilot study aims to quantify the image properties contributing to adequate visualisation quality in CE images.

Aims & Methods: Five clear images of SB pathology were obtained using MiroCam® (Intromedic, South Korea), image resolution 320×320 pixels: P1 and P2 angioectasias, ulcer, aphtha and polyp. Each image was processed using GIMP2 image editing software (www.gimp.org) for 3 parameters: (1) opacity (opacity filter matched in colour to commonly-seen SB contents, 10–90% in 10% increments), (2) blur (Gaussian blur, radius 1–20px), contrast (50% to 50% in 10% increments). Gaussian blur was used to simulate the effects of rapid capsule movement and as well as to affect image definition. A set of 5 original and 190 edited images were obtained. A web-based survey was created using Google Forms and 9 expert CE readers were asked to indicate whether each image was adequate or not for diagnosis. The order of images was randomised for each reader. For each type of pathology, we determined the threshold of image quality for diagnosis. Brotz's rating scales was deemed adequate for diagnosis.

Results: For image opacity, both aphthae and the polyoid lesion were adequately visualised below 40% opacity whereas the threshold was lower for both the ulcer and aphtha (100% opacity). Increasing blur radius significantly impacted the acceptability of images for reaching a diagnosis with confidence; for most images, blur radius 3px was the threshold for adequate visualisation but even 1px of blur radius decreased the visualisation quality of the aphtha image. The aphtha image was also affected the most by decreased contrast; conversely the ulcer was deemed more inadequately visualised with higher contrast. The other images were generally adequately visualised at ±10% contrast. Results are detailed in the table below.

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

All authors have declared no conflicts of interest.
P0267 EVALUATION OF A NEW PAN ENTERIC CAPSULE SYSTEM IN PATIENTS WITH SUSPECTED OR ESTABLISHED INFLAMMATORY BOWEL DISEASE - ASSESSING THE SYSTEM FUNCTIONALITY TO VISUALIZE AND ASSESS THE SMALL AND LARGE BOWEL

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Introduction: Inflammatory bowel diseases (IBDs) are chronic inflammatory diseases that may affect the whole gastrointestinal (GI) tract, mainly the small bowel and colon. Endoscopic evaluation of these parts is essential to assess disease extent and severity. The small bowel capsule endoscopy (SBC-CE) system is a new system composed of a two-headed capsule with a panoramic field of view and adaptive frame rate, customized for complete coverage of IBD lesions in the entire bowel, data recorder and new disease specific software, allowing assessment and follow-up over time of disease severity and extent.

Aims & Methods: The aim was to evaluate SBC-CE system functionality in suspected or established IBD (Crohn's disease [CD] and Ulcerative Colitis [UC]) patients. This was a prospective 5 center feasibility study assessing the procedure, small bowel capsule software. Subjects enrolled in the study ingested the new capsule after standard bowel preparation plus boost. Contraindications for its use included obstruction, dysphagia or swallowing disorders, pacemakers etc. GI patency was assured using the patency capsule. The patients were followed after video creation and report generation in accordance to the video reading methodology. Secondary end-points were subjective coverage of SBC, subjective duration of total and segmental reading time, over all video quality and occurrence/severity of adverse events.

Results: Of 54 enrolled, of which 54 were enrolled and 49 ingested the capsule (14 patient failure, 5 withdrew consent). Mean age was 40.1 years, 51% were males. 69% of patients had established CD, 10% UC and 21% suspected CD. The disease was active in 62% of known IBD patients. One patient who underwent extensive colon resection was excluded from all colon analyses. Overall cleansing was regarded good or excellent in 96% of patients. All 49 patients with pancreatic cancer were registered to NAC (S-1 [80 mg/m², twice daily], 2 cycles) or NACRT (a total dose of 50.4 Gy in 28 fractions and S-1 [80 mg/m², twice daily on radiation day alone] for 1 month and subsequent chemoradiotherapy with gemcitabine for 3 cycles) studies conducted by Hokkaido Pancreatic Cancer Study Group (HOPS) (UMIN000013031/UMIN000012293). Of them 29 patients who underwent biliary drainage with a MS or PS before NAC/NACRT and subsequent pancreaticoduodenectomy were analyzed.

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

References:

P0268 THE UTILITY OF A NOVEL TRANSAPPENDICULAR DILATION TECHNIQUE WITH A WIRE-GUIDED 6Fr DIATHERMIC CATHETER FOR SEVERE MAIN PANCREATIC DUCT STRICATURE DUE TO CHRONIC PANCREATITIS

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Introduction: Transapipillary dilation for severe main pancreatic duct (MPD) stricture is sometimes difficult and diathermic dilation is now getting attention as a salvage technique for severe stricture; however its efficacy and safety remains unclear.

Aims & Methods: To evaluate the efficacy and safety of a novel transapipillary dilation technique with a wire-guided 6Fr diathermic catheter for severe chronic pancreatitis. Between April 2011 and March 2017, 143 patients with chronic pancreatitis underwent endoscopic transapipillary stent placement for MPD. MPD dilatation was indicated in 18 patients, and diathermic dilation was required in nine patients. We evaluated (1) the patients' characteristics, (2) procedure characteristics, (3) clinical outcomes, (4) adverse events.

Results: (1) Six patients were men and three were women (mean age, 50.1 years). Alcohol 8, unknown 1. The strechies were in the head of pancreas: 8, body: 1.

The mean length of stricture was 20.2 mm (range, 10–56.8). The mean MPD diameter at the distal side of the stricture was 6.2 mm (range, 3.0–7.3). The diathermic dilatation of stricture was successful in all patients (100%). After diathermy and stent placement, 8 (88.9%) showed improvement of clinical symptoms (abdominal pain). Resolution 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 diahrerou procedures (6 times and 4 times, respectively) and relatively long duration of total diathermy procedures (39 sec. and 25 sec. respectively) were observed in cases with pancreatitis.

Conclusion: Transapipillary diathermic dilation is a relatively safe and effective salvage procedure for severe MPD stricture due to chronic pancreatitis. Diathermic dilation 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.
Conclusion: Follow-up period, stent revision via fistula tract was successful and additional up periods. The stent patency duration was 275.2 (147.8–402.7) days. During developed after EUS-BDR in 2 patients (1 case of cholangitis and 1 case of liver in 22 patients and partial covered stent in 2 patients. Early adverse events developed after EUS-BDR in 2 patients (1 case of cholangitis and 1 case of liver abscess in patients with malignant biliary stricture). Late adverse event that stent occlusion was observed in 5 patients. Neither proximal percutaneous stent migration nor spontaneous distal stent migration was observed during follow-up periods. The stent patency duration was 275.2 (147.8–402.7) days. During follow-up period, stent revision via fistula tract was successful and additional up periods. The stent patency duration was 275.2 (147.8–402.7) days. During.

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 upper 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: All authors have declared no conflicts of interest.

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


Aim: Methods: From September 2009 to June 2016, a total of 52 patients who underwent EUS-BDR 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 upper 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: All authors have declared no conflicts of interest.

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


Introduction: Endoscopic ultrasound-guided transmural gall-bladder drainage (EUS-GBD) with covered metal stent has become increasingly used to treat patients with acute cholecystitis who are not a candidate for surgical treatment. However, there are limited data comparing long-term outcomes of EUS-GBD with covered metal stent and conventional percutaneous cholecystostomy.

Aims and Methods: This is a single-center, retrospective study to compare 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 between January 2006 and August 2014.

Results: The mean age of the study population was 65 (4–80) years. A fully covered metal stent was used in 22 patients and partial covered stent in 2 patients. Early adverse events developed after EUS-BDR in 2 patients (1 case of cholangitis and 1 case of liver abscess in patients with malignant biliary stricture). Late adverse event that stent occlusion was observed in 5 patients. Neither proximal percutaneous stent migration nor spontaneous distal stent migration was observed during follow-up periods. The stent patency duration was 275.2 (147.8–402.7) days. During follow-up period, stent revision via fistula tract was successful and additional up periods. The stent patency duration was 275.2 (147.8–402.7) days. During.

Conclusion: Technical success rate of Group A was significantly higher than Group B (97.6 vs 83.3%, p = 0.03). The two groups were comparable for the functional success rate (90.2% vs 90.3%, p = 0.70), and the rate of adverse events tended to be higher in Group A than in Group B (26.1% vs 13.5%, p = 0.10). The re-inter-vention rate tended to be higher in Group A than in Group B (16.7% vs 8.1%, p = 0.25). Groups A and B did not differ significantly in terms of median overall patient survival (75 days vs. 70 days, p = 0.70), and median time to stent dysfunction or patient death (68 vs 63 days, p = 0.08). In patients who underwent cholecystectomy, there were no difference in the overall patient survival time (121 vs 137 days, p = 0.08) between the two groups although the time to stent dysfunction or patient death was significantly shorter in Group A than in Group B (71 vs 95 days, p = 0.02).

Conclusion: Technical success rate of HGS with AGS was lower than HGS, although HGS with AGS is superior to HGS in terms of stent patency in patients undergoing chemotherapy. Disclosure of Interest: All authors have declared no conflicts of interest.
median 20 days (14.0–45.2) after the procedure. A total of 7 patients in EUS- GBD group died after intervention for adverse events and all of them were conducted successfully. The patients who underwent percutaneous cholecystostomy more frequently received re-intervention for adverse event or recurrence of cholecystitis after removal of cholecystostomy. (7/74 vs. 23/106, P = 0.041).

Conclusion: EUS-GBD and percutaneous cholecystostomy were both effective interventions to urgent drainage for acute cholecystitis. However, EUS-GBD might be beneficial than percutaneous cholecystostomy in long term management for the patients with acute cholecystitis who are not suitable for cholecystectomy.

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

P0274 ENDOSCOPIC TREATMENT OF ANASTOMOTIC BILARY STRICTURES 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, mean age: 51 ± 9 years) who were matched with MPSs insertion (Group-2). In Group-1, secondary branch ducts were prophylactically drained with insertion of plastic stent(s) in order to prevent the development of cholangitis due to their occlusion. FcSEMS and plastic stent(s) were left in place for 2 months. In Group-2, maximum number of plastic stents were inserted and replaced every 3 months. Patients with a follow-up duration of at least 3 months after stenting were included to the study. Primary end-points were the number of endoscopic procedures and the time required for structure resolution. The secondary end-point was the recurrence rate of the stent.

Results: FcSEMSs were successfully deployed in all cases. The diameter of the Fc-SEMSs was 10 mm in 22 patients and 8 mm in 1 patient. The length of the Fc-SEMSs was 8 cm in 13 patients, 10 cm in 9 and 12 cm in 2 patients. Secondary branch ducts were prophylactically drained with a single plastic stent in 12 patients, 2 plastic stents in 8 patients, and 3 plastic stents in 3 patients. The median number of endoscopic procedures was 2 (2–4) in Group-1 and 4 (2–9) in Group-2 (p < 0.001). The time required for structure resolution was shorter in Group-1 (65.7 ± 18.2 days) than in Group-2 (240.1 ± 183.4 days) (p < 0.001). The recurrence rates were similar in Group-1 (17.4%) and Group-2 (15.6%) (p = 0.87) after a follow-up period of 315 ± 290 and 378 ± 86 days, respectively. Comparison is an effective method for the treatment of anastomotic 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 ingrowth of uncovered stents. 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 (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 Colonel 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 reduce the ingrowth of cells and reduce tumor ingrowth. The covered stent is coated with a silicone membrane between two layers of a metal mesh with distal, uncovered ends of 5 mm each. The role of the membrane is to prevent the ingrowth of the tumor, localization and uncovered 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%. Palliative care 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 patients died 1 week after the operation. 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 statistically 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 statistically insignificant. One patient with the carcinoma of the sigmoid colon with invasion in anterior abdominal wall noted the appearance of subcutaneous emphysema without pneumoperitoneum, in 3 (3.8%) patients the occlusion of the stents. The reasons for obstruction of the stents were occlusion by the obstruction from stool (fibers) on the 83rd day (the endoscopic recanalization was performed) and tumor overgrowth by 163 days (endoscopic «stent-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 continue to research for the accumulation of material from other centers.

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

References

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 to bariatric surgery for reducing weight. We developed a new endoscopic gastrointestinal (GI) bypass stent and designed a preclinical study to assess the safety in a porcine model.

Aims & Methods: 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 pig using with fixation by clippings or on duodenal bulb without fixation. Follow up endoscopy was done per one week after implantation. After they were sacrificed, gastric, duodenal, and jejunal tissues were harvested and examined for histologic assessment of any device or procedure-related effects.

Results: 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 ± 1.3 kg. Delivery of the implant took an average of 19.8 min (range, 11–32 min) for the bare stent group and 11.2 min (range, 6–19 min) in duodenal bulb stent group. It required an average clamping 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 erosions, but no definite ulceration on pylorus and duodenum.

Conclusion: New GI bypass stent has a good physiocompatible properties in simulated intestinal system. In animal, all stents were successfully deployed but migration was found in this study. We anticipate that stent will be used as the one designed such as endoscopic suture machine and modification of stent would be required. Disclosure of Interest: All authors have declared no conflicts of interest.
Introduction: Dysphagia may occur due to benign pharingo-esophageal strictures, other post-interventional conditions. 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) placed pharingo-esophageal benign strictures 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-Pinkas 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 (anastomotic). There was a follow-up interval between completion of the last dilatation and follow-up of 5 weeks. The endoscopic dysphagia Mellow-Pinkas score and luminal calibre were 3 ± 1 and 7 ± 2, 8 mm, respectively. Twenty-eight patients (out of 30 live patients non-submitted to additional therapies) answered to the interview: a) 96% had improved, b) 60% had no endoscopic dysphagia (grade 0-1), 75% did not need further dilations, d) 0% were admitted to PEG, with a combined efficacy of 58, 3%. Nine patients required additional therapy (6 PEGs, 2 prosthesis, 1 electroincision). Overall, 17 (out with 21 previous PEG) were able to resume feeding per os. Fifteen and 29% presented Kochman 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, ± 11, 2 months. Number of dilations and initial lumen calibre were significant predictors of combined efficacy in the univariated analysis; radiic strictures predicted a greater final dysphagia in the uni- and multivariate analysis; recurrent/refractory stenosis didn’t significantly predict global efficacy. Conclusion: Our dilation 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 relief.

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 in the treatment of variceal bleeding (EBV). 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 EBV at 4 tertiary care centers in Vienna (Medical University of Vienna, Krankenanstalt Rudolfstiftung, Wilhelminenspital and Krankenhaus Hietzing). Rates of bleeding control (5 days), bleeding-related mortality (6 weeks) and overall mortality were assessed.

Results: Among 35 patients, 13 patients had an unsuccessful endoscopic band ligation (EVL) prior to Danis-Stent placement. Danis-Stent controlled EBV in 80% (28/35) of patients. In the remaining uncontrolled bleeders (n = 7), 3 patients had subsequent EBV, 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 EBV. 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 immediate and 1 received a subsequent Danis-Stent, and 1 patient was treated with a Sengstaken tube. Moreover, among n = 14 patients without early rebleeding within 6 weeks, only n = 3 (21.4%) showed rebleeding later during follow-up: n = 2 patients were treated with a Sengstaken-Tube (both experienced bleeding-related death) and n = 1 had another Danis-Stent placed (successful bleeding control). Only n = 11 (31.4%) patients did not experience any rebleeding after Danis-Stent removal, while n = 8 patients died with the Danis-Stent in situ. Notably, “early-TIPS” was performed in this study, but 4 (11.4%) received a TIPS 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 (62.9%) patients died. The median survival was 10.5 (IQR:82) days after Danis-Stent placement. Median Danis-Stents dwell time was 5 (range: 0–13) days. The most common adverse events were stent disloca- tions (n = 13; 37.1%), while ulcers/nerosions of the esophageal mucosa were seen in only 4 (11.4%) patients.

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

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

References
Our fastening method can be feasible and useful technique for postoperative anal stenosis in colon surgery, with some studies estimating the rate at around 20% 8-11. 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 oesophagus to the baseline stenosis, with 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 stents) (p=0.039). This also met Bonferroni significance. We demonstrate a trend towards shorter strictures being associated with an increased risk of migration [OR 1.14 CI1.122-1.164 (p=0.052)]. There were no significant associations between migration and whether patients received previous chemo-radiotherapy, or whether the stent crossed the GOJ.

Conclusion: Endoscopic placement of 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 stricture length. Patients received previous chemo-radiotherapy, or whether the stent

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

References
Seventy of intrathoracic and intraabdominal lymphadenopathy: mediastinal lymphadenopathy 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 1 group 96.1%, 3-year is 42.3%, 5-year 10/6; 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.

The scope of surgery is generally advised to take into account the constructed 3D-models, which helps to solve the problem of the possibility of surgical intervention in esophageal cancer.

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

P0283 INFLUENCE OF CONTINUOUS ADMINISTRATION OF LOW-DOSE ASPIRIN 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 treatment of high-grade gastric neoplasms. The use of antithrombotic agents has increased for first or secondary prevention of cardiovascular or cerebral disease. Continuous administration of low-dose aspirin (LDA) during ESD was recommended in American, British and Japanese guidelines. However, the influence of LDA for the hemostasis condition during ESD procedure is still unclear. Therefore, we performed this study for addressing intraoperative bleeding risk without cessation of LDA.

Aims & Methods: In this retrospective study, we assessed the hemostasis condition during ESD that were treated for superficial gastric lesions between January 2014 and March 2017. Patients with antithrombotic therapy by LDA (n = 42) and those with no antithrombotic therapy (n = 187; Control) were compared using propensity score matching. Primary outcome was frequency of intraoperative major bleeding. Secondary outcomes included procedure time, Hb reduction rate, En blec reaction 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 minor 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 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, tumour stage, calendar year, and tumour group.

Results: Included were 228,927 patients. Later weekday of surgery (Thursday and even more so Fridays) was associated with increased mortality rates for gastrointestinal cancers. The adjusted hazard ratios for disease-specific mortality comparing surgery on Friday with Monday were 1.57 (95% CI 1.31–1.88) for 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 suggested that later weekday of surgery (Thursday, Friday) 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/ radiotherapy or in combination have been introduced to improve outcome after 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 (205 patients). The outcomes 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: Ninety-nine sixty-nine-nine-six patients were examined in this study. 89 (52.7%) and 66 (39.1%) patients had neoadjuvant and adjuvant treatment, 85 (50.3%) and 84 (49.7%) underwent distal and total gastrectomy, respectively. 24 (14.2%), 16 (9.5%) and 5 (3.0%) were diagnosed as grade III, IV, V complications. The prognosis of the patients with grade III or higher complication was significantly worse (3-year OS: 66.6% vs 47.3%, P < 0.001). Subgroup analysis by pathologi-
cal stage showed that the prognosis of pStage III/IV patients with postoperative complications was significantly poorer than the patients with no abdominal symptoms marked at 19 (32.2%) and 20 (33.9%) patients, combined of pStage 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 were seen by the existence of complications (3-year OS: 78.7% 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).

Conclusion: 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 ENDOCOSPIC 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 for duodenal papillary tumor has 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. Several 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 clinical 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, MRC, 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 collected.

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-
nant by abdominal pain followed by cholestasis and cholangitis, but nine cases showed 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 papillary adenoma (40/75), adenocarcinoma (37.3%, 28/75), atypia with high-grade intraepithelial neoplasia (18.7%, 14/75), adenoma with low-grade intraepithelial neoplasia (26.7%, 20/ 75), adenoma combined with local carcinoma (16%, 12/75), and neuroendocrine tumor (1.3%, 1/75). In bloc resection was achieved in 53 cases (70.7%) and the patients with no abdominal symptoms. Endoscopic papillectomy was technically feasible in all these patients, and was mainly performed by four experienced endoscopists.

Disclosure of Interest: All authors have declared no conflicts of interest.
P0287: PROPHYLACTIC COLECTOMY WITH EXTENDED INDICATION OF RECTAL PRESERVATION IN RELATED APC SYNDROME: SYSTEMATIC REVIEW

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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 canceration 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 with a prophylactic surgery for FAP were screened and patients with systemic endoscopic follow up in our unit: systemic endoscopic treatment of adenomas (argon, mucosectomie), were prospectively included. MYH-related polyposes and patients who underwent abdomino-nasorectal resection were excluded from analysis.

Results: 296 patients were included: 92 proctocolectomy with IAA (31.1%), 197 total colectomy with IRA (66.6%), and 7 abdomino-nasorectal resections (2.4%). Mean (SD) number of preoperative rectal adenomas was 24.7 (33.9) in the IRA group and 10.7 (18.3) in IAA group (p = 0.01). Mean number of rectal canceration was 3.1% (n = 9). 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 the IAA group (p = 0.91). Mean (SD) number of treated adenomas was 17.8 (20.8) and 12.9 (18.8), respectively (p = 0.06); secondary cancer incidence was 6.1% vs. 11% (p = 0.06). The 15-year recurrence-free and overall survival (IR vs. IAA) were respectively 99.5% vs. 100% (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.
and liver metastases in newly diagnosed patients with CRC. Three hundred patients with CRC underwent endoscopy and serum screening 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 demonstrated high diagnostic accuracy of NLR (AUC 0.774, 95%CI = 0.683–0.790) and PLR (AUC 0.698, 95%CI = 0.663–0.742) for synchronous lymph node and liver metastases. Also combination of NLR and PLR performed 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 value in early recognition of different stages of CRC.

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

References

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 hernial orifice with stainless-steel sutures. In 1983, laparoscopic transabdominal preperitoneal (TAPP) repair was 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 thoughtless introduction of the TAPP method. On the other hand, with surgery employing the TAPP method only, the hernia was indicated normally 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 treatment at our hospital. Surgical indication of inguinal hernia in our department is as follows. Symptomatic inguinal hernia is treated using the TAPP method when there is only one POSSUM score-based risk factor. When 2 or more risk factors are present or the patient has undergone surgery of the prostate, the anterior approach is employed (the UHS and Mesh Plug methods for internal and external inguinal hernia, respectively). Treatment under local anesthesia is prioritized for patients aged 90 years or older and patients with PS2 or higher. Arrangement in operating room is that the operator and assistant stand on the left and right sides of the patient, respectively, an assistant stand on the left and right sides of the patient, respectively, an

Aims & Methods: In this study, we investigated the current state of inguinal hernia treatment at our hospital. The subjects were 120 patients who underwent radical surgery for inguinal hernia before and after the full-scale introduction of the TAPP method (early period: October 2014-April 2015 (7 months), late period: October 2015-December 2015 (7 months), 47 and 73 patients were treated in the early and late periods, respectively). Changes in the surgical procedure, complications, and duration of hospital stay were investigated in 120 patients.

Results: The median age was 70 years (19-91 years). There were 114 male and 6 female patients. Complications occurred in 70 and not used in 50. TAPP, mesh plug, and UHS and others were used in 58, 54, 17, 3 lesions. There was no change for both the Early period and Late Period. The median operative time was 81 minutes (60-120 min), 102 minutes (58-215 min), and was 90 ml (5-500 ml). The total amount of operative bleeding and results in favorable clinical outcomes.

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 HINCHY 3/4

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Introduction: To evaluate 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.

Aims & Methods: A consecutive unselected series of 44 patients 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 instrumentations were standardized. We collected patients-, surgery- and hospital-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. We did not observe any intraoperative complications.

Conclusion: Laparoscopic left colectomy with primary anastomosis and loop ileostomy seems to be a good technique that resulted in encouraging short-term outcomes. In expert hands it represents an effective technique for the treatment of acute diverticulitis complicated by diffuse purulent peritonitis.

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

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. However, ME alone is the international standard surgical procedure for rectal cancer. Complete LLND is important because of the potential pelvic cavity and the complicated anatomical structure and invasive procedure which needs longer operative time and greater blood loss. Herein we introduce laparoscopic LLND as our new procedure securing equivalent range of lymph node dissection.

Aims & Methods: After laparoscopic ME, the external iliac artery was exposed and the external iliac nodes were completely removed from inguinal ligament. Obturator nodes were completely dissected while preserving the obturator nerve, resecting the obturator artery and vein, and confirming lateral pelvic wall, bladder wall and sacral nerve. Subsequently, proximal internal iliac nodes were removed and superior vesical artery was separated. Distal internal iliac nodes from the coccgeal vein (Akcock’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). No one was dead within a year, and the most frequent one was temporary urinary diversion in 2 (20%) patients. The median number of harvested lateral lymph node was 20 (14–23). So far there are no recurrences.

Disclosure of Interest: Our laparoscopic LLND provides good visual field and reduces an amount of operative bleeding and results in favorable clinical outcomes.

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

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 to the abdominal cavity assisted by colonoscopy and one trocar.

Aims & Methods: The experimental study was conducted in a porcine model in general anesthesia. After operation in an acute model, we started the study with 5 pigs. In an acute survival model. Using a colonoscope, a transgastric access was created by needle-knife incision and balloon dilatation. CO2 peritoneum was achieved by insufflation via a working channel. By steering the colonoscope, the colon was maneuvered endoluminally and the colic mesentery was exposed. Bowel-close was performed with a coagulating needle and the mesentery was removed. Finally, the colon was transected and an anastomosis was created simultaneously assisted by a grasper via the Anubiscope. Both instruments have the

Disclosure of Interest: None.
lower abdomen. The bowel examination was performed by invagination transrec- tal through the transrectal distal linear stapling of the sigmoid, the colorectal anastomosis was completed by applying a circular stapling device transrectally, assisted 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 healing with a stenosis and consecutive prestenotic dilatation in one case. These animals developed a perigastric abscess beside the anastomosis. Gastric closure was healed and the OTSC clip still in situ in all animals. In one case we used two OTSC clips for gastric closure, there were severe adhesions with two perigastric abscesses.

Conclusion: The use of an operating platform like the Anubisscope has the advantage of flexible preparation in opposite position of the instruments. The disadvantages are the only two degrees of freedom of the flexible instruments and the rotation-like movements. Flexible colonoscopy provided a fixed reference frame for condition analysis and description. For resection and anastomosis, an additional transcutaneous access was necessary.

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

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

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Introduction: Peritoneal tuberculosis (TB) and advanced ovarian cancer, two conditions with different management and prognosis, have many similarities: ascites, complex adnexal mass, peritoneal deposits, and raised CA-125 level. Symptoms such as weight loss, reduced appetite, and dull abdominal pain are also common to these two entities.

Aims & Methods: The aim of this study was to analyze patients’ characteristics, laboratory investigations, radiological and surgical findings in post-menopausal women with pelvic TB who were diagnosed after laparotomy or laparoscopy for suspected ovarian cancer. We report twenty-one cases of pelvic-peritoneal TB in post-menopausal women who presented with mimicking 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 lower abdominal pain and distension of varying duration of 1 month to 6 months. Eleven patients had reduced appetite and weight loss, and four women gave a history of low-grade fever. A CT scan showed the presence of solid-cystic adnexal masses ranging from 3 cm to 14 cm in diameter and ascites in 90.4%. Ascitic fluid analysis was done in 19 patients and showed a lymphocytic predominant pattern, and absence of malignant cells. Ascitic fluid cultures was negative in all. CA-125 was elevated in all and of varying duration of 1 month to 6 months. Eleven patients had reduced appetite from 2004 to 2014 in a Tunisian center.

Discussion: Conditions with different management and prognosis, have many similarities: ascites, complex adnexal mass, peritoneal deposits, and raised CA-125 level. Symptoms such as weight loss, reduced appetite, and dull abdominal pain are also common to these two entities.

Conclusion: Peritoneal tuberculosis (TB) and advanced ovarian cancer, two conditions with different management and prognosis, have many similarities: ascites, complex adnexal mass, peritoneal deposits, and raised CA-125 level. Symptoms such as weight loss, reduced appetite, and dull abdominal pain are also common to these two entities.

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

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 correlation between H. pylori infection and inflammatory bowel disease (IBD). Our previous research indicated that the regulatory immune responses induced by H. pylori infection were not limited to gastric mucosa, IL-10-producing B cells and Foxp3+ Treg cells expanded in spleen and mesenteric lymph nodes (MLN), the balance of intestinal mucosal immunity was influenced to a skewed regulatory immune response.

Aims & Methods: A murine model with H. pylori infection and acute and chronic colitis induced by dextran sulphate sodium (DSS) was established to explore the functional changes of the Breg cells in H. pylori infection and acute and chronic colitis induced by DSS. A C57BL/6 mice model of acute and chronic colitis was induced by 3% DSS with or without H. pylori infection in advance, the colitis performances were assessed by disease active index (DAI), colon length and colonic histological inflammatory scores. The CD19+IL-10+ Breg cells and CD4+CD25+Foxp3+ Treg cells in blood, spleen, MLN, PP and gastrointestinal mucosa were measured by flow cytometry, immunohistochemistry and immunomicroscopy. The anti-inflammatory cytokines were also detected at mRNA level by real-time PCR.

Results: Compared with the DSS treated acute colitis group, H. pylori/DSS co-treated acute colitis group: (1) DAI and colonic histological scores reduced (9.25±2.8 vs 28.18±3.05, P<0.025) and colon length shortened (5.62±0.63 vs 5.40±0.54, P<0.001). (2) The percentages of CD19-IL-10+Breg cells detected by flow cytometry expanded in different tissues: blood: 5.05±0.68 vs 2.89±0.55, P=0.001; spleen: 4.32±0.56 vs 3.17±0.20, P<0.05; MLN:5.89±0.54 vs 4.94±0.65, P=0.047; PP: 6.95±1.67 vs 5.39±0.88, P=0.005, respectively. (3) The percentages of CD4+CD25+Foxp3+ Treg cells expanded in different tissues: spleen: 13.50±1.37 vs 10.73±1.13, P=0.008; MLN: 17.50±0.82 vs 14.87±1.3, P=0.003; PP: 12.70±3.42 vs 8.58±1.71, P=0.001, respectively. The numbers of Breg cells per colon in control group: 3.34±0.40 vs 2.58±0.34, P=0.004. (4) mRNA expression in colonic mucosa: IL-10 (P=0.001) mRNA relative expression upregulated and IFN-γ (P=0.04) mRNA relative expression downregulated significantly. Compared with DSS treated acute colitis group, H. pylori/DSS co-treated chronic colitis group: (1) DAI and colonic histological scores reduced (9.00±1.73 vs 14.67±1.53, P=0.001), and colon length shortened less (6.82±0.41 vs 5.98±0.15, P=0.001). (2) The percentages of CD19-IL-10+Breg cells expanded which declared in DSS treated acute colitis group: spleen: 7.09±0.72, P=0.024; MLN: 4.78±0.73 vs 3.02±0.83, P=0.047; PP: 7.14±1.04 vs 4.34±1.03, P=0.005 respectively. (3) The percentages of CD4+CD25+Foxp3+ Treg cells decreased dramatically in different tissues: blood: 6.69±0.91 vs 7.37±1.08, P=0.01; spleen: 9.07±2.88 vs 13.10±1.99, P=0.018; PP: 7.33±1.07 vs 12.80±0.96, P<0.001; the numbers of Foxp3+ T cells per HPF in colonic mucosa: 3.66±0.99 vs 4.08±0.56, P=0.392. (4) mRNA expression in colonic mucosa: IL-10 (P=0.023), Foxp3 (P=0.000) mRNA relative expression upregulated significantly, and IFN-γ (P=0.001) TNF-α (P=0.005), IL-17A (P=0.019) and IL-23 (P=0.000) mRNA relative expression downregulated significantly.
CD19 may through the expansion and function of CD19 immunosuppression may aggravate gut fungal dysbiosis in IBD patients, but Treatment strategies affect fungal composition. To some extent, Faecalibacterium and Asterotremella found a weak fungi-biomarkers correlation in IBD patients, but fungi such as and its expression is elevated in the inflamed tissue of patients with ulcerative colitis (UC) [1-3]. Pre-clinical models of colitis demonstrate a therapeutic benefit of blocking CXCL12/CXCR4 interaction. A candidate monoclonal antibody (GS-5745) is a high-affinity IgG4 monoclonal antibody against human Matrix Metalloproteinase 9 (MMP9). In a 36-day Phase 1b study in UC, andecaliximab demonstrated clinical efficacy relative to placebo treatment [5]. Here we describe bacterial microbiota analysis of stool samples collected during the Phase 1b study of andecaliximab in UC.

Aims & Methods: The objective of this study is to examine changes to the bacterial microbiota pre- and post-andecaliximab treatment and relative to therapeutic response. stool was collected in inflammatory bowel disease (Baseline) and all phases of the study (Day 36). Clinical response was defined as a Mayo score reduction ≥3 point and ≥30% reduction from baseline score; accompanying decrease in rectal bleeding sub-score of ≥1 or an absolute rectal bleeding sub-score of 0 or 1. DNA was extracted from fecal samples using a modified CTAB method and 16S rRNA amplicon sequencing was performed on 59 samples (27 paired and 5 unpaired samples). Alpha diversity, beta diversity (calculated in QIIME), and taxonomic differences were examined between placebo and andecaliximab-treatment groups and between responders and non-responders.

Results: Compared to placebo-treated patients, those who received andecaliximab trended towards decreased alpha diversity (p = 0.06) at 36 days post-treatment. These changes in alpha diversity were not dose related. At Day 36, a trend towards a significant difference in community beta-diversity was observed between the andecaliximab-treated group relative to placebo (p = 0.07). Andecaliximab treatment was also associated with differences in bacterial taxonomy relative to placebo (p = 0.07). Specifically, the genera 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 Baseline to Day 36 (p = 0.15). Amongst patients, the microbiome results are unlikely to be pursued in relation to andecaliximab treatment effects, but may be beneficial as a reference for future trials in inflammatory bowel disease.

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References

P0303 MUCOSAL CYTOKINE PROFILE IN INFLAMMATORY BOWEL DISEASE PATIENTS: A LASER CAPTURE MICRODISSECTION APPROACH

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Introduction: Crohn’s Disease (CD) and Ulcerative Colitis (UC) are inflammatory bowel diseases (IBD) with a complex etiology, including an immune response against microbial and autologous antigens and an imbalance between pro-inflammatory and anti-inflammatory mediators. Different approaches have been used to study the pattern of cytokines in IBD and few data are available on cytokines production in different intestinal compartments. Laser Capture Microdissection (LCM) is a powerful tool for the isolation of specific tissue compartments (1).

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Aim: To investigate the cytokine production in different inflammatory bowel disease compartments

Methods: A total of 41 biopsies were obtained from IBD patients at the Department of Gastroenterology, San Filippo Neri Hospital, Roma/Italy.

Conclusions: LCM technology can be used to determine the cytokine profile of different inflammatory bowel disease compartments.
Aims & Methods: This work was designed to investigate the pattern of cytokines that regulate the mucosal immune response occurring in different intestinal compartments of IB 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 metronidazole (EM) and lactobacillus (LP) pre- and post-treatment with LCM, RNAAs from EM and LP samples were extracted and, after a reverse transcription, RNA levels of TNF-α, IFN-γ, IL-17, IL-10 and TGF-β were determined by quantitative PCR, using glyceraldehyde 3-phosphate dehydrogenase (GAPDH) as reference gene.

Results: We observed a significant increase in gene expression level of IL-17 in the lamina propria of UC patients respect to CD and controls (p < 0.05). TNF-α, IFN-γ, IL-10 and TGF-β levels were significantly higher in the LP of CD as compared with UC biopsies (p < 0.05). All the cytokines investigated were not significantly up-regulated in the surface EP of both CD and UC patients, when compared to controls.

Conclusion: Our data show that the LP compartment play a key role in the mucosal immune response in IBD patients. In particular, CD seems to be prominently an innate immune response-mediated disease, which is characterized by an increased production of IFN-γ and TNF-α. On the opposite, UC seems to be prominently a CD4 lymphocyte-mediated disease, which is characterized by an increased production of IL-17. Consequently, with the post-inflammation response, high amounts of the anti-inflammatory cytokines IL-10 and TGF-β are also produced in CD compared to UC patients, suggesting that in UC patients the immune-regulatory mechanisms could be impaired. This work underlines the importance of LCM as a valuable tool to determine potential inflammatory components involved in IBD pathogenesis.

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

Reference

P0304 ALTERATIONS IN THE MUCOSA-ASSOCIATED FUNGAL MICROBIOTA IN PATIENTS WITH ULCERATIVE COLITIS
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Introduction: The gut microbiota play important roles in the development of the ulcerative colitis (UC). Enough evidence has proven the role of intestinal bacterial microbiota in UC pathogenesis. However, the role of intestinal fungal microbiota in UC pathogenesis has not been fully demonstrated.

Aims & Methods: Fungal microbiota from the descending colon mucosal samples of 14 active UC patients and 15 healthy subjects (HS) were analyzed by high-throughput sequencing method. The expressions of pro-inflammatory cytokines(IL-1β, TNF-α, INF-γ, IL-10, IL-17A, and IF-23) were up-regulated in the UC patients. The genera Wickerhamomyces, Sterigmatomyces, and Penicillium were positively correlated with the expression of several pro-inflammatory cytokines in the colonic mucosa, whereas Nigrospora was negatively correlated. Nigrospora and Sterigmatomyces were positively correlated with the Baron and/or Mayo score.

Results: The number of fungi decreased significantly in inflamed mucosal tissue compared to HS counterpart while the shannon diversity did not show significant differences. Fifteen major genera were examined, among which X. qiu, Emericella, and Penicillium showed increasing trends, whereas Wickerhamomyces and Leucosporidium decreased significantly.

Conclusion: The expression of Wnt ligands from CD16 positive cells, which are accumulated in the mucosa, may be involved in murine intestinal fibrosis.

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

Reference

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 well be related to commensal enteric bacteria in a genetically susceptible patient. Anti-inflammato-
ry agents such as 5-ASA 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 27% of patients with active UC including those with steroid-refractory or dependent disease, suggesting ATM/AFM might be possibly effective for achieving UC remission.

Aims & Methods: Thirty-two patients with UC given ATM/AFM therapy for two weeks on average were enrolled in this study. The clinical conditions of these UC patients were evaluated by Mayo score. Fecal samples were obtained prior to, after therapy and at three months after treatment 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 indicated by the Mayo score. Furthermore, dramatic gut microbiota changes were observed at an early stage, i.e. just two weeks after starting ATM/AFM therapy. Comparison of the metagenomic data suggested that the 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, 0.5, 0.5, 0.5, 0.5, 0.5, and 0.5 mg intracolitally or saline weekly and they were sacrificed 3, 5 or 7 weeks after the first TNBS administration. The percentage of CD206, CD16, and CD68 positive cells was analyzed by flow cytometry in F4/80+ macrophages isolated from the intestinal mucosa. The mRNA expression of Wnt ligands was evaluated in F4/80+ CD16+ macrophages isolated from the mucosa, 7 weeks after the first TNBS administration and results are expressed as fold induction vs vehicle-treated mice. The mRNA expression of CD16 and fibrosis markers were evaluated in the colonic mucosa. The mRNA expression of CD16 was expressed as Mean±SD and the differences among data were analyzed using Pearson’s correlation coefficient (p < 0.05).

Results: TNBS increased the percentage of CD206 positive macrophages in the mucosa of TNBS-WT animals while it failed to do that in TNBS-TAT6 (-/-) mice. The percentage of CD16 positive macrophages increased in a time-dependent manner only in the mucosa of STAT6 (-/-) TNBS-treated mice. The percentage of CD68+ cells was similar between TNBS-WT and TNBS-TAT6 (-/-) mice. In CD16+ macrophages isolated from TNBS-TAT6 (-/-) 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), α-SMA (p = 0.0044*, r = 0.55) and MMP2 (p = 0.0022*, r = 0.67) was detected in TNBS-TAT6 (-/-) mice but not in WT animals.

Table

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<td>2, 7±0, 4*</td>
<td>4, 5±0, 3</td>
<td>15, 3±2, 2*</td>
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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 proliferation of Bacteroides, Parabacteroides, Rickenella, Clostridium, Flavonifractor, Pelagibacter, Bordetella, Massilia and Piscirickettsia species. In responders after treatment, populations of Bilfdobacterium and Lactobacillus species were significantly increased. In this study, there was an especially strong negative correlation between Bacteroides and Bilfdobacterium 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 the cross section is associated with decreased in Bacteroides and Lactobacillus species and a decrease in Bacteroides.

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

References


P0307 GLP-1 EXPRESSING ENTEROENDOCRINE CELL NUMBERS ARE REDUCED AT THE SITE OF ACTIVE DISEASE IN VARIOUS MOUSE MODELS OF INTESTINAL INFLAMMATION

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Introduction: Classically, enteroendocrine cells (EEC) are regulated for revealing gastrointestinal motility, secretion, and insulin levels by release of peptide hormones. Via receptors and transporters GLP-1 are capable of sensing the lamina propria and luminal environment, including the microbiota, and also mediate immune-related signals. In particular, the L-cell-derived incretin hormone glucagon-like peptide 1 (GLP-1) is increasingly recognized to exert direct effects on immune cells and to orchestrate a metabolic-inflammatory response. In inflammatory bowel disease (IBD), a role for EEC in disease pathogenesis is 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, immunostainings 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, II-10–/– mice (colitis), an adoptive transfer model, Rag2−/− mice reconstituted with CD4+/CD45− T cells (colitis), 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 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-colitogenic CD4+CD45− T cells did not lead to changes in ChgA+ cells 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 Pyy 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 whether these data represent a consequence of intestinal inflammation and elucidate the functional consequences on immune responses.

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

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 diseases.

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

### P0310 METABONOMIC PROFILING OF ULCERATIVE COLITIS PATIENTS: RESULTS FROM AN INCEPTION COHORT TIME SERIES ANALYSIS

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**Introduction:** Previous studies have shown differences in disease phenotype of ulcerative colitis (UC) in South Asian (SA) migrants compared to Caucasians with pan-colonic phenotype predominant.1 The gut microbiota differs in Caucasian and SA patients with UC2 however, there is limited evidence on how this translates to the metabolome.

**Aims & Methods:** We aimed to examine the metabolic profile in a newly diagnosed cohort of UC patients recruited from St. Marks Hospital, London, UK. Patients were stratified by ethnicity (SA, Caucasian, Other), treatment (None, 5-ASA, Azathioprine and Steroids) and disease duration. Healthy controls (HC) were recruited locally among the staff at St. Marks Hospital. Biofluids (urine, faeces and serum) were collected at diagnosis (time point 1; months 0–3) and 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 (R²Y 0.896, Q²Y 0.451, p < 0.0003) and urine HILIC (R²Y 0.783, Q²Y 0.526, p < 0.0001) and serum BA (R²Y 0.702, Q²Y 0.517, p < 0.0001) and faecal BA (R²Y 0.832, Q²Y 0.395, p < 0.0001). Combined analysis revealed 1611 significant features (faecal HILIC 60, urine HILIC 199, serum 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-cyproline and creatine 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 models 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 differentiate 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.
Aims & Methods: In a retrospective and single-centre setting we aimed to understand if patients’ baseline clinical and endoscopic features were relevant guide for identifying likely responders and non-responders to adsorptive GMA. The subjects were 145 consecutive UC patients who had undergone GMA with the Adacolumn as remission induction therapy between 2012 and 2016. Seventy-three 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 his or her own control. Clinical activity index was defined as remission.

Biopsies from histologically 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 (64.1%) had the ability to induce remission with 35 evaluable patients (71.7%), 40 of 70 steroid dependent (57.1%), and 1 of the 2 steroid refractory cases. On average remission was sustained for 8.6 months in steroid naïve patients and for 10.4 months in steroid dependent subgroup. Observations on mucosal tissue biopsies showed that infiltrating leukocytes were mostly monocytes and lymphocytes. There was a marked reduction of infiltrating leukocytes in responder patients. Patients with extensive deep UC lesions together with loss of the mucosal tissue at the lesions were non-responders. Patients with the first UC episode were identified as the best responders (90%), followed by steroid naïve patients. Additionally, a short duration of active UC prior to GMA marked a patient as a likely responder. Further, all patients who achieved remission were steroid free at week 12.

Conclusion: First episode and steroid-naïve cases who responded well to GMA attained a favourable long-term clinical course. Additionally, GMA was more effective if applied immediately after a relapse than after a lag time. In general, GMA is favoured by its safety profile and for being a non-remission induction therapy. Patients with extensive deep UC lesions, with long duration of UC refractory to multiple pharmacologicals are unlikely to benefit from GMA. In therapeutic settings, knowing baseline clinical and endoscopic features, which may identify GMA responder patients should guide to futile use of medical resources.

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

P0312 THE EFFECTS OF GLIAL-DERIVED NEUROTROPHIC FACTOR PRODUCED BY ENTERIC GLIAL CELLS ON DENDRITIC CELL AND ITS ROLES IN DEXTAN SULPHATE SODIUM INDUCED COLITIS

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Introduction: Much research has demonstrated that tolerogenic dendritic cell (DCs) can be induced by regulatory T cells (Treg) play an important role in maintaining immune tolerance and has been proposed for treatment of inflammatory bowel disease (IBD). In this study, we report on the use of glial-derived neurotrophic factor (GDNF) produced by Enteric glial cells (EGCs) as a new approach to induce tolerogenic DCs with capacity to generate Treg, to identification of likely responders and non-responders to adsorptive GMA. The sub-


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

P0313 DETERMINANTS OF REDUCED GENETIC CAPACITY FOR BUTYRATE SYNTHESIS BY THE GUT MICROBIOME IN CROHN’S DISEASE AND ULCERATIVE COLITIS


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Introduction: Alterations in short chain fatty acid (SCFA) metabolism have been reported in inflammatory bowel disease (IBD). Among SCFA, butyrate has been described as a potent communicator to the immune system eliciting an anti-inflammatory response and other positive effects to human health1. A reduction of faecal butyrate levels has been reported in IBD but results have been conflicting or discrepant because of small sample numbers and failure to distinguish disease type, activity or other variables such as diet. Microbiota is receiving increasing attention as a key environmental factor influencing IBD2, which may identify GMA responder patients should guide to stop futile use of medical resources.

Disclosure of Interest: C. Hill: Prof Colin Hill has received research funding from Janssen and Artugen Therapeutics.

F. Shanahan: Prof Forough Shanahan has been a collaborator and has received research funding from Janssen, Abbvie, Alimentary Health Ltd, Sigmoid, 4DPharma and Second Genome.

M.J. Claesson: Dr Marcus Claesson has received research funding from Second Genome.

All other authors have declared no conflicts of interest.

References
P0314 A COMBINED ADMINISTRATION OF AMPICILLIN AND VANCOUVER'S MILD COLD COUGH SYMPTOMS CAN REDUCE DIVERSITY OF GUT MICROBIOTA AND PERTURBATION OF GLUTAMINE AND SHORT CHAIN FATTY ACID METABOLISMS
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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 and neomycin, or a combination of ABPC, VCM and LNG (A-V) for three consecutive days. Colitis was assessed by fecal occult blood test (FOBT) and mRNA level of cytokines. Metabolites and short chain fatty acid (SCFA) in the feces were measured by a chromatography-tandem mass spectrometry. Fecal microbiota was determined by 16S rRNA sequencing.

RT PCR and Western blot analysis. GPR 18 was localized in human colonic macroscopic score, microscopic score, quantification of myeloperoxidase (MPO) activity, expression of pro-inflammatory cytokines in RAW264.7 and induced expression of antimicrobial peptides (secretory leukocyte protease inhibitor and lactoferrin) in CMT93.

Conclusion: A V treatment induced mild colitis with reduced abundance of family of Clostridiaceae, which might disturb Gltn and SCFA metabolisms.

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

P0315 ANTI-INFLAMMATORY EFFECTS OF G PROTEIN-COUPLED RECEPTOR 18 – A NOVEL DOPAMINE THERAPEUTIC TARGET IN INFLAMMATORY BOWEL DISEASE
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Introduction: Inflammatory bowel disease (IBD) is a group of gastrointestinal tract diseases consisting mainly of Crohn’s Disease (CD) and Ulcerative Colitis (UC). Various etiological factors contribute to the pathogenesis of IBD, including modulation of microbiota, epithelial barrier disruption, genetics and environment. Recently, the treatment preference comprises several groups of drugs the choice of which is made based on disease activity and extent. The treatment options include: analogs of 5-aminosalicylic acids, glucocorticoids and antibiotics (A-V) for three consecutive days. Colitis was assessed by fecal occult blood test (FOBT) and mRNA level of cytokines.

RT PCR and Western blot analysis. GPR 18 was localized in human colonic macroscopic score, microscopic score, quantification of myeloperoxidase (MPO) activity and alpha (TNFα) in colonic tissue. The expression of GPR18 gene in colonic samples from patients with IBD was quantified using real-time RT PCR and Western blot analysis. GPR 18 was localized in human colonic samples using immunohistochemistry methods.

Results: The results of our study with lower doses of GPR18 ligands in the chronic TNBS model of colitis showed a non-significant decrease in macroscopic score, ulcer score and a significant decrease in MPO activity (p < 0.05) in mice injected with PSB-KK-1415 compared with TNBS-treated mice. PSB-CBS (1–5 mg/kg, i.e., once daily) was characterized in two mouse models of ulcerative colitis, induced by 2, 4, 6-trinitrobenzenesulfonic acid (TNBS) and dextran sulfate sodium (DSS). The extent of inflammation was evaluated based on the macroscopic score, microscopic score, quantification of myeloperoxidase (MPO) activity and alpha (TNFα) in colonic tissue. The expression of GPR18 gene in colonic samples from patients with IBD was quantified using real-time RT PCR and Western blot analysis. GPR 18 was localized in human colonic samples using immunohistochemistry methods.

Conclusion: We demonstrated potential ability of the GPR18 agonist PSB-KK-1415 to alleviate inflammation in the mouse models of colitis and showed that GPR18 is expressed in the human colon. We conclude that GPR18 is another receptor of the endogenous cannabinoid system family which may be implicated in the pathogenesis of IBD and intestinal inflammation overall.

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

P0316 THE MECHANISM OF PROTECTIVE ROLE OF D3 DOPAMINE RECEPTORS IN PATHOGENESIS OF ULCELERATIVE COLITIS
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Introduction: Our previous study showed that activation of D3 dopamine receptors (D3R) had the beneficial effect in experimental colitis treatment while the mechanism of this effect is unclear [1]. The disruption of surface colon mucosa layer with subsequent activation of local immune response by the bacterial infiltration into the inner layer of the mucosa are the key pathogenic mechanisms of ulcerative colitis progression and perpetuation. We found the localization of D3R on the Goblet cells in colonic mucosa [2].

Aims & Methods: We aimed to clarify how antibiotics affect the gut microbiota and avoid the disabling procedures. G protein-coupled receptor 18 (GPR18) belongs to the endogenous cannabinoid system which already earned its place in the pathogenesis of IBD and intestinal inflammation overall. As we lack data regarding modulation of microbiota, epithelial barrier disruption, genetics and environmental factors (UIC), various etiological factors contribute to the pathogenesis of IBD, including modulation of microbiota, epithelial barrier disruption, genetics and environment.

Results: The results of our study with lower doses of GPR18 ligands in the chronic TNBS model of colitis showed a non-significant decrease in macroscopic score, ulcer score and a significant decrease in MPO activity (p < 0.05) in mice injected with PSB-KK-1415 compared with TNBS-treated mice. PSB-CBS (1–5 mg/kg, i.e., once daily) was characterized in two mouse models of ulcerative colitis, induced by 2, 4, 6-trinitrobenzenesulfonic acid (TNBS) and dextran sulfate sodium (DSS). The extent of inflammation was evaluated based on the macroscopic score, microscopic score, quantification of myeloperoxidase (MPO) activity and alpha (TNFα) in colonic tissue. The expression of GPR18 gene in colonic samples from patients with IBD was quantified using real-time RT PCR and Western blot analysis. GPR 18 was localized in human colonic samples using immunohistochemistry methods.

Conclusion: We demonstrated potential ability of the GPR18 agonist PSB-KK-1415 to alleviate inflammation in the mouse models of colitis and showed that GPR18 is expressed in the human colon. We conclude that GPR18 is another receptor of the endogenous cannabinoid system family which may be implicated in the pathogenesis of IBD and intestinal inflammation overall.

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

References:

P0317 INFLAMMATION AT DISTAL ILEOCOLICAE RESECTION MARGINS INCREASES THE RISK OF POSTOPERATIVE CROHN’S RECURRENCE
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Introduction: Guidelines advise limited resection for Crohn’s terminal ileitis, as previous literature did not demonstrate clinical benefit from more extensive resections. Recently, some cohort studies identified positive resection margin as an independent risk factor for postoperative Crohn’s recurrence. But it is difficult to draw clinical conclusions, as non-uniform pathological definitions have been used. The aim of this study was to assess the incidence of non-radical resections (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.

References:
5. Mowat C, Arnott I, Cahill A, et al. Mercaptopurine versus placebo to pre-

References

Aims & Methods: The genetic basis that constitutes an adherent-invasive
tolerance. Three SNPs resulted in different nucleotide distribution between

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: Crohn’s Disease (CD) is an inflammatory disease of the intestinal tract. New therapies are needed to ameliorate the 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 chlor-
ide was used as a solvent. The hydration solutions contained an aminosalicylate
epsalicylate 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 intra-
colonic (i.c.) administration of 2, 4, 6-trinitrobenzene sulfonic acid (TNBS) on Day 0. Liposomal suspensions containing 5-ASA (5 mg/kg), CGA (20 mg/kg), berberine (5 mg/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 diarrhea. Additionally, tissue myeloperoxidase (MPO) activity was
to Day 6. Mice were sacrificed on Day 7 and colonic damage was evaluated.

Conclusions: Our study corroborates the absence of AIEC-specific genetic markers widely distributed across all AIEC strains. Nonetheless, three SNPs putatively involved with the AIEC phenotype have been described and one of them could be validated in AIEC screening.

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

References
incidence rate of microscopic colitis appeared to increase with time (Table). The incidence of microscopic colitis in 2016 was twice that observed in 2009 (incidence rate ratio 1.86; 95%CI 1.41, 2.46). There was a strong, independent graded association between the incidence of microscopic colitis and the number of lower GI endoscopy procedures undertaken (p = 0.03).

Conclusion: Microscopic colitis diagnosis is becoming more common. It is unclear whether microscopic colitis itself is increasing or greater numbers of lower GI endoscopy are being undertaken causing an ascertainment bias. Further work is required to explore environmental exposures such as drugs associated with microscopic colitis and to observe its natural history.

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

Reference

P0321 EXTRA-INTESTINAL MANIFESTATIONS AT DIAGNOSIS IN PAEDIATRIC- AND ELDERLY-ONSET ULCERATIVE COLITIS ARE ASSOCIATED WITH A MORE SEVERE DISEASE OUTCOME: A POPULATION-BASED STUDY

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Aims & Methods: The aims of this population-based study were to assess 1) the occurrence of EIM in paediatric- and elderly-onset UC; and 2) their impact on long-term disease outcome. Paediatric-onset (<17 years at diagnosis) and elderly-onset UC patients (>60 years) from a French prospective population-based Registry (EPMAD) were included. Data on EIM and other clinical factors at diagnosis and at maximal follow-up were collected.

Results: 158 paediatric- and 470 elderly-onset patients were included (median age at diagnosis 14.5 and 68.8 years; median follow-up 11.2 and 6.2 years, respectively). EIM occurred in 8.9% of childhood- and 3% of elderly-onset patients at diagnosis and in 16.7% and 2.2% of individuals during follow-up (p < 0.01). The most frequent EIM was joint involvement (15.8% of paediatric-onset and 2.6% of elderly-onset). Presence of EIM at diagnosis was associated with more severe disease course (need for immunosuppressive or biologic therapy or colectomy) in both paediatric- and elderly-onset UC (HR = 2.0, 95%CI: 1.0-4.2 and HR = 2.8, 0.9-7.9). Extensive colitis was another independent risk factor in both age groups.

Conclusion: Elderly-onset UC patients had lower risk of EIM either at diagnosis post-baseline compared to paediatric-onset UC patients. Further work is needed to better understand the impact of EIM on the long-term disease course and management of UC.

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

P0322 LONG-TERM NATURAL HISTORY OF MICROSCOPIC COLITIS: A POPULATION-BASED STUDY

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Introduction: Data on long-term natural history of microscopic colitis (MC), including collagenous (CC) and lymphocytic colitis (LC) are lacking.

Aims & Methods: A new case of MC diagnosed in the Somme area, France between January 1st, 2005 and December 31th, 2007 were prospectively included. Colonic biopsies from all patients were reviewed by a group of 4 expert gastro-intestinal pathologists to assess the diagnosis of MC or LC. Demographic and clinical data were retrospectively collected from diagnosis to February 31th, 2017.

Results: One hundred and thirty cases of MC, 87 CC and 43 LC were included (median age at diagnosis 70 and 48 years, respectively). The median follow-up was 9.6 years (Q1 = 7.6; Q3 = 10.6). By the end of follow-up, 37 patients (28%) relapsed after a median time of 3.9 years (1.2; 5) since diagnosis, without significant difference between CC and LC (36% vs 26%, p = 0.47). Twenty patients (15%) were hospitalized for a disease flare and 32 (25%) presented with another autoimmune disease. Budesonide was the most widely used treatment (n = 74, 59%), followed by 5-aminosalicylic acid (n = 31, 25%). Median duration of budesonide treatment was 92 days (70; 168) and no adverse event to budesonide were reported. Sixteen patients (22%) developed steroid-dependency and 4 (5%) were corticosteroidresistant. Only one patient was treated by immunosuppressant (azathioprine). No colorectal cancer was reported during follow-up. Any of the death (n = 25) observed during follow-up were linked to MC. In multivariable analysis, age at diagnosis (HR 1.03, 95%CI, 1.00-1.06; p = 0.02) and budesonide exposure (HR 0.40, 95%CI, 0.18-0.90; p = 0.03) were significantly associated with relapse.

Conclusion: This population-based study showed that after diagnosis, two third of patients with MC observed long term clinical remission. Age at diagnosis and budesonide exposure were associated with a risk of relapse.

Disclosure of Interest: M. Fumery: Lecture fees or consultant fees: Abbvie, Ferring, MSD, Takeda All other authors have declared no conflicts of interest.

P0323 IBD-INFO QUESTIONNAIRE: A MULTICENTER FRENCH UP-TO-DATE SURVEY OF PATIENT KNOWLEDGE IN INFLAMMATORY BOWEL DISEASE

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Introduction: It has been demonstrated in many chronic conditions, including inflammatory bowel disease (IBD), that better patients’ knowledge about pathology and treatment improves the course and management of disease. The aim of this study was to develop an updated self-questionnaire to assess patients’ level of knowledge of IBD.

Aims & Methods: The IBD-INFO included 3 parts: an original part (Q1), and 2 parts from the translation of the pre-existing questionnaires Crohn’s and Colitis Knowledge score (CCKNOW) (Q2) and Crohn’s and Colitis Pregnancy Knowledge score (CCKNOW) (Q3). The reliability and discriminatory ability of the questionnaire were validated with 3 groups of non-IBD volunteers with various theoretical knowledge levels. The final questionnaire (64 validated questions) was then tested on 364 in- and out- IBD patients from 4 French university hospitals. The score for each part of the questionnaire was calculated and factors associated with low scores were identified by uni- and multivariate logistic regression analyses.

Results: The scores obtained by the 3 non-IBD volunteer groups differed significantly (p < 0.0001) and the IBD-INFO questionnaire showed excellent internal reliability and consistency (α = 0.98). The median total score obtained by the IBD patients was 27/64 [0–59], and scores for Q1, Q2 and Q3 were, respectively, 10/23
Investigation of the average disease activity in 5-year-intervals in UC patients

F. Cordes
P0324 IMPACT OF PRIMARY SCLEROSING CHOLANGITIS ON 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 distinct disease course with less relapse, lower disease activity, but earlier 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 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, IB patients with and without PSC were matched at the ratio of 3:1 by sex, disease entity, age at diagnosis, time from diagnosis to first presentation, and duration of follow-up. Time to event analysis was performed using survival analytic methods including Kaplan-Meier method and Log-rank test.

Results:
- In UC patients, whereas pancolitis was more frequently diagnosed in UC-PSC patients (75% vs. 69%) and UC patients with acute flare as compared to UC-PSC patients (7.3 vs. 6.2; p = 0.044). Interestingly, UC patients without PSC presented more frequently with active disease, as compared to IB-PSC patients (20.4 vs. 21.7 years after onset, p = 0.05). Conveniently, 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 (38.9 vs. 22.0; p = 0.043) and earlier (20.4 vs. 28.6 years after onset, p = 0.087) in UC without PSC than in those with coincident PSC. Colorectal high grade intraepithelial neoplasia (HGIEN/CRC) occurred significantly earlier than in IB patients without PSC (20-year-risk: 9.6% vs. 5.6%; p = 0.003).

Conclusion: In our large cohort study, IB patients with coincident PSC showed a distinct disease course with less relapse, lower disease activity, but earlier disease onset and higher risk for extensive disease manifestation as well as increased risk for colorectal dysplasia development.

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

P0325 UNCHANGED SURGERY AND HOSPITALIZATION RATES IN THE EBCoP-EPICOM COHORT

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Introduction: The EpiCom-cohort is a European prospective population-based follow-up 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 incl. 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 examined by Cox regression analyses.

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 717 (56%) had ulcerative colitis (UC), 488 (38%) had Crohn’s disease (CD), and 84 (6%) 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 = 0.02), while 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 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 structuring (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 colorectal cancer while females, extensive disease, need for prednisolone at diagnosis, and progressing from CD to UC increased the risk. The cumulative probability of CD patients receiving treatment with 5-ASA was 90% in Western Europe and 84% in Eastern 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 immunomodulator 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 could 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 (chi^2 for trend, p
analysis. in patients with inflammatory bowel disease in the English primary care database
Table 1: The association between opiate prescriptions and all-cause mortality
patients with IBD. Any opiate use in patients with UC was associated was
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ates. Opiate prescribing for cancer and non-cancer pain has increased dramati-
cally in recent years but there is a paucity of data on prescription trends for
individuals with IBD. The only population-based study is from Canada where
5% of subjects with IBD became heavy opiate users after 10 years of diagnosis and
there was a strong association between heavy opiate use and mortality (OR 2.91, 95% CI 1.58–5.02). In this study we explore trends in the prescription of
opiate medications and assess the association between opiate prescription and 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 chi^2 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-cause mortality in opiate users and non-users was compared in a
propensity score matched, Cox proportional hazards regression analysis to pro-
duced hazard ratios (HR) and 95% confidence intervals (CI). All analyses were
performed for each opiate medication class in CD and UC patients.
Results: We included 3517 patients with CD and 5349 with UC. Opiate prescrip-
tions increased from 10% in 1990 to 30% in 2014 (chi2 for trend p < 0.005).
There was a similar, significant increase for codeine (chi^2 for trend, p = 0.008), tramadol (p < 0.003) 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 associated with increased mortality (HR 1.67, 95% CI 1.25–2.23). The strongest associations were for heavy users of strong opiates in patients with CD (HR 2.18, 95% CI 1.20–3.95) and UC (HR 3.30, 95% CI 1.77–6.18). There was no association
for prescriptions of tramadol at any prescription density in CD or UC.
Table 1: The association between opiate prescription and all-cause mortality in patients with inflammatory bowel disease in the English primary care database Research One. Propensity score matched, Cox proportional hazards regression analysis.

Table 1 Continued

<table>
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<th>Biological therapy</th>
<th>Surgery</th>
<th>Hospitalization</th>
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<tbody>
<tr>
<td></td>
<td>1 year</td>
<td>3 years</td>
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<td>Crohn’s disease</td>
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<tr>
<td>Eastern Europe</td>
<td>4 (5%)</td>
<td>6 (7%)</td>
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<tr>
<td>Western Europe</td>
<td>80 (20%)</td>
<td>110 (27%)</td>
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<tr>
<td>Ulcerative colitis</td>
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<td></td>
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<td>Eastern Europe</td>
<td>1 (1%)</td>
<td>6 (5%)</td>
</tr>
<tr>
<td>Western Europe</td>
<td>28 (5%)</td>
<td>53 (9%)</td>
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</table>

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
treated 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 individu-
als 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.

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Introduction: 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.

P0327 PATIENTS WITH INFLAMMATORY BOWEL DISEASE HAVE AN INCREASE RISK OF PERIODONTITIS CORRELATED WITH DISEASE ACTIVITY

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<td>Hazard ratio (95% CI)</td>
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<td>Ulcerative colitis</td>
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<tr>
<td>Hazard ratio (95% CI)</td>
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Any opiate medication

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<tr>
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<th>Hazard ratio (95% CI)</th>
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<tr>
<td>None/infrequent use (&lt;1 prescription per year)</td>
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<tr>
<td>Moderate use (1–3 prescriptions per year)</td>
<td>0.94 (0.64–1.39)</td>
</tr>
<tr>
<td>Heavy use (&gt;3 prescriptions per calendar year)</td>
<td>1.15 (0.85–1.55)</td>
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Codeine only

(continued)
Aims & Methods: In a prospective 6-months study, dental examination was performed on 103 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 (PD, the severity of pocket formation). 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 score > 5 or Mayo Score > 3) had a significantly higher score of BOP index (p = 0.007) as compared to patients with inactive disease. A significant correlation between BOP and Harvey-Bradshaw index was observed (r = 0.44, p = 0.0018). Anti-TNF therapy was significantly associated with lower BOP index (p = 0.02). All patients with diagnosis of periodontitis were treated by periodontal debridement and subgingival irrigation with povidone-iodine which led to a significant decrease of BOP index three months after diagnosis.

Conclusion: Inflammatory bowel diseases were associated with an increased risk of periodontitis. Gingival inflammation was correlated to disease activity and anti-TNF therapy was associated with a lower risk of active parodontal disease.

Disclosure of Interest: All authors have declared no conflicts of interest.
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 (rs154440) and 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 electrophoresis included 76 patients with UC and 85 controls. Genotyping was performed 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 electrophoresis.

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).

Conclusions: For 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
3. Hughes D.J., McManus R., Neary P. et al. Common variation in the vitamin D receptor gene and risk of inflammatory bowel disease (IBD) pathogenesis. DNMT3A and DNMT3B are two of the three members of the family of de novo DNA methyltransferases. Variants in these proteins are responsible for the establishment of de novo genomic DNA methylation patterns and are involved in the normal development as well as in many diseases. However, it is unknown if DNMT3A 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 DNMT3A in intestinal epithelial cells (IECs), human Caco-2 colon carcinoma cells were transfected with siRNA targeting DNMT3A, DNMT3B and DNMT3L. Gene expression analysis and DNA methylation analysis using qRT-PCR, RNA sequencing and 850K methylation chip assay were performed. For long-term experiments, we used a CRISPR/Cas9 genome editing to delete DNMT3A gene in Caco-2 cells. DNMT3A 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 DNMT3A 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 DNMT3A induces abnormal spheroids formation by reducing spheroids diameter and defect in actin organization and lumen formation. Thus, the observed morphological phenotype may be linked to the differently regulated genes involved in the previous analysed pathways.

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(IRE1), double-stranded RNA-dependent protein kinase (PKR)-like ER kinase (ERK) and XBP1 promoter activity (XBP1 expression factors; O4). Defects in the 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 ORM DL3. An objective of this study was to determine the function of ORM DL3 in UPR signaling to gain insights into the molecular mechanisms promoting chronic intestinal inflammation. Using molecular cell biology approaches, we studied the effect of ORM DL3 on ATF6, PERK and IRE1 signaling in cell lines. ORM DL3 in in vitro and in vivo an acute and chronic DSS-colt due model using Ormdl3-deficient mice.

Results: In our in vitro studies demonstrate that ORM DL3 facilitates ER stress-induced ATF6 activation. Overexpression of ORM DL3 resulted in increased cleavage of ATF6 and augmented ERSE promoter activity. Mechanistically, we show that ORM DL3 colocalizes and directly interacts with ATF6. Furthermore, ORM DL3 overexpression induced the PERK pathway by elevating eIF2α phosphorylation and protein levels. In contrast, we observed an increased rate of IRE1 signaling exerted by ORM DL3 proteins as shown by reduced XBP1 splicing and decreased UPRE promoter activity. IRE1 signaling exerted by ORMDL proteins as shown by reduced XBP1 splicing and decreased UPRE promoter activity. IRE1 signaling exerted by ORMDL proteins as shown by reduced XBP1 splicing and decreased UPRE promoter activity.

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

Reference

P0335 FINAL RESULTS ON IMMUNOGENICITY PROFILE AND PREDICTORS OF ADA DEVELOPMENT OF BIOSIMILAR INFlixIMAB DURING THE FIRST 12 MONTHS OF THE TREATMENT: RESULTS FROM A PROSPECTIVE NATIONWIDE COHORT

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Introduction: Biosimilar infliximab CT-P13 received EMA approval in June 2013 for all indications of the originator product and its use is mandatory in all anti-TNF naïve IBD patients in Hungary since May 2014. The aim of this study was to prospectively evaluate the immunogenicity profile of the biosimilar infliximab and predictors of TDM in IBD patients during the first year of therapy in a nationwide, multicentre cohort. Demographic data were collected and a harmonized monitoring strategy was applied. Clinical and biochemical activity were evaluated at weeks 14, 30 and 54. Routine therapeutic drug monitoring (TDM) was applied. Trough level (TL) and anti-drug antibody (ADA) concentrations were measured by ELISA (LT-005, Theradiag, France) at baseline and week 2, 6, 14, 30 and 54 weeks right before anti-TNF administration during the induction treatment.

Results: 353 consecutive IBD patients (209 CD patients and 144 UC patients) were included in the present cohort. 23.4% of CD patients and 19.4% of UC patients had received previous anti-TNF therapy. None of the patients had received infliximab within 12 months prior to initiation of the biosimilar infliximab. 60.51% of CD/UC patients received concomitant immunosuppressives at baseline. Mean TLs were 18.9, 17.3, 7.4, 4.3 and 5.3 µg/ml at weeks 2, 6, 14, 30 and 54 in CD and 19.1, 11.8, 5.0, 3.9 and 4.5 µg/ml in UC. Previous anti-TNF therapy was associated with lower early TLs in both CD (week 2, 14, and 30, p = 0.005) and UC (week 2, 6, p = 0.03). ADA positivity rates were 4.3%, 12.0%, 20.9% and 28.6% in naive patients at weeks 0, 14, 30 and 54 (mean TLs of 266, 312, 290 and 210). ADA positivity at week 14 was associated with lower TLs in all CD (week 2, 14 and 30, p < 0.007 for all) and UC (week 6, 14 and 30, p < 0.001 for all). Concomitant IS use prevented ADA formation in anti-TNF naïve patients (week 14, 30 and 54, p = 0.01, 0.02 and 0.004) in CD but not in UC and did not affect clinical remission or response rates (32.8%) patients had infusion reactions during induction or maintenance treatment, of which 16 patients had received previous infliximab treatment.

Conclusion: Drug TLs and ADA development in IBD patients until week 54 were in line with results from previous studies. Increased exposure to anti-TNFs had lower early TL coupled with ADA positivity and were more likely to develop infusion reactions. Concomitant IS use prevented ADA development in anti-TNF naïve patients.

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

Reference
P0336 RECONSIDERING THE PROGNOSTIC VALUE OF TRADITIONAL SEROLOGIC ANTIBODIES IN CROHN’S DISEASE – IMMUNOGLOBULIN CLASSES TO TAKE THE CENTRE STAGE

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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 serological antibodies. Endoscopic and histological (IP/S) complications were used as classification criteria. The Endoscopic Response (Remission or SR) was significantly associated with IgA type ASCA and IgG type ASCA. In Kaplan-Meier analysis, development of internal penetrating and/or stenosing (IP/S) complications and response to surgery (SR) was significantly associated with IgA type (Hazard ratio [HR] = 0.24; 95% CIs: 0.111%–0.54%; P = 0.001) and with IgG type (HR = 0.47; 95% CIs: 0.29%–0.78%; P = 0.003). MR ulcer healing was associated with a low risk of clinical relapse (Hazard Ratio [HR]: 0.24; 95% CIs: 0.111%–0.54%; P = 0.001) and serological relapse (HR = 2.84; 95% CI: 1.63–4.95; P = 0.008). Ulcer healing was associated with a low risk of clinical relapse (Hazard Ratio [HR]: 0.24; 95% CIs: 0.111%–0.54%; P = 0.001) and serological relapse (HR: 0.47; 95% CIs: 0.29%–0.78%; P = 0.003).

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

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 treatment, and may be associated with the disease activity, allowing monitoring of the short-term efficacy of biotherapies.

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. We performed a cross-sectional study that included consecutive patients with IBD attending our adult IBD clinic in a three-month period. Consenting patients completed a survey performed by two researchers not involved in patients’ care. Activity was evaluated using Harvey-Bradshaw index in Crohn’s disease (CD) and Partial Mayo Score in Ulcerative colitis (UC). Anxiety and depression were estimated by the Goldberg Anxiety and Depression Scale and modified Morisky Medication Adherence Scale (MMAS-8) was used to assess adherence (<6, 6-7 and 8 points indicate low, medium and high adherence, respectively). In statistical analyses, Chi-square and Student’s t-test were used for side by side comparisons and logistic regression for multivariable analysis.

Results: A total of 181 patients were evaluated. The median age was 47 ± 16 years; 98 (54.1%) were males and 32 (17.7%) were active smokers. 82 (45.3%) patients had CD and 99 (54.7%) had UC. The mean disease duration was 10.21 ± 8.59 years. Most patients were in remission (87.8%). In relation to the treatment, 35.9% were taking mesalazine, 2.8% steroids, 29.3% immunomodulators and 30.4% biologics. The oral route was the most frequent (52.5%), followed by rectal route (17.1%) and subcutaneous or intravenous (30.4%). Based on MMAS-8, almost half of our patients 84 (46.4%) had high adherence to IBD treatment, 56 (30.9%) had medium and 41 (22.7%) had low adherence. In relation to factors associated with adherence, univariate analyses showed that patients with high adherence were older (52.0 ± 16.1 years vs. 42.5 ± 14.4; p < 0.001) and their disease had longer duration (12.2 ± 9.7 years vs 8.5 ± 7.1; p = 0.004) than patients with medium/low adherence. However, smokers had a low adherence (p = 0.007). Multivariate analysis confirmed that age was associated with high adherence (OR:1.04, CI95% 1.01-1.06; p = 0.002) and being smokers with low adherence (OR:3.47, CI95% 1.36-9.00, p < 0.01). Also, multivariate analysis showed that CD was associated with low adherence (OR:2.54, CI95% 1.11-5.79, p < 0.05).

Conclusion: Only active smoking and age were predictors of insufficient adherence to drugs in IBD. Efforts for reinforce adherence should be especially directed to young patients. Quitting tobacco could improve adherence.
Correlation of components of the CDAI with SES-CD

General well-being  63.3 (50.2)  0.16  0.073  42.2 (46.7)  0.17  0.123
Abdominal pain  41.0 (29.6)  0.21  0.020  21.8 (25.6)  0.06  0.597

Aims & Methods: disease activity in registration trials. This post hoc analysis assessed the association between individual components of the CDAI with the Simple Endoscopic Score for Crohn’s Disease (SES-CD) from EXTEND.

Results: A total of 121 patients at week 12 and 80 patients at week 52 had both CDAI and SES-CD values. Mean (SD) CDAI and SES-CD values at week 12 were 193.8 (116.4) and 8.0 (7.4), respectively, and 132.5 (97.6) and 5.9 (6.6), respectively, at week 52. A significant, but weak correlation was observed between CDAI and SES-CD at week 12 (r = 0.31 [P < 0.001]) and at week 52 (r = 0.31 [P < 0.005]). Similar results were observed for correlations between mean changes from baseline in CDAI and SES-CD at weeks 12 (r = 0.35 [P < 0.001]) and 52 (r = 0.31 [P = 0.005]). Correlations between individual components of CDAI and SES-CD at weeks 12 and 52 are shown in the table. SF, AP, extra-intestinal manifestations, and SF + AP were significantly correlated with SES-CD at week 12; the strongest correlation was for SF (r = 0.46) and the addition of AP to SF did not increase the correlation (Table). At week 52, SF, hematocrit, and SF + AP were significantly correlated with SES-CD. At week 12, the CDAI baseline with SF and AP was significant regardless of whether the patient had disease of the ileum (r = 0.44 [P < 0.001] with ileal disease; r = 0.48 [P < 0.001] without ileal disease), while SES-CD correlated more strongly with AP in those with ileal disease (r = 0.27 [P = 0.036]) than those without ileal disease (r = 0.16 [P = 0.233]).

Table: Correlation of components of the CDAI with SES-CD

<table>
<thead>
<tr>
<th>Variable</th>
<th>Week 12 n=121</th>
<th>Week 52 n=80</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean (SD) r P-value</td>
<td>Mean (SD) r P-value</td>
<td></td>
</tr>
<tr>
<td>Stool frequency*</td>
<td>47.1 (35.2) 0.46 &lt;0.001 33.7 (32.1) 0.35 0.002</td>
<td></td>
</tr>
<tr>
<td>Abdominal pain</td>
<td>41.0 (29.6) 0.21 0.020 21.8 (25.6) 0.06 0.597</td>
<td></td>
</tr>
<tr>
<td>General well-being</td>
<td>63.3 (50.2) 0.16 0.073 42.2 (46.7) 0.17 0.123</td>
<td></td>
</tr>
<tr>
<td>Extra-intestinal manifestations</td>
<td>14.0 (16.3) 0.22 0.017 11.5 (13.8) 0.11 0.317</td>
<td></td>
</tr>
<tr>
<td>Diabetic pain medications</td>
<td>3.2 (9.3) 0.01 0.927 1.9 (7.3) 0.08 0.405</td>
<td></td>
</tr>
<tr>
<td>Abdominal mass (kg)</td>
<td>0.48 (0.49) 0.50 0.588 0.00 0.00 NA NA</td>
<td></td>
</tr>
<tr>
<td>HCT</td>
<td>21.1 (23.9) 0.35 0.770 17.5 (20.6) 0.40 0.001</td>
<td></td>
</tr>
<tr>
<td>Stool frequency + Abdominal pain</td>
<td>3.2 (6.1) 0.03 0.770 3.8 (7.0) 0.07 0.568</td>
<td></td>
</tr>
</tbody>
</table>

*the number of liquid or very soft stools per day. SES-CD, Simple Endoscopic Score for Crohn’s Disease. HCT, hematocrit. NA, not applicable.

Conclusion: Data from patients with moderate to severe CD and evidence of mucosal ulceration in EXTEND supported previous findings that the CDAI was only weakly correlated with SES-CD, as assessed at 12 and 52 weeks. Only SF was significantly correlated with SES-CD at both time points. At 12 weeks, the relationship of CDAI with SF was significantly stronger regardless of whether the patient had disease of the ileum (r = 0.44 [P < 0.001] with ileal disease; r = 0.48 [P < 0.001] without ileal disease), while SES-CD correlated more strongly with AP in those with ileal disease (r = 0.27 [P = 0.036]) than those without ileal disease (r = 0.16 [P = 0.233]).

References

NEGATIVE DECREASED CD8+CD28-CD27- T CELLS' RATIO CAN PREDICT THE POOR OUTCOME SENSITIVELY FOR PATIENTS WITH COMPLICATED CROHN'S DISEASE

Aims & Methods: To test the efficiency of CD8+CD28-CD27- T cell's 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, pathophysiologic, 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 Crohn’s disease activity index (CDAI) (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+/CD8- (CD8+CD28+CD27+CD28-CD27-) was associated with BMI, CDAI, steroids, and surgery (P < 0.005). II. Follow-up and dynamic changes of the balance was associated with BMI, CDAI, steroids, and surgery (P < 0.005). A shorter lasting time of remission (LTR) was found in complicated CD patients (P = 0.044). ROC curve showed that CD8+/CD8- (CD8+CD28+CD27+CD28-CD27-) 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. III. Kaplan–Meier analysis: Undergoing of steroids and surgery was closely related to worse outcome for the complicated CD patients, and patients who underwent steroids and surgery had the significantly lower CD8+/CD8- (CD8+CD28+CD27+CD28-CD27-) ratio and lower CRLRs (all P < 0.05). Conclusion: Depending on steroids and surgery stands for a more severe disease activity and thus disqualify the immunological balance, which could be the potential factors for lower CRLRs. CD8+/CD8- (CD8+CD28+CD27+CD28-CD27-) 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.


Conclusion: For both preparations, site colonoscopist findings demonstrated similar very high rates of cleansing success for the overall colon (>95%) and high rates of high-quality cleansing of the ascending colon (>73%), however, statistical significance was not met in either comparison. The rates of cleansing success in the ascending colon reported by the site colonoscopists are notably higher than those previously reported by central readers.

Disclosure of Interest: R. Ng Kwet Shing: Employee of Norgine

All other authors have declared no conflicts of interest.

References

P0345 BOWEL PREPARATION QUALITY OF NER1006 VERSUS SODIUM PICOSULFATE + MAGNESIUM CITRATE AS ASSESSED BY COLONOSCOPISTS AT SITE: A POST HOC ANALYSIS FROM A RANDOMISED CONTROLLED TRIAL

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Introduction: The efficacy of colonoscopy is dependent on the quality of bowel cleansing. NER1006 is the first 1L polyethylene glycol (PEG)-based bowel cleansing solution and is a patented combination optimised for effective bowel cleansing. The NOCT study (a multicentre randomised Phase 3 clinical trial investigating bowel cleansing efficacy of NER1006 vs trisulfate solution) reported bowel preparation quality assessed by central readers. This post hoc analysis shows the cleansing assessment by site colonoscopists, who typically guide clinical decision making; hence this study may be more relevant for clinical practice than previous studies.

Aims & Methods: In the NOCT study 621 patients (males and females, aged 18–85) were randomly assigned in a 1:1 ratio to receive either NER1006 or trisulfate solution, each administered as an overnight split-dose. Data from the 523 patients who underwent a colonoscopy and had a site colonoscopist assessment were used in this analysis. Colonoscopists were blinded to the preparation administered. Cleansing was assessed according to the Harefield Cleansing Scale, following sequential scoring, cleansing of the overall colon was graded from A to D; grades A and B were judged as successful cleansing. Cleansing of the ascending colon was graded from 0 to 4; grades 3 and 4 were judged as high-quality cleansing.

Results: As Table 1 shows, the bowel preparation quality of NER1006 when assessed by site colonoscopists did not show a statistically significant difference to trisulfate for the overall colon (93% vs 94%, P = 0.681; 95% CI: 5.1–1.3%) or ascending colon (80 vs 74%, P = 0.079; 95% CI: 0.7–13.6%). There was, however, a numerical advantage in favour of NER1006 on the proportion of patients achieving high-quality cleansing success in the right colon.

Table 1: Successful colon cleansing rates when treated with NER1006 or trisulfate solution.

<table>
<thead>
<tr>
<th>Bowel preparation</th>
<th>Overall colon</th>
<th>Ascending colon</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>259 (93)</td>
<td>259 (80)</td>
</tr>
<tr>
<td>NER1006</td>
<td>241 (93)</td>
<td>208 (80)</td>
</tr>
<tr>
<td>Trisulfate</td>
<td>248 (94)</td>
<td>195 (74)</td>
</tr>
</tbody>
</table>

N.B. successful cleansing defined here as a Harefield Cleansing Scale grade of A or B (overall colon) or 3 or 4 (ascending colon, high quality)
Several studies in recent decades have revealed new roles for vitamin D—especially as a regulator of the immune system and suppressor of fibrostenosis. Vitamin D deficiency is considered to be related to disease activity and intestinal fibrostenosis. We consider it important to demonstrate this relationship not only using clinical parameters, but also using endoscopic parameters such as mucosal inflammation and intestinal fibrostenosis.

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

References


### Table 1: A comparison of bowel cleansing efficacy as assessed by site colonoscopists between NER1006 and NaPic-C6

<table>
<thead>
<tr>
<th>Bowel preparation</th>
<th>Overall colon</th>
<th>Ascending colon</th>
<th>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)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NER1006</td>
<td>236 173 (73)</td>
<td>236 82 (34)</td>
<td>20 &lt; 0.001 12.7–27.8</td>
</tr>
<tr>
<td>NaPic + MgCit</td>
<td>243 148 (61)</td>
<td>243 35 (14)</td>
<td></td>
</tr>
</tbody>
</table>

### Results:

Inflammatory Bowel Disease Questionnaire (s-IBDQ) as well as a questionnaire regarding disease activity and QOL has been provided. The s-IBDQ score at follow up (p < 0.001; Mann-Whitney U test). In a multivariate analysis, low serum 25(OH)D levels were related with mucosal inflammation and intestinal fibrostenosis of CD (P < 0.05; logistic regression analysis).

**Conclusion:** This study demonstrated the relationship between vitamin D level and disease activity in CD patients. The disease pathology of CD consists of repetitive intestinal inflammation and intestinal fibrostenosis formed during healing and inflammation. We consider it important to demonstrate this relationship not only using clinical parameters, but also using endoscopic parameters such as mucosal inflammation and intestinal fibrostenosis.

### References


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**Introduction:** 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 plays an important role in the management of IBD. An eHealth web application consisting of a validated Fecal Calprotectin (FC) home testing kit (Calpro Smart™), 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 one 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, Harvey-Bradshaw Index (HBI) for CD or Simple Clinical Colitis Activity Index (SCCAI) for UC, and perform a home testing of FC. The FC measurement is a sensitive marker of disease activity in IBD and FC home testing can be performed either using the home-monitoring kit (3M-C6) or a one time kit (OD-C6). In a web-program rendering a Total Inflammation Burden Scoring (TIBS) which is visualized to the patient in a traffic light manner for instant recommendation of treatment strategies. At baseline and upon completion of the trial the patients were requested to fill out a QOL questionnaire (Short-Inflammatory Bowel Disease Questionnaire (s-IBDQ)) 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-IBDQ scores at baseline were 58 (95% CL: 55–61) in the 3M-group and 54 (95% CL: 50–58) in the OD-group as well as 58 (95% CL: 54–62) in the 3M-group and 61 (95% CL: 58–64) in the OD group at one year follow up.

**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: P. Weimers has provided all fecal Calprotectin home testing kits used in this study.
D. Markers: D. Markers has provided all fecal Calprotectin home testing kits used in this study.
D.V. Andersen: D.V. Andersen has provided all fecal Calprotectin home testing kits used in this study.
Skeletal muscle atrophy is a predictive factor for intestinal resection in patients with Crohn’s disease

Introduction
Sarcopenia defined as low SMI were observed in 44% of all IBD patients (29% in CD, 54% in UC). In UC patients, the O-PNI, CONUT, height and albumin were significantly lower than the CD patients. Spearman’s rank correlation is used to identify sarcopenia. The cumulative operation-free survival rate was significantly lower among patients (P = 0.047) were the significant factors predicting intestinal resection. The cumulative operation-free survival rate was significantly lower among sarcopenic patients in all IBD patients (P = 0.009) and stratified analysis in CD patients (P = 0.032) using Kaplan-Meier method and log-rank test.

Conclusion: The L3 skeletal muscle area can be a prognostic factor of intestinal resection in IBD, especially in CD. The results may originate from the fact that CD patients present with inflammatory diseases which accumulate intestinal deformity.

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

Background: Sarcopenia is a common condition associated with aging, malnutrition, chronic diseases, and various types of cancer. It is characterized by a progressive loss of muscle mass and strength, leading to impaired mobility, increased risk of falls, and decreased quality of life. Sarcopenia is strongly associated with poor outcomes in patients with inflammatory bowel disease (IBD), highlighting the importance of identifying and treating this condition to improve patient outcomes.

Aims & Methods: We aimed to assess the correlation between (TST/booster) and QFT in a population of IBD patients. We compared the prevalence of latent tuberculosis infection (LTI) before anti-TNF therapy by screening with QuantiFERON-TB (QFT) and the usefulness of repeating periodic (annual or biannual) screening in a population of IBD patients of Zamora (Spain). In a single cohort of IBD patients attended in the department of gastroenterology of Zamora Hospital, we implemented a questionnaire and collected TST/booster performed previously to February 2015. Afterwards, prospectively, between February 2015 to February 2017, TST and QFT were performed at the 1st and 2nd line of immunomodulator treatment. Additionally, the correlation between (TST/booster) and QFT was performed.

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 non-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>
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<tr>
<td>TST/booster</td>
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<td>3/89 (0.8%)</td>
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<td>TST/booster+QFT+ (T+)</td>
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Conclusion: The present study is the first 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: Currently, 78 patients (33 male, 45 female; age 16-72, mean 35 years) with newly diagnosed CD are enrolled. 56 CD-patients with follow up ≥2 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 a score from 0-2 step-up treatment occurred in 7%, whereas in 28 patients with a score ≥3 step-up rate was 43% (p = 0.0034). Differences between patients with a score 0-2 and ≥3 were (age 41 vs. 28 years, p = 0.0011), CRP ≥2 mg/l (17/28 patients vs. 0.28, p < 0.0001), endoscopy score 1.4 vs. 2.7, p < 0.001), perianal lesion ≥128 vs. 4/28, stenosis 1/8 vs. 6/28. There were no differences in terms of sex, fistula, extraintestinal manifestations and lever.

Disclosure: This early analysis of a prospective study planned with a 5-year follow-up is 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.

Aims & Methods: We have conducted a retrospective study on 61 IBD patients who have admitted due to exacerbation of the disease. We have enrolled IBD patients who had abdominal computed tomography and assessed the nutritional indices, such as the Onodera’s prognostic nutritional index (O-PNI) and control-ling nutritional status (CONUT). O-PNI was calculated based on the serum albumin and total lymphocyte count, using the following equation: O-PNI = 10 × (serum albumin (g/dl) + 0.005 × total lymphocyte count (ml/l)). The L3 skeletal muscle index (SMI) which is the cross-sectional area of the skeletal muscle at the level of the third lumbar (L3) vertebra normalized by the height squared is used to identify sarcopenia.

Results: The L3 skeletal muscle area can be a prognostic factor of intestinal resection in IBD, especially in CD. The results may originate from the fact that CD patients present with inflammatory diseases which accumulate intestinal deformity.

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

Aims & Methods: We aimed to assess the correlation between (TST/booster) and QFT in a population of IBD patients. We compared the prevalence of latent tuberculosis infection (LTI) before anti-TNF therapy by screening with QuantiFERON-TB (QFT) and the usefulness of repeating periodic (annual or biannual) screening in a population of IBD patients of Zamora (Spain). In a single cohort of IBD patients attended in the department of gastroenterology of Zamora Hospital, we implemented a questionnaire and collected TST/booster performed previously to February 2015. Afterwards, prospectively, between February 2015 to February 2017, TST and QFT were performed at the same day, and the TST-booster 7 days after. Finally we compared the results of the LTI screening performed prospectively with the screening of the retrospective cohort.

Results: A total of 404 patients were included with a mean age of 51.5 (SD 16.6), 225 (55.7%) male and 179 (44.3%) female. 227 patients (56.2%) were ulcerative colitis, 167 (41.3%) were Crohn disease and 10 (2.5%) were diagnosed of indeterminate colitis. 160 patients live in rural areas (40.6%), 60/355 (16.9%) were non-smokers. The prevalence of LTI and the correlation between TST/booster and QFT is shown in table 1.

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Prevalence of LTI in retrospective testing was of 54/246 (22.0%). Prospective testing of 276 (CFAST) patients with known quiescent small bowel CD, after the follow-up, 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 CAPST and QF in CE increases the detection of LTI. 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 in patients recruited over the 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.

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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 (jejunum and proximal ileum) small bowel inflammation by MRE is challenging. Current quantitative scores such as Magnetic Resonance Index of Activity (MaRIA) do not incorporate proximal small bowel data and were validated against ileocolonoscopy. Magnetic resonance enterography global score (MEGS) was designed for quantitative evaluation of the entire digestive tract; however, it was only validated against ileocolonoscopy and its accuracy in the proximal small bowel was not assessed. CE allows for accurate assessment of the entire small bowel and is the modality of choice for evaluation of the proximal small bowel.

Aims & Methods: We aimed to compare the quantitative evaluation of the small bowel inflammation by MEGS score and the Lewis capsule endoscopy score. Patients with known quiescent small bowel (CD) for at least 3 months (CDAI <150) were prospectively recruited and underwent magnetic resonance enterography (MRE) and capsule endoscopy (CE). MEGS score was calculated for each bowel segment and the entire small bowel. MEGS is based on the involved segment length, wall thickness, mural enhancement, mural and peri-mural edema and extra-intestinal findings. In addition, MARIA score was calculated for the terminal ileum. Small bowel inflammation on CE was quantified using the Lewis score (LS) (LS < 135= mucosal healing; LS ≥ 790 = moderate to severe inflammation). Proximal small bowel was defined as jejenum and duodenum on MRE and as 1st and 2nd tertiles LS on CE. Distal small bowel was defined as terminal ileum on MRE and 3rd tertile LS on CE. Fecal calprotectin (FCP) levels were measured and correlated with all scores.

Results: Fifty-two patients were included in the study. There was a strong correlation between MEGS and LS (Pearson correlation = r = 0.61, p = 0.001) 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. The primary outcome was concordance between TST and IGRAs. Secondary outcomes were effects of immunosuppressive therapy on both TST and IGRAs. 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 analysis. The pooled concordance between the TST and IGRAs 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 for TST increased from 1.0 to 1.57 if immunosuppressed (95% confidence interval [CI] 0.31–1.03, p = 0.06). The odds ratio of testing positive by TST if immunosuppressed was 1.14 (95% confidence interval [CI] 0.61–2.12, p = 0.69). Using the fixed effect model yielded similar results, however the effect size of immunosuppression on IGRAs reached statistical significance (p = 0.06 to 0.01).

Conclusion: While concordance was 85% between TST and IGRAs, the performance of IGRAs seems to be negatively affected by immunosuppression. Given the importance of detecting latent TB prior to anti-TNF initiation, using only IGRAs should be avoided in immunosuppressed IBD patients.

Disclosure of Interest: W. Alifè; Abbvie, Janssen, Takeda, Merck, Pfizer, Shire, Ferring, Theradiag
All other authors have declared no conflicts of interest.
**P0345 THIOPURINE MAINTENANCE THERAPY FOR IBD: WHICH IS THE BEST METHOD TO MEASURE MEDICATION ADHERENCE?**

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**Introduction:** For the majority of patients with IBD long-term therapy is required to maintain remission, yet 30–45% of patients do not adhere to their IBD medication. Medication adherence can be assessed with prescription refill rates, biological markers (metabolites, trough levels), and patient self-reports. There is currently no accepted gold standard and the feasibility and utility of different adherence assessment tools in the routine outpatient clinic setting have not been fully examined. The aim of this service improvement project was to test the acceptability of self-report tools assessing thiopurine adherence in the IBD clinic and to correlate the results with thioguanine-nucleotide (TGN) levels.

**Aims & Methods:** Consecutive outpatients on thiopurine maintenance therapy for IBD for >3 months were recruited from clinic. Patients self-reported adherence using the validated Morrisky 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 69. These included 38 women. Diagnoses were Crohn’s disease in 27, ulcerative colitis in 41 and IBD-U 3 cases. Concomitant therapy included 5/ASA (25 cases), anti-TNF (13 cases) and Vedolizumab (2 cases). The proportion of adherent patients was according to the relevant report tool 71% (TGN), 87% (VAS), 87% (Morisky) and 77% (MARS). VAS (Pearson 0.315; p = 0.005) and Morisky (Pearson –0.363; p = 0.001) correlated moderately with TGN, but MARS (Pearson 0.09; p = 0.39) did not. The 7 patients, who were non-adherent by TGN were detected by VAS in 3, Morisky in 6 and MARS in 3 cases. However, patients showing non-adherence according to self-report tools had higher TGN levels in 6 of 10 cases for VAS, 10 of 26 for Morisky and 4 of 15 for MARS.

**Conclusion:** Self-report tools provided a patient-friendly and inexpensive way of assessing adherence, but the correlation with TGN levels was only moderate. While providing a more objective 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 non-adherent. Neither TGN levels nor self-report tools can be seen as the gold standard at present.

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

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**Introduction:** Anti-TNFa therapies have improved outcomes in patients with inflammatory bowel disease. Their use has been associated with improved clinical outcomes, reduced hospitalisation and reduced costs. However secondary loss of response (LOR) to both infliximab (IFX) and adalimumab (ADA) is a significant problem, leading to further flares of disease, disease progression and poorer outcomes. Therapeutic drug monitoring (TDM), which involves measurement of an anti-TNFa drug, its metabolites, or another index of the drug, offers the opportunity of exploring an immune basis behind LOR, and potentially adjusting doses or switching therapies to help regain clinical response.

**Aims & Methods:** The aim of this study was to evaluate whether TDM can help predict secondary LOR to infliximab and adalimumab and whether dose adjustments based on this information can help patients regain clinical response. The study was a prospective, single-centre, observational study from April 2015 to April 2016, at our institution. Patients with Ulcerative colitis (UC) and Crohn’s disease (CD) were enrolled, if they were clinically (based on Harvey-Bradshaw Index (HBI) or partial Mayo scores) felt to be experiencing a secondary LOR to either infliximab or adalimumab maintenance therapy. Patients with available biochemical markers measured, including CRP and albumin. In addition assessment of inflammation took place, with measurement of SES-CD and Mayo scores, for CD and UC respectively. Anti-TNFa trough and antibody levels were performed using ELISA techniques. Patients were followed for a one-year period, from their initial assessment for secondary LOR to assess outcomes.

**Results:** 46 patients were recruited, 40 CD with Harvey-Bradshaw Index (HBI) >4 points and 6 patients with UC with Partial Mayo Score (PMS) >2 points. Mean age was 40.8 years, 26 (56.5%) were female. Severe flare of disease was 9.8 years, 3.8% were smokers, 71.5% on immunomodulators, and 11 (23.9%) had prior anti-TNFa exposure. 17 (48.6%) were on an adalimumab maintenance dose of 40 mg every other week. Overall HBI for the majority was <1.9, partial Mayo Score <3.6. Patients were followed for a one year period, following secondary LOR of SES-CD was 8.5, Mayo endoscopy score 2.7. Mean adalimumab trough level was 4.5 μg/ml and 15/36 (42.9%) had a sub-therapeutic trough level less than 1 μg/ml. 9 patients (25.7%) had antibodies to adalimumab. Mean infliximab trough level was 8.1 μg/ml and 2/20 (10%) had sub-therapeutic trough levels, none with antibodies. Higher baseline adalimumab trough levels, were noted in patients who were well or who had functional symptoms at one-year follow-up compared to patients, who were unwell, and required change in therapy, mean trough 6.4 μg/ml (IQR 2.1–10.3) compared to 2.9 μg/ml (IQR 0.3–6.3) (p = 0.0265 95% C.I. 0.4 to 6.5). The area under the curve [AUC] for association of ADA level at secondary LOR with a good outcome was 0.766, p = 0.037. In addition a trough level of 3.5 μg/ml predicted clinical response at one year, following secondary LOR to adalimumab, with a sensitivity of 85.7% and a specificity of 81.8%. Similarly for infliximab higher baseline trough levels, were noted in patients who were well at one-year follow-up compared to those who required change in therapy. Partial Mayo Score <1.75 (p = 0.04) versus 1.5–16.8) versus 4.5 (p = 0.005 95% C.I 4.5 to 18.3). The therapeutic strategy chosen for each group was: 23.9% no change in treatment, 26.1% increase anti-TNFa dose or decrease infusion interval, 19.6% switch to another anti-TNFa drug, 15.2% switch to non anti-TNFa (ustekinumab). For patients who had doses adjusted, clinical response (decrease of HBI ≤ 3 points for CD) was reached in 77.8% of patients and remission (HBI ≤ 4 for CD) in 55.6% at the end of follow-up.

**Conclusion:** Secondary LOR to anti-TNFa therapy has a significant impact on patient outcomes. Therapeutic drug monitoring is helpful for predicting secondary LOR and for facilitating dose adjustment or switch in therapy in a clinically guided fashion.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
**PO357 DIAGNOSTIC DELAY IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE – A STUDY OF THE AUSTRIAN IBD STUDY GROUP (ATISG)**

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**Introduction:** Diagnostic delay seems to be common in inflammatory bowel disease (IBD), especially in Crohn’s disease (CD). We sought to investigate the diagnostic delay in Austrian IBD patients and to identify associated risk factors as well as the impact of delayed diagnosis on the risk of intestinal surgery in CD.

**Aims & Methods:** In a multicentre cohort study adult patients with IBD (CD, UC) attending 19 Austrian outpatient clinics were recruited between May 2014 and July 2015 to evaluate diagnostic delay in Austrian IBD patients and to identify associated risk factors as well as the impact of delayed diagnosis on the risk of intestinal surgery in CD.

**Results:** Overall, 102 patients were enrolled in the study (Table 1). The median diagnostic delay was longer in CD (6 months) than in UC patients (3 months) and was associated with older age at diagnosis.

**Conclusion:** The median diagnostic delay was longer in CD (6 months) than in UC patients (3 months) and was associated with older age at diagnosis.

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

**References**


**Disclosure of Interest:**

E. Vazeille1, X. Hebuterne2, M. Fumery3, B. Pariente4, S. Nancy1, P. Seksik5, L. Peyrin-Biroulet1, M. Alle7, A. Dubois1, B. Bullet5, J. Filippi5, J. Dupas19, M. Nachury7, G. Boschetti7, M. Goutte1, G. Bommelmaer1, B. Pereira1, N. Barnich1, A. Buison1

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**Introduction:** Enterobacteria, especially adherent and invasive E. coli (AIEC), are suspected to play a key role in Crohn’s disease (CD). These bacteria are able to highly adhere to the ileal mucosa of CD patients through the CEACAM6 receptor (Caricnomembrnic antigen-related cell adhesion molecule 6). It has been shown that therapies targeting enterobacteria and/or AIEC could be more effective in mice overexpressing CEACAM6. In this line, the overexpression of CEACAM6 in the ileum as well as the presence of AIEC in the ileum could be potential biomarkers to select the patients who could benefit from drugs targeting the host-pathogen interaction. Unfortunately, the identification of these biomarkers is time-consuming and invasive highlighting the need for more convenient alternative.

**Aims & Methods:** We aimed to assess the correlation between the level of CEACAM6 in the saliva and the level of CEACAM6 in the ileum in CD patients and to define the best threshold of CEACAM6 in the saliva to detect overexpression of ileal CEACAM6. In addition, we attempted to identify non-invasive biomarkers of AIEC infection. In this prospective multicentre study (8 centers), all the patients requiring ileocolonoscopy, regardless the indication, were consecutively included from December 2015 and September 2016. Clinical and endoscopic data were collected on the day of colonoscopy. Blood samples, stool samples (before bowel cleansing), saliva and ileal biopsies from healthy and diseased patients were also collected. CEACAM6 from ileal biopsies was measured (duplicates) using ELISA assays. AIEC were identified using phenotypical assays.

**Results:** Overall, 102 patients were enrolled in the study (Table 1).

**Table 1:** Baseline characteristics of the 102 CD patients included in the study.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Sensitivity %</th>
<th>Specificity %</th>
<th>Accuracy %</th>
<th>PPV %</th>
<th>NPV %</th>
</tr>
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</table>

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<table>
<thead>
<tr>
<th>Gender</th>
<th>Active smokers</th>
<th>Montreal classification</th>
<th>Disease location</th>
<th>Disease behaviour</th>
<th>Current therapies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>56 (56.6%)</td>
<td>27 (28.4%)</td>
<td>L1</td>
<td>27 (28.4%)</td>
<td>19 (19.1%)</td>
</tr>
<tr>
<td>Male</td>
<td>34 (34.3%)</td>
<td>12 (12.6%)</td>
<td>L2</td>
<td>12 (12.6%)</td>
<td>20 (21.3%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>13 (13.2%)</td>
<td>L3</td>
<td>58 (61.1%)</td>
<td>43 (43.4%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7 (7.4%)</td>
<td>L4</td>
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<td>(continued)</td>
</tr>
</tbody>
</table>

**Table 1:** Baseline characteristics of the 102 CD patients included in the study.

B3 Perianal lesions
B4 Prior intestinal resection
B5 Current therapies
ileal CEACAM6 level did not depend on disease severity or the site of biopsy: the median level of ileal CEACAM6 was 3515 pg/mg [570.3–3164] and there was no difference in ileal CEACAM6 level between UC patients with active disease (median 151.6 pg/ml, range 121.6–216.1) and patients with inactive disease. A negative correlation between serum FGF19 levels and ileal CEACAM6 (ρ = 0.47; p = 0.001) was determined in both macroscopically healthy areas (ρ = 0.53, p < 0.0001) and ulcerated areas (ρ = 0.39, p = 0.0082). Using a ROC curve, we determined the best threshold of CEACAM6 in saliva for detecting ileal AIEC bacteria. Using a ROC curve (area under the curve (AUROC) = 0.73), the cut-off value of 3800 pg/mg demonstrated the best performance to detect ileal CEACAM6 overexpression with substantial specificity (76.0% [54.9–90.6]) and positive predictive value (67.5% [74.9–93.5]). The number of enterobacteria was increased in CD patients with prior intestinal resection (562 [201674] vs. 116 [0;752] pg/mg, p = 0.03). Interestingly, the number of enterobacteria was also increased in AIEC positive-patients (640 [193279] 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 (AUROC) of 0.70 (0.61; 0.77). The cut-off value of 60 cfu/biopsy demonstrated the best performance 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% [73.0–99.9]).

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 the number of enterobacteria associated to the ileum is a convenient and reliable test to screen CD patients for AIEC bacteria.


References
Introduction: Increasingly, immunosuppressive medications such as azathioprine and biologics are being used in order to promote clinical remission of inflammatory bowel disease (IBD) patients. It has been reported that such treatments increase the risk of developing all types of skin cancer. Education of these patients is key in order to promote their awareness of their increased risk and it is vital for gastroenterologists to counsell patients on sun protection strategies on initiating therapy. We recently performed a pilot study in this group which highlighted gaps in their knowledge of the increased risk and prevention strategies. We speculate clinician’s lack of knowledge was partly to blame.

Aims & Methods: Our aim was to determine Irish IBD clinicians’ knowledge of the skin cancer risk and advised photoprotective behaviours in this cohort. Cross-sectional descriptive study. We invited IBD clinicians via email to fill in an anonymous online survey designed to assess knowledge of skin cancer risk and preventative strategies. The survey included questions about their grade of training, experience, awareness of specific immunosuppressant risk, their knowledge of specific immunosuppressant risk was suboptimal; while they were more knowledgeable about prevention strategies. The majority knew what constitutes an at-risk mole; 100% (n = 45) knew there was a higher risk of developing NMSC for patients with a history of sunburn. The majority knew that sun protection is effective in reducing NMSC risk; 93% (n = 42) knew a personal history of skin cancer increased risk of skin cancer was reassuring; with all 45 (100%) knowing sun protection is a key preventative measure. Aims & Methods: 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. The majority (45, 100%) knew anti-TNF agents 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 11% (5) perform yearly skin checks on their patients taking immunosuppressants. Their knowledge of preventative measures was also lacking; 37 (86%) knew patients should wear SPF 50 but almost half (47% n = 20) thought it should be applied twice daily rather than two hourly (51% n = 23) and only 47% (n = 20) knew patients should stay in the shade from 11am-3pm. 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 < 0.05), 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 immunosupPRESSION risk and their lack of emphasis on preventative measures and skin examination in clinics. A targeted educational and awareness programme may address this.

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

Reported here as part of the IBD + Cancers: A multi-centre prospective study of CALPROTECTIN IN ADULT PATIENTS WITH INFLAMMATORY BOWEL DISEASE at the 2015 ESPGHAN Conference.

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Introduction: Due to the chronic and progressive nature of inflammatory bowel disease (IBD) it is of significant importance to detect and treat a relapse as soon as possible in order to decrease the total inflammation burden and avoid progression of intestinal damage, and possibly improve the disease course. A validated Fecal Calprotectin (FC) home testing kit and smart phone application CalproSmartTM have been added to an existing eHealth web-application, enabling patients to monitor their disease activity using clinical scores and FC from home with results shown on their smart phone. eHealth allows for tight monitoring of disease activity, however, the frequency of an optimal screening procedure for adult IBD patients has not yet been determined.

Aims & Methods: The aim of this one-year randomized controlled trial of 120 adult IBD patients, was to determine if an eHealth screening procedure for disease activity should be implemented in clinical practice ‘every 3 months, 3M’ or according to patients own gut feeling, ‘on demand, OD’. Both groups used the eHealth-program to tightly monitor their disease activity either OD or 3M (29%). CD group was divided according to the Montreal classification: 20/93 (22%) patients had B1 phenotype, 19/93 (20%) B2, 20/93 (21%) B3 and 34/93 (37%) B2 + B3. Perianal involvement was present in 27/93 (29%). L1 involvement was present in 15/93 (16%), L2 in 14/93 (15%) and L3 in 10/93 (10.8%). regards the FC screening procedure, no difference in FC home measurements pr. patient was similar in the two groups OD 6.7 (95% CL: 5.2–8.2) vs. 3M 7.3 (95% CL: 5.9–8.5), p = 0.52. Median (range) AUC for FC and disease active scores were not significantly different in the groups (OD, 3M): 62016 (3782-541338) vs 89730 (10286-335881) p = 0.71, 549 (0.3726) vs 610 (0.2844) p = 0.61. In this preliminary study, no difference between the two screening procedures was found in regards to disease course and resource utilization. A slightly but non-significant reduction in no of FC measurements pr. patient used in OD-group relative to 3M-group could argue for an economical benefit of implementing the OD screening procedure. Long-term results are awaited.

Disclosure of Interest: D.V. Ankersen: Calpro Inc. Norway has provided all fecal Calprotectin home testing kits used in the study.

P. Weimers: Calpro Inc. Norway has provided all fecal Calprotectin home testing kits used in the study.

J. Burisch: Calpro Inc. Norway has provided all fecal Calprotectin home testing kits used in the study.

P. Munkholm: Calpro Inc. Norway has provided all fecal Calprotectin home testing kits used in the study.

All authors have declared no conflicts of interest.

Reference

Conclusion: Association of serum $\text{S100A4}$ protein with $\text{UC}$ and $\text{CD}$ was confirmed. In CD, disease behaviour did not have an impact on serum concentration of $\text{S100A4}$ protein. In CD, higher levels of serum $\text{S100A4}$ were observed in patients with ileo-colonic and colonic involvement compared to those with isolated small bowel involvement.

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PO364 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.1

Aims & Methods: The aim of the study was to determine the Vitamin D (VitD) status in an Italian IBD cohort in relation to disease activity. Serum 25-hydroxyvitamin D was measured in 260 IBD outpatients, not supplemented with VitD for at least 3 months. VitD status was defined as adequate $\geq 20$ ng/ml, insufficient $10$–$19$ ng/ml, and deficient $<10$ ng/ml. Disease activity in $\text{IBD}$ patients was assessed by Harvey Bradshaw Index (HBI) in $\text{CD}$ and Crohn’s Disease Activity Index (CDAI) for $\text{CD}$ and Mayo partial score for $\text{UC}$. 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 ($\text{OR} 4.5$, $95\% \text{CI} 2.9$–$6.9$, $p<0.001$). Of 260 IBD patients, 156 ($60\%$) had VitD deficiency, more often in $\text{CD}$ than in $\text{UC}$ ($72.7\%$ vs $48\%$, $p<0.001$). HBI score was significantly related to VitD deficiency ($r=0.37$, $p=0.001$).

Conclusion: VitD deficiency is significantly more common in IBD patients than in controls, more so in $\text{CD}$. 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

PO365 MAGNETIC RESONANCE OF THE SMALL BOWEL WITH EARLY (70 MINUTES) AND LATE (7HOURS) PHASE. POST GDIM三LINUM IMAGING TO IDENTIFY FIBROSIS IN STRICKING SMALL BOWEL CROHN’S DISEASE

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Introduction: Small bowel (SB) Crohn’s disease (CD) strictures can comprise of both inflammatory and fibrotic elements. An accurate tool to discriminate fibrotic from inflammatory disease would be clinically useful to guide therapy and predict 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, $31\%$ stricture and $19\%$ penetrating; Location: $42\%$ ileal, $45\%$ ileocolic and $13\%$ colic.

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 prevalence 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.

PO366 GASTRODUODENAL INVOLVEMENT 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) with upper symptoms is controversial. The aim of this study was to establish the prevalence of gastroduodenal involvement, regardless of symptoms, and its prognostic implications.

Aims & Methods: Patients from a single centre with established $\text{CD}$ ($n=347$) 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 $\text{Helicobacter pylori}$ (HP) infection).

Results: We included 140 patients - phenotype: $50\%$ inflammatory, $31\%$ stricture and $19\%$ penetrating; Location: $42\%$ ileal, $45\%$ ileocolic and $13\%$ colic. Upper endoscopy was performed in $19\%$ for symptoms and in $81\%$ for staging. Gastric macroscopic findings were detected in $49\%$ ($69/140$); the most common were erosions ($21\%$) and erythematous mucosa ($18\%$). Biopsies were performed in $56\%$ of patients: chronic gastritis $66\%$, normal $23\%$, granuloma $5\%$, focal gastritis $2\%$ and cryptic microabcesses $2\%$. HP was positive in $25\%$ of patients. In the duodenum, endoscopic lesions were observed in $33\%$ of the patients ($46/140$); the most common were erosions ($16\%$) and ulcers ($9\%$). Biopsies were performed in $32\%$ and the most prevalent findings were chronic non-specific inflammation $62\%$, ulcers $17\%$, granuloma $3\%$ and erosion $3\%$. Applying macro/microscopic criteria, gastroduodenal involvement by CD was considered in $18\%$ of the patients and was not correlated with the presence of symptoms, phenotype or localization of the disease. The prevalence of gastroduodenal involvement was a significant predictor of hospitalization.

Conclusion: The prevalence of gastroduodenal involvement by CD in this sample was $18\%$, and a larger percentage have macro/microscopic findings that are not disease specific. The presence of symptoms does not predict gastroduodenal involvement due to CD that is associated with a worse prognosis.

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

PO367 INCIDENTAL FINDINGS AT CT ENTEROGRAPHY IN PATIENTS WITH CROHN’S DISEASE: CLINICAL SIGNIFICANCE AND IMPACT ON TARGETED THERAPY

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Introduction: CT enterography is one of the most accurate imaging methods for evaluating Crohn’s disease (CD) extent and intestinal involvement.

Aims & Methods: The aim of the study was to determine the frequency and clinical impact of the incidental findings in CD patients who underwent CT enterography. This was a retrospective study that evaluated patients with CD who underwent CT enterography between January 2012 and December 2016. Incidental findings were defined as previously unknown extraintestinal lesions. The orientation of the patients after their detection was evaluated.
Results: A total of 520 patients who underwent CT enterography were identified, with a median age of 43 (32-53)% and 53% were women. The main indication for CT enterography was CD staging (81%). A total of 531 incidental findings were detected (median of 2 [1–3] per patient). The main findings identified were hepatic nodules (n = 39), hepatic cysts (n = 55) and sarcoidosis (n = 46). The findings implicated orientation 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%); one suspended biologic therapy, 2 suspended immunomodulator therapy and 6 initiated biologic therapy.

Conclusion: Incidental findings are relatively common in patients with CD who undergo CT enterography. A significant proportion is clinically relevant and may involve change CD therapy. A risk stratification may be important to avoid morbidity associated with unnecessary examinations to assess benign situations.

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

Reference


PO0368 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 diff in IBD patients.

Consecutive IBD patients on immunomodulators in clinical remission for the past six months were prospectively recruited from the IBD clinic since 2013. Those cases were excluded if they had past history of total 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 enrolment 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 cytotoxigenic RT-PCR assay was obtained.

The primary outcomes were the disease activity which was graded by Crohn Disease Activity Index (CDAI) in Crohn disease (CD) (graded as follows: <150: remission; 150–<220: mild-moderate; 220–<450: moderate-severe; >450: severe). Ulcerative colitis Disease Activity Index (UC-DAI) in ulcerative colitis (UC) (graded as follows: the total index score ranges from 0–12; 0: remission; 3–6: mild; 7–10: moderate; >10: severe UC). The secondary outcomes were proportion with C. difficile diarrhea which was defined in the patients with active lower gastrointestinal symptoms accompanying with positive RT-PCR assay of C. difficile at that instant.

Statistical inference of the variables was examined by Mann-Whitney U and χ2 test for numerical and categorical parameters respectively.

Results: Of 197 IBD patients (CD: 98 (49.75%); male: 132(67.01%); age (yr): median 43, minimum 17, maximum 79), 9(4.57%; CD: 6 patients) patients were found to be asymptomatic carriage of C. difficile during the study period. The demographic features, including age, gender ratio, smoking history and the duration of IBD, of the patient group with and without asymptomatic carriage of C. difficile were comparable each other. Four UC patients in the non-carriage group had prior history of anti-TNF exposure in which three were treated as maintenance therapy for the active disease activity, associated axial spondylarthropathy and rectovaginal fistula while the other two patients (one from each group) had received three doses of anti-TNF as rescue therapy for severe disease flare-up.

Incidence rates of the disease flare-up were comparable (11.17 vs. 22.22%, p 0.313) between the non-carriage and carriage groups in which all these flares were under-controlled by course of high-dose prednisolone.

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(48.94)</td>
<td>66(66.7)</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>
<tr>
<td>mild/moderate/severe</td>
<td>16(5.7)</td>
<td>2(0.0)</td>
</tr>
<tr>
<td>C. difficile infection (n, %)</td>
<td>14(7.45)</td>
<td>3(33.33)</td>
</tr>
</tbody>
</table>

Data were expressed as median(interquartile range)

*: all are UC cases and 3 for maintenance therapy with indications as follows: refractory colitis, spondyloarthropathy, rectovaginal fistula

**: case of UC received 3 doses of anti-TNF for severe flare

Abbreviation: IBD, inflammatory bowel disease; C. difficile, Clostridium difficile; ulcerative colitis, UC; ns, non-significant

Conclusion: The incidence of asymptomatic carriage of C. difficile in the IBD patients on immunomodulators was not common. It did not associate with the disease flare-up but a significant portion of them could evolve subsequently into clinical infection.

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

References


PO0369 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 monitoring the disease course, and response to therapy. Clinical parameters (e.g. CRP, fecal calprotectin) and the Simple Colitis Clinical Activity Index (SCCAI) were used for routine assessment of disease activity. In recent years it has already been shown that ultrasound (US) is a useful tool to monitor the disease activity. The hypothesis of the TRUST&UC (TRansabdominal UltraSonography of the bowel To monitor disease activity in subjects with Ulcerative Colitis) study is that transabdominal US is an easy to use, easily repeatable, and accurate diagnostic tool in the assessment of UC activity, in monitoring the disease course, and response to therapy.

Aims & Methods: TRUST&UC is a German ongoing prospective, observational multi-center study in patients with active UC. The primary objective of this study is the prospective evaluation of bowel wall US in response to therapy in order to assess its value in monitoring UC patients in routine medical practice. Clinical parameters (e.g. CRP, fecal calprotectin) and the Simple Colitis Clinical Activity Index (SCCAI) were used for routine assessment of disease activity.

Results: 176 patients with active UC have been enrolled in 37 German IBD study group (GISG) centres until February 2017. 47.2% of the patients were female, median age was 38.9 years (range 19–77) with median disease duration of 152.2 days (range 6odie/17). Of all the patients with a clinical flare defined by SCCAI >90.3% showed a bowel wall thickening (BWT), and only 9.7% showed no US signals. At US examination, a BWT in the colon sigmoidium was present in 87.5% of the patients, in the colon descendens in 83.7%, in the colon transversum in 42.3% and in the colon ascendens in 18.3%. Loss of bowel wall...
stratification was the case in 20.6% of the patients, mesenteric fibro-fatty pro-
liferation more than 50%, had increased signal in the color Doppler US. At baseline systemic steroids were used in 62.1%, azathioprine in
36.2%, and TNFα antagonists in 40.0% of patients (N = 174). All follow-up patients (N = 104) displayed acute inflammatory symptoms at baseline with moderate disease activity which required an introduction or escalation of treatment. After 12 weeks, the US examination showed signif-
icant improvements of the following parameters: BWT in colon sigmoideum (87.5% vs 33.7%, p = 0.034) and colon transversum (42.3% vs 15.4%, p = 0.012), loss of haustration (54.8% vs 33.7%, p < 0.001), ascites (9.7% vs
2.9%, p < 0.001), mesentric lymphadenopathy (31.6% vs 14.3%, p = 0.005), mesentric fibro-fatty proliferation (40.0% vs 10.0%, p = 0.041) and increased signal in color Doppler US (56.7% vs 23.1%, p = 0.039). A decrease of BWT was significantly accompanied by a decrease in SCAI (8.0 to 1.5 points, p < 0.001).

Conclusion: In this real-life cohort almost 90% of the patients showed a BWT, a pivotal IBD symptom and within 12 weeks selected bowel US parameters improved significantly from treatment intensification. Therefore, US examination is a useful tool to monitor disease activity and response to therapy in UC patients.

Disclosure of Interest: C. Maaser: C. Maaser has received lecture and consulting fees from AbbVie. F. Petersen: F. Petersen has received lecture and consulting fees from AbbVie. U. Helwig: U. Helwig has received lecture and consulting fees from AbbVie. A. Rösler: A. Rösler is AbbVie employee and may own AbbVie stock or options. D. Lang: D. Lang is AbbVie employee and may own AbbVie stock or options. S. Rath: S. Rath is AbbVie employee and may own AbbVie stock or options. T. Kucharzik: T. Kucharzik has received lecture and consulting fees from AbbVie. All other authors have declared no conflicts of interest.

Reference

P0370 THE GUT MICROBIOME IN IBD IS CHARACTERIZED BY IMPAIRED METABOLIC COOPERATIVITY AND CAN BE RESTORED UPON ANTI-TNFα THERAPY

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Introduction: Blocking TNFα is an important treatment option for inflammatory bowel disease (IBD). The etiology of the disorder comprises a permanent activation of immune cascades and imbalanced cytokine networks. Evidence has been put forward that alteration of the human gut microbiota may play a critical role in the pathogenesis of IBD. However, the impact of targeted cytokine blockade on dysbiosis and intestinal microbial communities is poorly understood. Here, we investigate the effect of anti-TNFα treatment on gut microbial community structures in a prospective, longitudinal study for 30 weeks. The study compares IBD as a disorder, which primarily affects the gut, with seropositive and -negative rheumatoid arthritis, a disease characterized by chronic inflammation and hyperproliferative bone formation.

Results: Intestinal microbial diversity and cooperativity are decreased in both disease entities, IBD and RA. In IBD, anti-TNFα therapy is able to restore microbial diversity and cooperativity. More over cooperative metabolic interaction is significantly increased only in anti-TNFα responders. In RA, anti-TNFα therapy did not significantly restore microbial community structures.

Conclusion: We show that anti-TNFα treatment increases the gut microbial diversity and coupling of cross feeding metabolic interactions towards the state of healthy individuals. Assessment of metabolic interactions of intestinal microbiota may serve as a marker for clinical response in IBD patients.

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

References


P0371 SELF-MONITORING OF THE COLONIC INFLAMMATORY BOWEL DISEASE BY A RAPID HOME BASED FEACAL CALPROTECTIN TEST AND A SYMPTOM QUESTIONNAIRE

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Introduction: Faecal calprotectin (FC) is a most reliable noninvasive means to distinguish remission from active inflammation in inflammatory bowel disease (IBD). It is a quick, 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 lifelong 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 49/115 (43%) patients for 12 months. In the control group, 49/89 (56%) patients had filled in the symptom score at baseline and 9/89 (11%) 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. It is still ongoing.

Conclusion: The self-monitoring of IBD activity with a rapid FC home test provides an option for individualized treatment for increasing amount of IBD patients. However, in this study the adherence to the self-monitoring program was low. The patients need to be reminded of performing the stool tests and filling in the questionnaires in time. Also, the selection and education of the patients, as well as the easy accessibility of the monitoring program are crucial and need further consideration.

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

References

P0372 CLINICAL CHARACTERISTICS IN ULCERATIVE COLITIS PATIENTS WITH COLITIS ASSOCIATED DYSPLASIA/CANCER AND SPORADIC TUMOR

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Introduction: Although the incidence of ulcerative colitis (UC)-related colorectal cancer (CAC) is increased in cases with long duration of disease, it should also be recognized that sporadic tumors (ST) develop as older. Various studies have been conducted on CAC, but there are few clinical studies on ST merged with UC. In
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this study, the clinical and endoscopic features of CAC and ST, treatment
method, and prognosis are compared.
Aims & Methods: Among 261 UC patients who underwent colonoscopy (CS) and
had neoplastic lesions, the clinical features, treatment and prognosis were compared between 71 patients (88 lesions) with CAC (including HGD; CAC group)
and 47 patients (63 lesions) who underwent local excision (surgical or endoscopic
resection) within the presence of the past/present inflammation of UC (ST
group). Definition of CAC and ST was performed by conventional pathological
and immunohistochemical findings.
Results: The age of UC onset (29.8 vs. 39.0) and tumor detection (45.5 vs. 57.3) in
the CAC group were significantly higher than those in ST group (p 5 0.01). The
CAC group (47.1%) has a higher percentage of chronic persistent type than the
ST group (2.3%), and the Mayo endoscopic score is also significantly higher
(p 5 0.01) in the CAC group (1.43) than ST group (0.38). The percentage of
advanced cancer (35.2% vs. 7.9%) was higher in CAC group than ST group.
In patients with intraepitherial neoplasia (IEN) or submucosal lesions, flat lesion
was found in 15 lesions of CAC group and whereas no flat lesion was observed in
ST group. Only one lesion in ST group could not distinguish the lesions from the
surrounding mucosa without magnifying colonoscopy. In ST group who received
resections, 4 patients after resections observed ectopic CAC or low-grade dysplasia during follow-up. In CAC group, 50, 5, 4 patients received total colectomy,
local colectomy, ESD, respectively, whereas in ST group, 1, 7, 40, 15 patients
received total colectomy, local colectomy, EMR and polypectomy, ESD, respectively. Although mortality from cancer was 11.4% (8/70 cases) in CAC group,
group, no death due to cancer observed in patients whose lesions were found as
IEN. On the other hand mortality from cancer was 2.1% (1/47 cases) in ST
group.
Conclusion: Most sporadic lesions were endoscopically distinct and local resection was safe if inflammation was controlled. After the sporadic lesions were
resected in remitting UC patients, regular surveillance colonoscopy is necessary
because 8.5% (4/47) of patients was found CAC/dysplasia. Even in CAC group,
prognosis is well in patients with IEN.
Disclosure of Interest: All authors have declared no conflicts of interest.

Introduction: Accelerated treatment strategy, including tight disease control and
early aggressive therapy with 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 (OEP). We used the administrative database of the National Health Insurance Fund (OEP), the only nationwide state-owned health insurance provider in Hungary. Newly diagnosed CD
patients were identified through previously reported algorithms using the ICD-10
codes for Crohn’s disease in the 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, 13.5%, steroid 31% vs. 30.5%, IM 40.4% vs. 40.2%, biologicals 16.5% vs.
15.6%). Probability of hospitalizations during the first 3-years from diagnosis
was lower according to the maximal treatment step in patients diagnosed after
2009 (at 36 30-day period: overall 55.7% vs. 47.4% (p ¼ 0.000), anti-TNF: 73%
vs. 66.7% (p ¼ 0.103), IS: 64.6% vs. 56.1% (p ¼ 0.000), steroid: 44.2% vs. 36.8%
(p 5 0.007), 5-ASA: 32.6% vs. 26.7% p ¼ 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. 15.3% (p ¼ 0.672) anti-TNF 26.7% vs.
27.2% (p ¼ 0.993), IS: 24.1% vs 22.2% (p ¼ 0.565), steroid 8.1% vs. 7.9%
(p ¼ 0.896), 5-ASA 10% vs. 11% (p ¼ 0.816)).
Conclusion: Distribution of maximal treatment steps and surgery rates was not
different in patients diagnosed before and after 2009, although immunosuppressive and was commenced earlier. Of note, steroid and 5-ASA remained high after
2009. Maximal treatment steps were associated to hospitalization and surgery
rates, 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.

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) corticoisteroids treatment. Nevertheless, about
30–40% of patients fail to response. 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 recfractory 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
reponse to cyclosporine. Eleven petients were non responders and underwent
colectomy. In univariate 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 ¼ 0.007; 0.002 and 0.001 respectively), ESR greater than 30 mm at day 3 of
treatment (p ¼ 0.05), thrombocytosis at day 3 of treatment (p ¼ 0.05), a Lichtiger
colitis activity index scoring greater than 10 at day 3 of treatment (p ¼ 0.001) and
the need for blood transfusion (p 5 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 ¼ 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
reponse 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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P0375 RELATIVE FREQUENCY OF RELAPSES IN PATIENTS WITH
ULCERATIVE COLITIS AND CROHN’S DISEASE TREATED WITH
MESENCHYMAL STROMAL 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-III 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 CD (colitis and ileokolit), with a group of patients
with UC (total lesion) receiving MSCs. A group of patients (CD) aged 22 to 56
years (Me-28) (n ¼ 24) received MSC culture scheme (0-1-2 weeks, then every 26
weeks). The second group of patients with UC (n ¼ 26) aged 20 to 62 years (Me28) received the culture of MSCs in a similar way. Evaluation of the effectiveness
of therapy for relapse frequency was carried out at 12, 24, 36, 48 and 60 months
after initiation of therapy.
Results: Among the patients in 1st group relapse in the 12 months of observation
occurred in 2/24 patients (8.3%) in 2nd group, relapse occurred in 3/26 (11.5%)
(OR-0.72; 95% CI 0, 13–3, 96, p ¼ 0.92). After 24 months in the group of patients
(group 1) receiving MSC, relapse occurred in 5/24 (20.8%) in group 2 patients
with recurrent disease in 7/26 (26.9%) (OR 0.77; 95% CI 0.13–3.96, p ¼ 0.92).
After 36 months in group 1 patients with a relapse of the disease in 8/24 (33.3%)
in group 2 relapsed in 14/26 (53.8%) (OR-0.62; 95% CI 0.32–1.21; p ¼ 0.24).
After 48 months in group 1 receiving MSC, relapsed in 11/24 (45.8%) in
group 2 relapsed in 18/26 (69.2%) (OR-0.6; 95% CI 0.37–0.97, p ¼ 0.048).
After 60 months in 1st relapse in 16/24 (66.6%) in group 2 relapsed in 22/26
(84.6%) (OR0.63; 95% CI 0.44–0 90, p ¼ 0.013).
Conclusion: MSCs transplantation longer contributes to clinical remission in
patients with Crohn’s disease luminal shape compared to a group of patients
suffering from ulcerative colitis.
Disclosure of Interest: All authors have declared no conflicts of interest.

P0376

CELL THERAPY FOR PERIANAL CROHN’S DISEASE

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**Introduction:** Perianal fistulas are the most widespread and common types of fistulas in Crohn’s disease (CD). They are difficult to treat, worsen the quality of life of the patient and increase the risk of bowel resection. Despite the significant effect of anti-cytokine therapy fistulous forms of CD, treatment of these patients remains a difficult task with high risk of relapse of CD. Mesenchymal stromal cells have immunomodulatory properties and a large regenerative potential, at present also used for treatment of fistulous CD and perianal fistulas of different etiologies.

**Aim & Methods:** We aimed to compare the efficacy of combined therapy (local and systemic) mesenchymal stromal cells (MSCs) of bone marrow, infliximab (IFX) and anti-immunosuppression (IS) on the rate of healing of simple perianal fistulas in Crohn’s disease. 36 patients with Crohn’s disease with perianal lesions were divided into three groups depending on the method of therapy. The first group of patients aged from 19 to 58 years (Me-29) (n = 12) received culture of MSCs systemically via the scheme and locally; on the perimeter of the fistulas introduced 40 million -4.0 pg/ml of saline containing 10 million live cells. After 4 and 8 weeks treated 40 million MSCs in the area of the fistula. The second group of patients with CD (n = 10) aged 20 to 68 years (Me-36) were receiving anti-cytokine therapy of IFX. The 3rd group of patients with CD (n = 14) aged 20 to 68 years (Me-28) received antibiotics and is in the dynamics evaluated the closure of the fistula opening. The results were compared with controls.

**Results:** After 12 weeks among patients of the 1st group simple healing of fistulas was observed in 10/12 patients (83.3%), in the 2nd group healing simple fistulas have a 8/10 (80.0%) (OR=0.83; 95% CI 0.44-1.49; p = 0.72). In the 3rd group – patients 4/14 (28.6%) (OR - 0.47; 95% CI 0.2-1.11; p = 0.12 in comparison with the 1-st group). After 6 months in the 1st group patients receiving MSCs, healing of simple fistulas persisted in 8/12 (66.7%) with the 2nd group - 7/9 (70.0%) (OR - 1.1-11; 95% CI 0.32-3.84; p = 0.76). In the 3rd group – patients 4/14 (28.6%) (OR - 0.47; 95% CI 0.2-1.11; p = 0.12 in comparison with the 1-st group). After 12 months in the 1st group receiving MSCs, healing of simple fistulas maintained in 8/12 (66.7%), in the second group - in 6/10 (60.0%) (OR - 1.25; 95% CI 0.48-3.22; p = 0.69). In the 3rd group in 2/14 patients (14.3%) (OR=0.04; 95% CI 0.24 to about 0.98; p = 0.03 in comparison with the 1st group. After 12 months among the patients of the 1st group, the closure of the fistula in 10/12 patients (83.3%), in the 2nd group - 5/6 (83.3%), in the 3rd group - 0/14 patients (0.0%) (OR = 0.38; 95% CI 0.36-0.94; p = 0.01 in comparison with the 1st group).

**Conclusion:** Combined stem cell and anti-cytokine therapy of CD with perianal lesions is more effective in the prolonged closure of simple fistulas, compared with antibiotics/immunosuppressant.

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

**References**

Conclusion: V565, an oral domain antibody (Vorabody) to TNF engineered to be serum sample (LLoQ 62.5 ng/ml).

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, were not analysed for V565 as this was a post hoc analysis and the MTs were not

31001 – 406 306 0.8 0 0 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 1 0 0

In addition to the V565 concentrations in ileal fluid, partially dissolved MTs were recovered from the ileostomy bags of all subjects. Each 166.5 mg dose contained a total of 135 MTs. 50 MTs were recovered 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 31003 (72MTs) 4h post dose from subject 31004 (19MTs). The ileal fluid was not sampled from subject 31002 who was withdrawing from ileostomy bags. MT concentrations were added to ileal fluid concentrations. V565 was not detected in any serum sample (LLOQ 62.5 ng/ml).

Conclusion: V565, an oral domain antibody (Vorabody) to TNF engineered to be resistant to intestinal proteases, delivering high concentrations of active compound in the ileal fluid following oral administration to human volunteers. The oral domain antibodies (Vorabodies) are delivered via enteric coated mini-tablets (MTs) designed to release active drug at pH 6.5.

Aims & Methods: Following prior placebo-controlled demonstration of the safety and tolerability of high single and multiple doses of V565, this open label assessment was performed to confirm the delivery of active domain antibody to the terminal ileum of human subjects. Four subjects with a terminal ileostomy were given a single oral dose of V565 and ileostomy bags were collected hourly for the first 12 h post dose with further collections 16, 20 and 24 h post dose. Contents were analysed for V565 concentrations by competitive ELISA. In addition, serial blood samples were taken for determination of V565 serum concentrations over 24 h.

Results: Four subjects with an ileostomy (3 with UC; 1 with a prior history of UC in remission) of ileostomy were demonstrated in the ileal fluid of all four subjects as shown in Table 1 below.

<table>
<thead>
<tr>
<th>Micromolar concentration of V565 in ileal fluid</th>
<th>Hours post-dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject</td>
<td>1</td>
</tr>
<tr>
<td>31001 – 406 306 0.8 0 0 0 0</td>
<td>0</td>
</tr>
<tr>
<td>31002 – 33 1130 792 82 13 5(ave) 0</td>
<td>0</td>
</tr>
<tr>
<td>31003 – 1060 496 7 0 38(ave) 0</td>
<td>0</td>
</tr>
<tr>
<td>31004 – 126 0.2 11 4 1 0 0</td>
<td>0</td>
</tr>
</tbody>
</table>

**Micromolar concentration of V565 in ileal fluid**
obviously evaluated by the IBD validated Functional Assessment of Chronic Illness Therapy-Fatigue Scale (FACIT-F).

**Aims & Methods:** The main objective was to assess the efficacy of electroacupunture (EAc) vs. sham EAc and no treatment for treating fatigue in patients with quiescent IBD in a single-blind randomized trial. Secondary objectives were to assess changes in quality of life, depression, anxiety and sleepiness after treatment with EAc.

**Methods:** Fifty-two patients with quiescent IBD and severe fatigue (FACIT-F < 40) (65.3% female, mean age 42 years) were randomized to EAc vs sham acupuncture group. Patients in the sham EAc group performed a total of 9 acupuncture sessions during eight weeks (2 sessions/first week and one session per week during the after treatment periods).

**Results:** Both EAc and Sham group improved the FACIT-F score post-treatment (EAP — 5.35 points, 95% CI [—13.2 to —6.75, Basal Vs 9th session p < 0.001]; Sham — — 9.7 to —2.06, Basal Vs 9th session p = 0.003; depression (8.9 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 (1.46 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 targetted and sham electroacupuncture are effective in managing fatigue in patients with quiescent IBD.

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

**References**


**P0382 EFFICACY AND SAFETY OF GOLIMUMAB IN CROHN'S DISEASE: A FRENCH NATIONAL RETROSPECTIVE STUDY**

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**Introduction:** Anti-TNF, such as adalimumab (ADA) and infliximab (IFX), have improved the therapeutic care of Crohn’s disease (CD). However their use may be associated with loss of efficacy, adverse events and sometimes primary failure. At the current time, it is possible to switch to another anti-TNF. In France, three anti TNF are available in ulcerative colitis (IFX, ADA and golimumab), but only the first two are approved in CD, because golimumab has not been studied in this indication. The aim of this study was to report golimumab efficacy and safety in CD.

**Aims & Methods:** This national multicenter retrospective study included patients with CD from 12 French tertiary centers who received golimumab and analyzed: clinical response, duration of treatment, tolerance, reasons for discontinuation of treatment, adverse phenotype, and treatments preceding and associated with golimumab. The main endpoint was the efficacy of golimumab defined by the duration of treatment before failure (need for therapeutic optimization or cessation). Predictive factors of therapeutic response were determined (log rank and Cox model), and the tolerance was evaluated.

**Results:** One hundred and fifteen patients with a median duration of the disease of 13.5 years received on average golimumab in 3, 6 th line of biotheraphy. The overall clinical response assessed by the physician was 55.8% at the time of the re-evaluation (on average, at 3.8 months [0.6–24] after initiation of therapy). The median duration of treatment was 12 months (0.55–48.7). Sixty-seven percent of patients received treatment for more than 6 months and 48.7% of patients were still treated with golimumab at the end of the follow-up. At 12 months, 34.9% of patients still received golimumab without optimization. At 24 months, this figure was 18.1%. In univariate analysis, the factors associated with a longer golimumab treatment duration without stopping or optimizing were the active smoking status (p = 0.043), the absence of anoperineal lesions (p = 0.012), the presence of extra-intestinal symptoms (p = 0.035), the presence of a co-immunosuppression of more than 6 months (p < 0.001) and discontinuation of the first anti-TNFa for intolerance (p = 0.022). In multivariate analysis, discontinuation of the first anti-TNFa for intolerance and the presence of co-immunosuppression with thiopurine derivatives or methotrexate over 6 months were independently associated with golimumab efficacy (OR 2.16, 95% CI [1.25–3.66], p = 0.005 and OR 3.98:95% CI [2.3–7.1], p < 0.001, respectively). Side effects led to discontinuation of treatment in 6% of patients. These were paradoxical psoriasi in three patients, paresthesia (n = 1), lower extremity edema (n = 1), injection site reaction (n = 1) and not reported reason for discontinuation (n = 1). The causes for discontinuation of the first anti-TNFa was an intolerance.

**Conclusion:** After failure of the other anti-TNF agents, golimumab is well tolerated and results in sustained clinical response in one in two patients with Crohn’s disease, particularly when associated with a co-immunosuppressant, and if the reason for discontinuation of the first anti-TNFa was an intolerance.

**Disclosure of Interest:** H. Sokol: consulting fee: Tillotts, Abivix, MSD, Enterome, Maat
All other authors have declared no conflicts of interest.

**P0383 BIOLOGICS AND BIOSIMILARS: WHAT MATTERS TO PHYSICIANS?**

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**Aims & Methods:** The purpose of this survey was to determine physicians’ familiarity and comfort level with prescribing biosimilars to patients. The survey was sent to physicians residing in the European Union and specializing in the following clinical fields: dermatology, endocrinology, gastroenterology, neurology, oncology, and rheumatology.

**Introduction:** Biologic medicines and their biosimilar counterparts are effective therapies for many conditions, including inflammatory bowel disease, Crohn’s disease and ulcerative colitis. The European Medicines Agency (EMA) has approved twenty-two biosimilar medicines, which are derivatives of eight original biologics, and four more biosimilar are scheduled to be reviewed this year. As the number of approved biosimilars rises, regulatory agencies must closely monitor their safety and efficacy.

**Results:** The majority of survey respondents specialized in endocrinology (19%) and gastroenterology (19%). Respondents were recruited almost equally from the five countries, with France being the most represented country (22%) and the UK being the least represented (18%). The majority of respondents (55%) indicated that safety and efficacy is the most important factor in determining whether a patient should be switched from a prescribed biologic therapy to its approved biosimilar. Thirty percent of respondents indicated that clinical trials related to the switch were the condition being treated was the most important factor to switching. Only 12% of respondents indicated that cost to the government or insurance companies is a primary concern, and less than 1% were currently involved in this activity.

**Conclusion:** This survey suggests that the safety and efficacy of biosimilar medicines is of paramount importance to physicians and that physicians highly value clinical trial data for biosimilars. Given that biosimilars are structurally distinct from their original innovator biologic counterparts, the EMA should consider requiring more stringent clinical trials data for biosimilars seeking approval. Specifically, the EMA should require clinical trials for each proposed indication and should provide physicians with this data so that physicians can make informed prescribing choices for the safety of their patients.

**Disclosure of Interest:** D. Charles: David Charles receives income from Medtronic, Allegan, Ipsen, and the Alliance for Patient Access for education or consulting services.

This data was generated from a SERMO Poll. SERMO is the largest global social network exclusively for doctors. All other authors have declared no conflicts of interest.

**P0384 ARE STEROIDS STILL USEFUL IN THOSE INFLAMMATORY BOWEL DISEASE PATIENTS UNDER IMMUNOSUPPRESSION? A RETROSPECTIVE POPULATION-BASED STUDY**

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**Introduction:** Oral steroids are effective in inducing remission of moderate flares of patients with either ulcerative colitis (UC) or Crohn’s disease (CD). However, we know little about their efficacy in immunosuppressed patients or their possible role in reducing biologics and/or surgical needs in these patients.
Aims & Methods: We aimed to determine the efficacy of systemic or low bioavailability immunosuppressives (IMM) for moderate flares of patients with at least 6 months of immunosuppressive treatment, and describe long-term follow-up outcomes. The final long-term postmarketing registry (PYRAMID) evaluating long-term safety and effectiveness of adalimumab (ADA) was an international, multi-center, non-interventional registry. Patients with and without prior ADA experience were allowed to enroll. The final long-term registry included 10,032 patients with IBD (Crohn’s disease, ulcerative colitis, and IBD unclassified). The mean (SD) duration of exposure to ADA was 27 (13) months. The most common primary indications for treatment were perianal disease (57%), abdominal surgery (25%), and smoke habit (32%).

Results: Among the 5025 patients evaluated in the registry, 2057 (40.9%) were ADA-naïve 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. The aims of this analysis were to describe 1) the efficacy of systemic or low bioavailability immunosuppressives in ADA-naïve patients and 2) the benefits and risks of ADA use in clinical practice, including meaningful improvements in disease activity, work productivity, and quality of life.

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-naïve patients with moderately to severely active CD. These improvements were maintained for up to 5 years after registry enrollment, as demonstrated by 2) the benefits and risks of ADA use in clinical practice, including meaningful improvements in disease activity, work productivity, and quality of life.
Table: Change from enrollment (baseline) in effectiveness measure scores in ADA-naïve patients with CD (N = 2057)

<table>
<thead>
<tr>
<th>Effectiveness measure</th>
<th>Enrollment, mean (SD)</th>
<th>Month 12</th>
<th>Month 24</th>
<th>Month 36</th>
<th>Month 48</th>
<th>Month 60</th>
<th>Month 72</th>
</tr>
</thead>
<tbody>
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<td>PGA</td>
<td>8.0 (5.6) n = 1969</td>
<td>-3.6 (5.4)</td>
<td>n = 1305</td>
<td>-3.7 (5.5)</td>
<td>n = 1109</td>
<td>-4.2 (5.3)</td>
<td>n = 1036</td>
</tr>
<tr>
<td>WPAI Overall Work Impairment</td>
<td>40.7 (12.7) n = 1422</td>
<td>11.0 (6.9)</td>
<td>n = 1044</td>
<td>11.1 (8.3)</td>
<td>n = 888</td>
<td>11.4 (13.1)</td>
<td>n = 565</td>
</tr>
<tr>
<td>WPAI Absenteeism**</td>
<td>21.9 (33.5) n = 802</td>
<td>-12.2 (33.8)</td>
<td>n = 314</td>
<td>-10.3 (32.8)</td>
<td>n = 217</td>
<td>-15.5 (35.3)</td>
<td>n = 186</td>
</tr>
<tr>
<td>WPAL Presentee**</td>
<td>41.1 (30.0) n = 833</td>
<td>-18.9 (32.4)</td>
<td>n = 338</td>
<td>-19.3 (35.7)</td>
<td>n = 248</td>
<td>-22.0 (33.2)</td>
<td>n = 207</td>
</tr>
<tr>
<td>WPAL Overall Work Impairment**</td>
<td>49.8 (33.4) n = 800</td>
<td>-23.4 (34.8)</td>
<td>n = 310</td>
<td>-22.7 (39.2)</td>
<td>n = 214</td>
<td>-27.5 (36.2)</td>
<td>n = 181</td>
</tr>
<tr>
<td>WPAL Activity Impairment**</td>
<td>50.3 (31.8) n = 1366</td>
<td>-21.9 (31.7)</td>
<td>n = 664</td>
<td>-22.5 (34.4)</td>
<td>n = 491</td>
<td>-23.4 (32.9)</td>
<td>n = 412</td>
</tr>
</tbody>
</table>


P0386 EFFECT OF ADA LUMABAM 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 INSPIRADE


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Introduction: Adalimumab (ADA) has been shown to improve clinical outcomes for UC. This analysis aimed to further evaluate ADAs effect on health-related quality of life (HRQoL) significantly in patients (pts) with ulcerative colitis (UC) in a clinical practice setting. Evidence is limited about benefits of ADA among UC pts with different characteristics.

Aims & Methods: The aim was to examine clinical and HRQoL effects of ADA in pts with UC based on disease severity and prior use of tumour necrosis factor inhibitor (TNFI). INSPIRADE details have been presented. Pts received ADA 160 mg at week (wk)0/2 followed by ADA 40 mg 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 [PGA = 2] vs severe [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, 6, 12, 18, and 26. Change from baseline in HRQoL outcomes was calculated, including Short Inflammatory Bowel Disease Questionnaire (SIBDQ), European Quality of Life-5 Dimensions-5 Level (EQ-5D-5L), Treatment Satisfaction Questionnaire for Medication (TSQM) and Work Productivity and Activity Impairment (WPAI).

Results: Among pts with moderate UC (n = 386) and severe UC (n = 74), SCCAI response rates were 74.6% vs 74.3%, 80.1% vs 71.6%, and 67.1% vs 64.9% at wk 2, 6, 12, respectively. Although remission rates were similar between moderate and severe pts at wk 26 (49.5% vs 40.5%, p = 0.16), ADA provided greater disease control for moderate pts at wk 2 (29.8% vs 9.5%, odds ratio [OR] 4.195% confidence interval [CI] 1.8–9.1; p < 0.0001) and wk 8 (52.3% vs 31.1%, OR 2.4, 95% CI 1.1–4.4; p = 0.01) compared to severe pts (table). The rate of dose escalation (ADA 40 mg weekly) was 28.0% in moderate and 28.4% in severe UC pts. HRQoL outcomes were similar between the moderate and severe cohorts. Among pts who were naïve (n = 389) and those experienced to TNFIs (n = 72), response rates were 74.0% vs 76.4%, 79.2% vs 75.0%, and 66.3% vs 68.1% at wk 2, 6, 26, respectively. No significant difference was observed in remission rates for naïve vs experienced pts at wk 2 (28.0% vs 19.4%, p = 0.43) and wk 26 (49.4% vs 41.7%, p = 0.39), but naïve pts showed a significantly higher remission rate than the experienced group at wk 8 (52.2% vs 31.9%, OR 2.1, 95% CI 1.2–3.7; p < 0.0001). The rate of dose escalation was 26.5% in naïve pts vs 36.1% in experienced pts (p = 0.09). In general, HRQoL outcomes were similar between naïve and experienced TNFI pts.

Table: Remission rate by disease severity and previous use of TNFIs

<table>
<thead>
<tr>
<th>Remission rate, n (%)</th>
<th>Moderate UC (n = 386)</th>
<th>Severe UC (n = 74)</th>
<th>Odds ratio (95%CI)*</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wk 2</td>
<td>115 (29.8%)</td>
<td>7 (9.5%)</td>
<td>4.06 (1.81–9.12)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Wk 8</td>
<td>202 (52.3%)</td>
<td>23 (31.3%)</td>
<td>2.43 (1.43–4.40)</td>
<td>0.001</td>
</tr>
<tr>
<td>Wk 26</td>
<td>191 (49.5%)</td>
<td>30 (40.5%)</td>
<td>1.44 (0.87–2.38)</td>
<td>0.16</td>
</tr>
</tbody>
</table>

(continued)

Conclusion: ADA treatment achieved clinically relevant rates of SCCAI response and remission even in pts who had severe UC and those who were more treatment-refractory (experienced to TNFIs), in clinical practice. In addition, ADA was associated with greater disease control in the induction period for pts with moderate than severe UC and for naïve pts than those experienced to TNFIs.

Disclosure of Interest: S. Travis: Adviser, grants, lecturer; AbbVie; Asahi; Bioerhinger; BMS; Cosmo; Elian; Ferring; FPRT Bio; Genentech/Roche; Genzyme; Glenspark; GW; Lilly; Merck; Novartis; Novo Nordisk; Oceara; Pfizer; Shire; Santarsus; SigmoidPharma; Synthon; Takeda; Tillotts; Topivert... Funding Statement: Financial support for the study was provided by AbbVie. AbbVie participated in the interpretation of data, review, and approval of the abstract. All authors contributed to the development of the publication and maintained control over the final content.

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L. Peyrin-Biroulet: Consultant: Merck, AbbVie, Janssen, Genentech, Mitsubishi, Ferring, Norgine, Tillotts, Vifor, Therakos, Pharmacosmos, Pile`ge, BMS, UCB, Hospira, Celltrion, Takeda, Biogaran, Boehringer, Lilly, Pfizer, HAC, Index, Amgen, Sandoz. Lecturer: Merck, AbbVie... R. Panaccione: Consultant, lecture fees: AbbVie, Amgen, AstraZeneca, Ascan, Biogen, BMS, Centocor, ChemoCentrux, Eieli, Elian, Ferring, Genentech, GSK, Janssen, MSD, Millenium, Oceara, Otsuka, Pfizer, Shire, Prometheus, Schering-Plough, Synia, Telva, UCB, Warner Chilcott

S. Danese: Board membership fees: Merck Sharp & Dohme; Consulting fees: Schering Plough, AstraZeneca, AbbVie, Takeda Millennium; Lecture fees, including fees for service on speakers’ bureaus: UCB Pharma, Merck Sharp & Dohme

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W. Lee: Employee, stockholder: AbbVie

Reference
**P0387** **SUBCUTANEOUS ADMINISTRATION OF A NOVEL FORMULA OF CT-P13 (INFLIXIMAB BIOSIMILAR) IS SAFE AND ACHIEVES PROJECTED THERAPEUTIC DRUG LEVELS: A PHASE I STUDY IN HEALTHY SUBJECTS**


1B.D. Ye, W. Reinish: Employee, stockholder: AbbVie, Truven Health Analytics, an IBM Company, Cambridge, MA, USA and received payment from AbbVie to assist with the analyses of this abstract. All authors contributed to the development of the publication and approval of the abstract. All authors contributed to the development of the publication and maintained control over the final content. Acknowledgement: Editorial support was provided by Fishawack Communications, Conshohocken, PA; this support was funded by AbbVie.

**Introduction:** Treatment with intravenous (IV) CT-P13, a biosimilar infliximab (INX) licensed for use in 80 countries, is highly effective and well tolerated. To increase treatment modalities with CT-P13 for patients, a new subcutaneous (SC) formulation was developed.

**Aims & Methods:** This phase I and open label study, conducted at a single site in Korea, was designed to evaluate safety and pharmacokinetics (PK) of SC administration of CT-P13 in healthy subjects. In a single dose escalation study, 38 subjects received either SC injection or IV infusion of CT-P13 on Day 0 and were followed for 12 weeks (2 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 AUC, Cmax, Tmax, and T1/2.

**Results:** A total of 38 male subjects with median age of 23 years (range 19, 30 years) received treatment-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 AUC<T> ranged from 5016.4 to 14253.6 h·ug/mL and 10.0 to 23.1 ug/mL, respectively, after a single SC injection or IV infusion of CT-P13. SC CT-P13 formulation 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 43.7 to 50.4 days vs. 11.7 to 12.2 days) 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.

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**Reference**


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**P0388** **REAL-WORLD UTILISATION IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE NEWLY TREATED WITH VEDOLIZUMAB AND ANTI-TUMOUR NECROSIS FACTOR AGENTS**

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4AbbVie Inc., North Chicago/United States of America/IL

**Introduction:** Vedolizumab is a gut-selective anti-integrin biologic, vedolizumab (VDZ), has been approved since 2014. However, the real-world comparative effectiveness of VDZ and anti-TNF has not been fully investigated.

**Aims & Methods:** This study aimed to evaluate all-cause and IBD-related healthcare utilisation in IBD patients (pts) newly treated with VDZ and anti-TNFs. Using data from a large, de-identified administrative claims database in the US (Truven MarketScan® Commercial and Medicare Supplemental Databases). The date of the first VDZ/anti-TNF claim was defined as index date. New VDZ/anti-TNF treatment was defined as no claims for these agents in the 1 year before index date. All pts had ≥6 months continuous enrolment prior to and ≥6 months post-index date. All-cause and IBD-related healthcare utilisation including hospitalisation, emergency department (ED) visits and outpatient visits during 6 months post-index were examined for the IBD cohort overall, as well as in CD and UC cohorts. Multivariable logistic regression was employed to estimate the odds ratio (OR) for hospitalisation and ED visits, while Poisson regression was used to examine the rate ratio (RR) for outpatient visits with VDZ compared to anti-TNF use, controlling for demographic characteristics, index year, baseline Charlson comorbidity index (CCI) and baseline hospitalisation and ED visits 1 year prior to index date. In sensitivity analyses, outpatient visits related to infusion administration for VDZ or anti-TNF were excluded to examine the RR associated with outpatient visits that were not related to the visits for infusion procedure.

**Results:** A total of 652 and 6974 IBD pts newly treated with VDZ and anti-TNF were identified, respectively (mean age [year]; 45 VDZ vs 42 anti-TNF: male: 47% vs 48%). VDZ pts had a higher CCI than anti-TNF pts (0.7 vs 0.5). During the 6 months follow-up, compared to anti-TNF, use of VDZ had significantly higher rates of all-cause hospitalisation (16.3% vs 13.1%, OR 1.30, 95% confidence interval [CI] 1.03–1.64), all-cause outpatient visits (mean visits 45.1 vs 31.0, RR 1.39, 95% CI 1.32–1.37) and IBD-related outpatient visits (mean visits 28.1 versus 17.5, RR 1.60, 95% CI 1.51–1.69). A sensitivity analysis excluding outpatient visits related to infusion administration showed similar results for IBD-related outpatient visits (RR 1.53, 95% CI 1.44–1.62). In pts with CD, the magnitude of risk of IBD-related hospitalisation was even higher (OR 1.67, 95% CI 1.17–2.38), but no significant difference in IBD-related hospitalisation (OR 0.57, 95% CI 0.30–1.06) was observed in pts with UC. The difference in IBD-related ED visits between VDZ and anti-TNF pts was not significant in CD (OR 1.32, 95% CI 0.96–1.82) or UC (OR 0.72, 95% CI 0.40–1.29). However, the rates of outpatient visits were consistently higher in VDZ vs anti-TNF across CD (RR 1.82, 95% CI 1.69–1.96) and UC cohorts (RR 1.29, 95% CI 1.18–1.42). The results were similar in the sensitivity analyses when infusion-related visits were excluded.

**Conclusion:** In this real-world setting, VDZ treatment was shown to be associated with higher all-cause hospitalisations and outpatient services compared to anti-TNF for pts with IBD. A higher risk of IBD-related hospitalisation associated with VDZ use was observed in CD but not UC pts. Outpatient visit rates were consistently higher for VDZ users, regardless of taking into account the infusion-related visits for biologics. These results should be interpreted with caution as disease activity was not fully accounted for in this claims data analysis.

**Disclosure of Interest:** M.T. Osternan: Consultant fees: AbbVie, Janssen, Lycera, Merck, Pfizer, Takeda, and UCB. Research grant support: UCB. M. Skup: Employee, stockholder: AbbVie. A. Afzali: Consultant: AbbVie, Takeda, and UCB. Research grant: UCB X. Song: Employee: Truven Health Analytics, an IBM Company, Cambridge, MA, USA and received payment from AbbVie to assist with the analyses of this study.

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**P0389** **SAFETY OF ANTI-TNF TREATMENT IN ELDERLY PATIENTS WITH INFLAMMATORY BOWEL DISEASE**


**Introduction:** Due to population ageing and improved survival, the percentage of elderly patients with inflammatory bowel disease (IBD) is increasing. The safety
Disclosure of tumour necrosis factor antagonists (anti-TNF) treatment in this populations is ill-defined.

**Aims & Methods:** To assess the main adverse events (AE) of this therapy in the elderly population in comparison with the younger patients, we performed a retrospective cohort study of patients with IBD that initiated treatment with anti-TNF agents in 2003 and 2014, with follow-up until December 2013. Demographic, clinical and medication data were collected. AE (including opportunistic, malignancy, dermatologic, neurologic, cardiac and vascular, hepatic, infusion reactions and others) occurring during anti-TNF treatment in elderly and younger patients were analysed and both groups were compared. The severe AE definitions from Food and Drug Administration (FDA) and European Medicines Agency (EMA) were used.

**Results:** Of the 219 patients (55.3% women; average disease duration 13.60 +/- 7.55 years) 25 were older than 65 years-elderly group, mean age 70.0 year vs. younger group, mean age 41.77 years. Infliximab was used in 174 patients (on average 1585 days) and adalimumab in 93 (on average 1379 days), with a total 1106 years of anti-TNF exposure. In the elderly, aspihirine was used less frequently (P = 0.000). There were 46 severe AE overall, including 18 cancers and 16 opportunistic infections (5 tuberculosis). Malignancy (20.0% vs. 6.7%, P = 0.039) and cardiovascular events (16.0 vs. 4.1%, P = 0.036) occurred more frequently in the elderly, whereas dermatologic AE were more common in the younger group (4.0 vs. 0.0004). The number of severe AE (24.0 vs. 20.1%, P = 0.794) including death (4.0 vs. 2.6%, P = 0.521) was not significantly different between groups.

**Conclusion:** Despite being at higher risk of malignancy and cardiovascular events, the total number of severe adverse events was not significantly increased in elderly patients. Particular attention to malignancy surveillance and treatment of cardiovascular comorbidities is advised in this population.

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

**Reference**

**P0390 SWITCHING FROM REFERENCE INFlixIMAB TO CT-P13 IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE: 12 MONTHS RESULTS**

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**Introduction:** Over the past twenty years, the introduction of biological agents into clinical practice has radically improved outcomes in patients with inflammatory bowel disease (IBD), Crohn’s disease (CD) and ulcerative colitis (UC). Tumor necrosis factor (TNF) antagonists, such as infliximab, act by preventing TNF from binding to its receptor, neutralizing its activity and alleviating mucosal inflammation. However, biological agents are much more expensive than traditional treatments, and the high cost of these drugs in the treatment of IBD imposes a considerable burden on the national healthcare system. As a result, the number of patients who have grown up on biological agents are more likely to be at higher risk in terms of quality, efficacy, and safety to already licensed biologics but are associated with lower development costs. CT-P13 (Remsima® and Inflectra®) is a biosimilar of infliximab (Remicade®), which is its reference product (RP). Both CT-P13 and infliximab RP are chimeric IgG1 monoclonal antibodies produced in cell lines derived from the same cell type of murine hybridoma. CT-P13 was authorized by the EMA in 2013 for several indications, including IBD, based on two non-inferiority trials with infliximab RP (RAA) and ankylosing spondylitis (AS). However, a number of observational studies of CT-P13 in clinical practice in both anti-TNF-naïve patients and those who have been switched from infliximab RP have been published with good results.

**Aims & Methods:** We aimed to assess the effectiveness and safety of switching to CT-P13 from infliximab reference product (RP) in patients with inflammatory bowel disease. This was a prospective single-center observational study in patients with moderate to severe Crohn’s disease (CD) and ulcerative colitis (UC). All patients were switched from infliximab RP (Remicade®) to CT-P13 treatment and followed for up to 12 months. The efficacy endpoint was the change in clinical response assessed at 3-monthly intervals, according to the Harvey-Bradshaw (HB) score and partial Mayo score for patients with CD and UC, respectively. C-reactive protein (CRP) was also measured. The Cochrane’s Q and Friedman tests were used to analyze the change in clinical scores and CRP. Adverse events were monitored and recorded throughout the study.

**Results:** A total of 98 patients with inflammatory bowel disease (67 CD/31 UC) were included. 83.6% (56/67) of patients with CD were in remission at the time of the switch and 65.3% (18/28) were in remission at 12 months. The HB score showed a significant change at 12 months (P = 0.007) but no significant change was observed at 6 months (P = 0.000). There were 15 severe AE overall, including 9 cancers, 2 opportunistic infections (1 tuberculosis), 2 hepatic, 1 infusion reactions and others) occurring during anti-TNF treatment in elderly and younger patients were analysed and both groups were compared. The severe AE definitions from Food and Drug Administration (FDA) and European Medicines Agency (EMA) were used. **Aims & Methods:** In terms of quality, efficacy, and safety to already licensed biologics but are more similar than generic drugs. As a result, interest in biosimilars has grown as biosimilar agents are highly similar to their reference products.

**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 naïve 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 endoscopic response.

**Results:** 59 patients with IBD were treated with vedolizumab from May 2015 to October 2016. 28 (47%) had Crohn’s disease and the majority (n = 43, 73%) had mainly colonic inflammation (12 colonic Crohn’s, 29 UC, 2 IBDU). Median time from diagnosis to Vedolizumab initiation was 8 years (17 25%) 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 methotrexate or another IM. Patients had a clinical response to Vedolizumab based on a reduction of Harvey-Bradshaw index (HBI) from baseline ≥ 3 points for Crohn’s patients or a reduction of partial Mayo score ≥ 2 points for UC patients. The rates of response were similar in Crohn’s and UC patients while there was no difference in response according to gender, previous anti-TNF exposure, disease duration or location of inflammation. Patients on no concomitant IM were less likely to respond to Vedolizumab (Odds ratio 0.26, 95% CI 0.07–0.91, p = 0.036). 11(18.6%) patients experienced adverse events while treated with Vedolizumab, five of which were related to active IBD. There were two minor allergic reactions and two mild infections.

**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**

**Disclosure of Interest:** F. Argüelles Arias, : Advisory boards and has received financial support to attend scientific meetings from Kerna Pharma. All other authors have declared no conflicts of interest.
P0392 CORRELATION OF RELATIONSHIP BETWEEN INFliximab TRough AND ANTIBODY LEVELS WITH CLINICAL RESPONSE RATES AT COMPLETION OF INDUCTION THERAPY

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Introduction: Anti-TNFα therapies have helped improved response rates, reduced complication rates, and quality of life for patients with inflammatory bowel disease (IBD). However primary loss of response (LOR) is still a big concern. Therapeutic Drug Monitoring (TDM) potential of adjust- dosing of anti-TNFα in a treat to target fashion. The end of anti-TNFα induction therapy is a key time point in the management of IBD. TDM is a useful method to help explore an immune basis behind LOR. In addition anti-TNFα trough levels are a significant predictor of future likelihood of clinical response and mucosal healing.

Aims & Methods: The aim of this study was to explore the relationship between infliximab (IFX) and adalimumab (ADA) trough and antibody levels with clinical response rates, at the end of anti-TNFα induction therapy. This was a pro-pective, single-centre study. Patients were recruited from the gastroenterology department at our centre, from July 2015 to August 2016. Inclusion criteria were all patients older than 17 years old with IBD who started treatment with anti-TNFα drugs, either infliximab or adalimumab, during the study period. Patient demographics, medication and clinical history were collected from the electronic hospital information system. Baseline clinical disease activity indexes were per-formed. HBI (Harvey-Bradshaw Index) for Crohn’s disease (CD), and partial Mayo scores for Ulcerative colitis (UC). Clinical response was defined as reduction in HBI ≤3 or reduction in partial Mayo score ≤4 and ≤30% from baseline. Anti-TNFα trough and antibody levels were measured using standard ELISA technique.

Results: 35 patients were recruited: 23 CD, 12 UC. 18 patients were treated with other induction regimes used, 5 mg/kg week 0, 2 and 6 and 160 mg, 80, mg and 40 mg every other week. 18 patients who completed induction therapy were included. Standard induction were 70.6% (n = 24), 33.3% (n = 12) for IFX. Overall trough levels were 12.5 ug/ml for IFX, and 4.4ug/ml for ADA. 71.4% had therapeutic trough levels >1 ug/ml. There was a clear link between higher anti-TNFα trough levels at the end of induction with clinical response rates. For infliximab, mean trough levels in responders was 16.4 ug/ml (IQR 8.4–22.7) versus 5.3 ug/ml (0.5–8.8) for non-responders (p value 0.026 95% CI 1.50–20.7). The area under the curve [AUC] for association of IFX level at end of induction with clinical response was 0.864, p = 0.0001. In addition a trough level of 4.8 ug/ml predicted clinical response at end of induction, with a sensitivity of 90.91% and a specificity of 67%. Similarly there was a link between higher ADA levels with clinical response, though not statistically significant (Responders mean trough 6.6 ug/ml (IQR 4.9-8.7) versus non-responders 3.0 ug/ml (IQR 0.1–7) p = 0.135 95% CI 1.24–8.43). Antibody forma-tion occurred in 6 patients (17.1%). Of the patients who had primary non-response, 18/35 (51.4%) had doses of anti-TNFα escalated, 7/17 (41.1%) for infliximab, and 11/18 (61.1%) for adalimumab. 4 patients required surgical inter- vention including colectomy.

Conclusion: Higher trough levels at the end of anti-TNFα induction are associated with improved response rates. Ongoing work will define optimal targets at this key timeframe.

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

P0394 PREGNANCY OUTCOMES IN THE TOFACITINIB ULCERATIVE COLITIS OCTAVE STUDIES

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Introduction: A woman with ulcerative colitis (UC), compared with age-matched controls, is at higher risk of adverse outcomes including spontaneous abortion, preterm birth and low birth weight.1,2 Tofacitinib is an oral, small molecule Janus kinase inhibitor that is being investigated for UC. Tofacitinib has been shown to be foetocidal and teratogenic in both rats and rabbits at exposures 146 times and 13 times, respectively, the human dose of 5 mg twice daily (BID). There is no adequate and well-controlled studies of tofacitinib in pregnant women.

Aims & Methods: We report the pregnancy outcomes from three randomised, placebo-controlled studies (OCTAVE Induction 1, NCT01458951; OCTAVE Induction 2, NCT01458952; OCTAVE Sustain, NCT01458554) and one ongoing open-label extension study (OCTAVE long-term study, NCT01470612) of tofa-citinib monotherapy in patients (pts) with moderate to severe UC.3,4 Pregnancy outcomes following maternal or paternal exposure to tofacitinib or 5 mg BD were identified from Pfizer’s internal safety database up to 23 March, 2017, and categorised as: healthy newborn, medical termination, foetal death, congenital malformation, spontaneous abortion or pending/lost to follow-up. Trial proto- cols required use of highly effective contraception for females of childbearing potential, and study drug to be discontinued in any female pts who became pregnant.

Results: A total of 1139 unique pts (incl. placebo) enrolled in the UC OCTAVE trials, of whom 296 were females of childbearing age. There were a total of 25 pregnancies reported with exposure to tofacitinib. Of these, 11 were cases of maternal exposure, all during the 1st trimester, including: 2 (18.2%) spontaneous abortions (5 mg BD, n = 1; 10 mg BD, n = 1), 2 (18.2%) medical terminations (both 10 mg BD), 4 (36.4%) healthy newborns (all on 10 mg BD) and 3 (27.3%) born to follow up (all on 10 mg BD). Out of the 14 cases of paternal exposure, 11 (78.6%) were healthy newborns (5 mg BID, n = 2; 10 mg BID, n = 9) and 3 (21.4%) were pending/lost to follow-up (5 mg BID, n = 1; 10 mg BID, n = 2). Overall, there were no cases of foetal death or congenital malformation.
P0395 SAFETY AND EFFICACY OF GRANULOCYTE AND MONOCYTE ADSORPTIVE APERATURE IN 363 PATIENTS WITH INFLAMMATORY BOWEL DISEASE WHO HAVE SPECIAL 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 Aducolumn® 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 Aducolumn® (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 considered as side effects (SEs). Feasibility problems (FPs) included blood withdrawal difficulty, venous pressure elevation, coagulation in the apheresis system and venous access difficulty. The safety of GMA was investigated in the following six special situation subgroups: the elderly (>65 years), concomitant treatment with multiple immunosuppressants, retreatment with GMA, anaemia (haemoglobin <10 g/dL), paediatric (<18 years) and other groups. We also compared AEs, SEs and FPs between the subgroups with/without each special situation by univariate analysis. The efficacy of GMA was also assessed in patients with UC. Patients with a partial UC disease activity index score (pUC-DAI) of <3, those with missing pUC-DAI scores and those receiving concomitant treatment with infliximab, adalimumab, tacrolimus or cyclosporine were excluded from efficacy analysis. pUC-DAI scores were calculated at the baseline and 3.4 after the final GMA session. 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 3.9%, 10.7% and 16.3% of the patients, respectively. There were 105, 112, 83, 49 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 GMA group than in those who received 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, at baseline and 2.5, 2, 0, 1, 1 and 0, respectively. The pUC-DAI score significantly decreased from 6.2 at baseline to 3.4 after the final GMA session (P < 0.001) and the remission rate at the final GMA session was 43.5%.

Conclusion: This multi-centre observational study showed that GMA has an acceptable safety profile in IBD patients and sufficient effectiveness in UC patients who have special situations. However, care should be taken when GMA is used in patients with anaemia or those who have received concomitant treatment with multiple immunosuppressants.

Disclosure of Interest: H. Tanaka: Lecture Fee(s) from JIMRO Co., Ltd. T. Shibuya: Unrestricted grant from JIMRO Co., Ltd. Financial support for research from JIMRO Co., Ltd. T. Osada: Unrestricted grant from JIMRO Co., Ltd. Financial support for research from JIMRO Co., Ltd. A. Sakuraba: Unrestricted grant from JIMRO Co., Ltd. S. Kukuma: Employee of JIMRO Co., Ltd. E. Hosoi: Employee of JIMRO Co., Ltd. All other authors have declared no conflicts of interest.

References

P0396 INTEGRATING PSYCHOLOGICAL SUPPORT INTO ROUTINE CARE FOR PEOPLE WITH INFLAMMATORY BOWEL DISEASE

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Introduction: People with Inflammatory Bowel Disease (IBD) commonly experience health issues (MHIs) such as anxiety and depression. MHIs reduce quality of life and are associated with poor medication adherence and worse disease course. However, psychological support is not routinely provided to people with IBD. There are scant prospective, systematically gathered data on MHIs in IBD; despite solid evidence of the value of psychological input for people with other chronic diseases.

Aims & Methods: The current study is investigating: the prevalence of MHIs in an IBD cohort; the acceptability and uptake of psychological support and treatment; whether MHIs correlate with higher healthcare utilisation; and potential benefits of integrated psychological care to patients’ mental health, physical health, and/or healthcare utilisation. Potential participants were prospectively recruited from the IBD service at a large tertiary hospital in South Australia via post and in-person at scheduled/routine outpatient appointments. Data were collected at two time points – at baseline screening and at 12 month follow-up. Mental health, medication adherence, and quality of life were measured by questionnaires: the Hospital Anxiety and Depression Scale (HADS), the Kessler 6 Scale of General Psychological Distress (K6), the Morisky Medication Adherence Scale (MMAS-8), and the Assessment of Quality of Life measure (AQoL-SD). Demographic and healthcare utilisation data were collected by electronic,

Table: Summary of pregnancy outcomes in the OCTAVE programme

<table>
<thead>
<tr>
<th>Maternal exposure (n=11)</th>
<th>Tofacitinib 5 mg BID</th>
<th>Tofacitinib 10 mg BID</th>
<th>Paternal exposure (n=14)</th>
<th>Tofacitinib 5 mg BID</th>
<th>Tofacitinib 10 mg BID</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>0</td>
<td></td>
<td>0</td>
<td>0</td>
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<td>1</td>
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</table>
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% had Crohn’s disease, mean disease duration of 11 years, 43.1% 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. Analogies and/or mental health medication increased the likelihood of scoring within the clinical range nearly fivefold (analgesic use OR = 5.32, p = 0.03; psycho OR = 6.04, p = 0.01). Significant predictors of accepting psychological treatment included older age (OR = 1.03, p = 0.04), anxiety (OR = 1.09, p = 0.045), general distress (OR = 1.11, p = 0.003) and lower quality of life (OR = 0.93, p = 0.042). At baseline, anxiety and depression were both negatively correlated with medication adherence (anxiety r = -0.32, p = 0.00, depression r = -0.20, p = 0.000) and overall quality of life (anxiety r = -0.78, p = 0.000, depression r = -0.78, p = 0.000). Depression and general distress were related to overall healthcare utilisation (depression r = 0.13, p = 0.018, general distress r = -0.12, p = 0.026). Anxiety was not related to overall healthcare utilisation, but was positively correlated with numbers of emergency department presentations (r = 0.12, p = 0.024), outpatient appointments (r = -0.11, p = 0.030), and appointment cancellations (r = 0.15, p = 0.05). Currently, approximately half of the twelve month follow-up data has been collected. Preliminary analysis shows improvements for patients’ mental health, quality of life and medication adherence (see table below).

Table 1: Outcomes of psychological support

<table>
<thead>
<tr>
<th>Variable</th>
<th>Screening (Mean)</th>
<th>SD</th>
<th>Follow-Up (Mean)</th>
<th>SD</th>
<th>t value</th>
<th>p value</th>
<th>ETA²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety</td>
<td>12</td>
<td>3.6</td>
<td>9</td>
<td>4.1</td>
<td>4.47</td>
<td>0.000***</td>
<td>0.56</td>
</tr>
<tr>
<td>Depression</td>
<td>8.8</td>
<td>3.9</td>
<td>6.4</td>
<td>5.0</td>
<td>4.34</td>
<td>0.000**</td>
<td>0.30</td>
</tr>
<tr>
<td>Distress</td>
<td>18.2</td>
<td>4.8</td>
<td>13.9</td>
<td>5.1</td>
<td>7.47</td>
<td>0.000***</td>
<td>0.56</td>
</tr>
<tr>
<td>Mental QoL</td>
<td>51.5</td>
<td>15.9</td>
<td>60.6</td>
<td>18.5</td>
<td>-4.91</td>
<td>0.000***</td>
<td>0.39</td>
</tr>
<tr>
<td>Physical QoL</td>
<td>72.5</td>
<td>14.9</td>
<td>75.0</td>
<td>17.7</td>
<td>-1.50</td>
<td>0.142</td>
<td>0.06</td>
</tr>
<tr>
<td>Total QoL</td>
<td>57.6</td>
<td>14.6</td>
<td>65.1</td>
<td>17.4</td>
<td>-4.39</td>
<td>0.000***</td>
<td>0.34</td>
</tr>
<tr>
<td>Medication adherence</td>
<td>5.1</td>
<td>2.0</td>
<td>5.7</td>
<td>2.2</td>
<td>-2.03</td>
<td>0.049*</td>
<td>0.09</td>
</tr>
</tbody>
</table>

* p < 0.05, ** p < 0.01, *** p < 0.001

**Conclusion:** Psychological issues are prevalent in patients with IBD and associated comorbidity and quality of life and medication adherence are common more likely to participate in psychological screening, and in general the screening approach was widely accepted. In addition, high proportions of patients reported clinical levels of distress (irrespective of their IBD activity) and went on to accept psychological intervention. All of which 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.

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 30 mg subcutaneous GP 2017 or reference adalimumab, followed by 40 mg every other week, starting one week after the initial dose, up to Week 17. At Week 17, patients with ≥50% improvement in Psoriasis Area and Severity Index (PASI 50) at Week 16 were re-randomized in a 2:1 ratio to either remain on their initial study treatment or undergo a sequence of three treatment switches between GP 2017 and reference adalimumab until Week 35. Thereafter, patients were returned to their originally randomized treatment up to Week 51.

**Results:** From randomization to Week 51, 168 and 171 patients received continuous treatment with GP 2017 or reference adalimumab, respectively. In the protocol analysis set, PASI 75 response rates for continual GP2017/reference adalimumab at Weeks 17 and 24 were 75.2% and 67.8%, respectively. 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 (59.8%/55.1%). There were no clinically relevant differences between the continual GP2017/reference adalimumab groups in the frequency of adverse events (AEs) (61.6%/64.9%), treatment-related AEs (17%/18.7%), serious AEs (3.0%/3.8%), drug-related AEs (15.5%/17%), or AEs leading to discontinuation of study drug (7.9%/7.0%) respectively.

**Conclusion:** Efficacy was similar and sustained in patients with psoriasis continuously treated with GP 2017 or reference adalimumab for up to 51 weeks. Safety profiles and immunogenicity were generally similar in both groups. Clinical data add to the totality of evidence suggesting GP 2017 could be used as a biosimilar for the treatment of the same indications for which reference adalimumab is approved, including inflammatory bowel disease.

Disclosure of Interest: A. Blauvelt: Investigator for Sandoz J. Lacour: Investigator for AbbVie, Amgen, BMS, BI, Celgene, Galderna, Janssen, LEO Pharma, Lilly, MSD, Novartis, Pfizer, Regeneron, Roche, Sandoz; consultant/speaker for AbbVie, BMS, Celgene, Galderna, 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 INFLAMMATORY 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.
PO399  ANDECALIXIMAB (ANTI-MMP9) INDUCTION THERAPY FOR ULCERATIVE COLITIS: A DOUBLE-BLIND, RANDOMIZED, PLACEBO-CONTROLLED, PHASE 2 STUDY
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Introduction: Andecaliximab (anti-MMP9) (MM-9) is a monoclonal antibody that selectively binds and inhibits MMP-9. A Phase 1 dose-ranging study of andecaliximab was conducted in UC patients, demonstrating clinical response and remission. We conducted a phase 2 study to further evaluate the safety and efficacy of andecaliximab in subjects with UC.

Aims & Methods: This was a double-blind, randomized, placebo-controlled 8-week induction study in adult subjects with UC with moderate to severe disease activity (defined as: CDAI total score 220–450, weighted PRO2 score ≥1 [standard CDAI weights: abdominal pain 0–3+ 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-alpha antagonist or vedolizumab. Subjects were randomized 1:2:2 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% (0.9–6.9%) and 7.3% (2.0–17.6%), respectively. Confidence intervals overlap for all groups and no single EBS component subscore appears to have driven the results. No concerning imbalances occurred between the treatment groups (Table 1).

The frequency of adverse events (AEs) was similar in the andecaliximab Q2W, andecaliximab QW and placebo groups: 53.7%, 58.9% and 60%, respectively. Common AEs included anemia, abdominal pain and nausea. Three AEs led to discontinuation in the andecaliximab Q2W group compared to one each in the andecaliximab QW and placebo groups. Two serious AEs occurred in the andecaliximab QW group (anemia and angina pectoris) compared to one in placebo.

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M. McKeity: Employee of Gilead Sciences.
S. Zhao: Employee of Gilead Sciences.
K. Kanwar: Employee of Gilead Sciences.
J. Sundy: Employee of Gilead Sciences.
S. Keshav: Consulted with Gilead Sciences.
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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). 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). 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.

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S. Danese: Consulted for Gilead Sciences.
All other authors have declared no conflicts of interest.

References
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%). Common 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 4 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.

The proportion 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.


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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. Fifteen (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 week 14. Patients with week 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), and 85% of AAA events were associated with loss of response compared with 58% rate for ATI (p = 0.03).

**Conclusion:** AAA formation often occurs earlier than anticipated, and associates with primary non-response to adalimumab induction. Overall rate of immunogenicity is lower for adalimumab compared to infliximab. However, once they occur, AAA are more specific to ATI.

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All other authors have declared no conflicts of interest.

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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% of patients maintaining the effect after one year. Due to its results, patient characteristics are still few with success on clinical outcomes of patients receiving golimumab in the routinely activities. In our region GLB became available starting July 2015.

Aims & Methods: Aim of this study has been to prospectively evaluate the efficacy and tolerability of golimumab 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 < 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 subscres <1) at the end of the induction phase and then in the maintenance phase. Complete follow-up is available for all at patients 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 (E2) in 70%, pancolitis (E3) in 23% and proctitis (E1) in 7% of patients. Ten patients (77%) were anti-TNF naïve, 3 patients (23%) had already received one anti-TNF in the past. Clinical response was obtained in 6/13 (46%) at week 6 and in 2 further patients at week 10, for a total of 8/13 (62%). Three patients resulted in complete clinical steroid-free remission after 6 weeks. At week 30, 5 patients still showed a clinical response (38%), one of them (7%) resulted in complete steroid-free remission. Among the 4 patients reaching week 54, 2 experienced a flare of disease whereas 2 were still in remission at week 54. The patient is in remission at week 42, potentially accounting for a total of 3/13 patients in remission after one year (23%). No differences were found between naïve and non-naïve patients. No significant adverse events were reported in the study period.

Conclusions: Our data seem to suggest that Golimumab, as compared to registries 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 in this kind of setting, the physicians may modify the dose to the patient's benefit. No other significant adverse events were reported.

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

P0404 FIVE-YEAR SAFETY DATA FROM THE OBSERVATIONAL POSTMARKETING ULTRACOLITIS STUDY, A EUROPEAN REGISTRY FOR ADULTS WITH ULTERATIVE COLITIS TREATED WITH ORIGINATOR INFlixIMAB OR STANDARD THERAPY


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Introduction: The Observational Postmarketing Ulcerative colitis Study (OPUS) registry was conducted to collect long-term (5 years) real-world clinical and 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: 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 5-ASA for the UC for the standard therapy group, as defined by their respective physician). Adverse events (AEs) were recorded during the 5-year follow-up period; at any time during the 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, hematologic condition, malignancy/lymphoproliferative disorder, autoimmune disorder, or hematological event). The incidence of these events was calculated for 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 [i.e. generally oral] therapies); p-values were not adjusted for multiplicity comparisons. Safety data were collected every 6 months.

Results: Data for 2239 patients were available: 1180 patients enrolled to standard therapy (including 296 patients who switched to originator infliximab during follow-up) and 1059 patients enrolled to originator infliximab. Patients who received originator infliximab, standard therapy, or who were switched to originator infliximab during follow-up on standard therapy, were followed for medians of 59.4, 50.6, and 49.8 months, respectively. However, median exposure to originator infliximab during follow-up on standard therapy, were followed for median exposure to originator infliximab during follow-up on standard therapy, were followed for 1059 patients enrolled to originator infliximab. Patients who received originator infliximab group, 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 (60.3%, P < 0.001) in the standard therapy group. In time-to-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 hematologic condition, autoimmune disorder, malignancy/lymphoproliferative disorder, hepatobiliary event, and fatality (Table). Because of very low incidence of AE's in the categories of CHF and demyelinating disorder (0.3% in each group), meaningful 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 to patients receiving standard therapy, patients enrolling into 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, did not have a significantly increased risk of a hematologic condition, autoimmune disorder, malignancy/lymphoproliferative disorder, hepatobiliary event, CHF, demyelinating disorder, or mortality. No new safety concerns were observed with originator infliximab in the OPUS registry.

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Golimumab (GLM) is a subcutaneously administered anti-tumor necrosis factor (anti-TNF) antibody that is approved for the treatment of moderate to severe ulcerative colitis (UC). We investigated the association between systemic exposure (area under the curve (AUC)) of GLM during induction therapy and endoscopic response in moderate-severe UC.

Aims & Methods: In this prospective observational trial, patients with moderate to severe UC (Mayo endoscopy score ≥2) received induction treatment with GLM 200 mg SQ (at week 0) and 100 mg (at week 2) followed by 50 or 100 mg at week 6, in patients with a bodyweight of less or more than 80 kg, respectively. Serum GLM concentrations were measured with an enzyme-linked immunoassay system (ELISA) developed by Sanquin laboratories. Endoscopic response was defined as disease duration at age, disease duration at baseline, history of previous dysplasia.

Results: A total of 20 patients were enrolled of which 19 patients underwent an endoscopy at baseline and 8-10 weeks after start of treatment. Median age (interquartile range) was 46 years [36–57], median baseline CRP serum concentration was 4.5 mg/L [1.1–13.7] and median baseline albumin serum concentration was 44 g/L [40–45]. None of the patients developed antibodies against GLM during induction treatment. After the induction phase, 12 out of 19 patients (63%) achieved an endoscopic response. Median AUC at week 2 and 6 was higher in endoscopic responders compared to non-responders. Median GLM trough concentrations at week 2 and 6 were higher in endoscopic responders compared to non-responders (Table 1). Correlations between GLM trough concentrations and AUCs at week 2 (Pearson correlation coefficient: 0.68, P < .0001) and week 6 (Pearson correlation coefficient: 0.81, P < .0001) were statistically significant. Despite a low area under the ROC-curve (AUROC), a GLM serum trough concentration ≥3.3 mg/L (AUROC: 0.75, 95% CI: 0.526–0.974, sensitivity: 67%, specificity: 71%) was associated with endoscopic response after the induction phase.

Conclusion: Serum trough concentrations of GLM and AUCs at week 2 and 6 were higher in endoscopic responders compared to patients without an endoscopic response. A significant correlation was found between GLM trough concentrations and AUC. A GLM trough level ≥3.3 mg/L at week 6 is associated with improved endoscopic outcomes.

Disclosure of Interest: S. Berends: Has received lecture fees from Johnson and Johnson, and Mercier Sharp & Dohme. A. Strik: Has received lecture fees from Biogen, Johnson and Johnson, Mercier Sharp & Dohme, Mundipharma, Takeda, and Tillotts. R. Mathiot: Has received consulting fees from MSD and research grants from Bayer, UCB Pharma, Shire and Roche. G.R. D’Haens: Has received speaker fees from Abbvie, Ferring, Johnson and Johnson, Mercier Sharp & Dohme, Mundipharma, Norgine, Pfizer, Shire, Millenium/Takeda, Tillotts and Vifor. M. Lowenberg: Has received speaking fees from Abbvie, Covidien, Dr. Falk, Ferrigno Pharmaceuticals, Mercier Sharp & Dohme, Receptos, Takeda, Tillotts and Tramedico. He has received research grants from Abbvie, Mercier Sharp & Dohme, Achmea healthcare and ZonMW.

Table 1: Median golimumab trough concentrations and AUCs at week 2 and 6

<table>
<thead>
<tr>
<th>Condition</th>
<th>Endoscopic responders median [IQR]</th>
<th>Endoscopic non-responders median [IQR]</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serum trough conc.</td>
<td>3.8 [2.6–6.0]</td>
<td>2.4 [1.1–3.8]</td>
<td>.08</td>
</tr>
<tr>
<td>AUC (mg/L/day) week 2</td>
<td>134 [102–170]</td>
<td>94 [80–169]</td>
<td>.48</td>
</tr>
<tr>
<td>AUC (mg/L/day) week 6</td>
<td>333 [250–476]</td>
<td>212 [206–417]</td>
<td>.21</td>
</tr>
</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 GLM trough concentrations and AUC. A GLM trough level ≥3.3 mg/L at week 6 is associated with improved endoscopic outcomes.

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Results: Twelve induction trials were identified from the SLR (ACT 1 & 2, EUCALYPTUS, GEMINI-I, PURSUIT SC, TOFACITINIB PHASE 2, Feagan 2003, PARKLANDS I & II, 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 (500 mg/m²) 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 1.68, 127.73]) in TNFi-exposed patients. A higher rate of clinical remission was seen with tofacitinib 10 mg BID vs adalimumab in TNFi-exposed patients (OR 11.93 [95% CrI 1.84, 154.78]). AE rates were similar between tofacitinib 10 mg BID and comparators in the overall and TNFi-naïve populations when analysed individually, but tofacitinib 10 mg BID was found to be associated with a higher rate of disaggregated AEs (“any AE”) than etrolizumab 300 mg in the overall population (OR 2.78 [95% 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.

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D.T. Rubin: Consulting fees: AbbVie, Amgen, Janssen, Pfizer Inc, Takeda, UCB. Research grants: AbbVie, Genentech, Janssen, Takeda, UCB. A.O. Ashaye: Employee of Evidera, who provide consulting and research services to pharmaceutical and related organisations. In salaried positions, work with a variety of companies, and are precluded from receiving payment or honoraria directly for services rendered. Y. Zhang: Employee of Evidera, who provide consulting and research services to pharmaceutical and related organisations. In salaried positions, work with a variety of companies, and are precluded from receiving payment or honoraria directly for services rendered. Y. Xu: Employee of Evidera, who provide consulting and research services to pharmaceutical and related organisations. In salaried positions, work with a variety of companies, and are precluded from receiving payment or honoraria directly for services rendered. K. Faehrbach: Employee of Evidera, who provide consulting and research services to pharmaceutical and related organisations. In salaried positions, work with a variety of companies, and are precluded from receiving payment or honoraria directly for services rendered. 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.
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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

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D. Mary Beth: MB Dorr - an employee of Merck Sharp & Dohme Corp., a subsidiary of Merck & Co., Inc., Kenilworth, NJ, USA, who may own stock and/or hold stock options in the Company. All other authors have declared no conflicts of interest.
**P0409** SIMILAR TRAIL - EFFICACY OF INFliximab-BIOSIMILAR COMPARISON IN INFLAMMATORY BOWEL DISEASE IN REMISSION - A RANDOMIZED, CONTROLLED, DOUBLE BLIND, PHASE 4 NONINFERIORITY TRIAL

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**Introduction:** Crohn’s disease (CD) and ulcerative colitis (UC) are the main entities of inflammatory bowel disease (IBD). For most patients, medical treatment is insufficient to keep the disease in remission. Infliximab (IFX) is a monoclonal antibody that targets tumor necrosis factor-α (TNF-α) inhibitors, such as Infliximab (IFA), are a major component in inducing and maintaining remission in more refractory patients. Recently IFX-biosimilars have been introduced for the treatment of IBD, these are less expensive than their biological counterparts. Preclinical studies have shown that IFX-biosimilar and IFX-biological have been compared for ankylosing spondylitis and rheumatoid arthritis showing no difference between efficacy and safety. So far, no double blind randomized clinical trial has been published that compared IBD patients who used IFX-biological or IFX-biosimilar. Cohort studies in IBD patients showed switching from IFX-biological to IFX-biosimilar had no impact on short-term clinical outcomes. The aim of this study was to examine non-inferiority in safety and efficacy of IFX-biosimilar compared with IFX-biological and to evaluate adverse effects and pharmacokinetics.

**Aims & Methods:** We randomized patients with CD or UC in clinical and biochemical remission to either switch to IFX-biosimilar or to continue using IFX-biological. Randomization was performed in a 2:1 ratio (65% to IFX-biosimilar). Patients in both arms received 4 to 6 doses of 5 mg/kg to 10 mg/kg during the 30-week study period. Patients eligible for inclusion had to be in clinical remission (HBI < 5 and MAYO < 2) and have a fecal calprotectin <250 μg/g. The primary endpoint was number of patients in remission at week 30. We measured C-reactive protein (CRP), fecal calprotectin (FCP), infliximab trough level (TL) and anti-drug antibodies [ADAs]. Patients were asked to fill in SIBDQ and Mayo or HBI questionnaires three times during the study period. Adverse events (AE) and serious adverse events (SAE) that patients experienced were documented.

**Results:** So far, we included 47 patients from 6 secondary Dutch Teaching 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. 15 received IFX-biological, 6 IFX-biosimilar. One patient experienced a relapse of IBD, this patient received IFX-biosimilar. 2 patients experienced a SAE, none were related to the study drug.

**Conclusion:** This is the first double blind randomized clinical trial that compares treatment with IFX-biological or IFX-biosimilar. The preliminary results show that switching from IFX-biological to IFX-biosimilar is feasible and safe.

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

**References**

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**P0411** ENCAPSULATED FECAL MICROBIOTA TRANSFER IN PATIENTS WITH CHRONIC, ANTIBIOTIC-REFRACTORY POUCHITIS

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**Aims & Methods:** We randomized 14 patients with chronic pouchitis (a; activity items: presence of epithelial damage, polymorphonuclear leukocytes (IGHAS)/colonic GHAS (CGHAS) score or IGHAS/CGHAS activity subscores and b; induction items: presence of crypt abscesses, neutrophils in epithelium, cryptosis and granulomas) to filgotinib (FIL) versus placebo (PBO). A JAK1 inhibitor that blocks cytokine signaling through inhibition of STAT phosphorylation, has recently shown efficacy in a double-blind, placebo (PBO)-controlled Phase 2 study in CD (FILZROY2). Effects of filgotinib versus placebo have been demonstrated on centrally read endoscopy and histopathology assessments after a 10-week induction treatment.

**Results:** Baseline IBD activity was comparable between the treatment arms. A similar distribution of IBD medication (sulfasalazine, 5-aminosalicylates, steroids) was present in both groups. 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 values increased in patients treated by FMT every 4 weeks according to the individual therapeutic outcome. The encapsulated fecal microbiota was as effective as the endoscopic jejunal application in its capacity to restructure the pouch microbiota. However, an increase in 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 that of the pouch microbiota. High 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**

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**P0412** HISTOLOGIC MEASURES OF MUCOSAL HEALING CORRELATE WITH ENDOSCOPIC MEASURES OF DISEASE ACTIVITY AT BASELINE AND FOLLOWING INDUCTION THERAPY WITH THE JAKI INHIBITOR FILGOTINIB IN ACTIVE CROHN’S DISEASE: RESULTS FROM FITZROY STUDY

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**Introduction:** Mucosal healing (MH) has been established as co-primary treatment target in Crohn’s disease, predominantly defined by the absence of ulceration. However, even in patients with MH, inflammation may persist on histologic examination. Filgotinib (FIL), a selective inhibitor of JAK1 that blocks cytokine signaling through inhibition of STAT phosphorylation, has recently shown efficacy in a double-blind, placebo (PBO)-controlled Phase 2 study in CD (FILZROY2). Effects of filgotinib versus placebo have been demonstrated on centrally read endoscopy and histopathology assessments after a 10-week induction treatment.

**Aims & Methods:** In this post hoc analysis, we explored the correlation between histologic and endoscopic disease activity at baseline (BL) and following FIL induction therapy by comparison of total ileal Global Histology Activity Score (IGHAS)/colonic GHAS (CGHAS) score or IGHAS/CGHAS activity subscores (a; activity items: presence of epithelial damage, polymorphonuclear leukocytes in lamina propria, neutrophils in epithelium, cryptosis and granulomas) and (b; versus total simple Endoscopic Score for CD (vISES-CD))/colonic SES-CD (vCES-CD) score or ISES-CD/SES-CD ulcer subscores (a; sum of size and % affected surface). CD patients were randomized 3:1 to receive 200 mg FIL or PBO QD for 10 weeks. Intestinal biopsies were collected at BL and Week 10 (W10) from the most affected areas of each predefined bowel segment (ileum, ascending, transverse, descending, sigmoid colon and rectum). Biopsies were formalin fixed and paraffin embedded. The mean changes from baseline for each treatment group were compared to zero using a one sample t-test.

**Results:** Baseline values were comparable across treatment groups, although CGHAS and SES-CD were numerically higher in the PBO group (Table 1). Following 10 weeks of treatment with FIL 200 mg, histologic measures of colonic mucosal inflammation (CGHAS and aCGHAS) were significantly improved and were coupled with macroscopic changes in both CSES-CD and vCES-CD. Changes in histology score for ileal segments were numerically greater after FIL treatment versus placebo. Histology total and subscores were significantly higher in the PBO group compared to ulcer subscores at baseline and W10, and more pronounced when looking into the colonic segments versus the ileal segments (IGHAS v vISES-CD: Corr = 0.52, p < 0.001; Corr = 0.65, p < 0.001; BL and W10 respectively) aCGHAS v vUSCES-CD: Corr = 0.53, p < 0.001;
Only subjects with non-missing data for all segments at BL and W10 were included in the calculation; *Subscore for GHAS data is activity subscore and for SES-CD data is ulcer subscore; bolded texts indicate p-value <0.05 from t-test

**Conclusion:** Improvements in endoscopic severity induced by filgotinib are paralleled by reductions of histologic scores. In line with previous findings from anti-TNF therapies®, colonic mucosa is more prone to improve than ileal disease. Spontaneous reductions of histologic activity under placebo were not observed.

**Aims & Methods:** Patients achieving clinical response 8 weeks after a single IV induction dose were randomized to SC placebo (PBO), UST 90 mg every 12 weeks (q12w) or every 8 weeks (q8w). UST patients not in clinical response 8 weeks after the IV induction dose were given UST 90 mg SC and if in clinical response 8 weeks later were continued on 90 mg SC q8w dosing. A total of 458 patients were exposed to an IV induction dose of 6 mg/kg (UNITI-1, N = 249 and in UNITI-2, N = 209) with a response rate at week 8 of 37.8% and 57.9% vs. PBO response rate of 20.2% and 32.1% respectively. The remission rate at week 8 in UNITI-1 and UNITI-2 was 20.9% and 40.7 vs. PBO of 7.3% and 19.6% respectively. For this evaluation, the response and remission status of the entire population exposed to an IV induction dose of 6 mg/kg of UST was evaluated 8 weeks after the first subcutaneous maintenance dose of UST. All patients who received 6 mg/kg IV UST induction were included, including responders randomized to SC PBO (who did not receive SC UST at week 8).

**Results:** Of the 219 patients not in clinical response in UNITI 1 & 2, 37.6% and 60.5% respectively were in clinical response 8 weeks after the first maintenance induction dose of 6 mg/kg SC. Evaluating all patients exposed to 6 mg/kg IV UST induction, response rates 8 weeks after the first subcutaneous injection (16 weeks after the IV induction dose) for UNITI1&2 are 47.4% and 73.7% respectively (see table for response and remission rate). Similar assessments were calculated in the sub-population who were anti-TNF naïve upon enrolment into UNITI-2.

**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.
P0414 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) and 200 (IQR: 148–283) days in both cohorts. Median time to first hospitalisation was 153 (IQR: 78–209) days for VDZ initiators vs. 98 (IQR: 45–168) days for IFX initiators. For IBD-related flares, median time was 111 (IQR: 40–226) days for VDZ initiators vs. 93 (IQR: 35–182) days for IFX initiators.

Table 1. Baseline characteristics of propensity-score matched IBD patients initiating therapy with vedolizumab or infliximab

<table>
<thead>
<tr>
<th>Characteristic</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></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surgery</td>
<td>5.7</td>
<td>7.3</td>
<td>0.663</td>
</tr>
<tr>
<td>Hospitalisations</td>
<td>37.1</td>
<td>32.7</td>
<td>0.407</td>
</tr>
<tr>
<td>Corticosteroids</td>
<td>70.5</td>
<td>71.1</td>
<td>0.902</td>
</tr>
<tr>
<td>Immunosuppressives</td>
<td>20.02121</td>
<td>37.8</td>
<td>0.001</td>
</tr>
</tbody>
</table>

Conclusion: Among biologic-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 PRESENTATION FUNCTION OF COLONIC EPITHELIAL CELLS BY INDUCING CD80 IN THE EARLY STAGES OF COLONIC CARCINOGENESIS

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3Dept. Of General Surgery, University of Padova, Padova/Italy
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Abstract: 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 expression1, 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 colonic epithelial cells using an in vitro and 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 CD80 expression in colonic epithelial cells using an

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

References:


P0416 ALTERED INTESTINAL EXPRESSION PROFILES OF ANTIMICROBIAL GENES IN IRRITABLE BOWEL SYNDROME ARE LINKED TO BACTERIAL COMPOSITION AND IMMUNE ACTIVATION


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5Life Science, Danone Nutricia Research, Plaisance/France
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7Department Of Internal Medicine And Clinical Nutrition, Sahlgrenska Academy, University of Gothenburg, Gothenburg/Sweden
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Introduction: Altered immune activity and gut microbiota alterations are proposed to be important factors in the pathophysiology of irritable bowel syndrome (IBS), but the relevance for symptoms is unclear.

Aims & Methods: We aimed to determine if colonic antimicrobial gene expression profiles differ between IBS and healthy subjects and if potential alterations are linked to immune activity or gut microbiota composition. The expression of 84 key antimicrobial genes in sigmoid colon biopsies from patients with IBS, defined as being either immuno-active or immuno-norm based on systemic and mucosal cytokine profiles (Bennett et. al. Am J Gastro, 2016), and healthy subjects was assessed by Human Antibacterial Response RT2 Profiler PCR Array. Targeted 16S rRNA pyrosequencing was performed on faecal 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 (Immuno-active and Immuno-norm) and healthy subjects.

<table>
<thead>
<tr>
<th>Gene (ΔΔ Ct)</th>
<th>IBS (n = 31) v Healthy (n = 16)</th>
<th>Immuno-active (n = 15) v Healthy</th>
<th>Immuno-norm (n = 15) v Healthy</th>
<th>Immuno-active v Immuno-norm</th>
</tr>
</thead>
<tbody>
<tr>
<td>AKT1</td>
<td>0.01</td>
<td>0.01</td>
<td>0.06</td>
<td>0.01</td>
</tr>
<tr>
<td>IRF7</td>
<td>0.0002</td>
<td>0.0008</td>
<td>0.004</td>
<td>0.001</td>
</tr>
<tr>
<td>MAP2K4</td>
<td>0.002</td>
<td>0.006</td>
<td>0.01</td>
<td>0.01</td>
</tr>
<tr>
<td>TICAM1</td>
<td>0.002</td>
<td>0.001</td>
<td>0.007</td>
<td>0.001</td>
</tr>
<tr>
<td>TNFRSF1A</td>
<td>0.003</td>
<td>0.005</td>
<td>0.03</td>
<td>0.001</td>
</tr>
<tr>
<td>SUGT1</td>
<td>0.004</td>
<td>0.005</td>
<td>0.02</td>
<td>0.001</td>
</tr>
<tr>
<td>LYZ</td>
<td>0.004</td>
<td>0.01</td>
<td>0.02</td>
<td>0.001</td>
</tr>
<tr>
<td>LTF</td>
<td>0.008</td>
<td>0.009</td>
<td>0.03</td>
<td>0.001</td>
</tr>
<tr>
<td>CHUK</td>
<td>0.01</td>
<td>0.002</td>
<td>0.02</td>
<td>0.001</td>
</tr>
<tr>
<td>IRAK1</td>
<td>0.02</td>
<td>0.02</td>
<td>0.02</td>
<td>0.001</td>
</tr>
<tr>
<td>MAP3K2</td>
<td>0.01</td>
<td>0.05</td>
<td>0.04</td>
<td>0.001</td>
</tr>
<tr>
<td>ZBP1</td>
<td>0.04</td>
<td>0.05</td>
<td>0.03</td>
<td>0.001</td>
</tr>
<tr>
<td>TLR4</td>
<td>0.04</td>
<td>0.04</td>
<td>0.03</td>
<td>0.001</td>
</tr>
<tr>
<td>IL1B</td>
<td>0.05</td>
<td>0.05</td>
<td>0.04</td>
<td>0.001</td>
</tr>
<tr>
<td>RIPK1</td>
<td>0.05</td>
<td>0.05</td>
<td>0.03</td>
<td>0.001</td>
</tr>
<tr>
<td>XIAP</td>
<td>0.03</td>
<td>0.03</td>
<td>0.04</td>
<td>0.001</td>
</tr>
<tr>
<td>TIRAP</td>
<td>0.04</td>
<td>0.04</td>
<td>0.03</td>
<td>0.001</td>
</tr>
<tr>
<td>NFKB1</td>
<td>0.01</td>
<td>0.01</td>
<td>0.05</td>
<td>0.001</td>
</tr>
<tr>
<td>CARD9</td>
<td>0.05</td>
<td>0.05</td>
<td>0.03</td>
<td>0.001</td>
</tr>
<tr>
<td>IL-18</td>
<td>0.05</td>
<td>0.05</td>
<td>0.03</td>
<td>0.001</td>
</tr>
<tr>
<td>IRE5</td>
<td>0.01</td>
<td>0.01</td>
<td>0.03</td>
<td>0.001</td>
</tr>
<tr>
<td>CXCL1</td>
<td>0.03</td>
<td>0.03</td>
<td>0.04</td>
<td>0.001</td>
</tr>
<tr>
<td>TOLLIP</td>
<td>0.04</td>
<td>0.04</td>
<td>0.03</td>
<td>0.001</td>
</tr>
</tbody>
</table>

Data presented as p-values (Mann-Whitney t-test) “*” no 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 subtype according to their predominant bowel habit (R² = 0.02). An OPLS-DA model showed discrimination between immuno-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). All 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 immuno-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* (r = 0.12, P < 0.05).

**Conclusion:** The intestinal antimicrobial gene profiles differ between subsets of IBS patients and healthy subjects. An altered ability to recognise 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.

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**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 rat’s intestinal barrier function rats on intestinal mucosal barrier function index with special reference of intestinal immune-related index expression. Sixty male Sprague-Dawley rats were randomly assigned to four groups: OJ, sham operation (SH), internal biliary drainage (ID) and external biliary drainage (ED). All animals underwent surgical ligation of the bile duct, except SH was produced by separating common bile duct locally but not dividing on day 1. Then ED and ID were reoperated on day 8 for biliary drainage procedure. Blood from inferior vena cava were collected for the test of DAO and slgA activities by the method of ELASA. The terminal ileum specimens of each groups were collected for observation of the morphological changes with haematoxylin-eosin (HE) staining. The expression of IgA mRNA, plgR mRNA, GP-BAR1 mRNA, RD-5mRNA were detected by real-time reverse transcription polymerase chain reaction (RT-PCR). GP-BAR1 of the ileum mucosa was analyzed by Western blot.

**Results:** After bile duct ligation, the injuries of the intestinal mucosa were obvious in OJ group with thinner mucosa, sparser villi, destruction of the epithelium and goblet cells accompanied by inflammatory cell infiltration. The expression of RD-5 mRNA in OJ group were decreased significantly 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 IgA mRNA and plgR mRNA reduced markedly (P < 0.01). 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 in 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.

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**P0417 THE EXPOSURE OF ANTIBIOTICS IS ASSOCIATED WITH INCREASED RISK OF COLORECTAL CANCER- A SYSTEMATIC REVIEW AND META-ANALYSIS**

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**Introduction:** Recently, accumulating evidence suggested that the dysbiosis of the intestinal microbiota was associated with increased risk of colorectal cancer and might play a significant role in the colorectal carcinogenesis [1-2]. Many environmental factors (e.g. diet and lifestyle) that altered the gut microbiota had been reported in the development of colorectal cancer[3]. Antibiotics are able to shift the gut microbiota by altering bacterial composition and functions. The overuse of antibiotics has been associated with substantial increase in adverse effects, such as severe infections, obesity, inflammatory bowel disease. Similarly, it is plausible to hypothesize that overuse of antibiotic might be linked to CRC by altering the colonic microbiota. However, the relationship between antibiotic and CRC was unclear and studies regarding this topic were limited [4-7].

**Aims & Methods:** To evaluate the association between use of antibiotic and colonic microbiota. However, the relationship between antibiotic and CRC was unclear and studies regarding this topic were limited [4-7].

**Results:** From initial search, we identified four case-control studies and finally included in the meta-analysis. Compared with no/low use of antibiotics, high use of antibiotics has been associated with several adverse effects, such as severe infections, obesity, inflammatory bowel disease. Similarly, it is plausible to hypothesize that overuse of antibiotic might be linked to CRC by altering the colonic microbiota. However, the relationship between antibiotic and CRC was unclear and studies regarding this topic were limited [4-7].

**Conclusion:** Further research is needed to verify our results and explore underlying mechanisms.

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

**References**


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**P0419 COMPARATIVE EFFECT OF XYLOGLYCAN ASSOCIATIONS WITH COMPOUNDS FROM ANIMAL OR ALGAE ORIGIN ON LIPS-INDUCED ENTERITIS IN RATS**

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**Introduction:** Xyloglucan (XG) is a film-forming agent exhibiting protective effects against diarrhea linked to infectious gastroenteritis in humans; further in animal models, xyloglucan efficacy against cholera-toxin-induced diarrhea was further prolonged when this mucoprotectant agent is associated with gelatin from animal origin. The use of compounds from animal source in galenic formulations is nowadays questionable.

**Aims & Methods:** Thus, in this study, we aimed at comparing the efficacy of XG associated with gelatin vs XG associated with alginate in alleviating LPS-induced enteritis in rats. Since LPS-induced enteritis is characterized by increased intestinal permeability and mucosal inflammation, the efficacy of xyloglucan associations was evaluated by measurement of these two parameters. Male Wistar rats (200–225 g) were orally treated with either XG (10 mg/kg) or alginate (10 mg/kg) or XG (10 mg/kg) + gelatin (25 mg/kg) or XG (10 mg/kg) + gelose (25 mg/kg) or XG (10 mg/kg) + gelose (50 mg/kg) or vehicle (NaCl 0.9%) 3 h before intraperitoneal (IP) administration of LPS from *E. coli* (1 mg/kg). Six hours later AJP administration, the animals were sacrificed and strips of jejunum were collected for the test of DAO and slgA activities by the method of INPT-EF-Parpau, Toulouse/France.

**Results:** In the 10 mg/kg of XG group, 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 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 in 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.
Results: Compared with control, LPS administration induced a significant increase (p < 0.05) of intestinal paracellular permeability (53.0 ± 4.9 vs 181.6 ± 21.1 pmol/cm² respectively) associated with jejunal mucosal inflammation (302.1 ± 9.5 vs 655.6 ± 108.9 U MPO/g protein, respectively). XG (10 mg/kg) + gelose at the lowest dose (25 mg/kg) failed to reverse the intestinal hyperpermeability and mucosal inflammation induced by LPS. In contrast, XG (10 mg/kg) + gelatin (25 mg/kg) and XG (10 mg/kg) + gelose at 50 mg/kg significantly (p < 0.01) and equally prevents LPS-induced hyperpermeability (34.8 ± 2.8, 38.7 ± 3.9 vs 181.6±21.1 pmol/cm² respectively) and jejunal inflammation (27.70 ± 32.2, 286.2 ± 28.8 vs 655.6 ± 108.9 U MPO/g protein respectively).

Conclusion: This study shows that oral treatment with xyloglucan associated with gelose at 50 mg/kg has similar protective effects on LPS-induced enteritis in rats than xyloglucan associated with gelatin. These data demonstrate that algae is an effective and safe substitute for replacing compounds from animal origin in xyloglucan mucoprotectant formulations.

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

P0402 RISK FACTORS ASSOCIATED WITH RECURRENT 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 or 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 < .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 = .013). 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 = .799) and proton pump inhibitor therapy (OR 1.277; 95% CI, 0.825 to 1.977, P = .327) 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

Analysis of the clinical factors associated with in-hospital mortality in all patients

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Odd ratio</th>
<th>95% CI</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Univariate analysis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sepsis</td>
<td>2.071</td>
<td>0.691–6.209</td>
<td>0.194</td>
</tr>
<tr>
<td>Gender (male/female)</td>
<td>0.545</td>
<td>0.184–1.619</td>
<td>0.275</td>
</tr>
<tr>
<td>Immunocompromised status</td>
<td>0.986</td>
<td>0.328–2.969</td>
<td>0.981</td>
</tr>
<tr>
<td>Intensive care unit admission</td>
<td>6.871</td>
<td>2.068–22.833</td>
<td>0.002*</td>
</tr>
<tr>
<td>Requisite time of diagnosis (day after admission)</td>
<td>1.034</td>
<td>1.002–1.066</td>
<td>0.034*</td>
</tr>
<tr>
<td>General condition</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sepsis</td>
<td>1.039*10^10</td>
<td>0.000–&gt;10^12</td>
<td>0.998</td>
</tr>
<tr>
<td>Shock</td>
<td>5.714</td>
<td>1.793–18.210</td>
<td>0.003*</td>
</tr>
<tr>
<td>Respiratory failure</td>
<td>4.062</td>
<td>1.309–12.610</td>
<td>0.015*</td>
</tr>
<tr>
<td>Operation before diagnosis</td>
<td>5.200</td>
<td>0.583–17.553</td>
<td>0.180</td>
</tr>
<tr>
<td>Underlying diseases</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inflammatory bowel disease</td>
<td>0.000</td>
<td>0.000</td>
<td>0.999</td>
</tr>
<tr>
<td>Systemic lupus erythematosus</td>
<td>4.900</td>
<td>0.747–32.123</td>
<td>0.248</td>
</tr>
<tr>
<td>Solid organ transplantation</td>
<td>2.941</td>
<td>0.147–49.636</td>
<td>0.454</td>
</tr>
<tr>
<td>Solid organ malignancy</td>
<td>0.941</td>
<td>0.909–9.671</td>
<td>0.959</td>
</tr>
<tr>
<td>Hematological malignancy</td>
<td>2.941</td>
<td>0.147–49.636</td>
<td>0.454</td>
</tr>
<tr>
<td>Liver cirrhosis</td>
<td>0.941</td>
<td>0.909–9.671</td>
<td>0.959</td>
</tr>
<tr>
<td>Chronic kidney disease</td>
<td>2.067</td>
<td>0.576–7.421</td>
<td>0.265</td>
</tr>
<tr>
<td>Stage end renal disease</td>
<td>3.357</td>
<td>0.742–15.181</td>
<td>0.116</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>1.682</td>
<td>0.543–5.205</td>
<td>0.367</td>
</tr>
<tr>
<td>HIV infection</td>
<td>0.000</td>
<td>0.000–&gt;10^12</td>
<td>0.999</td>
</tr>
<tr>
<td>Immunosuppressive medication</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Immunosuppressant</td>
<td>3.200</td>
<td>0.583–17.553</td>
<td>0.180</td>
</tr>
<tr>
<td>Chemotherapy</td>
<td>4.840*10^10</td>
<td>0.000–10^12</td>
<td>1.000</td>
</tr>
<tr>
<td>Steroid</td>
<td>1.124</td>
<td>0.336–3.764</td>
<td>0.849</td>
</tr>
<tr>
<td>Steroid over 1 month</td>
<td>2.350</td>
<td>0.472–11.708</td>
<td>0.297</td>
</tr>
</tbody>
</table>

Laboratory data

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Odd ratio</th>
<th>95% CI</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total WBC count (x10^9/mm³)</td>
<td>1.000</td>
<td>1.000–1.000</td>
<td>0.419</td>
</tr>
<tr>
<td>ANC (x10^3/mm³)</td>
<td>1.000</td>
<td>1.000–1.000</td>
<td>0.254</td>
</tr>
<tr>
<td>ALC (x10^3/mm³)</td>
<td>0.999</td>
<td>0.998–1.000</td>
<td>0.018*</td>
</tr>
<tr>
<td>Hemoglobin level (g/dL)</td>
<td>0.668</td>
<td>0.485–0.918</td>
<td>0.013*</td>
</tr>
<tr>
<td>Platelet count (x1000/mm³)</td>
<td>0.995</td>
<td>0.990–1.001</td>
<td>0.000</td>
</tr>
<tr>
<td>Creatinine (mg/dL)</td>
<td>1.448</td>
<td>1.059–1.978</td>
<td>0.020*</td>
</tr>
<tr>
<td>ALT (IU/L)</td>
<td>0.995</td>
<td>0.958–1.033</td>
<td>0.787</td>
</tr>
<tr>
<td>Blirubin (mg/dL)</td>
<td>1.370</td>
<td>0.965–1.944</td>
<td>0.078</td>
</tr>
<tr>
<td>Albumin (g/dL)</td>
<td>0.625</td>
<td>0.231–1.687</td>
<td>0.354</td>
</tr>
<tr>
<td>C-reactive protein (mg/dL)</td>
<td>1.009</td>
<td>1.000–1.018</td>
<td>0.047*</td>
</tr>
</tbody>
</table>

Viral markers

(continued)
Analysis of the clinical factors associated with in-hospital mortality in all patients

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Odd ratio</th>
<th>95% CI</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMV pp65 antigenemia</td>
<td>0.656</td>
<td>0.140−0.307</td>
<td>0.593</td>
</tr>
<tr>
<td>CMV IgG positive</td>
<td>0.286</td>
<td>0.016−5.095</td>
<td>0.394</td>
</tr>
<tr>
<td>CMV IgM positive</td>
<td>3.210</td>
<td>0.547−17.841</td>
<td>0.220</td>
</tr>
<tr>
<td>Clostridium difficile infection</td>
<td>0.889</td>
<td>0.077−10.300</td>
<td>0.925</td>
</tr>
<tr>
<td>Ganciclovir or valganciclovir treatment</td>
<td>2.286</td>
<td>0.579−9.026</td>
<td>0.238</td>
</tr>
<tr>
<td>Treatment duration</td>
<td>0.989</td>
<td>0.953−1.026</td>
<td>0.563</td>
</tr>
<tr>
<td>Surgical treatment</td>
<td>1.840</td>
<td>0.392−6.830</td>
<td>0.439</td>
</tr>
<tr>
<td>Perforation</td>
<td>1.441</td>
<td>0.123−16.920</td>
<td>0.771</td>
</tr>
</tbody>
</table>

Conclusion: Immuno-compromised patients or steroid users did not have higher in-hospital mortality rate. Early diagnosis was only independent factor for lower in-hospital mortality in patients with CMV infection.

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

References
2. Khan TV, Toms C. Cytomegalovirus Colitis and Subsequent New Diagnosis of Inflammatory Bowel Disease in an Immunocompetent Host: A Case Study and Literature Review. Am J Case Rep 2016; 17: 538-43.


P0425 VANCYMYCIN FOLLOWED BY FECAL MICROBIOTA TRANSPLANTATION VERSUS VANCYMYCIN FOR INITIAL CLOSTRIDIUM DIFFICILE INFECTION: AN OPEN-LABEL RANDOMISED CONTROLLED TRIAL

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1Medicine And Therapeutics, Chinese University Of Hong Kong, Hong Kong/Hong Kong PRC
2Microbiology, Chinese University of Hong Kong, Hong Kong/Hong Kong PRC

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Introduction: Fecal microbiota transplantation (FMT) is effective for the treatment of recurrent Clostridium difficile infection (CDI) but its role as an initial therapy in CDI has not been studied.

Aims & Methods: We assessed the efficacy of FMT in patients with an initial episode of CDI compared with standard vancomycin regimen. In a single center, consecutively, we assigned patients with an initial episode of CDI to receive either: oral vancomycin (500mg four times daily) followed by FMT consisting of a single infusion of donor feces through a nasoduodenal tube; or a standard oral vancomycin regimen (500mg four times daily for 10 days). The primary end point was resolution of diarrhea associated with CDI without relapse within 10 weeks after initiation of therapy. Secondary outcomes included 30-day and 6-month mortality, 30-day colectomy rates, length of hospital stay, adverse effects and alteration of fecal microbiota after FMT using metagenomic sequencing.

Results: Baseline characteristics including age, gender and comorbidities were comparable between the vancomycin and FMT arm. 60% and 47% of subjects in the vancomycin and FMT arm, respectively, had severe CDI. Resolution of C. difficile in 10 out of 15 patients (67%) receiving vancomycin and 11 of 15 patients (73%) receiving FMT (p < 0.001). Two deaths occurred in the vancomycin group and none in the FMT group within 30 days. Nine (60%) and three deaths (20%) occurred in the vancomycin and FMT arms, respectively, within 30 days. None of the patients had a colectomy. Median length of hospital stay did not differ between both arms (13 vs 15 days; p = 0.05). No serious adverse events attributed to FMT were observed. A restoration of healthy control enriched bacteria in recipients was observed after FMT, with a decrease in abundance of CDI-enriched bacteria. FMT, but not vancomycin treatment, resulted in marked virome alterations.

Conclusion: In this pilot randomised controlled trial, FMT was not superior to vancomycin in patients with an initial episode of CDI. 30-day and 6-month mortality was higher in the vancomycin arm. A restoration of healthy control enriched bacteria in recipients was observed after FMT, with a decrease in abundance of CDI-enriched bacteria (Clinical Trial registry, NCT02570477; Funded by the Hong Kong Society of Gastroenterology Society).

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

References

P0426 A 10-YEAR REVIEW OF ABDOMINAL TUBERCULOSIS EXPERIENCE IN A MULTI-ETHNIC SECONDARY CARE POPULATION

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3Dept. Of Surgery, Academic Medical Center Amsterdam, Amsterdam/Netherlands

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Introduction: The traditional fear that every acute appendicitis will eventually result in marked virome alterations.

Aims & Methods: The aim of this study was to assess in-hospital delay of surgery and factors for complications in patients with acute appendicitis. PubMed and EMBASE were searched from 1990 to July 2016. Outcome measures of interest were complicated appendicitis, surgical site infections and postoperative morbidity. All studies reporting surgically treated patients with one of these outcome measures in two or more predefined time intervals were included. Adjusted odds ratios were pooled using forest plots if possible. All unadjusted data was pooled using generalized linear mixed models.

Results: Forty-five studies with 152, 314 patients were included. Pooled adjusted odds ratios revealed no significantly higher risk for complicated appendicitis when delaying appendectomy for 6 to 12 hours or 13 to 24 hours; odds ratio 1.07 (95% CI 0.98–1.17) and 1.09 (95% CI 0.95–1.24), respectively. For a delay of up to 24 hours no statistically significant adjusted data was available for published studies. Pooled unadjusted data showed a decreased risk for 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 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

P0427 INCREASING INCIDENCE OF CLOSTRIDIUM DIFFICILE INFECTION AND THE USE OF PROTON-PUMP INHIBITORS: RESULTS FROM A TERRITORY-WIDE POPULATION STUDY IN HONG KONG

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2Department Of Anesthesia And Intensive Care, The Chinese University Of Hong Kong, Hong Kong/Hong Kong PRC
3Institute Of Gastroenterology, United Medical & Dental Schools Of The University Of Hong Kong, Hong Kong/Hong Kong PRC
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Introduction: Clostridium difficile infection represents a major burden in Europe and North America. However, data on its disease epidemiology remain sparse in Asia. This study aims to investigate the burden, risk factors and clinical outcomes of C. difficile infection in Hong Kong, using a large territory-wide population database.

Aims & Methods: This is a population-based study conducted from 1 January 2006 to 31 December 2014, and included all in-patient C. difficile infections in public hospitals in Hong Kong. Gastroenteritis infections were identified from a territory-wide electronic database, and were defined as the isolation of C. difficile, or positive test for either toxin or molecular assay from the fecal specimens. The disease incidence, mortality, risk factors and clinical outcomes were analyzed.

Disclosure of Interest: None declared.
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_trend < 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
I. Van Rongen

LOWER GASTRO-INTESTINAL BLEEDING: RESULTS OF THE RANDOMIZED CONTROLLED TRIAL IN PATIENTS WITH ACUTE P0432 EARLY VERSUS STANDARD COLONOSCOPY – A than those in the single bleeding episode group (5902 Agatston scores in the recurrent bleeding episode group were significantly higher 
rent bleeding episode group was 33% and 59% at 1 and 3 years, respectively. Results: Overall, 39 (49%) cases had recurrent bleeding episode and 40 (51%) 
edissolved. In the discontinued group, 1 patient developed acute myocardial infarction in next day after colonoscopy polypectomy. Conclusion: Patients taking anticoagulants have an increased risk of PPB compared with the control even if the anticoagulant treatments are discontinued. Hemepro- 
bridge therapy might be responsible for increased PPB in patients taking anticoagulants. Disclosure of Interest: All authors have declared no conflicts of interest.

Aim & Methods: We sought to assess the degree of arteriosclerosis in cases with diverticulum bleeding as well as the patients’ clinical characteristics. We con- 
ducted a retrospective cohort study in a group of 79 consecutive patients with colon diverticulum bleeding (51 men) who underwent both colonoscopy and 
computerized tomography (CT) between August 2007 and March 2014. The mean age of the patient population was 69.5 years (range 29–91 years) and mean 
(±standard deviation) follow-up time was 6.2 (±2.0) years (range 3.1–9.7 years). Patients were divided into two groups: the recurrent bleeding episode 
group and the single bleeding episode group. Recurrent bleeding episodes were defined as bleeding intervals of >1 month. Cases that underwent successful 
therapy during the initial bleeding episode were excluded. We compared Agatston scores (total calcium score) between the two groups of patients to 
assess the degree of arteriosclerosis. A calcified lesion was defined as an area of at least 2 connected pixels with >120 Hounsfield units (HU) on the unen- 
hanced CT scan. Aortic mural calcified area × cofactor (1:120–199HU; 2:200– 
299HU; 3:300–399HU, 4:≥400HU) was determined. The sum of the scores for 
ey calculated specif were calculated across all lesions in a slice from the level of 
the diaphragm to the aortollic bifurcation to obtain the total calcium score. Moreover, the relationship between recurrent bleeding episodes and the patients’ chest pain, heartburn, including age, sex, smoking habit, comorbidity (hyper- 
tension, cerebral-carotidovascular disease, diabetes mellitus, hyperlipidaemia, 
chronic liver disease, chronic kidney disease, and chronic obstructive pulmonary disease), internal medicine (anti-thrombotic drug, non-steroidal anti-inflamma- 
tory drug, and proton pump inhibitor), shock vital on hospitalization, and trans- 
fusion need, was determined. Results: Overall, 39 (49%) cases had recurrent bleeding episode and 40 (51%) 
have been included in the study. The cumulative recurrent bleeding rate in the recur- 
rent bleeding episode group was 33% and 59% at 1 and 3 years, respectively. Agatston scores in the recurrent bleeding episode group were significantly higher than those in the single bleeding episode group (5902 ±7187 vs 2912 ±4687, P =0.031). Clinical characteristics associated with recurrent bleeding episodes were cerebral-vascular disease (P =0.0044), chronic kidney disease (P =0.031), and anti-thrombotic drug (P =0.048) in univariate analysis. Subsequent multivariate analysis determined that cerebral-vascular disease was the independent contributor to recurrent bleeding episode (OR: 5.48; 95%CI: 1.11–40.7). Conclusion: Arteriosclerosis along with cerebral-carotidovascular disease may be a 
significant contributing factor for colon diverticulum recurrent bleeding. Disclosure of Interest: All authors have declared no conflicts of interest.

Introduction: The incidence of acute lower gastro-intestinal bleeding (LGB) is estimated at 21 adults per 100,000 person years and male and female ratio of the population [1]. Diagnostic management of LGB has been extensively debated in recent literature, especially whether colonoscopy within 24 hours of presentation is feasible and safe [2–4]. We performed a single-centre, non-blinded randomized controlled trial, including patients presenting at the emergency department with acute hematochezia and excluding patients with an upper bleeding source. Primary outcome was the length of hospital stay. Secondary outcomes included yield of colonoscopy, blood transfusion requirements, recurrent bleedings, complications, diagnostic and therapeutic interventions related to complications and 30-day mortality. The follow-up period was one month. Results: In total, 132 patients were randomized: 63 for early colonoscopy and 69 for standard colonoscopy. Baseline characteristics of both groups were compar- able with the intention-to-treat (ITT) analysis, the length of hospital stay was significantly lower in patients that underwent an early colonoscopy, compared to the standard colonoscopy group: median 2.0 days [IQR 2.0–4.0] vs. median 3.0 days [IQR 2.9–4.0] (p =0.009). Recurrent bleedings and hospital re-admissions were significantly more frequent in the early colonoscopy group: 13% vs. 3% 
(p =0.04) and 11% vs. 2% (p =0.02) respectively. The reason for more recurrent bleedings could not be established, although use of anti-thrombotic therapy might play a factor. No difference was observed regarding the number of patients diagnosed with either a confirmed active bleeding or presumptive bleeding source. In both groups, blood transfusion rate was similar and thirty-day mortality was zero. Conclusion: In patients with LGB, early colonoscopy reduces the length of hospital stay compared to standard colonoscopy. However, more recurrent bleedings are observed and no improvement of diagnostic yield could be established. Disclosure of Interest: All authors have declared no conflicts of interest.

References


cancer, the screening test should be done to monitoring the occurrence of ovarian cancer. Further research is necessary to determine the predictive 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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6Gastroenterology & Hepatology, AMC - Gastroenterology & Hepatology, Amsterdam/NL, Amsterdam/Netherlands
7Kep, Karolinska Institutet, Institute of Medicine Söder, Stockholm/Sweden
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15Gastroenterology, YAMC, White River Junction, United States, Vermont/United States of America
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Introduction: Colonscopy is an imperfect tool. Several publications confirm colorectal cancer may manifest after a negative colonoscopy(1-3). The term “interval cancer” has often been used for cancers appearing after a negative colonoscopy. However, this is primarily a screening term(1). Post-colonoscopy colorectal cancer (PCCRC) 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. PCCRC can be thought of as an overarching term. PCCRC 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 was recommended, up to 10 years following the colonoscopy).

Aims: 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 - PCCRC/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 represen- tant) 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 PCCRC
  c. How to ascribe potential explanations
d. Minimal colonoscopy, histology and radiology datasets to examine PCCRC
2. Molecular testing to be performed to examine PCCRC
3. Prevention of PCCRC in high-risk groups
4. Performance WG
   a. PCCRC calculation & reporting
   b. PCCRC monitoring
c. PCCRC 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-correspondence. Each statement was scored on an scale of 1 (strongly agree) to
P0437 EXCESS RISK OF SECOND PRIMARY CANCERS IN YOUNG-ONSET COLORECTAL CANCER SURVIVORS

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Introduction: Young-onset colorectal cancer (CRC) is still the third most common malignancies in the US according to Colorectal Cancer Statistics, 2017[1]. During past decades, the incidence and mortality of CRC among individuals aged over 50 years are declining significantly, while the rate of CRC in the young is sharply on the rise (2-3). Excluding rate of young-onset CRC, coupled with increased survival rate, would definitely lead to accumulation of young survivors considerably. There is a growing study reporting the risk of secondary cancers (SPCs) in certain cancer survivors, including CRC. Several population-based studies revealed that patients with a history of CRC at high risk of SPCs than the general population [4-6]. However, to the best of our knowledge, very little is known regarding the risk and sites of SPCs following prior diagnosis of CRC in the young (aged ≤ 50).

Aims & Methods: To address this important gap, we aimed to quantify the relative risk of SPCs after a diagnosis of CRC in the young CRC survivors. We conducted this retrospective study by utilizing the Surveillance, Epidemiology, and End Results (SEER) database and identified primary CRC patients with subsequent cancers between 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 access the relative risk for SPCs. SIRs for subgroup analysis were further stratified by gender, race, calendar year, location, SEER stage, cancer subsite, radiotherapy use. All statistical tests were performed by SEER*Stat version 8.3 and a P value <0.05 was considered statistically significant. Our study was approved by the review board of Zhejiang Institute of Gastroenterology, Sir Run Run Shan Hospital, China.

Results: There were 3,64,472 CRC survivors who developed 51,084 SPCs during the follow-up, including 32,83 young (young aged ≤ 60 and 41,189 (old > 50) old survivors. The SIR of all sites significantly decreased with increased age. Compared with the general population, SIRs of all solid tumors and hematological disease were significantly increased in the young. There was significant 43% risk of SPCs in young survivors (SIR = 1.34, 95%CI = 1.29–1.39, AER = 33.85) and slight increases in old survivors (SIR = 1.02, 95%CI = 1.01–1.03, AER = 4.20). For young survivors, small intestine (SIR = 8.36, colon (SIR = 3.77), rectum (SIR = 3.56), bile ducts (SIR = 2.70) sites were the most significant (p < 0.05). AER was persistent regardless of other factors, such as gender, race, calendar year, stage, subsites, radiation, and latency. For young survivors with second cancers, 36.4% died of their initial cancer, but 84.6% died of their second primary malignancy.

Conclusion: Excess risk of developing a second malignancy existed in young-onset CRC survivors and this trend was consistent among different subgroups. About 44.6% young patients died of their SPCs. We hope our results may provide some implication for future surveillance and prevention strategies for young CRC survivors.

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

References

P0438 INCIDENCE OF FECAL OCCULT BLOOD TEST INTERVAL CANCERS IN COLORECTAL CANCER SCREENING:A SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction: Worldwide, many organized colorectal cancer (CRC) screening programs use non-invasive fecal occult blood tests (FOBTs). Although the interval colorectal cancer (iCRC) risk in average CRC screening populations was reported, the iCRC incidence after negative FOBTs are limited. Research Supporting a determinant of a screening program, data on iCRC after negative FOBTs are limited.

Aims & Methods: In this systematic review and meta-analysis we compared the incidence of iCRCs following a negative fecal immunochemical test (FIT) or guaiac fecal occult blood test (gFOBT). Second, we assessed if screening-related or patient-related factors are associated with FOBT iCRCs. Ovid Medline, Embase, The Cochrane Library, the Science Citation Index, PubMed publisher and Google scholar were searched up to May, 2016. All studies reporting on the incidence rate of FIT or gFOBT iCRCs after average CRC screening populations were included, without language restrictions. Main outcome was pooled incidence rate of iCRCs per 100,000 person-years (p-y). FOBT iCRC was according to international standards defined as cancer that developed after a negative FOBT and before the next FOBT was due. Pooled incidence rates were obtained by fitting random effect poisson regression models. The between-study heterogeneity of effect-size was quantified using the I².

Results: We identified 5,873 records, of which 413 full-text articles were assessed for eligibility and 30 studies were included in both qualitative and quantitative syntheses. Meta-analyses comprised data of 5,252,563 screening participants, in which 14,030 screen-detected CRCs and 5398 FOBT iCRCs were documented. Pooled incidence rates of iCRC following FIT and gFOBT were 20 (95%CI 14.28; F; I2 = 94%) and 40 (95%CI 26.61; F; I2 = 93%) per 100,000 p-y, respectively. The pooled incidence rate of FIT iCRC compared to gFOBT iCRC was 0.50 (95%CI 0.30–0.84, n = 30 studies). For every FIT iCRC, three CRCs were found with FIT, while for gFOBT the ratio between FIT and gFOBT was 1,113. Table 1. No significant differences were found between the relative risk of FOBT iCRC in the second and third screening round compared to the first, with 1.03 (95%CI 0.94–1.13) and 1.08 (95%CI 0.93–1.22), respectively. Incidence rate ratio of FOBT iCRC compared to FIT iCRC was 0.87 (95%CI 0.81–1.17) for males relative to females and 5.00 (95%CI 1.21–21.78), and females aged ≥60 relative to <60 years.

Table 1: Baseline data of 30 studies included in quantitative meta-analyses displayed per test type
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. Wieter: 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-to-hip ratio ( WHR), waist-height ratio (WHHR), weight-height ratio (WHRR), A Body Shape Index (ABS) 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, colonic 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 and waist circumference (WC) was the best predictor based on C-statistics and LR-test (HR per standard deviation [SD] increment, 1.19; 95% CI, 1.08–1.31, LR-test p < .001, C-statistics 0.6278). The association between WC and CRC was only found in men with a BMI above 25. All body composition measures apart from WHRR and percent body fat significantly predicted CC in men, again WC was the best predictor (HR 1.25; 95% CI, 1.11–1.42, LR-test p < .001, C-statistics 0.6444). ABSI was the only measure significantly associated with risk for RC in men (HR, 1.24; 95% CI, 1.05–1.47). In women neither of the measures was significantly associated with an increased risk for CRC, CC nor RC.

Conclusion: In this Swedish population-based cohort study on well-characterized participants, body composition measures predicted CRC in men but not in women. WC was the best predictor in CRC analysis, in order to identify overweight 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 (ELISA) 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 vivo and EMT process, SW480 cells were cultured with IL-17 until they formed tumor xenografts (NXG). The expression of IL-17 was confirmed by ELISA. CRC and NXG were further explored and verified in larger cohort of 101 rectal tumors and 105 colorectal cancer patients. We have identified 71 candidate miRNAs in 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 migration, and inhibited apoptosis in vitro and in vivo. IL-17 overexpression reduced the expression of E-cadherin and induced the expression of Snail, b-catenin, and Vimentin in both SW480 cells and tumor xenografts, suggesting that IL-17 could induce the EMT process of CRC. When co-cultured with SW480 cells with Th17 cells, we found Th17 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 survival.

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
P0442 MUSCARINIC-3 RECEPTOR TARGETED miRNAs ARE INVOLVED IN BILE ACID-INDUCED PROLIFERATION ON H508 COLON CANCER CELL LINE

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Introduction: Studies with the colon cancer cell lines which express muscarinic-3 (M3) receptors showed that taurine conjugates of lithocholic acid, but not other bile acids, bind to M3 receptors, and stimulate an increase in cell proliferation. On the other hand, many microRNAs (miRNAs) are involved in colon carcinogenesis. However, the interaction of bile acid-M3 receptors and miRNAs and their potential effects in colon carcinogenesis remains to be elucidated.

Aims & Methods: For the first time in the literature, we examined the possible role of M3 receptor-targeted miRNAs on two human colon cancer cell lines: H508, which expresses M3 receptors, and SNU-C4, which does not. Cell proliferation for 6 days after sodium taurocholat (ST) and atropin (A) treatment was analysed by WST-1 method. Expression of M3 receptor gene at mRNA level was analysed by qPCR, and at protein level by Western Blot method. Apoptotic experiments were analysed by Annexin V assay. MiRNAs which possibly targeted M3 receptors were identified by in silico analyses. The methods were repeated three times, and the average values were calculated.

Results: When compared to SNU-C4 cells, M3 receptor gene expression was found to be increased 7-fold on H508 cells. After a 6-day incubation, maximum H508 cell population (300%) was achieved on 5th day with a dose of 300 μM ST, inhibited by a dose of 1μM A. In contrast, the SNU-C4 cells showed no significant change in cellular proliferation. Treatment of H508 cells with ST caused a decrease (2.53-fold) of M3 receptor gene expression, however, no change of M3 receptor at protein level was seen. No changes in apoptosis on both colon cancer cell lines were observed. Of 25 M3 receptor-targeted miRNAs, expression levels altered in 9; 6 of them were up-regulated (hsa-miR-129-5p, hsa-miR-30c-5p, hsa-miR-224-5p, hsa-miR-30b-5p, hsa-miR-522-5p, hsa-miR-1246) and 3 of them (hsa-miR-30e-5p, hsa-miR-147b, hsa-miR-885-3p) were down-regulated on H508 cells (p < 0.05).

Conclusion: ST interact with M3 receptors which modulate colon cancer cell proliferation on H508 cells. M3 receptor-targeted miRNAs are involved in ST induced proliferation. Whether the use of ursodeoxycholic acid, selective anti-miRNAs, anti-cholinergic agents or other approaches to blocking potential interactions of bile acids/salts with neoplastic colonic epithelium may be a useful adjunct to colon cancer prevention or treatment remains to be determined.

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

P0443 COLORECTAL CANCER AND DYSLIPIDAEMIA: CAUSE OR CONFOUNDING? A MENDELIAN RANDOMIZATION STUDY

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Introduction: Dyslipidaemia and statin use have been associated to colorectal cancer (CRC), but prospective studies have shown controversial results. Dyslipidaemia has been thought to have an important role in inflammatory pathways, oxidative stress and insulin resistance, which could contribute to the pathogenesis of cancer. However, findings from prospective studies that have examined the association between serum dyslipidaemia (low density lipoprotein cholesterol (LDL), HDL or TG) and colorectal neoplasia have been inconsistent.[1–4] It is unknown whether lipids and lipoproteins cause cancer or are intermediate or correlated factors within carcinogenic pathways. Epidemiological studies could be confounded by 3-Hydroxy-3-methylglutaryl-coenzyme A reductase inhibitors (statins) use, which might also have a protective effect to CRC. It is unclear whether it is statin use or dyslipidaemia that prompted statin use, which may be associated with CRC. Indeed, a large number of epidemiological studies have examined the effect of statins on colorectal cancer risk, with often inconsistent results.[5–6] A Mendelian randomization approach could help to establish a causal relationship between dyslipidaemia and CRC.

Aims & Methods: We aimed at determining whether dyslipidaemia is causally linked to CRC risk and to explore association of statins with CRC. A case-control study was performed including 1336 CRC cases and 2744 controls (MCC-Spain) between 2008 and 2013. Subjects were administered an epidemiological questionnaire that included lifetime 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 the association 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 studied. Cases had the same average alleles as controls in all the lipids traits. Statin use was a borderline significant protective factor for CRC (multivariate adjusted OR = 0.83; 95%CI 0.69–1.00; p = 0.049).

Conclusion: Using the Mendelian randomization approach, our study does not support the hypothesis that lipid levels are associated with the risk of CRC. This study does not rule out, however, a possible protective effect of statins in CRC by a mechanism unrelated to lipid levels.

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

References
P0444 LINC00152 LONG NON-CODING RNA FACILITATES CELL POLYPS AND RISK OF ADVANCED THROUGH REGULATION OF CELL CYCLE AND WNT SIGNALING PATHWAY

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Introduction: Long non-coding RNAs (lncRNAs) contribute to different cancers including colorectal cancer (CRC) through influencing cancer-related processes such as cell proliferation, apoptosis, and invasion. Previous studies have shown altered LINC00152 expression in CRC, but the detailed mechanism of its effects during colorectal carcinogenesis and cancer progression is not well studied.

Aims & Methods: We aimed to study the effects of LINC00152 to the cell cycle regulation and promoter DNA methylation of several CRC-associated tumor suppressor genes in colon cancer cells. We also analyzed the expression and promoter DNA methylation of LINC00152 and of its regulated molecules in human colonic tissue samples. LINC00152 were silenced in SW480 colon cancer cells using Stealth siRNAs. Cells were harvested 48 or 72 hours after transfection. Flow cytometric cell cycle analysis was performed using propidium iodide staining. Cyclin D1 protein expression was detected using flow cytometry after labeling with anti-cyclin D1 antibody. The effect of LINC00152 silencing to DNA methylation levels of SFRP1, SFRP2, SD2C and PRIMA1 genes was measured in human colonic tissue samples. LINC00152 were silenced in SW480 colon cancer cells using Stealth siRNAs. Cells were harvested 48 or 72 hours after transfection. Flow cytometric cell cycle analysis was performed using propidium iodide staining. Cyclin D1 protein expression was detected using flow cytometry after labeling with anti-cyclin D1 antibody. The effect of LINC00152 silencing to DNA methylation levels of SFRP1, SFRP2, SD2C and PRIMA1 genes was measured in human colonic tissue samples.

Results: LINC00152 expression was successfully silenced in SW480 cells with 93–98% knockdown. Colorectal cancer cell line SGC7901, which expresses LINC00152 suppressed cell growth, apoptosis and decreased cyclin D1 protein expression. LINC00152 knockdown did not affect the promoter methylation status of SFRP1, SD2C and PRIMA1 genes, while reduced the DNA methylation level of SFRP2 promoter. Remarkable hypomethylation of LINC00152 promoter was detected in CRC compared to normal samples (p < 0.01), which correlated with increased expression (R = 0.9). SFRP2 promoter hypermethylation and decreased expression were measured in CRC and adenoma tissues compared to normal samples (p < 0.05). Contact: E-mail Address: orgi1@yahoo.com

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: Polyposis and advanced lesions (AML) are significant predictors of colorectal cancer, smoking and features of AML in first colonoscopy. P value analysis. There were no significant results concerning BRAF status. Multivariate analysis highlighted CIMP-H as the unique independent marker associated to shorter time to develop AML (HR 4.01, 95% CI 1.36–10.46; p = 0.001).

Aims & Methods: We aim to 1) evaluate the impact of 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 expression in CRC patients. DNA methylation was determined by the Illumina 880K methylation array and Methyl Light qMSP assays. Histone methylation was determined by Histone H3 Modification Multiplex Assay Kit and Western blot. U-13C5-Glu glutamate metabolic labeling and analysis of glutamine metabolism via the TCA cycle was determined by liquid chromatography-mass spectrometry analysis. In clinical samples, SLC25A22 mRNA expression was determined by qPCR. We then correlated CIMP Island Methylator Phenotype (CIMP) status and histone methylation mark (H3K36me2) was evaluated.

Results: Using three pairs of isogenic cell lines harbouring wild-type and mutant KRAS (DKS80/WT vs DLD1(mutant); HKE3/WT vs HCT116(mutant); ICT/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 suppression of the DNA and histone demethylase genes. Our results revealed that SLC25A22-dependent epigenetic regulation, as DNA methylation profiling revealed that SLC25A22 knockdown on glutamine metabolism had a profound effect on epigenetic regulation, as DNA methylation profiling revealed that SLC25A22 knockdown on glutamine metabolism had a profound effect on epigenetic regulation.
Conclusion: SLC25A22 promotes the tumorigenesis of KRAS mutant CRC by deregulating expression of DNA and histone hypermethylation, an effect mediated by increased production of TCA cycle intermediates succinate and fumarate, which inhibits DNA and histone demethylases. SLC25A22 is correlated with CIMP and histone hypermethylation in CRC patients.

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

P0447 FOLLISTATIN-LIKE PROTEIN 1 SUSTAINS COLON CANCER CELL GROWTH AND SURVIVAL

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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 cell were evaluated in human CRC cell lines (i.e., HCT-116, DLD-1) treated with a specific FSTL1 antisense (AS) or control oligonucleotides. Western blotting, immunohistochemistry, and real-time PCR were used to assess the expression of proteins involved in cell cycle progression, poly ADP-ribose polymerase (PARP), caspase-9 and active caspase-3. Moreover, the effect of FSTL1 knockdown on 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: Although 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, direct effect of TP53 mutation on malignant potential in 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 influence of TP53 mutation on malignant potential in colon cancer. TP53 mutation is commonly found in colon cancer patients. However, negative staining of TP53 might also be careful for carcinogenicity in CRC.

Aims & Methods: We first selected LS174T cells with WT-TP53 because TP53 gene has been described in malignancies but its contribution to carcinogenesis remains controversial. 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 cell were evaluated in human CRC cell lines (i.e., HCT-116, DLD-1) treated with a specific FSTL1 antisense (AS) or control oligonucleotides. Western blotting, immunohistochemistry, and real-time PCR were used to assess the expression of proteins involved in cell cycle progression, poly ADP-ribose polymerase (PARP), caspase-9 and active caspase-3. Moreover, the effect of FSTL1 knockdown on 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.

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 morphinephenylalanin analog with mu- and kappa-opioid activity – caused accumulation of acute phase inflammatory cells and reduction of experimental cancer (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 mice were sacrificed and tumors 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. Myeloperoxidase activity, a marker of neutrophil infiltration, was inhibited by P-317 injections. Hematoyxlin and eosin staining confirmed anti-tumor activity of P-317 as indicated by histological score connecting the following features: muscle thickness, damage of the intestinal wall, immune cell infiltration, invasion depth, crypt hyperplasia and disruption. The expression of IL-1β and TNF-α at mRNA level was decreased in P-317-treated mice as compared to vehicle-treated group. Conclusion: P-317 may become an important pharmacological tool to study the factors that determine the development of inflammatory bowel disease and to define the role of the endogenous opioid system in chronic colitis and colorectal cancer.

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

P0450 INCREASED 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. Up to date, there is no effective screening tool for CRC. Therefore, it is imperative to find new biomarkers for CRC diagnosis and subsequent death due to colorectal cancer is associated with its stage 11. 2. Because of its insidious onset, the diagnosis of CRC is usually delayed. However, serological markers can be a relatively easier and cheaper alternative to the current CRC screening strategies. Since concurrent occurrence of CRC with the high motility group box 1 (HMGB1) plays a critical role in CRC progression, death, and poor prognosis15. Several recent studies have shown that HMGB1 is over-expressed in various types of cancers, including CRC, and those cases with high expression of HMGB1 are associated with lymphatic metastasis, distant metastasis and poor prognosis15. Several reports have demonstrated that HMGB1 is
secreted by cancer cells may be involved in occurrence of tumor metastasis. 6.7. In a study by Luo et al., authors found that HMGB1 secreted by the primary tumors had an apoptotic effect on the Kupffer cells which promoted development of liver. 6.7. Furthermore, some researchers showed that increased levels of c-IAP2 and pERK, the downstream effector molecules of HMGB1 are found in tumors. 6.7. Such observations suggest that HMGB1 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: Aims were 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 2013. 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 tissues.

Results: 144 patients with CRC and 50 healthy subjects underwent HMGB1 testing. Resected specimens of 50 patients were used for HMGB1 mRNA and protein expression analysis. Serum HMGB1 levels in CRC patients were higher than that of the control group (8.42 vs. 1.79 ng/L, p < 0.05). Preoperative serum HMGB1 concentrations were significantly higher than the postoperative values (8.42 ± 5.67 vs. 1.64 ± 1.89 ng/L, p = 0.05). Serum HMGB1 levels in CRC patients with distant metastasis were significantly higher (13.32 ± 6.12 vs. 7.37 ± 5.14 ng/L, p < 0.05). HMGB1 mRNA and protein expression in CRC tissues was significantly higher than in the adjacent normal mucosa. HMGB1 protein expression positively correlated with the lymph node metastasis. There was positive correlation between HMGB1 and c-IAP2 (r = 0.457, P = 0.008), HMGB1 and pERK (r = 0.461, P < 0.05) as well as pERK and c-IAP2 (r = 0.399, P < 0.05).

Conclusion: HMGB1 expression in CRC correlates with distant and lymph nodal metastasis. It may inhibit apoptosis by inducing activation of pERK and c-IAP2.

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

P0452 THE MICRONAS EXPRESSION PROFILES OF MULTIPLE COLORECTAL 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 cancer-related miRNAs (miR-143, -145, -197 or -200) were differentially expressed in samples of tumors and paired non-tumorous samples taken from the same patients with colorectal tumors, and there was a relation close to adenoma-carcinoma sequence for these miRNAs expression.

Aims & Methods: In this study, we focused on 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, -197 and -54a) and morphological appearance of 102 sporadic colorectal adenomas (SA), 27 tumors of multiple colorectal adenoma (10 adenomas/one patient, MA), 21 tumors of FAP and 114 sporadic cancer (SC).

Results: The expression levels of miR-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

P0453 UTILITY OF MEAN PLATELET VOLUME, PLATELETCRIT, PLATELET-LYMPHOCYTE RATIO AND NEUTROPHIL-LYMPHOCYTE RATIO IN THE DIFFERENTIATION OF COLORECTAL CANCER AND COLONIC POLYPS IN OLDER PATIENTS
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Introduction: Colorectal carcinoma (CRC) is an important cause of mortality and morbidity among healthy patients. The colorectal cancer in elderly patients, irrespective of the iron status. There is a close association between increased mean platelet volume (MPV) and the presence of many solid tumors such as hepatocellular carcinoma, pancreatic carcinoma, lung cancer, endometrial cancer and gastric cancer. Neutrophil/lymphocyte ratio (NLR) and platelet/lymphocyte ratio (PLR) are markers of systemic inflammatory response and their elevation is closely some studies to be associated with progression of colorectal carcinoma. Although colonoscopic examination is the standart way of colorectal cancer detection, it is not possible for all elderly patients. The NLR and PLR markers are important for predicting colorectal carcinoma and colonic polyps for each parameter studied.

Aims & Methods: The aim of this study was to investigate whether MPV, plateletcrit, PLR and NLR may have a role in the discrimination of CRC and colonic polyps in older patients. 418 patients aged >65 years with colorectal carcinoma (n=93) (Group I) and colonic polyps (n=325) (Group II) were included into the study. Also 601 (Group III) patients aged >65 years with normal colonoscopic findings served as a control group. All study subjects were investigated by using MPV, plateletcrit, PLR and NLR in order to establish sensitivity and specificity for predicting colorectal carcinoma and colonic polyps for each parameter studied.
Results: MPV, PCT, NLR and PLR were significantly higher in Group III compared to Group II (all p < 0.001). However, only MPV and PCT were significantly higher 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 sensitivity and specificity of 80% and 91% respectively (r = 0.892). MPV and PCT were also significantly higher in patients with non-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 assessment 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

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 chance of a complete response was re-scored by the expert team according to ‘common’ radiological features such as volume showed inferior performance compared to features extracted from manual delineations. Inadomi et al. showed that 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 the Radiomics signature of patients with LARC and evaluate its potential value for pre-treatment prediction of the response to neoadjuvant chemoradiotherapy.

Aims & Methods: 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: [1] by 2 expert pelvic radiologists, [2] using a semi-automatic (region growing) software algorithm, and [3] by manual adjustment of the semi-automatic delineations by two non-expert readers, adding up to 5 delineations per tumour/patient in total. Radiomics signatures were extracted from the images for each of the five delineations (300 features in total). Features showing both sufficient stability (ICC ≥ 0.75) as well as reproducible performance (Wilcoxon test, False Detection Rate (FDR) 10%) across different readers/delineations were considered as ‘common’ radiological features such as volume showed inferior performance (highest rating 56) Results derived from delineations performed by the two expert radiologists were more stable and reproducible than those performed by the non-expert reader (highest rating 41). Results: Out of 300 initially identified Radiomics features, 1853 proved stable across different readers/delineations. For the four manual delineations ±300/3002 features per reader remained significantly performant after 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 performant across all five readers/delineations. These features resulted in a mean AUC of 0.67 (range 0.64-0.73) to predict a complete response and a mean ICC of 0.81 (range 0.75-0.95). Best results were obtained for textural features measuring the heterogeneity of the tumor on DWI (all top 20 features). In contrast, more ‘common’ radiological features such as volume showed inferior performance (highest rating 56). Results derived from delineations performed by the two expert radiologists and non-expert readers resulted in comparable diagnostic performances.

Conclusion: 1) Various Radiomics features extracted from pre-treatment MRI correlate to neoadjuvant treatment response and may be used as imaging biomarkers to predict the response to chemoradiotherapy in rectal cancer. 2) Best results are obtained for textural features (representing tumour heterogeneity) derived from diffusion-weighted MR sequences. 3) Features extracted from semi-automated (software generated) delineations show inferior performance compared to features extracted from manual delineations, emphasizing the need for adequate tumour delineation. Interestingly, however, delineations from expert and non-expert readers rendered similar good results, suggesting that the selected features are robust and do not necessarily require highly expert input.

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

Reference
Introduction: Laterally spreading tumors (LSTs) of the colorectum are classified in three according to their morphological and cytogenetic type (LST-GH), granular nodular mixed type (LST-GM), and non-granular flat- elevated type (LST-NGF), and non-granular pseudo- depressed type (LST-NGPD). Clinical features of each subtype of LSTs have not been fully evaluated.

Aims & Methods: The aim of this research is to clarify the clinical and diagnostic 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 examined clinical features (mean age, size, location, Incidence of concomitant carcinoma) according to their subtypes.

Results: Of these 422 lesions, a total of 131 (31.3%) were LST-GH, 34 (8.1%) LST-GM, 32 (7.6%) LST-NGF, and 29 (6.6%) LST-NGPD. Mean age of patients with each subtype was 68.3 years old for LST-GH, 67.1 for LST-GM, 67.9 for LST-NGF, and 67.2 for LST-NGPD. Male to female ratio (M/F) was 1.21 for LST-GH, 2.05 for LST-GM, 1.95 for LST-NGF, and 1.65 for LST- NGPD. Mean size of LST-GH (21.2 mm) and LST-NGF (17.0 mm) were significantly larger than that of LST-NGF (17.0 mm) and LST-NGPD (15.1 mm). All subtypes were located predominantly in the proximal colon. Incidences of concomitant carcinomas in LST-GH, LST-GM, LST-NGF, and LST-NGPD were 0% (0 out of 151), 14.7% (5 out of 34), 1.9% (2 out of 209), and 5.0% (8 out of 162), respectively.

Conclusion: Each subtype of LSTs have 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 subtype.

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

References


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Introduction: Post-colonoscopy colorectal cancer (PC-CRC) rates are proposed as a quality indicator for colorectal screening. Estimating PC-CRC rate is important 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 (Colonoscopy + abdomen) CRC rate at 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 study.1

Aims & Methods: Retrospective audit of all patients diagnosed with CRC during two consecutive periods from 1st March 2015 to 28th February 2017 inclusive 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.2

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. Colonoscopy was diagnosed by colonoscopy in 200 patients and by CTC or CT in 148. In the symptomatic service groups there were 7 preceding colonoscopies and in the surveillance group there were 5 preceding (“false negative”) colonoscopies within the previous 3 years. The overall PC-CRC rate was 6.5 (+3.6, –2.2) % (90% confidence interval). In the Colonoscopy + abdomen group, 1 patient had a previous CT scan which the BCSP marked as false negative. The positive predictive value of the symptom and 4 from the surveillance group underwent CT scans within the preceding 6–36 months. All bar one of these 15 patients had undergone preceding CT abdomen scans with one elderly patient from the symptomatic group with a previous CT scan and a BCSP marked as a false negative. The positive predictive value of the symptom and 4 from the surveillance group underwent CT scans within the preceding 6–36 months. All bar one of these 15 patients had undergone preceding CT abdomen scans with one elderly patient from the symptomatic group with a previous CT scan and a BCSP marked as a false negative. The positive predictive value of the symptom and 4 from the surveillance group underwent CT scans within the preceding 6–36 months. All bar one of these 15 patients had undergone preceding CT abdomen scans with one elderly patient from the symptomatic group with a previous CT scan and a BCSP marked as a false negative.

Conclusion: Our findings offer the opportunity for further review of individual patients and services. Estimating PC-CRC rate is important 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 (Colonoscopy + abdomen) CRC rate at 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 study.1
had ACO (ACO group). In the non-ACO group, we confirmed that the surgical II/III CRC with ACO among patients in the two institutions.

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

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 immunochemical 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 ≥200ng hemoglobin/g of feces threshold. We performed a descriptive analysis of clinical data detected during follow-up and mortality. We estimated the differences in the risk of GITT detection and mortality between the two cohorts by logistic regression and proportional hazards after adjusting for age, sex, and significant colonic lesions (CSL) detection at baseline colonoscopy.

Results: We included 1061 patients without CRC and a complete baseline colonoscopy; 320 (30.2%) with a positive FIT and 741 with a negative FIT. The median follow-up was of 36.0 ± 8.9 months with no difference between both groups (p = 0.2). There were significant differences regarding age (67.5 ± 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 esophageal, and one patient with a gastric and a CRC. Patients with a positive FIT had a non-significant increase in the risk of GITT detection (OR 2.1, 95% CI 0.9–4.8) after adjusting for age, sex and SCL. The overall risk of death in both groups was 8.8% and 6.2%, 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 SCL.

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

Reference

P0460 LONG-TERM OUTCOMES OF TRANSDURAL COLORECTAL TUBE PLACEMENT FOR DISTAL STAGE II/III COLORECTAL CANCER WITH ACUTE COLORECTAL OBSTRUCTION

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Introduction: A stent is a standard management for colorectal cancer (CRC) with acute colorectal obstruction (ACO). Transanal colorectal tube (TCT) placement is an alternative endoscopic treatment for ACO; however, the oncological outcomes of TCT placement for the curative treatment of CRC remain unknown.

Aims & Methods: Data were retrospectively reviewed from patients with distal stage II/III CRC who underwent surgery between January 2007 and December 2011 at two Japanese affiliate hospitals with an interchange of endoscopists and different endoscopic and surgical endoscopic and surgical endoscopic and surgical settings. This study demonstrated the high technical and clinical success rate of double-wire double-woven uncovered metallic stent placement for malignant colorectal obstruction. Clinicians should perform this procedure carefully in patients with presence of ascites.

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

Reference

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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 double-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 affecting the technical difficulty of stenting by using univariate and multivariate analyses.

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 included in stenting. Of these, 100 were men (51%), and 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 experienced colorectal perforation during stenting. 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-four patients with a deployment time longer than 31 minutes were regarded as technically difficult cases of stenting, which were identified as independent factors of the technical difficulty in stent placement: presence of ascites (odds ratio, 2.483; 95% confidence interval [95%CI], 1.17–5.29; p = 0.02), presence of >1 stent (odds ratio, 4.80; 95%CI, 1.10–21.0; p = 0.04).

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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

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Reference
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T. Kuwai: personal fees: Boston Scientific Japan, Century Medical Inc
S. Saito: personal fees: Century Medical Inc., Boston Scientific Japan
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 (TiCRC) can be treated with endoscopic resection. If patients have pathological risk factors such as deep submucosal invasion, bunting, 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’ prognosis in clinical practice.

Aims & Methods: This research aims at revealing the prognosis and clinicopathological features of pathologically high-risk TiCRC 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 Ti colorectal cancer at Kyoto University Hospital (Kyoto, Japan) between February 2005 and February 2015. Treatment strategy after diagnosis follows: Patient’s values and preferences, solely presence of “depth” risk factor, possible intensive surgery due to TiCRC located in the lower rectum, other advanced malignancy, and perioperative risks; advanced age, past history of abdominal surgery or radiation, severe comorbidity including chronic heart disease, and possible intensive surgery due to T1CRC located in the lower rectum.

Results: Among 162 TiCRC 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. There were no recurrences among the 62 e-curable patients. On the other hand, five recurrences (5%) were found in non-e-curable patients, and they were all in Group A. They consisted of local recurrence (one patient who also had lung metastasis), lymph node metastasis (two patients), lung metastasis (two patients), and liver metastasis (one patient who also had LN metastasis). There were no significant differences in DSS between Group A and Group B + C (LST-NG). However, OS was 93% in Group A, which was significantly lower than that (96%) in Group B + C (p < 0.05). DFS in Group A was 90%, which was significantly lower than that (100%) in Group B + C (p < 0.05). The prognosis of patients with non-e-curable disease after ER alone showed no significant differences in OS, DFS, and DSS between Group A and Group B + C. The prognosis of patients with non-e-curable disease after surgical resection showed no significant differences in DFS or DSS. However, OS in Group A was 94%, which was significantly lower than that (97%) in Group B + C (p < 0.05).

Conclusion: Long-term outcomes supported the JSCCR criteria for e-curable patients for ER for Ti LSTs. All recurrences occurred in patients with Ti LST-NG in the FU group. OS of LST-NG was significantly shorter than in the LST-NG group.

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

References

Results: In this study we developed and tested a controlled-release paclitaxel-eluting SEMS designed to prevent tissue hyperplasia and stent occlusion. A leucovorin- and paclitaxel-eluting, 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® and D.S 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 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® and D.S cholangioscopy and cholangiography with a targeted 6 month study endpoint.

Results: At 30 days post-implant, no significant tissue reaction to any stent was observed. However, all animals displayed mild biofilm formation and increased intraluminal mucus production. Substantial dilation of the common bile duct was observed in 5/11 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 bile liver duct dilation persisted and a tendency of stents were fully opposed 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 toward dose animals. At 30 days post-implant, 4/11 animals demonstrated bile duct dilation, 3/11 animals demonstrated bile duct stenosis, and 3/11 animals demonstrated bile duct obstruction. At 60 days post-implant, 10/11 animals demonstrated bile duct dilation, 8/11 animals demonstrated bile duct stenosis, and 9/11 animals demonstrated bile duct obstruction. Although bile duct dilation was observed within the stent, however in only 3 animals bile ductal dilation persisted and the majority of stents were fully apposed to the duct wall. Although bile duct dilation was observed within the stent, however in only 3 animals bile ductal dilation persisted and the majority of stents were fully apposed to the duct wall. Although bile duct dilation was observed within the stent, however in only 3 animals bile ductal dilation persisted and the majority of stents were fully apposed to the duct wall.

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Aims & Methods: In this prospective study, we evaluated the overall survival (OS) of patients with colorectal cancer who were associated with overall and with non-resectable survival not inferior to those of the traditional approach, favoring its implementation.

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

Conclusion: Preliminary results of our series confirm that the W&S strategy is equivalent to FOLFOX/FOLFIRI in the treatment of colorectal cancer and is associated with an overall survival not inferior to those of the traditional approach, favoring its implementation.

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

P0406 LONG-TERM COLONOSCOPIC SURVEILLANCE BETWEEN PATIENTS AFTER SURGICAL RESECTIONS OF COLORECTAL INVASIVE CANCER AND THOSE AFTER ENDOSCOPIC RESECTIONS OF COLORECTAL ADENOMA AND INTRAMUCOSAL INVASIVE CARCINOMA

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Introduction: Patients after surgical resection of colorectal invasive cancer and those after endoscopic resections of colorectal adenoma and intramucosal cancer, both of them have the risk of metachronous advanced neoplasia during follow-up.

The present study aimed to compare the risk of metachronous neoplasia during a long-term follow-up between patients with colorectal invasive cancer resected by surgery and those having colorectal adenoma and intramucosal cancer resected at initial colonoscopy.

Aims & Methods: A total of 1078 patients were colonoscopically followed-up during a long-term period in our hospital. They were divided into group A, B, and C as follows: 445 in group A (mean age 64.7 yr, M=2.371); 318 in group B (66.1 yr, 2.311) with high-grade adenoma or intramucosal cancer colonoscopically resected at baseline, 388 in group C (65.1 yr, 1.541) with invasive cancer resected at initial colonoscopy. During follow-up colonoscopies detected metachronous neoplasms were resected and pathologically evaluated into non-index lesion (low-grade adenoma) or index lesion (high-grade adenoma or cancer).

The cumulative incidences of metachronous colorectal neoplasms were compared with each other using Logrank test.

Results: Median follow-up periods and frequencies of colonoscopy were 64.3 months and 3.7 times in group A, 52.0 months and 3.5 times in group B, and 74.6 months and 3.9 times in group C, respectively. The cumulative incidences of metachronous non-index lesion were 24.5% (109 patients with 299 low-grade neoplasms) in group A, 26.1% (64 with 184) in group B, and 19.3% (75 with 229) in group C, respectively. The prevalence of metachronous non-index lesion was lower in group C compared to that in group A (p=0.007), and group B (p=0.007). The cumulative incidences of metachronous invasive cancer were 0.9% (4 patients with 4 invasive cancers) in group A, 1.2% (3 with 3) in group B, and 3.6% (14 with 14) in group C, disclosing highest prevalence in group C (p<0.005). Logrank test revealed that the cumulative incidence of non-index lesion was 1.29 times in group C, respectively. The prevalence of metachronous non-index lesion was lower in group C compared to that in group A (p=0.007) and group B (p<0.005).

Conclusion: Significant higher prevalence of metachronous index lesion including invasive cancer and, in contrast, significant lower prevalence of metachronous non-index lesion were observed in patients after resected colorectal invasive cancer compared to those after endoscopic resections of colorectal adenoma and intramucosal cancer.

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

P0409 LONG-TERM COLONOSCOPIC SURVEILLANCE BETWEEN PATIENTS WITH UNRESECTED DIMINUTIVE POLYPY AND THOSE WITH COLORECTAL ADENOMAS > 5MM IN SIZE RESECTED AT INITIAL COLONOSCOPY

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Introduction: A long-term risk of colorectal advanced neoplasia among patients having diminutive polyps at initial colonoscopy has been unknown. The present study is to clarify the risk of metachronous advanced neoplasia during follow-up between patients with untreated diminutive colorectal polyps and those with small or large adenoma resected at baseline colonoscopy.

Aims & Methods: A total of 1395 patients were colonoscopically followed-up during a long-term period in our hospital. They were divided into group A, group B, and C as follows: 581 in group A (mean age 65.0+8.9 yr, M=411.170) with colorectal adenoma more than 5 mm in size resected at baseline, 495 in group B (65.2+9.6 yr, 328.167) with diminutive polyps left untreated at baseline, and 519 in group C (62.5+10.7 yr, 255.264) with no polyps at baseline. During follow-up colonoscopies detected metachronous neoplasms more than 5 mm in diameter were resected and pathologically evaluated into non-index lesion (low-grade adenoma) or index lesion (high-grade adenoma or cancer). The cumulative...
incidences of metachronous colorectal neoplasms were compared with each other.

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 neoplasms were 24.1% (202 with 837) in group A, 21.5% (151 with 698) in group B, and 22.5% (27 with 121) in group C, respectively. The prevalence of metachronous non-index lesion was highest in group A followed by group C and group B, respectively. The prevalence of metachronous index lesion in group A was 5.1% (25 with 497) 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 group C and group B, respectively. The cumulative incidences of metachronous index lesion were 7.2% (42 patients with 580) in group A, 5.1% (25 with 257) in group B, and 2.3% (12 with 15) in group C, respectively. The cumulative incidences of metachronous index lesion were 1.0% (6 patients with 5 invasive cancers) in group A, 0.7% (7 with 10) in group B, and 0.0% (with 0) in group C, respectively. The 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 0.0% (with 1) in group C with no significant difference. Logrank test revealed that the cumulative incidence of non-index lesion was highest in group A, and statistical significances were observed between group A and B (p < 0.0001), and between group B and C (p < 0.0001). Logrank test also revealed that the cumulative incidence of index lesion was highest in group A, and statistical significances were observed between group A and B (p < 0.0001), and between group B and C (p < 0.0005).

Conclusion: The results of a longer colonoscopic follow-up disclosed a significantly higher prevalence of metachronous advanced neoplasms in patients with adenoma >5 mm in size resected at baseline compared to those with diminutive polyps left untreated at baseline. Persons with no polyps at baseline (male: 1 point, female: 0), age (40–49 years: 0, 50–59: 2, 60–69: 3, male or past smoker: 1, body mass index (BMI)  3 and C (p < 0.0001), and between group B and C (p < 0.0005).

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

P0470 A NEW SCORING MODEL FOR PREDICTING ADVANCED COLORECTAL NEOPLASIA IN ASYMPTOMATIC SCREENING POPULATION AND COMPARISON WITH THE MODIFIED ASIA-PACIFIC COLORECTAL SCREENING SCORE

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Introduction: Colorectal cancer (CRC) is still a major cause of death even in countries with a CRC screening program, indicating the need for improved screening methods. Risk-stratification of populations is one strategy that might satisfy this requirement. Currently, in the Asia-Pacific region, the use of the modified Asia-Pacific Colorectal Screening (APCS) score [age 50–59: 1 point, current or past smoker: 1, body mass index (BMI)  70: 3.5], CRC (p < 0.05). The statistical analyses were performed using Statistica for Windows 6.0 (StatSoft Inc.).

Results: Threshold for RAIR and %RAIR were 22.3 ml (10.0; 30.0), 74.4% (38; 99.5) respectively. Threshold for first RAIR was 30.0 ml (11.1; 58.3) and threshold for %RAIR was 85.6% (33.5; 182.0). The c-statistic of the score in the development set was 0.6 (95% confidence interval: 0.5; 0.7) and 0.6 (95% confidence interval: 0.5; 0.7) respectively. The prevalence of metachronous non-index lesion was 5.1% (25 with 497) in group B, and 2.3% (12 with 15) in group C, respectively.

Conclusion: A new scoring model could stratify the screened population into low-, moderate-, and high-risk groups. Of the detected ACN, a substantial number were proximal or flat; therefore, primary screening with total colonoscopy may be advisable for high-risk individuals.

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

References

P0471 ASSOCIATION BETWEEN PARAMETERS OF THE RECTAL INHIBITORY REFLEX AND THRESHOLD FOR FIRST RECTAL SENSATION ESTABLISHED BY HIGH-RESOLUTION ANORECTAL MANOMETRY (HRAM) AND ITS SIGNIFICANCE FOR FECAL INCONTINENCE DIAGNOSTICS

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Introduction: Previous studies have shown that increase of threshold for first rectal sensation can be a predictor of fecal incontinence. However, significance of the range of rectal inhibitory reflex (%)RAIR in development of this disease remains unknown.

Aims & Methods: To determine association between %RAIR and threshold for first rectal sensation in healthy adults and its significance in development of fecal incontinence in asymptomatic volunteers (18 women, 8 men) median age was 35.03 years (19–59) was studied. We performed them a high-resolution anorectal manometry (HRAM) using a 20 channels silicone water-perfused catheter (Solar GI, MMS, Netherlands). The following HRAM parameters were analyzed: threshold for RAIR and %RAIR (automatically calculated as the ratio of the amplitude of the relaxation of the anal sphincter (AS) to the basal pressure AS *100%), threshold for first rectal sensation (RS) and for desire to defecate. The statistical analyses were performed using Statistica for Windows 6.0 (StatSoft Inc.).

Results: Threshold for RAIR and %RAIR were 22.3 ml (10.0; 30.0), 74.4% (38; 99.5) respectively. Threshold for first RAIR was 30.0 ml (11.1; 58.3) and threshold for %RAIR was 85.6% (33.5; 182.0). Threshold for RAIR was not associated with threshold for first RS (r = 0.07) and for desire to defecate (r = 0.02). %RAIR was weak positively correlated with threshold for first RS (r = 0.26) and was not associated with threshold for desire to defecate (r = −0.03).

Conclusion: Threshold for RAIR and %RAIR are not associated with first rectal sensation. So, these parameters of RAIR cannot be predictors of fecal incontinence.

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

P0472 AVOIDANT COPING AND SOMATIZATION PARTLY EXPLAIN THE RELATIONSHIP BETWEEN NEUROTICISM AND GASTROINTESTINAL SYMPTOM BURDEN

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Background: Trait neuroticism is consistently found to be associated with more severe functional gastrointestinal (GI) symptoms (1). One explanation for this is that high neuroticism predisposes individuals towards avoidant coping by leading them to view negatively-valenced situations as catastrophic (2) and, therefore, unsolvable (3). Avoidant coping, in turn, increases the risk of developing GI discomfort because over-reliance on “flight” strategies in stressful situations overstimates the sympathetic nervous system at the expense of parasympathetic activity necessary for digestion (4). Evidence for this proposed chain has come from studies that have observed relationships between each pair of the chain’s components: neuroticism and avoidant coping (e.g., 3), and avoidant coping and higher GI symptom burden (e.g., 1). Across two studies, this paper integrates these findings, while also exploring the role of somatisation. Somatisation is consistently observed in people suffering from functional GI Conditions (e.g., 1) and refers to a subtype of avoidant coping - the expression of psychological stress through complaints about bodily symptoms (6). Should evidence emerge that somatisation is an intermediary between avoidant coping and GI symptom burden in the relationship between neuroticism, coping styles and GI symptom burden, the dominant explanation for how avoidant coping and GI symptoms are connected would need to be expanded to
predict that somatisation has deleterious consequences for GI conditions - possibly because it encourages the use of non-beneficial coping strategies (7).

**Aims & Methods:** In Study 1, 147 undergraduate students completed measures of neuroticism, 14 coping styles (including avoidance styles such as denial and disengagement), somatisation and GI symptom burden. In Study 2, where participants were undergraduates and hospital outpatients (pooled: N = 250), the variables investigated in Study 1 were measured alongside hypochondriasis, which was included to measure the aspect of somatisation that involves worry independently of any actual physical symptoms. Statistical analysis was based on path modeling. It involved fitting a model to test a priori hypothesised indirect relationships between neuroticism and GI symptom severity via the selected coping styles and somatisation. Direct effects were also estimated, meaning that the path analysis provided information regarding the significance of any indirect effects once a range of direct effects were accounted for. Only six coping styles found to correlate with both neuroticism and GI symptom severity were included (see Results table). Coping styles were assumed to covary, and the model in Study 2 assumed a covariance relationship between somatisation and hypochondriasis.

### Results

<table>
<thead>
<tr>
<th>Variable</th>
<th>Study 1 direct effects on row variables</th>
<th>Study 2 direct effects on row variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-distraction</td>
<td>.30(.07)** n.s.</td>
<td>.22(.07)** n.s.</td>
</tr>
<tr>
<td>Denial</td>
<td>.24(.07)** n.s.</td>
<td>.28(.05)** n.s.</td>
</tr>
<tr>
<td>Venting</td>
<td>.36(0.07)** n.s.</td>
<td>.32(0.06)** n.s.</td>
</tr>
<tr>
<td>Substance-use</td>
<td>.40(0.07)** n.s.</td>
<td>.19(0.06)** n.s.</td>
</tr>
<tr>
<td>Disengagement</td>
<td>.52(0.06)** n.s.</td>
<td>.55(0.06)** n.s.</td>
</tr>
<tr>
<td>Self-blame</td>
<td>.53(0.06)** n.s.</td>
<td>.62(0.04)** n.s.</td>
</tr>
<tr>
<td>Somatisation</td>
<td>.42(0.09)** n.s.</td>
<td>.40(0.07)** n.s.</td>
</tr>
<tr>
<td>Hypochondriasis</td>
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<td>.06(0.03)**</td>
</tr>
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<td>Symptom burden</td>
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<td>Not applicable</td>
</tr>
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<td>Substance-use</td>
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<td>.03(0.02)</td>
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<tr>
<td>Not applicable</td>
<td>n.s.</td>
<td>n.s.</td>
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</tbody>
</table>

### Conclusion

All authors have declared no conflicts of interest.

**References**


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

### Results

Significant standardised path model coefficients involving neuroticism across the two studies. In Study 1, neuroticism exerted indirect effects on symp-tom burden through substance-use-based coping and somatisation, as well as through disengagement-based coping and somatisation. In Study 2, neuroticism affected GI symptom burden through denial-based coping and somatisation, as well as through denial-based coping and hypochondriasis. An indirect effect of neuroticism through self-blame and somatisation, with the two intermediary variables relating negatively to each other, was observed in Study 1. (Note: *p* < .001, *p* < .01, *p* < .05, *p* denotes non-significant coefficients).

**Conclusion:** Somatisation and hypochondriasis were found to be intermediaries in neuroticism and GI symptom severity with the two intermediary variables relating negatively to each other, was observed in Study 1. (Note: *p* < .001, *p* < .01, *p* < .05, *p* denotes non-significant coefficients).

**Disclosure of Interest:** All authors have declared no conflicts of interest.
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 silt clay, is an adsorbent widely used for the treatment of several gastrointestinal syndromes (IBS). Preclinical chronic stress models have been developed in animals on the block for a period of 1 h every day. For both conditions (basal and after WAS), intestinal transit was evaluated by faecal output measurement Visceral sensitivity to colorectal distension (CRD) was assessed both in CVH-NS in CRD, though without statistical difference (2.35 \pm 0.05 vs CVH-Bifi) in adulthood. The CRD rats in 42-day old were treated by gavage administration with Bifidobacterium bifidus (1*10^10 CFU/day) for two weeks (CVH-Bifi). Other CRD 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 56, another AWR was assessed, and the hippocampus and prefrontal cortex (PFC) were Separated and used to analyze the c-fos, NMDAR2A, NMDAR2B 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 \pm 0.08 vs 2.40 \pm 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 (0.77 \pm 0.23 vs 0.48 \pm 0.10, p = 0.171). The NMDAR2A of CVH-Bifi was higher than that of Con-sham (1.04 \pm 0.22 vs 0.51 \pm 0.16, p = 0.055). In PFC, the NMDAR2A of CVH-Bifi was significantly higher than that of CVH-NS (0.63 \pm 0.14 vs 0.21 \pm 0.05, p = 0.004) and Con-sham (0.63 \pm 0.14 vs 0.20 \pm 0.07, p = 0.011).

Conclusion: We reported the negative effects of Bifidobacterium bifidus gavage, which induced higher activation of c-fos and higher expression of NMDAR2A in hippocampus and PFC. The roles 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.

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 reduce the visceral hypersensitivity in IBS. But different treatment effects have been reported. The negative effect of Bifidobacterium has been rarely studied and reported.

Aims & Methods: We aimed to study the effects of gavage administration with Bifidobacterium bifidus for two weeks on the visceral hypersensitivity of rats. Colonic visceral hypersensitivity (CVH) was induced by colonic injection of 0.5% acetic acid (AA) in 10-day old rats while control (NS) induced with 0.9% saline. The abdominal withdrawal reflexes (AWR), induced by colorectal distension (CRD) was used to quantify the level of colonic sensitivity in adult rats. The CRD rats in 42-day old were treated by gavage administration with Bifidobacterium bifidus (1*10^10 CFU/day) for two weeks (CVH-Bifi). Other CRD 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 56, another AWR was assessed, and the hippocampus and prefrontal cortex (PFC) were separated and used to analyze the c-fos, NMDAR2A, NMDAR2B 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 \pm 0.08 vs 2.40 \pm 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 (0.77 \pm 0.23 vs 0.48 \pm 0.10, p = 0.171). The NMDAR2A of CVH-Bifi was higher than that of Con-sham (1.04 \pm 0.22 vs 0.51 \pm 0.16, p = 0.055). In PFC, the NMDAR2A of CVH-Bifi was significantly higher than that of CVH-NS (0.63 \pm 0.14 vs 0.21 \pm 0.05, p = 0.004) and Con-sham (0.63 \pm 0.14 vs 0.20 \pm 0.07, p = 0.011).

Conclusion: We reported the negative effects of Bifidobacterium bifidus gavage, which induced higher activation of c-fos and higher expression of NMDAR2A in hippocampus and PFC. The roles 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.

P0478 DA-9701 IMPROVES COLONIC TRANSIT TIME AND SYMPTOMS IN PATIENTS WITH FUNCTIONAL CONSTIPATION: A PROSPECTIVE STUDY
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Introduction: DA-9701, a newly developed prokinetic agent formulated with Pharmacomonas and Corthylium, has been shown to be effective by treating 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 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.

References
Results: Twenty-seven patients completed the study. DA-9701 was associated with a statistically increased CTT from 14.9 ± 5.0 hours/treatment day to 23.7 ± 7.4 hours/treatment day (P = 0.001). Segmental CTT also significantly decreased after treatment (right CTT: from 14.0 ± 8.2 to 7.5 ± 7.4 hours, P = 0.001; rectosigmoid transit time: from 14.2 ± 11.9 to 9.5 ± 10.9 hours, P = 0.021). In addition, 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
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 consultants and non-consultors do not differ in their abdomen pain severity or extra intestinal symptom burden. [Support: The Rome Foundation].

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.
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 untreated 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: Colon cancer expression of SLC7A5 and SLC3A2 (together comprising the amino acid transporters LAT1 and LAT2) 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 (SLC9A8) 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


Aims & Methods: The aim of our present study was to determine the role of genetic variation within genes encoding for collagen s of the connective tissue in the development of diverticulosis. Genetic polymorphisms COL3A1 (rs3134646, rs1800255) and COL1A1 (rs1800012) were genotyped in 422 patients with diverticulosis. Among 70 patients with complicated diverticulitis, 51 (78.6%) patients underwent emergent surgery; most of them (54 patients, 98.2%) were with diverticulitis of sigmoid colon (odds ratio 62.2, 95% confidence interval 21.8–178.0) as a significant independent factor for complications of diverticulitis. The amino acid transporters LAT1 and LAT2 appeared to 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

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Introduction: Colonic diverticulosis is one of the most common gastroenterological disorders. Though diverticulosis is typically benign, many individuals develop diverticular disease (DD). DD is thought to stem from a complex interplay of environmental, dietary, and genetic factors; however, the exact pathogenesis remains unknown.

Aims & Methods: The aim of our present study was to determine the role of genetic variation within genes encoding for collagens of the connective tissue in the development of diverticulosis. Genetic polymorphisms COL3A1 (rs3134646, rs1800255) and COL1A1 (rs1800012) were genotyped in 422 patients with diverticulosis and 285 controls of Caucasian descent using TaqMan assays.

Results: All genotype distributions did not deviate from the Hardy-Weinberg equilibrium. Overall, rs3134646, rs1800255 and rs1800012 were associated with diverticulosis. After multivariate logistic regression analysis, they were not linked with the risk of developing colonic diverticulosis in general; when selectively analyzing genders, the minor allele (AA) in rs3134646 remained significantly associated with diverticulosis in men (p = 0.037).

Conclusion: Our study shows that a variant of COL3A1 rs3134646 is associated with risk of developing colonic diverticulosis in Caucasian men, while COL3A1 rs1800255 and COL1A1 rs1800012 were not associated with this condition in our cohort of patients after adjusting for confounding factors.

Disclosure of Interest: All authors have declared no conflicts of interest.
P0490  THE USE OF ENDOCYTIC CLASSIFICATION “DICA” MAY HAVE A SIGNIFICANT COST-SAVING ON THE BURDEN OF DIVERTICULAR DISEASE OF THE COLON


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

Introduction: Although symptoms occur in only 20% of patients harbouring diverticula, Diverticular Disease (DD) of the colon DD represents the 8th disease as burden in USA. Several treatment are currently advised in managing those patients, but their impact on the burden of the disease is unknown. The recent DICA endoscopic classification has been developed and validated for the classification of DD, founding that treatment of DICA 1 and DICA 3 patients did not impact significantly in terms of acute diverticulitis occurrence/recurrence and surgery occurrence. Our aim was to assess the impact of using DICA classification on the burden of DD in Italy.

Aims & Methods: We assessed retrospectively the overall and the cost/year of treatments (or rifaximin, or any other treatment, including probiotics, fibers, systemic antibiotics and spasmodics) in DICA 1, DICA 2 and DICA 3 population. Analysis of diverticulitis prevalence was estimated according to data population provided by Italian Institute of Statistics (ISTAT). Cost of treatments was calculated 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 estimations, DICA 1 and DICA 3 patients represent about 75% of diverticuloid population on DICA 1, about 30% on DICA 2, and about 15% on DICA 3. According to the drugs’ consumption recorded during our study, we estimated that overall about 679 million of euros could be spent in Italy in treating those patients. In particular, >357 million of euros are spent in DICA 1 population, >205 million of euros in DICA 2 population, and >88 million of euros in DICA 3 population. Considering that medical treatments did not show any significant advantage when treating DICA 1 and DICA 3 people in terms of prevention of acute diverticulitis occurrence/recurrence and surgery occurrence, we can estimated that >245 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 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: No conflicts of interest.

P0491  NATURAL HISTORY OF SYMPTOMATIC UNCOMPLICATED DIVERTICULAR DISEASE: A 13-YEAR PROSPECTIVE STUDY

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

Introduction: Symptoms of Gastroenterology, Parma/Italy

Aims & Methods: Thirteen consecutive female patients, living in the same district and suffering from SUDD, were studied. Patients were treated with a 2-week course of 30×day fiber supplementation (3 patients), 1,6 grams/day of mesalazine (3 patients), 900 billion/day of probiotic mixture VSL#3 (currently available in Europe as VivoMixx®), 3 patients), and 800 mg/day of rifaximin (4 patients). Stool samples were collected at entry (T0), at the end of the 2-week course of treatment (T1), and after 30 (T2) and therefore after 60 days at the end of the therapeutic course (T3). Real-time PCR was used to quantify targeted microorganisms. High-resolution proton 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=0.440). The overall amendment of Akkermansia muciniphila species was significantly reduced at T1 (p=0.017) and T2 (p=0.026), while at T3 it became similar to that of T0 (p=0.09). The amount of Lactobacilli group was increased in all groups but not significantly at T1 and T2, while at T3 it became similar to that of T0. The treatments showed the same results except for probiotic group, who had higher and persistent amount of Lactobacilli up to T3. PLS-DA analysis of NMR-based fecal metabolomics showed significant changes at T1 and T2, while at T3 it became similar to that of T0. All treatment were showed the same behaviour in influencing fecal metabolome except for rifaximin group, in which we did not find any metabolic change neither at the end of treatment nor during the washout period.

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 on fecal microbiota and fecal metabolic profiling in those patients.

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

P0492  IMPACT OF TREATMENTS ON FECAL MICROBIOTA AND FECAL METABOLIC PROFILING IN SYMPTOMATIC UNCOMPLICATED DIVERTICULAR DISEASE OF THE COLON

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Disclosure of Interest: No conflicts of interest.

Introduction: Fecal microbiota and metabolome may be altered in patients with Symptomatic Uncomplicated Diverticular Disease (SUDD). In particular, we found that Akkermansia muciniphila species were significantly increased in SUDD patients when compared with asymptomatic diverticulosis and healthy people, as well as PLS-DA analysis of NMR-based fecal metabolomics showed significant discrimination between HC and AD patient. Our aim was to assess the effect of current treatments for SUDD on fecal microbiota and fecal metabolic profiling in those patients.

Aims & Methods: Thirty consecutive female patients, living in the same district and suffering from SUDD, were studied. Patients were treated with a 2-week course of 30×/day fiber supplementation (3 patients), 1,6 grams/day of mesalazine (3 patients), 900 billion/day of probiotic mixture VSL#3 (currently available in Europe as VivoMixx®), 3 patients), and 800 mg/day of rifaximin (4 patients). Stool samples were collected at entry (T0), at the end of the 2-week course of treatment (T1), and after 30 (T2) and therefore after 60 days at the end of the therapeutic course (T3). Real-time PCR was used to quantify targeted microorganisms. High-resolution proton 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=0.440). The overall amendment of Akkermansia muciniphila species was significantly reduced at T1 (p=0.017) and T2 (p=0.026), while at T3 it became similar to that of T0 (p=0.09). The amount of Lactobacilli group was increased in all groups but not significantly at T1 and T2, while at T3 it became similar to that of T0. The treatments showed the same results except for probiotic group, who had higher and persistent amount of Lactobacilli up to T3. PLS-DA analysis of NMR-based fecal metabolomics showed significant changes at T1 and T2, while at T3 it became similar to that of T0. All treatment were showed the same behaviour in influencing fecal metabolome except for rifaximin group, in which we did not find any metabolic change neither at the end of treatment nor during the washout period.

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 on fecal microbiota and fecal metabolic profiling in those patients.

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

P0493  5-YEARS ITALIAN REGISTER OF DIVERTICULOSIS AND DIVERTICULAR DISEASE (REMAI): A LOW PROGRESSION RATE INTRODUCTION: FECAL MICROBIOTA AND SUTURE. 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.

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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 diverticulitis 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: Overall, at baseline 1217 (55.7% female, median years 67 (28–95), BMI 25.6 kg/m² (16.2–43.4) patients were enrolled: 707 (58.1%), 300 (24.7%) and 210 (17.3%) with diverticulosis, SUDD, and PD, respectively. At 12 months, 922 patients (53.1%, 29.8%, and 17.1% with diverticulosis, SUDD, and PD) were followed, and 27.4% of patients were lost at follow-up. In the 12 months follow-up, 33 (6%) and 4 (0.7%) of diverticulosis patients developed SUDD and acute diverticulitis, respectively; 4 (1.6%) of SUDD patients developed acute diverticulitis, and in 14 (9.4%) of PD patients a new episode of acute diverticulitis occurred. Overall, only 3 patients developed a complication, without need of surgery. One year of follow-up logistic regression, showed that only female gender was associated with subjects who changed subgroup from diverticulosis to SUDD (OR 2.26, 95%CI 0.97–5.22). No specific features associated with recurrence of diverticulitis could be identified.

Conclusion: These preliminary data suggested that, during an observation period of one year, progression from diverticulosis to SUDD occurred in less than a tenth of patients, and was associated with female gender. Overall incidence of diverticulitis (2.3%), whereas incidence of diverticulitis was uncommon. This observational study suggested, that although the vast majority of patients did not show progression of disease, in those who progressed in ten tended to relapse during follow-up.

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

All other authors have declared no conflicts of interest.

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

All other authors have declared no conflicts of interest.

P0494 CLINICAL FEATURES ASSOCIATED WITH SYMPTOMATIC UNCOMPLICATED DIVERTICULAR DISEASE AND DIVERTICULITIS PATIENTS: RESULTS FROM THE ITALIAN REGISTER OF DIVERTICULAR DISEASE (REMA D)

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Introduction: In the vast majority of patients colonic diverticula remain asymptomatic: prevalence of new cases of recurrent abdominal symptoms (symptomatic uncomplicated diverticulitis disease, SUDD) or complications (diverticulitis), with subsequent impact on quality of life (QoL). To date, clinical features associated with each subgroup are not fully understood.

Aims & Methods: Aim of this study was to assess, in a cohort of patients with colonic diverticula, the clinical features and QoL scores associated with each subgroup of patients. GRIMAD (Italian Diverticular Disease Group) promoted the creation of REMAD (Register of Diverticular Disease) a 5-years prospective, 5-years, no-profit, cohort study involving 47 Italian centers. Each center enrolled at least 20 consecutive patients during a period of 2 months. Inclusion criteria were: informed consent; age ≥18 years; endoscopic/radiological-confirmed colonic diverticula. The clinical data (patients’ characteristics and habits, characteristics of DD, treatment and QoL) collected by participating centers were reported on an electronic Case Report Form managed by CD Pharma, Milan. At entry, patients were categorized into subgroups of patients 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 the presence of subtypes of DD. A p value < 0.05 was considered statistically significant.

Results: 1217 patients were enrolled. Characteristics of each subgroup of patients are reported in the table.

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

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Introduction: Patients with symptomatic uncomplicated diverticulitis disease (SUDD) 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 SUDD and PD. Patients were categorized according to the following criteria: i) diverticulosis (presence of diverticula in the absence of abdominal symptoms); ii) SUDD (recurrent abdominal symptoms in the absence of overt inflammation); iii) PD (patients who experienced at least one episode of acute diverticulitis). Patients were enrolled in the study. 300 (24.7%) and 210 (17.3%) fulfilled criteria for SUDD and PD, respectively. Among them, 223 patients with SUDD (74.3%) and 154 patients with PD (73.3%) accepted to fill in short-lasting pain questionnaire, whereas 156 patients with SUDD (52.0%) and 140 patients with PD (66.6%)
P0496 MUSCULAR INFLAMMATORY STATE AND PHENOTYPIC SWITCH IN DIVERTICULOSIS AND COMPLICATED DIVERTICULAR DISEASE

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Introduction: Colonic diverticulitis, as well as diverticular disease, is a multifactorial disease characterized by neutrophil- and pro-inflammatory cytokine-driven impaired contraction, inflammation and fibrosis. Mesenchymal smooth muscle cells (SMC) are able to switch from a contractile phenotype to a less mature synthetic phenotype, characterized by a loss of differentiation with decreased expression of contractile markers as well as synthesis and release of several pro-inflammatory cytokines. Different organ specific pathways have been demonstrated to induce this mesenchymal transition. Renal fibrosis is driven by transforming growth factor-β (TGF-β) through inverse regulation of Smad2/3 while vascular fibrosis by PDGF-β, ending in downregulation of marker gene Tbr3 expression.

Aims & Methods: Aim of this study was to determine, both in human uninolved and involved tracts of asymptomatic diverticulosis (AD - AD+) and in stenosing complicated diverticulitis (CDD), the alteration of muscular synthetic pro-fibrotic switch.

Results: In both muscle layers, AD and AD+ SMC, compared to CTR, showed an overall increase in inflammatory gene expression, with a trend of decrease from AD to AD+, the lowest expression being observed in CDD. This inflammatory alteration was accompanied with an increase in IL-1β secretion in stenotic and medium compared to CTR and a progressive inhibition of contraction to carbchol, already in AD in circular strips and SMC. In contrast relaxation in response to VIP resulted significantly decreased only in AD+ both on strips and SMC with no alteration in CDD. Peculiarity of circular SMC was a progressive increase in Col1 expression from AD to CDD compared to CTR (3 hundred fold increase) paralleled to about 50% decrease in the contractile protein α-SMA. Differently, longitudinal SMC, both in AD and CDD, presented a homogenous increased Col1 expression, decrease in α-SMA and reduction of contraction. VIP-induced relaxation was significantly decreased in CDD. Phenotypic switch was only observed in CDD, driven by TGF-β-dependent pathway (increase for TGF-β: 2.8±0.6 and Smad2/3: 2.2±0.4), whereas in AD, the SMC muscular synthetic pro-fibrotic switch.

Conclusion: Intrinsinc myogenic alterations are present in colonolic asymptomatic diverticulosis and complicated diverticular disease, both in the circular and longitudinal layers characterized by a myogenic pro-inflammatory state and an impaired contractile activity that, in complicated diverticular disease, ended in a muscular synthetic pro-fibrotic switch.

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

P0497 THE ONCOGENIC 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 NOTCH1-4 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, monocellular colony formation, cell migration and migration assays through siRNA-mediated knockdown. The mRNA expression of miR-491-5p and miR-875-5p in GC cells was examined. The clinicopathological features were correlated with the expression of miR-491-5p, miR-875-5p and NOTCH3.

Results: NOTCH3, but not NOTCH1, 2, 4, is uniformly upregulated and significantly correlated with poor survival in multiple GC datasets. Knockdown of NOTCH3 in AGS and MK28 cells exhibited significant anti-oncogenic effect in vitro. NOTCH3 downregulation suppressed cell proliferation, reduced monocellular colony formation, and inhibited cell invasion ability. Moreover, NOTCH3 knockdown significantly promoted cleaved caspase-3 and cleaved-PARP expression in GC cells. miR-491-5p and miR-875-5p knockdown significantly inhibited cell proliferation and induced apoptosis. More importantly, the expression of miR-491-5p showed negative correlation with NOTCH3 mRNA expression in primary GC samples and re-expression of miR-491-5p in GC cells exerted tumor-suppressive function by inhibiting cell proliferation and inducing apoptosis. miR-491-5p and miR-875-5p significantly correlated with poor survival in multiple GC datasets. Knockdown of NOTCH3 by putative miRNAs was confirmed by qRT-PCR, Western blot and luciferase activity assays. miR-491-5p and miR-875-5p overexpression in AGS cell line dramatically downregulated NOTCH3 expression, whereas knockout of NOTCH3 by putative miRNAs was confirmed by qRT-PCR, Western blot and luciferase activity assays.

Conclusion: NOTCH3 over-expression plays an oncogenic role in gastric carcinogenesis through its direct downstream miR-875-5p. The activation of NOTCH3 in GC is partly due to the silence of tumor-suppressive miRNAs, miR-491-5p and miR-875-5p. Our 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.
signaling pathway. However, the molecular mechanism of FOXX2 in GC is still unknown.

**Aims & Methods:** We hypothesized 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 Parallel Analysis of Chromat Inium Precipitation (CHIP) assay and luciferase assay.

**Results:** FOXX2 significantly decreased both nuclear and cytosolic levels of β-catenin in a GSK-3β independent manner and promoted β-catenin degradation via ubiquitin-proteasome pathway in gastric cells. Using Human Ubiqtna Library and western blot, we identified that IRF2BPL was upregulated upon FOXX2 overexpression and was a promising E3 ligase for β-catenin. Overexpression of IRF2BPL suppressed the TOP-flash luciferase reporter and reduced Wnt target gene expression in GC cells. Overexpression of IRF2BPL significantly increased β-catenin ubiquitination and reduced β-catenin protein without alteration of its mRNA level. Conversely, knockdown of IRF2BPL significantly decreased endogenous β-catenin ubiquitination. Immunoprecipitation assay suggested that IRF2BPL interacted with β-catenin. The mRNA and protein levels of IRF2BPL in a potential E3 ligase that targets β-catenin for degradation. To investigate whether FOXX2 directly regulates IRF2BPL transcription, we performed ChIP assay and found that FOXX2 bound on to the IRF2BPL promoter region. We cloned the IRF2BPL promoter region (−2000 to +100) into pGL3 basic plasmid and performed a luciferase activity assay. Wild-type FOXX2 but not the mutant ΔFOXX2 significantly activated the lucerase reporter in AGS and SGC199 cells, suggesting that FOXX2 directly activated IRF2BPL transcription. Moreover, FOXX2 significantly increased the level of H2K72Ac (a marker to distinguish active from inactive enhancer element) on the 5′-flanking region of IRF2BPL gene, suggesting that FOXX2 positively regulated IRF2BPL gene transcription. In addition, IRF2BPL was downregulated in human GC tissues compared to the adjacent normal tissues (N = 30, P < 0.01) by real-time PCR analysis. IRF2BPL mRNA showed a positive correlation with FOXX2 in gastric cancer in a Chinese cohort (N = 30, Spearman’s rho = 0.42, P < 0.05) and in the TCGA cohort (N = 30, Spearman’s rho = 0.38, P < 0.05).

**Conclusion:** We reported a novel FOXX2-IRF2BPL-β-catenin signaling axis in gastric cells. FOXX2 is a critical tumor suppressor in gastric carcinogenesis through promoting β-catenin degradation by transcriptionally upregulating E3 ligase IRF2BPL.

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

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**P0502 THE OBESTATIN/G PROTEIN- COUPLED RECEPTOR 39 SYSTEM REGULATES PEPSINOGEN 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 stomach and characterized to bind selectively GPR39. GPR39 is expressed in normal gastric epithelial cell sheets, but not in gastric adenocarcinoma. In healthy human stomachs, obestatin expression was observed in the oxyntic glands but also in a few cells of the neck section (pre-chief cells). This expression co-localized with ghrelin expression in both cell types. The mucous neck cells were positive for GPR39 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).

**Results:** Obestatin-induced PGI secretion was blocked using an anti-GPR39 antibody. Results: ACS cells expressed obestatin, GPR39 and PGI. In these cells, exogenous administration of obestatin (200 nM, 40 min) stimulated PGI secretion (60% over control). This effect was exerted via the GPR39 receptor. In the human healthy stomach, GPR39 expression was detected mainly in the chief cells of the oxyntic glands but also in a few cells of the neck section (pre-chief cells). This expression co-localized with PGI expression in both cell types. The mucous neck cells were positive for PGI and negative for GPR39. Obestatin also exerted a dose-dependent stimulatory effect on PGI secretion in the in vitro explant culture of human stomach, being significant for 100 and 200 nM compared to the control sample at 20 min (39% and 66% over control, respectively), for 200 nM at 40 min (51% over control) and 100 nM at 60 min (64% over control).

**Conclusion:** The obestatin/GPR39 system is physiologically involved in the stimulation of PGI secretion in the healthy human stomach.

**Disclose 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 the 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.

**Conclusion:** Exosomal miRNAs were chosen because they have been shown to function as onco-miRs in previous studies. Levels of miR-21, miR-16, miR-25 and miR-155 were significantly higher in EAC patients than in controls (fold-change 35.36, 30.87, 9.24 and 2.26, respectively).

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

**References**
9.24 and 2.26, respectively). The level of miR-192 was significantly lower in EAC patients than in controls (Fold-change 0.35). We did not observe a significant fold-change in miR-92a expression levels between EAC and controls. P-values did not achieve statistical significance, possible due to large standard deviations and relatively small sample sizes. We also visualized exosomes isolated from both cell culture medium and sera of EAC patients and control subjects, with diameter ranging from 30 to 100 nm using transmission electron microscopy.

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**P0504 COMPARATIVE STUDY BETWEEN THE EFFICACY OF REBAMIPIDE, SUCCINATE 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 mostly empirical with drugs used for peptic ulcer disease. We aimed to compare the efficacy of rebamipide, succinate and pantoprazole in treatment of post banding variceal ulcers. Seventy-five patients with esophageal varices eligible for elective band ligation represented the population of the study. The patients were allocated into three groups; rebamipide group, they received rebamipide 100 mg 3 times daily; pantoprazole group, they received pantoprazole 40 mg/day orally at morning; succinate group, they received succinate 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 rebanding group when compared to pantoprazole and sucralfate (P < 0.001). Chest pain, dysphagia and vomiting scores were not significantly different. Dysphagia was by far the most common symptom with no case of bleeding was reported in all patients of the studied groups.

Conclusion: Rebanding 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. Rebanding can be used routinely in settings of post-EVL as a good alternative to pantoprazole and sucralfate.

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

References

P0505 MULTICENTRE EVALUATION OF FIRST-LINE ENDOCOSOPIC TREATMENT WITH THE OTSC IN ACUTE NON-VULGIB GASTROINTESTINAL BLEEDING AND COMPARISON WITH THE ROCKALL COHORT - THE FLETROC- STUDY

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Introduction: The over-the-scope-clip (OTSC) overcomes limitations of standard clipping devices and facilitates haemostasis in non-varical upper gastrointestinal bleeding (NVUGIB). The study aims to evaluate mortality, rebleeding and mortality after rebleeding of patients in whom the OTSC was used as first-line endoscopic treatment (FLET) of NVUGIB. Data on OTSC use for NVUGIB in high-risk patients is currently linked.

Aims & Methods: In total, 118 patients (FLET cohort) with a median age of 73.5 years (range 29–93 years; mean ±SD 71.39 ± 12.93 years) were included. The distribution of patients with respect to risk category revealed a median Rockall score of 7 (range 1–10; mean ±SD 7.25 ± 1.51). For hypothesis testing, the FLET cohort was categorized into 3 risk groups taking into account the Rockall score: low risk (Rockall risk category (RRC) 1–3), moderate risk (RRC 4–7), and high-risk (RRC ≥ 8). Event rates (mortality, re-bleeding and mortality after rebleeding) were compared to predicted event rates (Rockall cohort) using Fisher’s Exact Test.

Results: Primary successful haemostasis (PSh) was achieved in 92.4% either by FLET alone or in combination with an additional haemostasis technique in 1.7% (SCS = secondary clinical success). In 7.5 % of the FLET cohort PSh couldn’t be achieved. Mortality in the FLET cohort was in the high-risk group (RRC ≥ 8) lower compared to RRC prediction, but no significant difference. However mortality after re-bleeding was significantly reduced from 27.9 % to 10.9 % in the high-risk group (RRC ≥ 8) treated with FLET (p < 0.001). Furthermore, occurrence of re-bleeding or continued bleeding was significantly lower in the moderate risk group (RRC 4–7) with 4.9 % as well as in the high-risk group (RRC ≥ 8) with 21.4 % compared to RCC 24.9 % and 55.2 %, respectively, as predicted by the Rockall scoring system (p < 0.001).

Conclusion: Our study shows that OTSC is superior to standard clipping techniques and FLET of OTSC reduces significantly re-bleeding and re-bleeding associated mortality in NVUGIB and it is for this reason we recommend FLET for NVUGIB in high-risk patients.

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

References

P0506 A NEW PREDICTION RULE FOR UPPER GASTROINTESTINAL BLEEDING USING THE GLASGOW BLATCHFORD SCORE AND CT NUMBER

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Introduction: Upper gastrointestinal bleeding can have various severities, with some cases needing for intensive care while, others allow for patient to go home. Thus, it is important to detect the patients who need endoscopic treatment. The Glasgow Blatchford score (GBS) is currently regarded as the best score for predicting endoscopic treatment (area under the receiver operating characteristic curve (AUROC) 0.75)[1]. Contrast-enhanced CT is also useful for patients with gastrointestinal bleeding [2]. However, it is a complicated procedure and it cannot be used for patients with renal failure.

Aims & Methods: The aim is to analyze the accuracy of the GBS and non-enhanced CT in predicting the necessity of endoscopic treatment for patients with upper gastrointestinal bleeding. This study was designed as a hospital-based observation study. Patients who were hospitalized for upper gastrointestinal bleeding and had an endoscopy performed within 24 hours from April 2013 to March 2014 at Yodogawa Christian Hospital were studied. The clinical utility of the GBS and CT were assessed separately and in combination

Results: A total of 113 patients were included in the study. The median GBS was 5 and CT cut-off value was 300 HU. The accuracy of the GBS in predicting the necessity of endoscopic treatment was AUROC of 0.63. The median CT number was 48HU (IQR 26.7–60.7). The CT number also did not discriminate well with AUROC of 0.65. We set the cut off for GBS at 4, and a CT number at 50HU. The endoscopic treatment percentage of the group of GBS ≥4 and CT number ≥500HU was 63.5%, GBS=4 and CT number <500HU was 30.6%, GBS=4 and CT number ≥500HU was 33.3%, GBS <4 and CT number <500HU was 11.1%. We counted that GBS=4 was 1 point, CT number ≥500HU was 1 point. The points were added up to a total score that predicts the necessity for endoscopic treatment. Those scoring 2 points was about 60 percentage for the necessity for endoscopic treat- ment, 1 points was about 30 percentage, 0 point was about 10 percentage. AUROC of this model was 0.69.

Conclusion: Using both the GBS and CT in combination performed better for predicting the necessity of endoscopic treatment for patients presenting with upper gastrointestinal bleeding.

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

References

P0507 FIBRIN GLUE CAN PREVENT BLEEDING AFTER ENDOCOSOPIC SUBMUCOSAL DISSECTION

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Introduction: Fibrin glue can prevent bleeding after endoscopic submucosal dissection.

Aims & Methods: We aimed to explore the utility of fibrin glue in prevention of bleeding after endoscopic submucosal dissection and to investigate the risk fac- tors for bleeding after endoscopic submucosal dissection. 330 patients who underwent ESD between July 2015 and June 2016 in Jiangsu Province Hospital were enrolled in this study, the patients were randomly divided into two groups, fibrin glue was sprayed during the operation in 161 patients of Group A, while 169 patients in group B were used with routine hemostasis method,postoperative bleeding was defined as hematemesis or melena or Hb > 7 g/dL, decrease after the operation of postoperative bleeding was defined as bleeding 7 to 30 days after operation. Then bleeding rate after ESD, average length of stay and average hospitalization expenses were compared between the two groups to explore the clinical effect of fibrin glue. 37 patients experienced bleeding after ESD were grouped into bleeding group, the remaining 293 patients were divided into non-bleeding group, several factors were compared between the two groups to analyse the risk factors of bleeding after ESD.

Results: There are no differences in age, gender, lesion location, underlying dis- ease, taking anticoagulant drugs or not, invasive depth, pathological type and procedure time between Group A and Group B. Bleeding rate after ESD was lower in group A (P < 0.05). And Intraoperative hemostasis rate was higher in Group A (P < 0.05). 2 patients in group B experienced delayed postoperative bleeding, while none in group A experienced delayed postoperative bleeding. Patients in group B spent more time staying in hospital than group A, while group A had a higher hospitalization ratio than group B.37 patients experienced bleeding after ESD, among whom 22 occurred within 24 hours after ESD, 13 within 1 week and 2 after 1 week. Univariate analysis revealed that resection size and procedure time over 120 minutes are risk factors for bleeding after ESD. The use of fibrin glue can reduce the bleeding rate after ESD. Multivariate analysis revealed that resection size greater than or equal to 3cm and the absence of fibrin glue are independent risk factor for bleeding after ESD.

Conclusion: The use of fibrin glue is safe, effective and economical in the proced- ure of ESD. Resection size and procedure time over 120 minutes are risk factors for bleeding after ESD. The use of fibrin glue can reduce the bleeding rate after ESD. Rebleeding after ESD. Resection size greater than or equal to 3cm and the absence of fibrin glue are independent risk factor for bleeding after ESD. So adequate preparation and close monitoring are needed during the procedure of ESD.

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

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Introduction: Aims and Methods: We compared the incidence of bleeding after gastric ESD between patients 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 recorded.

Results: Gender, age, resected specimen diameter, oral antithrombotic drug use, and whether 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.

Table: Incidence of post-ESD bleeding and next-day hemostasis

<table>
<thead>
<tr>
<th></th>
<th>VPZ group, n (%)</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-ESD bleeding</td>
<td>2 (10.5)</td>
<td>0.678</td>
</tr>
<tr>
<td>Next-day hemostasis</td>
<td>6 (31.6)</td>
<td>0.197</td>
</tr>
</tbody>
</table>

Conclusion: VPZ didn’t significantly reduce post-endoscopic submucosal dissection bleeding compared with EPZ.

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

References:

Conclusion: Data was collected prospectively (January 2016 – April 2017) on the use of Hemospray in acute upper and lower GI bleeding, from 3 initial centres in the international registry. The use of Hemospray in GI bleeding was at the endoscopist’s discretion at the time of endoscopy. Hemospray use was either as mono-therapy or dual-therapy with standard endoscopic techniques or as rescue therapy once standard methods had failed.

Results: To date 56 cases have been recruited (39 male and 17 female). The Forrest Classification of the bleeding lesions were in 5 (9%) cases Forrest Ia bleed, 41 (73%) Ib, 3 (5%) Ha, 4 (7%) Ib and 3 (5%) Forrest III bleed. Sources of GI bleed included Peptic ulcer disease 24 (43%), postsurgical bleeding 9 (16%), Mallory Weir tear 2 (4%), angiodysplasia 1 (2%), bleeding polyp 2 (4%), duodenal diverticular bleed 1 (2%), oesophageal variceal bleed 1 (2%), pseudoaneurysm 1 (2%), gastric variceal bleed post NGT insertion 1 (2%). A total of 48 patients (86%) achieved immediate haemostasis after Hemospray endoscopic therapy, 8 patients did not achieve haemostasis. 2 managed conservatively, 1 treated by radiological intervention and 5 died. Hemospray was used in 25 patients (45%) as monotherapy [haemostasis achieved in 22/25 (88%)], in 22 patients (39%) in combination with other modalities [haemostasis achieved in 17/22 (77%)] and in 9 patients (16%) used as rescue therapy where other modalities failed [haemostasis achieved in 9/10 (90%)].

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

Disclosure of Interest: Patients received clopidogrel with aspirin or ticagrelor with aspirin between January 2013 and June 2015 at Ramathibodi hospital. In patients with GIB, the endoscopic finding with stigmata of recent hemorrhage was also recorded.

Conclusion: Early data from our registry show a high rate of immediate haemostasis (86%) with Hemospray and an excellent safety profile. The imminent expansion of this registry to other centres in Europe will provide invaluable data on the efficacy of Hemospray in various disease and patient types over the coming years.

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

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Introduction: Current guidelines suggest dual antiplatelet therapy (DAPT), clopidogrel or ticagrelor with aspirin, for patients with acute coronary syndrome. Other indications of DAPT include recurrent ischemic stroke and peripheral vascular disease. Gastrointestinal bleeding (GIB) is one of the most common adverse effects of DAPT, potentially causing hospital admission and death. Scarce information regarding safety of DAPT in Thailand is available.

Aims & Methods: The objective of this study is to determine cumulative incidence and risk factors of GIB in patients received DAPT, clopidogrel with aspirin and ticagrelor with aspirin among Thai patients.

A retrospective cohort study was conducted. We reviewed the medical records of patients received clopidogrel with aspirin or ticagrelor with aspirin between January 2013 and June 2015 at Ramathibodi hospital. In patients with GIB, the endoscopic finding with stigmata of recent hemorrhage was also recorded.

Disclosure of Interest: Patients received clopidogrel with aspirin or ticagrelor with aspirin between January 2013 and June 2015 at Ramathibodi hospital. In patients with GIB, the endoscopic finding with stigmata of recent hemorrhage was also recorded.

Conclusion: Early data from our registry show a high rate of immediate haemostasis (86%) with Hemospray and an excellent safety profile. The imminent expansion of this registry to other centres in Europe will provide invaluable data on the efficacy of Hemospray in various disease and patient types over the coming years.

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

Disclosure of Interest: Patients received clopidogrel with aspirin or ticagrelor with aspirin between January 2013 and June 2015 at Ramathibodi hospital. In patients with GIB, the endoscopic finding with stigmata of recent hemorrhage was also recorded.

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

Disclosure of Interest: Patients received clopidogrel with aspirin or ticagrelor with aspirin between January 2013 and June 2015 at Ramathibodi hospital. In patients with GIB, the endoscopic finding with stigmata of recent hemorrhage was also recorded.

Disclosure of Interest: All authors have declared no conflicts of interest.
Results: A total of 201 patients received clopidogrel with aspirin and 199 patients received ticagrelor with aspirin. 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. 231 days, respectively (p = 0.216). There were 20 (10.1%) GIB event 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 1.34 (95% confidence interval [CI] 0.9–3.7, p = 0.093). By multivariate logistic regression analysis, duration of DAPT < 180 days (RR 3.28; 95% CI 1.89–5.69, p < 0.001) and history of previous GIB were associated with GIB events (RR 10.35; 95% CI 6.04–17.71, p < 0.001).

Conclusion: Risk of GIB is almost two times higher among patients received clopidogrel with aspirin compared to those received ticagrelor with aspirin. Closed monitoring patients who had duration of DAPT < 180 days and previous GIB might be minimized the risk of GIB event after receiving DAPT.

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

References

P0512 REAL-LIFE ANALYSIS OF FREQUENCY, LOCATIONS AND BLEEDING SOURCES IN UNSELECTED EMERGENCY PATIENTS DURING NON-VITAMIN K ANTAGONIST ORAL 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 intracranial 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 aixtpalan, dabigatran, edoxaban and rivaroxaban. A current patient cohort included consecutive 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: From 2013 patients with GI bleeding 31 patients received VKA (14.5%) and 23 patients (10.8%, n.s.) had NOAC with major bleeding rates of 68% and 61%, resp. In patients with VKA 87% had an upper GIB, 12% a lower GIB, and none had a rectal bleeding (0%). During NOAC therapy, a similar distribution was found with 71% and 17%, but the proportion of rectal bleeding was higher with 10%.

This frequency of GIB rates in unselected emergency patients is significantly higher than reported in the controlled NOAC approval studies that included selected patients (3.8–5.6% GIB). In these NOAC studies a lower rate of GIB was found. A higher rate for lower GIB (32%, 17–84%) and rectal bleeding (15%, 10–47%) was found. Although NOACs are associated with an 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
Disclosure of Interest:

Sensitivity to orally ingested capsaicin decreases after long-term capsaicin ingestion was indirect proportional to the result during the initial capsaicin test. Differences in upper GI symptoms distinguished capsaicin positive patients from capsaicin negative patients. After long-term capsaicin ingestion, the symptoms scores after capsaicin ingestion were reduced by 25%/75%, p < 0.05 was considered significant.

Results: 53% FD had a positive capsaicin test. Basic clinical characteristics (age, gender, FD subtype, medication, psychological profile) were comparable in capsaicin positive and negative FD, but median daily aggregate upper gastrointestinal symptoms scores were significantly higher in capsaicin positive (median: 9.4; 5.4 (1.7) vs. 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). After capsaicin ingestion, aggregate upper gastrointestinal symptoms scores were reduced by ~3.3 (~4.9–1.9; p < 0.001) and epigastric bloating (p = 0.001) than capsaicin positive patients. Lower abdominal symptoms scores were comparable in capsaicin positive and negative patients at baseline (NS).

After capsaicin ingestion, aggregate upper gastrointestinal symptoms scores were reduced by ~3.3 (~4.9–1.9; p < 0.001) and epigastric bloating (p = 0.001) than capsaicin positive patients. Lower abdominal symptoms scores were comparable in capsaicin positive and negative patients at baseline (NS).

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 ingesting 0.25 mg capsaicin tid for four 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; 

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

Reference


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

Reference


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Reference


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

Reference


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

Reference
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 technical and clinical 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 native (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), LH3 (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 ± 27.1 min; P = 0.002). On multivariate analysis- type of AC, dilated oesophagus (> 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 was similar in TN and PT failure cases.

Conclusion: POEM is equally efficacious and safe in treatment native and prior treated cases. POEM should be considered in treatment failure cases.

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

Predictors of operative time on multivariate analysis

<table>
<thead>
<tr>
<th>Factor</th>
<th>OR</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Type of AC (II/II-H)</td>
<td>16.24</td>
<td>0.002</td>
</tr>
<tr>
<td>2. Esophageal diameter (&gt;6 &lt;6 cm)</td>
<td>2.76</td>
<td>0.012</td>
</tr>
<tr>
<td>3. Knife(TT/TJ3)</td>
<td>14.41</td>
<td>0.001</td>
</tr>
<tr>
<td>4. Adverse events</td>
<td>0.98</td>
<td>0.941</td>
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<tr>
<td>5. Prior treatment</td>
<td>1.16</td>
<td>0.480</td>
</tr>
<tr>
<td>6. Pediatric Achalasia</td>
<td>0.71</td>
<td>0.544</td>
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</table>

References

P0519 ESOPHAGEAL REFUX BURDEN IN RELATIONSHIP TO AET (ACID) AND ESOHAGOGASTRIC JUNCTION (EGJ) AND ESOHAGOGASTRIC BODY (EB) 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 relationship to AET, remains unclear.

Conclusion: This clinical study demonstrates beneficial effects of prior on fullness, bloating and pain after a 400 mL test meal in diabetic patients with moderate-severe symptoms compatible with gastroparesis (GCSI > 27).

Disclosure of Interest: All authors have declared no conflicts of interest.
Aims & Methods: Our aim was to evaluate the complex interrelationships between lower esophageal sphincter (LES), upper esophageal motor abnormalities, and esophageal reflux burden in this ongoing multicenter collaboration. Esophageal function studies from patients with persisting reflux symptoms were reviewed from four centers (2 in Europe and US) for this preliminary report. EGJ morphology was categorized using HRM into hypotensive (EGJ-CI < 40 mmHg cm), hiatus hernia (HH, manometric separation between lower esophageal sphincter and crural diaphragm) and intact EGJ (normotensive EGJ-CI, no HH). Esophageal body metrics were characterized using Chicago Classification v 3.0 into intact, ineffective esophageal motility (IEM) and absent contractility. Total antireflux 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 antisecretory 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 43.4%). 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 multivariate regression with categorical and linear EGJ and esophageal body motor findings as dependent variables, presence of HH (p = 0.001), HH was an independent categorical predictor of abnormal MNBI noted in 401 of 596 studies (67.2%; both abnormal in 24.8%, both normal in 69.6%* (94/135)). Proportions with abnormal reflux burden in relationship to EGJ and esophageal body motor findings on high resolution manometry

<table>
<thead>
<tr>
<th>AET &gt; 6% AET &lt; 4% MNBI &gt; 2292</th>
<th>n = 431</th>
<th>n = 642</th>
<th>ohms 596</th>
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</thead>
<tbody>
<tr>
<td>EGJ findings</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% (63/108)</td>
</tr>
<tr>
<td>Hypotensive EGJ (n = 862)</td>
<td>36.5%*</td>
<td>49.2%**</td>
<td>56.3% (259/460)</td>
</tr>
<tr>
<td>Hiatus hernia (n = 422)</td>
<td>40.0%*</td>
<td>36.5%**</td>
<td>69.8%* (138/199)</td>
</tr>
<tr>
<td>Both (n = 342)</td>
<td>49.4%*</td>
<td>34.8%**</td>
<td>70.9%* (124/175)</td>
</tr>
<tr>
<td>Esophageal body motor findings</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intact esophageal body (n = 686)</td>
<td>31.0%</td>
<td>56.9%**</td>
<td>46.5% (158/340)</td>
</tr>
<tr>
<td>IEM (n = 326)</td>
<td>41.4%*</td>
<td>44.8%</td>
<td>69.6%* (94/135)</td>
</tr>
<tr>
<td>Absent contractility (n = 43)</td>
<td>53.5%*</td>
<td>39.5%</td>
<td>88.2%* (15/17)</td>
</tr>
<tr>
<td>Combined EGJ &amp; esophageal body motor findings</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% (36/73)</td>
</tr>
<tr>
<td>Hypotensive EGJ, HH, IEM (n = 105)</td>
<td>56.2%*</td>
<td>24.8%**</td>
<td>83.0%* (44/53)</td>
</tr>
<tr>
<td>Hypotensive EGJ, HH, absent contractility (n = 7)</td>
<td>71.4%*</td>
<td>14.3%</td>
<td>100%* (5/5)</td>
</tr>
</tbody>
</table>

\*p < 0.05 compared to intact EGJ and/or esophageal body function **p < 0.05 compared to AET > 6% EGJ: esophagogastric junction; AET: acid exposure time; MNBI: mean nocturnal baseline impedance; IEM: ineffective esophageal motility, HH: hiatus hernia

Conclusion: A disrupted EGJ and IEM on esophageal HRM are independent predictors of elevated esophageal reflux burden. Hierarchical HRM evaluation of both esophageal body and esophageal motor findings add credits to categorization of esophageal reflux burden.

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

References

P0520 MEASURING THE ACTIVE AND PASSIVE CHARACTERISTICS OF CONTRACTILE SMOOTH MUSCLE IN PORCINE INTESTINE MODEL
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Introduction: Electrical stimulation therapy is a new way to treat digestive disorders such as constipation, colonic inertia. It is necessary to understand the physiology of smooth muscle contraction in developing novel medical devices related to electrical stimulation therapy. The aims of this study were to measure the active characteristics of smooth muscle with acetylcholine in porcine intestine segment.

Methods: We used five female pigs and obtained ten centimeters of each porcine small intestine. To measure passive characteristics of small intestine, a universal testing machine with a tensile rate of 30 mm/min. To estimate the active characteristic parameters of smooth muscle and isometric and isotonic intestinal motility of smooth muscle, muscle contraction was induced by applying the stimulation solution (HTK solution containing 1 mM of acetylcholine chloride). Then, we obtained the maximum muscle contractile force of the specimens to measure the isometric and isotonic intestinal motility.

Results: In tensile test, the maximum contractile force, that indicate passive muscle force of smooth muscle 0.702 N, was measured. In the isometric and isotonic contractions in the porcine small intestine, the maximum motility, 12.35 mM, was obtained in isometric experiments, and the maximum velocity of muscular contraction, 0.4476 mm/min, was obtained in isotonic experiments. We demonstrated that in equal lengths, the muscle contraction velocity of the smooth muscle is 10–100 times slower than that of the skeletal muscle indicating force-velocity relationship of smooth muscle. And we obtained that the maximum contraction force from each individual percentage of active force (25%, 50%, and 100%) was achieved at L/L0 = 1.

Conclusion: We straighten out the active and passive property of porcine intestinal smooth muscle. Our study may be helpful for developing novel medical devices and understanding the physiology of smooth muscle in the porcine small intestine.

P0521 MOTILITY PATTERNS AFTER PER-ORAL ENDOSCOPIC MYOTOMY (POEM) IN PATIENTS WITH ACHALASIA
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Introduction: Partial recovery of esophageal peristalsis has been reported in up to 7% of Achalasia patients treated by myotomy (either per-oral endoscopic myotomy (POEM) or laparoscopic Heller’s myotomy) in several rather small studies. The aim of our study was to assess motility patterns following possible “recovery” of esophageal peristalsis in a large cohort of patients after POEM.

Aims & Methods: We performed a retrospective analysis of prospectively collected data of patients undergoing POEM at our tertiary referral center. All patients in whom high-resolution manometry (HRM) studies were performed prior to and 3 months after POEM and who completed at least 6-month follow-up were included. All HRM studies were reviewed and the Chicago Classification (CC) v3.0 of motility disorders was applied to characterize both pre- and post-POEM motility patterns.

Results: From 192 patients who underwent POEM since 2012, 127 patients met the diagnostic criteria. The initial CC diagnoses before POEM were as follows: type I achalasia – 20 pts (16%), type II achalasia – 100 pts (79%), type III achalasia – 5 pts (4%), other (esophageo-gastric junction outflow obstruction (EGJOO) and Jackhammer) – 2 pts (1%). Only 6 patients (5%; type III achalasia – 1 patient, EGJOO) had had some signs of esophageal contractility before POEM. After POEM, peristaltic fragments were present in 28/127 patients (22%) - 9x ineffective esophageal motility, 5x fragmented peristalsis, 2x distal esophageal spasm, 5x EGJOO, 7x type III achalasia. Thus, the partial “recovery” of esophageal peristalsis was observed in 22/121 patients (18%) and it only occurred in patients with type II achalasia; contractile activity was not detected in any patient with type I achalasia after POEM (22/100 vs. 0/20, p = 0.023). Panesophageal pressurization completely resolved in 88 patients (88%) with
achalasia type II. The mean integrated-relaxation pressure (IRP) decreased from 27 (±13) mmHg to 13 (±5) mmHg (p < 0.0001). The presence of 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 to report the results of our model.

Aims & Methods: Between May 2014 and January 2017, POEM was performed to 225 achalasia patients at the gastroenterology clinics under general anesthesia. POEM procedure Eckardt scores were significantly low in all patients (p < 0.005). Demographic features and data of the procedures are presented in Table 1. Control endoscopy was performed to 151 patients at 3 months after POEM to rule out early recurrence. T-tunneling was the most common technique used for POEM and it was performed in 111 patients (49%). No significant difference between the groups in terms of tunnel length, myotomy length, tunnel entrance time and frequency of homeostatic forceps use (p > 0.05).

Main outcomes were treatment success defined as Eckardt score ≤3, recurrence and post-POEM reflux.

Results: There were 114 patients in group A, 111 patients in group P. There was no statistical difference between the groups in regards to tunnel length, myotomy length, tunnel entrance time and frequency of homeostatic forceps 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 POEM the Eckardt scores were significantly low in all patients (p < 0.005). Demographic features and data of the procedures are shown in the table below. No significant difference between the groups in regards to tunnel length, myotomy length, tunnel entrance time and frequency of homeostatic forceps use (p > 0.05).

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. We declare 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

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

P0523 LONG-TERM RESULTS OF PERORAL ENDOSCOPIC MYOTOMY (POEM) FOR ACHALASIA
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Introduction: Peroral endoscopic myotomy (POEM) has gained trust by proven safety and short-term efficacy and at present, it is considered to be a standard method for treatment of esophageal achalasia. However, long-term data concerning the efficacy and safety especially with regard to post-POEM reflux are still awaited.

Aims & Methods: The aim of this prospective single-center case series was to assess the long-term clinical outcome of POEM with emphasis on post-POEM reflux evaluated by pH monitoring, endoscopic findings, reflux symptoms and use of proton pump inhibitors (PPIs). Since 2012, a total of 192 patients with achalasia underwent 202 POEM procedures. Follow-up visits at 3, 12, 24 and 36 months were completed in 160, 116, 70 and 27 patients. Upper GI endoscopy, high-resolution manometry (HRM) and 24-hour pH monitoring were performed 3 months after POEM, endoscopy was then repeated between 24-36 months.

Main outcomes were treatment success defined as Eckardt score ≤3, recurrence rate and post-POEM reflux.

Results: At 3, 12, 24 and 36 months, treatment success was achieved in 97% (95% CI: 94–90), 95% (CI: 91–99), 88% (CI: 82–95) and 81% (CI: 69–93) of patients. A total of 14 patients experienced treatment failure (n = 5) or recurrence (n = 9). The recurrences occurred most often in patients with HRM type I achalasia (4 out of 20; 15.4%) followed by type II (3 out of 113; 2.6%) vs. none in type III achalasia (0 out of 10; 0%; p = 0.022. At 3 months, reflux esophagitis was diagnosed in 63/160 patients (39.4%; severe esophagitis LA C or D in 8 patients). Abnormal acid exposure on pH-metry studies was detected in 58/146 (39.7%). At 24-36 months, endoscopy was performed in 41 patients and reflux esophagitis was present in 9 patients (21.9%; none of the patients has been treated with PPIs). At 3 and 24M, a proton pump inhibitor was administered to 33.5% and 31.4% of patients.

Conclusion: POEM is effective treatment modality for achalasia with treatment success around 90% at 2 years, slightly dropping down to 81% at 3 years. Generally mild reflux esophagitis and abnormal esophageal acid exposure are diagnosed in about 40% of patients 3 months after POEM but are successfully manageable with proton pump inhibitors. Occurrence of reflux esophagitis tends to decrease with time.

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

References

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

P0524 BEER EFFECTS ON POSTPRANDIAL DIGESTIVE SYMPTOMS AND GASTROESOPHAGEAL PHYSIOLOGY
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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 GERD disease (GERD), were included. Basal symptoms were assessed through PAGI-SYM(3) and OQLRAD (4) questionnaires, both validated to Spanish. Study was divided in two substudies based on the study intervention: 33 cl of regular beer (substudy 1) and the same amount of non-alcohol beer (substudy 2). Mineral water (33 cl) was the control intervention in both substudies. Each participant was its own control. The study lasted two weeks (control study week and intervention study week). Each week started with a visit to the laboratory at 7:30 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 puation 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 through a diary adapted from PAGISYM 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, range 18–32); 80% were men. Twenty participants were enrolled in substudy 2, mean aged 23.4 years (SD 5.5, range 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 increasement 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>SYMPTOMS</th>
<th>SUBSTUDY 1 (Regular beer)</th>
<th>SUBSTUDY 2 (Non alcohol beer)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min 5- Min 0</td>
<td>Control visit (Mean)</td>
<td>Intervention visit (Mean)</td>
</tr>
<tr>
<td></td>
<td>0, 655 (0, 65 (0–1))</td>
<td>0, 18 (0, 3 (0–1))</td>
</tr>
<tr>
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<tr>
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<td>Min 20- Min 0</td>
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<td>0, 18 (0, 3 (0–1))</td>
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</table>

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

**References**


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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 (3,4). 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 3 μm, stained with H&E and scanned to digital images (Aperio). The pathologist, blinded to the case-control status, analyzed de-identified digital images of the biopsy specimens and assessed for eosinophil counts/mm² in sections. Individual sections were also assessed for the presence of Brunner’s glands (BG) and intraepithelial lymphocyte counts (IEL)/100 enterocytes. This was done in order to distinguish the first part of the duodenum with BG 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. The mean eosinophil counts/biopsy fragment was Brunners glands (BG) and intraepithelial lymphocyte counts (IEL)/100 enterocytes. This was done in order to distinguish the first part of the duodenum with BG and the second part generally without BG, (D2) and intraepithelial lymphocyte counts (IEL)/100 enterocytes.

**Patients with rumination syndrome (22) had a mean age of 39.2 years (range 19–71) and 77% were female. The mean eosinophil counts/biopsy fragment was Brunners glands (BG) and intraepithelial lymphocyte counts (IEL)/100 enterocytes. This was done in order to distinguish the first part of the duodenum with BG and the second part generally without BG, (D2) and intraepithelial lymphocyte counts (IEL)/100 enterocytes.

**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 innate immune mechanisms in the pathophysiology of rumination syndrome warrants further enquiry.

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


P9027 CHRONIC POSTSTROKE OROPHARYNGEAL DYSPHAGIA IS ASSOCIATED WITH IMPAIRED CORTICAL ACTIVATION TO PHARYNGAL SENSORY INPUTS

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Introduction: The role of afferent sensory pathways in the pathophysiology of post-stroke oropharyngeal dysphagia (OD) is not known [1]. We hypothesized that chronic post-stroke patients with OD (PSD) would show impaired sensory cortical activation in the affected hemisphere.

Aims & Methods: We studied 28 chronic unilateral post-stroke patients (17 PSD and 11 nondysphagic [PnD]) and 11 age-matched healthy volunteers (HV). Electrophysiological measures used to assess event-related sensory evoked potentials to pharyngeal stimulation (pSEP) and sensory thresholds with a naso-pharyngeal catheter with two electrodes passed through the nostrils 14-15 cm until the pharynx (Galetic Ltd, Dunvegan, Scotland). We analyzed pSEP peak-latency and amplitude (N1, P1, N2, P2) and neurotopographic source characteristics from brain MRI.

Results: HV presented a highly symmetric bi-hemispheric cortical pattern of brain activation at centro-parietal areas (N1-P1, N2-P2) to pharyngeal stimuli. In our patients, an asymmetric pattern of reduced ipsilesional activation was found in PSD (N2-P2; p = 0.026) but not in PnD. PSD presented impaired safety of swallow (Penetration-Aspiration score: 4.3 ± 1.6) and delayed laryngeal vestibule closure (360 ± 70 ms), and higher NIHSS (7.0 ± 2.6 vs. 1.9 ± 1.4, p = 0.001) and Fazekas scores (3.0 ± 1.4 vs. 2.0 ± 1.1, p = 0.05) than PnD. pSEP showed a unilateral delay at stroke site exclusively for PSD (peak-latency inter-hemispheric difference vs. PnD: N1; 6.5 ± 6.7 vs. 1.1 ± 1.0 ms; N2; 32.0 ± 15.8 vs. 4.5 ± 4.9 ms; p = 0.05).

Conclusion: Chronic post-stroke OD is associated with stroke severity and degree of leukoaraiosis. Impaired conduction and cortical integration of pharyngeal sensory inputs at stroke site is a key feature of chronic PSD. These findings highlight the role of sensory pathways in the pathophysiology of post-stroke OD and offer a potential target for future treatments.

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

References


P9028 PERCUTANEOUS ENDOSCOPIC GASTROSTOMY WITH JEJUNAL EXTENSION FOR GASTROPARESIS: THE ULTIMATE SOLUTION?

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Introduction: Gastroparesis is characterized by abnormal gastric motor function with delayed gastric emptying in the absence of mechanical obstruction. In our tertiary referral centre, patients are treated with a stepwise approach, starting with dietary and lifestyle advice and prokinetics followed by pyloric botulinum toxin. When these initial measures fail, the presence of malnutrition, one of the following interventions are considered: three months nasoduodenal tube feeding with ‘gastric rest’ and placement of a percutaneous endoscopic gastrostomy with jejunal extension (PEG-J). Our primary aim was to evaluate the effect of nutritional treatment entities in patients with gastroparesis who fail previous treatments, on weight and symptoms.

Aims & Methods: Prospectively collected data of all referred gastroparesis patients between 2008 and 2016 were reviewed.

Results: A total of 101 gastroparesis patients (71% female, 20–86yrs, mean 55yrs) with delayed gastric emptying in the absence of mechanical obstruction. In our centre, 36 patients were treated with 3 months of gastric rest via complete nasoduodenal tube feeding. Enteral tube feeding was well accepted, occlusion occurred in 8% of patients. Mean weight gain in symptom responders was 3.5% (2.4 kg, p = 0.02), in non-responders 3.7% (2.4 kg, p = 0.01). These 19 patients with insufficient symptomatic response after 3 months gastric rest continued treatment with enteral feeding through PEG-J. A significant weight gain of 8.2% was seen (mean 5.0 kg, range –6% to +29%), p = 0.003) within 3–6 months after PEG-J placement. Thereafter only 3 patients (1%) were able to be reduced to same complete oral intake, the PEG-J was removed after a mean treatment time of 11 months. In 84% of patients the PEG-J is still in use, with a mean treatment time of 894 days. Over 75% of patients report adequate effect on symptoms. Most frequent complication was lysis of the jejunal extension to the stomach (32% of patients). Other complications were peristomal infection (11% within 30 days, 16% after 30 days) and buried bumper (16%).

Conclusion: This study describes the sequelae of a large group of tertiary referral gastroparesis patients treated with PEG-J treatment. In gastroparesis patients who failed all previous treatment, PEG-J is an excellent option to regain and maintain adequate nutritional status with marked symptom control.

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

References


P9029 RELEVANCE OF SLEEP DISTURBANCE TO FUNCTIONAL GASTROINTESTINAL SYMPTOMS, CLINICAL CHARACTERISTICS, AND PSYCHOLOGICAL DISTRESS

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Introduction: Reduced sleep quality has been linked to gastroesophageal reflux disease (GERD) and functional gastrointestinal disorders. It is unknown whether GERD, functional dyspepsia (FD) and irritable bowel syndrome (IBS) are more prevalent in subjects with significant sleep disturbance (SD) than those without SD.

Aims & Methods: The aim of the study was to investigate gastrointestinal symptoms, clinical characteristics, and psychological factors in subjects with and without SD in a general population undergoing health checkups. We enrolled 2752 consecutive subjects who received upper gastrointestinal endoscopy and colonoscopy during their health checkups. All participants underwent an evaluation with questionnaires including Reflux Disease Questionnaire score, Pittsburgh Sleep Quality Index (PSQI), Taiwanese Depression Questionnaire, and State-Trait Anxiety Inventory before receiving endoscopic exam. Demographic characteristics and biochemical data were also recorded. FD and IBS were based on Rome III diagnostic criteria, and metabolic syndrome was defined by the National Cholesterol Education Program Adult Treatment Panel III definition. SD was confirmed when PSQI score was greater than 5. We compared the clinical and psychological factors between subjects with and without sleep disturbance.

Results: Among the study population (n = 2674), 956 (36%) individuals had SD. SD subjects had more female gender, older age, lower level of education, higher systolic blood pressure, higher serum high-density lipoprotein levels, and higher prevalence of FD and IBS than those without SD. In addition, SD patients also had more depression, anxiety, more severe GERD symptoms, and higher prevalence of non-erosive reflux disease (NERD) (p < 0.001). Multivariate analysis revealed that female sex (OR = 1.75, p < 0.001), older age (OR = 1.03, p < 0.001), more severe GERD symptoms (OR = 1.03, p = 0.033), NERD (OR = 1.63, p = 0.023), IBS (OR = 1.48, p = 0.05), and depression (OR = 1.16, p < 0.001) were positive predictive factors for SD, whereas higher level of education (OR = 0.57, p = 0.001) was negative predictive factor for SD.

Conclusion: Our study demonstrates that SD is associated with female sex, older age, lower education level, greater GERD symptom burden, greater depression, and higher prevalence of NERD and IBS. Future studies will be needed to clarify the relationship between functional gastrointestinal diseases and sleep disorders.

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

References


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).

**Conclusion:** Esophageal symptoms compatible with a functional esophageal disorder are common in the Western population. Age and presence of other GI and non-GI symptoms are associated with reporting esophageal symptoms.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
Several studies have provided information on the prevalence of different atopic conditions in adult EoE patients compared to several groups of control subjects. The findings indicate that, overall, EoE patients show a higher frequency of asthma, rhinoconjunctivitis, eczema, and food allergies than control groups; however, definitions for the associated atopic conditions have not always been concorded and the selection process for the controls has not been such that they can be considered universally representative of the general population without EoE. These two limitations have hampered researchers in their efforts to clearly assess the magnitude of the association between atopy and EoE. We aimed to conduct a systematic review of the literature and to perform a meta-analysis in order to evaluate the presence of atopic diatheses in patients with EoE as well as to summarize the prevalence of atopic conditions in both paediatric and adult EoE patients in comparison with the non-EoE control populations without EoE.

Aims & Methods: A highly sensitive search strategy was designed to identify and retrieve all documents dealing with the relationship between atopy and EoE in children and adults. This systematic literature search was performed independently (AA and AJL) by searching three bibliographic databases (PubMed, EMBASE, and Scopus) for the period up to March 2016. The search was not restricted with regard to the language of publication. A predetermined protocol was used in accordance with the quality standards for reporting meta-analyses of observational studies in epidemiology. Four reviewers (JG-C, AA, MM-CM, and AJL) independently extracted relevant information from each eligible study using a standardized data extraction sheet and then proceeded to cross-check the results. Estimates for the prevalence of each atopic manifestation in EoE patients and controls were summarized with the aid of a fixed- or random-effects meta-analysis, depending on intra-study heterogeneity, weighted for inverse variance following the method elaborated by DerSimonian and Laird. Summary estimates, including 95% confidence intervals (CI), were calculated for each season and month, whenever possible.

Results: Of the 2954 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 were similar or identical 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 chronic EE findings at initial endoscopy, GORD patients, and general population without EoE; 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 well. The criteria for defining a diagnosis of atopy among EoE patients and control subjects varied widely across the different studies, from self-reported/parent-reported atopic background to strict allergist/immunologist-provided diagnoses. Overall, allergic rhinitis was significantly more common among controls compared to EoE patients (OR 5.49 [CI 3.27, 9.53; P = 0.006] as were bronchial asthma (OR 3.06 [95% CI, 2.01, 4.66; P = 0.001]) and eczema (OR 2.86; 95% CI, 1.88, 4.36; P = 0.037). Food allergies and other atopic conditions were also assessed. No significant publication bias or study dealing with rhinitis and eczema in EoE patients was identified. Our search uncovered two papers that reported on the frequency of drug allergy in EoE patients compared to controls, showing no significant differences between these two populations (OR = 0.981; 95%CI, 0.07, 14.72).

Conclusions: Our present study shows that an accurate diagnosis of allergy 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 of the general population. Further research based on index and prevalent 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 patients with EoE.

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

Table 1: Plasma FP PK Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>AM Fast Geometric Mean (CV%)</th>
<th>AM Fed Geometric Mean (CV%)</th>
<th>Mean (CV%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cmax (pg/mL)</td>
<td>31.1 (103.6)</td>
<td>34.2 (102.3)</td>
<td>23.8 (111.9)</td>
</tr>
<tr>
<td>Tmax (h)</td>
<td>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>AUC0–24 (pgh/mL)</td>
<td>366.607 (115.8)</td>
<td>361.277 (105.7)</td>
<td>359.541 (100.5)</td>
</tr>
<tr>
<td>AUCinf (pgh/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.

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Introduction: Eosinophilic esophagitis (EE) is a chronic condition of the esophagus with pathognomonic clinical, endoscopic and histologic features. We aimed to prognosticate which cohort of patients respond best to proton pump inhibitor (PPI) monotherapy or topical steroids based on index endoscopy and histology in conjunction with symptoms at presentation and on follow-up.

Aims & Methods: All patients referred with dysphagia or with an incidental high eos/hpf finding of >15 eos/hpf were diagnosed with EE and included in the study. Patients who underwent a therapeutic intervention (PPI or FBO) demonstrated a reduced normalisation of eos/hpf following either steroid or PPI therapy compared to those not presenting with these symptoms at a minimum of 3 months (46% vs. 100%; p = 0.03). Overall, there were no significant associations between eos/hpf at index endoscopy and adverse events or deaths. The other histological findings, patients presenting with dysphagia or FBO demonstrated a higher response to steroids than those with reflux symptoms (50% vs 9% p = 0.018) who responded best to PPI (91%). 78 patients were available to 3 months following initiation of treatment. Patients with chronic EE findings at initial endoscopy were less likely to respond symptomatically to PPI monotherapy compared to those with normal or acute endoscopic findings (52% vs. 68%; p = 0.003) while they were more likely to respond...
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 histologic one.

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

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**P0536 ESOMEPRAZOLE, RABEPRAZOLE AND PANTOPRAZOLE ARE EQUALLY EFFECTIVE IN INDUCING ENDOSCOPIC AND HISTOLOGIC RESPONSE IN PATIENTS WITH PROTON PUMP INHIBITOR-RESPONSE ESOPHAGEAL EOSINOPHILIA**

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**Introduction:** Proton Pump Inhibitor-response esophageal eosinophilia (PPI-REE) is an emerging condition characterized by a constellation of clinical, endoscopic, and histopathologic features in the setting of eosinophilic inflammation on esophageal biopsies responding to a course of proton pump inhibitor (PPI) therapy. A recent meta-analysis explored the role of different PPIs in inducing endoscopic, according to Endoscopic Reference Score (EREF), and histologic features were blindly reviewed for each patient. Esophageal sphincter and have no reflux so gastro-esophageal reflux could not be developed accessories was easily achieved. However, pigs have a strong lower esophagus of 8 pigs during 7 days to evaluate placement, feeding, weight gain, absence of migration as well as removal. Deployment of the « GARD » was easy, esophagus of 8 pigs were required for treatment allocation, 8 (29%) patients received esomeprazole, 9 (32%) rabeprazole and 11 (39%) pantoprazole. Baseline, demographic and clinical data, including age, sex, BMI, H. pylori infection, concomitant allergy conditions and latency from diagnosis were similar (p = ns). Moreover, no differences were found in terms of frequency of symptoms reported (p = ns). Endoscopic and histologic features at baseline and after PPI therapy are shown in the Table. Esomeprazole, rabeprazole and pantoprazole reached the same degree of efficacy in inducing endoscopic and histologic changes in PPI-REE patients (p = ns).

**Table:** Endoscopic and histologic features at baseline and after PPI therapy in PPI-REE

<table>
<thead>
<tr>
<th>Feature</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-</td>
<td>Baseline</td>
<td>After-</td>
<td>Baseline</td>
</tr>
<tr>
<td>Eos/hpf</td>
<td>7.3</td>
<td>1.2</td>
<td>8.1</td>
</tr>
<tr>
<td>Mean EREFS Score</td>
<td>7.3</td>
<td>1.2</td>
<td>8.1</td>
</tr>
<tr>
<td>Median eos count*</td>
<td>75</td>
<td>8</td>
<td>75</td>
</tr>
</tbody>
</table>

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**Table Continued**

<table>
<thead>
<tr>
<th>Histologic Features, n or %</th>
<th>Esomeprazole Group (n = 8)</th>
<th>Rabeprazole Group (n = 9)</th>
<th>Pantoprazole Group (n = 11)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Degranulation present</td>
<td>88% (13%)</td>
<td>100% (11%)</td>
<td>90% (11%)</td>
</tr>
<tr>
<td>Microcbeaness present</td>
<td>63% (13%)</td>
<td>55% (11%)</td>
<td>48% (9%)</td>
</tr>
<tr>
<td>Basal layer present</td>
<td>100% (26%)</td>
<td>100% (22%)</td>
<td>100% (18%)</td>
</tr>
<tr>
<td>Spongiosis present</td>
<td>88% (26%)</td>
<td>88% (11%)</td>
<td>90% (18%)</td>
</tr>
<tr>
<td>Subepithelial tissue present</td>
<td>75% (13%)</td>
<td>55% (11%)</td>
<td>81% (9%)</td>
</tr>
<tr>
<td>Lamina propria fibrosis present</td>
<td>0% (0%)</td>
<td>0% (0%)</td>
<td>0% (9%)</td>
</tr>
</tbody>
</table>

**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 Maleisci, Reckitt, AlfaWasserman, Abbvie
E. Savarino: Consulting fee from Medtronic, Sofar, Takeda, Abbvie, MSD
All other authors have declared no conflicts of interest.

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**P0537 THE « GARD (GASTRO-ESOPHAGEAL ANTI-REFLUX DEVICE): A NEW ENDOSCOPIC MEDICAL DEVICE TO DIAGNOSE, MANAGE AND TREAT GERD**

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**Introduction:** The « GARD » (Gastroesophageal Anti-Reflex Device) is an anti-reflux tubular valve placed in the lower esophagus under endoscopic control allowing normal ingestion of food and beverages but blocking all gastro-esophageal refluxate mechanically (fluid, solids and gas).

**Aims & Methods:** The « GARD » was placed in the esophagus of 8 pigs during 7 days to evaluate placement, feeding, weight gain, absence of migration as well as removal. Deployment of the « GARD » was easy, the « GARD » is placed through the 2.8 mm working channel of a standard gastroscope. The GARD is held in place by pressure. The upper ring holds an anti-reflux thin-walled tubular valve moulded in one piece under the ring. After placement of a standard guidewire, the « GARD » is placed through the patient’s mouth and is released in the lower esophagus. The procedure is performed under sedation on an ambulatory basis in about 15 minutes when experienced. The « GARD » was placed in the lower esophagus of 8 pigs during 7 days to evaluate placement, feeding, weight gain, absence of migration as well as removal. Deployment of the « GARD » was easy, there was no migration in the stomach and removal of the GARD with the developed accessories was easily achieved. However, pigs have a stronger lower esophageal sphincter and have no reflux so gastro-esophageal reflux could not be evaluated. In a human volunteer with very severe gastro-esophageal reflux who had previously failed anti-reflux surgery and had an unsatisfactory response to clinical and pH metric measurement under 80 mg of esomeprazole, the « GARD » was placed preoperatively. Hereafter are this patient’s pH metric results without PPIs (table 1); with the patient taking 80 mg/day PPIs (table 2) and after GARD placement and PPIs stopped for 10 days, table 3.

**Results:** Fig 1. First pH metric study (no PPIs for 10 days): The patient has very severe reflux with 63% of the time with a pH under 4 (normal less than 4% of the time at a pH under 4) after PPIs were stopped for 10 days. Fig 2. Patient is taking 80 mg of esomeprazole a day. pH metric measurement remains highly pathologic at 23% of the time under pH 4 once PPIs have been resumed at 80 mg of PPIs daily. Fig 3. After placement of the GARD and PPIs have been stopped for 10 days, there is no longer any reflux measured. The pH tracing does not drop under the red line at pH 4.

**Conclusion:** a new medical device blocking GERD is presented. A first clinical trial was started in 2018 to help diagnose and manage Refractory GERD. Further clinical indications are at the planning stage including treatment of Refractory GERD and LPR.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
**P0538 SYMPTOM PATTERNS AND TYPES OF GASTROESOPHAGEAL REFUXES SIGNIFICANTLY DIFFER IN GROUPS OF EROSOUS ESOPHAGITIS AND NON-EROSEUS FORM OF GASTROESOPHAGEAL REFUX 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±d) 42±4.8 yrs) and 49 controls (22 men, 27 women, age (M±d) 46±6.7 yrs) were examined using 24-hours esophageal pH-impedance recordings (Omegah, MMS, the Netherlands; 24-hpH-impedance channels catheters, UnisensorAG, USA) and validated GERD-Q questionnaire. According to baseline endoscopy 91 patients were classified as non-erosive reflux disease (NERD) and 67 as erosive reflux disease (ERD) patients. Patients’ symptoms were classified according to Montreal classification.

**Results:** Extraesophageal symptoms as well as weak acid gastroesophageal refluxes were found significantly more often in patients with NERD compared to ERD group (table 1). However higher number of acid refluxes, higher GERD-Q score and DeMeester score were present in ERD. The total number of gastroesophageal refluxes didn’t differ between ERD and NERD groups of patients.

<table>
<thead>
<tr>
<th>Table 1: Results of the study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Controls (n=49)</td>
</tr>
<tr>
<td>Number of refluxes/day, n</td>
</tr>
<tr>
<td>Number of acid refluxes/day, n</td>
</tr>
<tr>
<td>Number of weak acid refluxes/day, n</td>
</tr>
<tr>
<td>Number of high gastroesophageal refluxes/day, n</td>
</tr>
<tr>
<td>DeMeester score</td>
</tr>
<tr>
<td>GERD-Q score</td>
</tr>
<tr>
<td>Extraesophageal symptoms (cough, laryngitis, etc.)</td>
</tr>
</tbody>
</table>

**Conclusion:** ERD and NERD groups of patients are characterized by different symptom patterns and types of gastroesophageal refluxes registered with 24-hours esophageal pH-impedence monitoring. These findings could reflect differences in pathogenesis and clinical manifestation of mentioned forms of GERD.

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

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**P0539 LARYNGEAL DISORDERS AND CHRONIC COUGH IN ADULTS WITH AND WITHOUT EROSOUS 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 248 patients with erosive esophagitis aged 16–56 (mean age 46.5±16.3 years) and 273 controls (aged 46±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 analysis was used to assess the association of erosive esophagitis and extra-esophageal symptoms.

**Results:** Patients with erosive esophagitis had a higher prevalence of excessive alcohol consumption, smoking, sedentarity and obesity compared to their control counterparts (9% vs. 5%, 70% vs. 49%, 31% vs. 17% and 22% vs. 9%, respectively). The prevalence of hiatal hernia was higher in cases than in controls (21% vs. 8%, respectively), whereas the prevalence of gastric-duodenal ulcer was similar in both groups (13% vs. 14%, respectively). Upon adjustment for all sociodemographic characteristics and lifestyle/behavioral factors, there was evidence of a strong association of erosive esophagitis with chronic cough (OR=3.1, 95%CI=1.7–5.7), and even more so with laryngeal disorders (OR=4.4, 95%CI=2.6–7.4). In all models, the association of erosive esophagitis with chronic cough was strong and remained significant in the majority of 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.

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**P0540 ASSESSMENT OF EXHALED BREATH CONDENSATE FOR NON-INVASIVE DIAGNOSIS OF GASTROESOPHAGEAL REFUX DISEASE IN CORRELATION WITH MII-PH AND PEPTEST**

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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 and anatomic mechanisms and is at least in part secondary to hiatal hernia. Gastroesophageal reflux (GER) is an important condition due to the risk it poses to the respiratory tract and pH monitoring (MII-pH) and salivary Peptest in a group of patients with GERD. The Peptest which measures the pH of saliva (pH 4–7) vs. healthy controls and NO3−, Ca2+, Na+, Mg2+, Cl−, NO3−, NO2−, 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 acidic reflux (n=17), weakly acidic reflux (n=8) and without reflux (n=14).

**Results:** The values of pH (after CO2 removal with Na2) were significantly higher in the group with acidic reflux (p<0.01), (mean pH 7.13, interquartile ranges 6.83–7.47) and in the group with weakly acidic 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 acidic reflux- mean BA 3.33 μM) compared to healthy subjects (mean BA 0.69 μM). Further statistically significant differences were found in chloride (Cl−), nitrate (NO3−) and sodium (Na+) ions concentration. BA was elevated at (p<0.01) in group with acid reflux vs. healthy controls and NO3− and Na+ were elevated at (p<0.01) in both groups with acid reflux vs. healthy controls. In case of pH stratification significantly different pH in EBC 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
P0541 **GASTRIN 17 MEASUREMENTS IN SINGLING 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 results of impedance-pH: a) Group A: subjects with increased number of acid reflux episodes or abnormal AET, confirming the background of the negative feedback between acidic output and G17 levels. Interestingly, when impedance-pH showed a feature of non-acid reflux pattern (Group B), levels of G17 were always low, but higher than in case of acid reflux pattern (Group A) (p < 0.05). Finally, when impedance-pH did not show any kind of abnormal reflux, suggesting a diagnosis of FH, G17 levels were always normal.

**Conclusion:** In this preliminary study, G17 levels well correlated with the three different categories of patients suffering of heartburn and included in the NERD umbrella (i.e. NERD patients with increased acid reflux episodes or abnormal AET, endoscopy-negative patients with increased non-acidic reflux and subjects with 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.

### Abstract No: P0542

**ANTI REFLUX MUCOSECTOMY (ARMS) FOR REFRACORY GASTRO ESOPHAGEAL REFUX 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 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 valve grading 1 to 3. We performed a baseline screening endoscopy to rule out a hiatus hernia and to exclude helicobacter infection. A GERDQ questionnaire was filled by all the patients indicative of severity of reflux All patients had a high resolution manometry (Sandhill scientific) to exclude significant dysmotility and 24 hour pH measurements using Zephyr pH probe (Sandhill scientific) on therapy to demonstrate significant acid reflux. Only patients with mucosal flap valve grading 1, 2 or 3 were selected for anti reflux mucosectomy.

**Results:** Technique: Crescentic ARMS of the esophagogastric junctional (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 mucosal valve at gastric cardia. All patients had a high resolution manometry (Sandhill scientific) to exclude significant dysmotility and 24 hour pH measurements using Zephyr pH probe (Sandhill scientific) on therapy to demonstrate significant acid reflux. Only patients with mucosal flap valve grading 1, 2 or 3 were selected for anti reflux mucosectomy.

**Conclusion:** Results suggest a potential anti-reflux effect of ARMS. The mechanism is presumed to be due to scar formation after healing of the mucosal defect. On the gastric side, this induces narrowing of the gastric cardia opening, while preserving and/or re-creating a robust his angle. After ARMS, the lesser curve of the gastric cardia takes on an almost “mechanically-stitched” appearance. The mucosal flap is rebuilt and looks well-defined. Furthermore, the lesser curve side 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 diagnostic value.

**Disclosure of Interest:** This work was supported by Ministry of Health of the Czech Republic, grant nr. 17-31945A. All rights reserved.

### Table: ARMS PATIENT

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<th>POST ARMS (%)</th>
<th>RECUMBENT ACID EXP – ARMS (%)</th>
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<th>LONGEST REFLUX EPISODE PRE ARMS (minutes)</th>
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<th>TOTAL REFLUX TIME PRE ARMS (minutes)</th>
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of the EGI is shortened with scar formation, and greater curve of EGI (his side) is not covered and therefore remains less flexibility 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: both the extent and type of mucosal resection (0 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 procollagen type 1 N-terminal propeptide (P1NP) 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) were 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 P1NP and CTX were within normal range during 26 wks of DEX 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 mg/mL; 95% CI 0.03–0.23). The 26-wk median % increase in P1NP from baseline vs PBO (difference in median % change [95% CI] = 19% [0–30%] 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 REFUXES AND OF STOMACH CONTENT IN LIVE RATS AND PH-EFFECT MONITORING COMBINED WITH STOMACH PH MONITORING IN REFUX PATIENTS

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Introduction: Raft-forming alginate inhibit gastroesophageal reflux; however, remains unexplored effect of alginate on postprandial processes in the stomach.

Aims & Methods: 25 patients (14 F, age 23–69) with typical GERD symptoms, participated in the study. All patients underwent a 3-hour combined gastroesophageal pH-impedance monitoring with standardized breakfast (muffin and coffee). To determine the effect of alginate on postprandial reflux and pH in the esophagus and stomach, all patients underwent a repeat of similar monitoring the next day, before taking 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. 0.52 ± 0.3 during 2nd postprandial hour] gastroesophageal reflux, but increased of number low acid reflux [3.52 ± 0.46 vs. 3.91 ± 0.82 during 1st postprandial hour and 2.16 ± 0.45 vs. 2.04 ± 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 and safe agent to reduce 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 content from the lower esophageal sphincter, but not the neutralization of stomach acid, unlike non-failling acidants 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-EROFFIVE REFUX DISEASE: A PHASE III PLACEBO-CONTROLLED TRIAL

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Introduction: S-isomer (S) pantoprazole is more bioavailable and less dependent on pH, so it is less likely to show acid-regurgitation effect than the racemic S- and P-isomers. The present study was designed as a multicenter, randomized, double-blind, placebo controlled trial. NERD was defined as reflux symptoms and normal endoscopy findings.

Patients: Eighty-eight patients (46 male, 42 female) were randomised to 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 (34% vs. 14%, P < 0.001). Both groups, symptoms of heartburn, acid regurgitation and epigastric discomfort significantly improved after treatment compared with baseline; however, improvement of all symptoms was greater in the s-pantoprazole group compared to placebo group. Therapeutic gains in controls of heartburn, acid regurgitation and epigastric discomfort were 66.0%.

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 (10mg) 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.
Disclosure of Interest: despite PPI therapy.

Conclusion: Data demonstrate a reversal of inflammatory changes in the TJ-proteins by STW5 and O. They also suggest that inflammatory changes in TJ are consistent with TJ-protein modulations in tumorgenesis. Subsequent studies are needed to better define the role of TJ in inflammatory process and in tumorgenesis and the potential benefit arising from a treatment with STW5 or O.

Disclosure of Interest: H. Abdel-Aziz: Fully employed by Steigerwald Arzneimittelwerk GmbH
O. Kelber: Fully employed by Steigerwald Arzneimittelwerk GmbH
All other authors have declared no conflicts of interest.
Aims & Methods: nar cells. Bone Morphogenetic epithelium in the esophagus is replaced by columnar epithelium. BE predisposes to preserve morphological information. Material from three patients was collected. These were continuous strips, from proximal to distal, of the gut. This property is termed collinearity and links clustering to function. In theory could be substantially bolstered. If it can be shown that gastric cardia glands contain elements associated with positional misspecification, this perspective to modulate the metabolic process using an innovative anti-BMP4/LLama-derived antibodies with commercially available BMP4 inhibitors. MAbs Comparison of newly developed anti-bone morphogenetic protein 4 llama- such prevent the development of esophageal adenocarcinoma. Model enhanced the amount of squamous epithelium. These pre-clinical results in vivo organoid model of human BE to investigate the potential to modulate the study aimed to identify biomarkers of active HPV infection in Barrett's metaplasia in the gut. These findings suggest that gastric cardia glands have a broad differential potential. This is consistent with an origin of Barrett's metaplasia in the most proximal part of the anatomic gastric cardia. Recent evidence from human and mouse studies has shown Barrett's dysplasia (BD) and its origins from the lesion itself. Nat Rev Gastroenterol Hepatology 2015;12:50–60.

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Calpe, S., Correia, A. C., Sancho-Serra Mdel, C. & Krishnadath, K. K. 2016. Cardia glands contain elements associated with positional misspecification, this perspective. This study aimed to identify biomarkers of active HPV infection in Barrett's metaplasia (BM)/BD/OAC by immunohistochemical staining (IHC) of formalin-fixed paraffin embedded (FFPE) tissue for aberrations of p53 and the retinoblastoma (pRb) pathway which are targets for the viral oncoproteins, E6/E7 respectively. (BM)/BD/OAC by immunohistochemical staining (IHC) of formalin-fixed paraffin embedded (FFPE) tissue for aberrations of p53 and the retinoblastoma (pRb) pathway which are targets for the viral oncoproteins, E6/E7 respectively.

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Introduction: Metaplastic phenomena in the upper gastrointestinal tract are still controversial. The gastroesophageal junction is a high prevalence area for metaplasia which cover only the most proximal part of the anatomic gastric cardia. Recent evidence from human and mouse studies has shown Barrett's dysplasia (BD) and its origins from the lesion itself.

Conclusion: Genetic cardia gland epithelial cells in both human and mouse exhibit HOXA13 expression. This study aimed to identify biomarkers of active HPV infection in Barrett's metaplasia in the gut. These findings suggest that gastric cardia glands have a broad differential potential. This is consistent with an origin of Barrett's metaplasia in the gut. These findings suggest that gastric cardia glands have a broad differential potential.

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

Results: Out of 218 patients, 56 were HPV DNA positive (HPV16 (n = 42), 18 (n = 13), 6 (n = 1)). Viral load was low. Transcriptically active HPV (DNA+ RNA+) was only found in the dysplastic and adenocarcinoma group (n = 21). The majority of HPV DNA+RNA+ BD/OAC were characterized by transcriptionally active high-risk HPV (hr-HPV) is strongly incriminated in Barrett’s dysplasia (BD) and oesophageal adenocarcinoma (OAC) using mainly fresh frozen tissue. This study aimed to identify biomarkers of active HPV infection in Barrett’s metaplasia (BM)/BD/OAC by immunohistochemical staining (IHC) of formalin-fixed paraffin embedded (FFPE) tissue for aberrations of p53 and the retinoblastoma (pRb) pathway which are targets for the viral oncoproteins, E6/E7 respectively.

Aims & Methods: We aimed to determine HOXA13 expression in physiological gastric cardia glands. Firstly, strips of tissue from surgical specimen 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 HOXA13GFP x C57BL/6J heterozygous mutant mouse model was used. In these animals, the cardiac glands expressed HOXA13 assessed 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 cardia glands did not show any signal. The signal is located relatively close to the base of the crypts of the cardiac glands. The HOXA13GFP 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 the cardia glands. 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 was used as a control for HOXA13 expression.

Conclusion: Genetic 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 gut. These findings suggest that gastric cardia glands have a broad differential potential.


References

Aims & Methods: None of the patients enrolled in this study received chemoradiotherapy prior to surgery and all patients had pathologically confirmed BE. All patients were evaluated for tumor size and non-malignant peritumoral samples of 39 patients were examined. Immunohistochemical analysis was conducted to investigate interlineages during the progression from BE to EAC. Interlineages were investigated in fresh resected esophageal cancer specimens and in its non-malignant peritumoral tissue (n=11). 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 and IL-17A+ cells as well as the number of FOXP3+ cells/mg tissue increased in oesophageal cancer and in its peritumoral tissues 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 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 is decreasing, the pro-tumorigenic cell population, represented by high IL-10 mRNA expression in EACs, demonstrates to suggest that especially regulatory T cells influence overall patient survival in EAC. Notably, high levels of IL-10 in the non-malignant peritumoral tissue also demonstrated to be unfavourable for patient survival. Thus, a pro-tumorigenic cell population might contribute to local recurrences despite radical endoscopic or surgical resection.

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

P0554 DIFFERENT GLAND PHENOTYPES ARE CLONALLY RELATED IN BARRETT’S ESOPHAGUS 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 p21. CD4+ and CD8+ T cells were detected in BE and CD8+ T cells were detected in the adenocarcinoma. A high proportion of CD4+ T cells were detected in BE and dysplasia, but not in the adenocarcinoma. A high proportion of CD8+ T cells were detected in the adenocarcinoma, but not in BE.

Conclusion: Our preliminary in vitro findings suggest there are differences in the epithelial and non-epithelial components of BE in the stroma. This is the first time that different gland phenotypes have been demonstrated to be clonal and suggests that Barrett’s displays phenotype as well
as genotypic evolution. Patients with dysplasia also show a significant increase in gland phenotype diversity (Shannon) per biopsy in adjacent to dysplasia glands compared with patients who do not have dysplasia.

Conclusion: BE is phenotypically diverse with a range of glandular phenotypes that are clonally related. An increase in phenotypic diversity may be a potential biomarker for progression which patients with BE are more likely to progress from BE to cancer with implications for diagnostic and surveillance policy.

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

P0556 ADHERENCE TO QUALITY INDICATORS AND SURVEILLANCE GUIDELINES IN THE MANAGEMENT OF BARRETT’S OESOPHAGUS: A RETROSPECTIVE ANALYSIS

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Introduction: Adherence to quality indicators and surveillance guidelines in the management of Barrett’s oesophagus (BO) promotes high-quality cost-effective care.

Aims & Methods: The aims of this study were to evaluate (1) adherence to standardized classification (Prague Criteria) and a systematic four-quadrant biopsy protocol, (2) identify predictors of practice patterns, and (3) to assess adherence to surveillance guidelines for non-dysplastic BE (NDBE).

This was a Single-center retrospective study of endoscopies (EGDs) performed for BE between June 2008 to December 2015. Data on patient demographics, procedure characteristics and histology results were obtained from a prospectively collected electronic endoscopy database and chart review. Adherence to the use of Prague Criteria and systematic biopsy protocol were assessed based on operative report documentation. Guideline adherence surveillance EGD was defined as those performed within 6 months of the recommended 3–5 year interval. Uni- and multi- variate analysis were performed to identify predictors of practice patterns.

Results: A total of 397 patients (66.5% male; mean age 60.1 ± 12.5 years) had an index EGD during the study period. Adherence to the use Prague Criteria and systematic biopsies were 27.4% and 24.1%, respectively. Endoscopists who perform systematic interventions for BE were more likely to use the Prague Criteria (OR: 3.16; 95%C.I: 1.47–6.82) than those who do not. Longer time in practice (in years) was positively associated with adherence to Prague Criteria (OR 1.07; 95% CI: 1.02–1.12; p < 0.01) but with a lower likelihood of performing systematic biopsies (OR: 0.85; 95% C.I: 0.59–0.97; p = 0.01). Nearly 41% of patients with NDBE (11/27) underwent surveillance EGD sooner (range 1–24 months) than the recommended interval.

Conclusion: Adherence to quality indicators and surveillance guidelines in BE is low. Older age characteristics, including experience with endoscopic therapy for BE and time in practice predicted adherence to the use of Prague Criteria and systematic biopsies. Future efforts are needed to reduce variability in practice and promote high-value care.

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

References

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 stays 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. Additionally we analyzed control group of patients with non-cancer lesion or normal tissue of upper digestive tract (13 patients). We divided the patients into two groups. Group A consisted of 13 cancer patients and 7 control patients 65 years of age or older, while Group B consisted of 10 cancer and 6 control patients younger than 65 years of age. The two groups were comparable - there were no differences between the two groups regarding tumor stage.

Results: Elderly patients have statistically significant better survival (median 20.2 months) compared with younger patients (median 15.4 months) (p = 0.0045). The median survival rate of patients without TGF-B and/or CD-44 expression was significantly lower (7 m) than that of patients with positive expression (> 15 m) (p = 0.003). Regardless of patients age, CD-44 was significantly higher in the cancer tissue of elderly patients than in younger (p < 0.05). But no significant difference was observed in the TGF-B expression between group A and group B cancers tissue (p = 0.005).

Conclusion: The biology of tumors may be different in elderly patients, leading to a lower rate of tumor-related mortality.

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

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 oesophageal adenocarcinoma (OAC). Once diagnosed, interval endoscopic surveillance is recommended to promote early detection of dysplasia and cancer. Occurrence and incidence of dysplasia and cancer among BO vary across populations. Recent studies show BO patients mortality is mainly related to non-oesophageal cancer and cardiovascular morbidity.
**Abstract No: P0556**

**Table:** Factors associated with the adherence to the use of Prague Criteria and systematic four-quadrant biopsies for BE evaluation

<table>
<thead>
<tr>
<th>Clinical Variable</th>
<th>Prague Criteria</th>
<th>Systematic Biopsies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Univariate</td>
<td>Multivariate</td>
</tr>
<tr>
<td></td>
<td>OR (95% CI) P value</td>
<td>OR (95% CI) P value</td>
</tr>
<tr>
<td>Age</td>
<td>1.02 (0.99–1.04) 0.06</td>
<td>1.00 (0.98–1.04) 0.53</td>
</tr>
<tr>
<td>BMI</td>
<td>1.00 (0.95–1.04) 0.84</td>
<td>0.98 (0.93–1.04) 0.60</td>
</tr>
<tr>
<td>Sex (male)</td>
<td>2.34 (1.38–3.94) 0.001</td>
<td>2.07 (0.99–4.31) 0.05</td>
</tr>
<tr>
<td>GERD</td>
<td>1.31 (0.71–2.43) 0.40</td>
<td>0.64 (0.17–2.40) 0.51</td>
</tr>
<tr>
<td>PPI use</td>
<td>1.48 (0.90–2.47) 0.13</td>
<td>1.29 (0.49–3.39) 0.61</td>
</tr>
<tr>
<td>Smoking history</td>
<td>1.53 (0.77–3.00) 0.22</td>
<td>2.16 (0.81–5.80) 0.17</td>
</tr>
<tr>
<td>Current smoker</td>
<td>0.970 (0.57–1.70) 0.91</td>
<td>0.82 (0.37–1.61) 0.62</td>
</tr>
<tr>
<td>Previous smoker</td>
<td>0.21 (0.13–0.38) 0.01</td>
<td>0.21 (0.13–0.38) 0.01</td>
</tr>
</tbody>
</table>

**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 to compare the original histology from the endoscopic surveillance biopsy to the histology obtained from the EMR, to analyse any deviation and to demonstrate the importance of histological staging of the early neoplasia in BO. We also investigated the three-year survival in patients who had their EMR longer than 3 years ago, along with causes of death. 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 analysed the resection margins for both en bloc and piecemeal EMRs. We compared the original histology from the endoscopic surveillance biopsy to the histology obtained from the EMR, to analyse any deviation and to demonstrate the importance of histological staging of the early neoplasia in BO. We also investigated the three-year survival in patients who had their EMR longer than 3 years ago, along with causes of death.

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

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**Reference**


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**P0559**

**THE EFFICACY OF ENDOSCOPIC MUCOSAL RESECTION IN MANAGING EARLY NEOPLASIA IN BARRETT’S OESOPHAGUS, EXPERIENCES OF 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. Our objectives were to demonstrate EMR’s efficacy in removing early neoplasia within BO and its usefulness in obtaining comprehensive histological specimens to accurately stage the early neoplasia and effectively deliver therapy.

**Aims & Methods:** We have conducted a retrospective analysis using our electronic database for endoscopic procedures for patients with BO, who underwent EMR...
K. Yamauchi
P0561 LONG-TERM OUTCOMES OF ENDOSCOPIC RESECTION
stimulate and monitor the implementation of guidelines in clinical practice. A clinical set-up of a dedicated BE surveillance pro-
muscularis mucosae (MM) or submucosa up to 200

Introduction:
Barrett esophagus (BE) is a premalignant condition for esophageal

Results:
From a total of 373 studies, 49 were eligible for this meta-analysis. For

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

References

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

References
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P0562 ESOPHAGEAL REFUX DISEASE AND ESOPHAGEAL
SQUAMOUS CELL CARCINOMA IN PATIENTS WITH FCANI
ANEMIA UNDERGOING ENDOSCOPIC SURVEILLANCE
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Introduction: Patients with Fanconi anemia (FA) have an increased risk of develop-

Results: Eight FA subjects with a median age of 22.2 years at first endoscopy

Conclusion: FA patients are at an increased risk for developing esophageal cancer

P0563 RISK FACTORS FOR THE DEVELOPMENT OF DYSPLASTIC
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5Kumamoto Regional Medical Center, Kumamoto/Israel
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7Tokyo Prefectural University of Medicine, Koto/Israel
8Tokyo University, Sendai/Israel
9Shizuoka Cancer Center, Shizuoka/Israel
10Osaka National Hospital, Osaka/Israel
11Okayama University, Okayama/Israel
12Kanagawa Cancer Center, Kanagawa/Israel
13Shon University, Tokyo/Israel
14Kumamoto Regional Medical Center, Kumamoto/Israel
15St. Marianna University, Kawasaki/Israel
16Kawasaki Municipal Kawasaki Hospital, Kawasaki/Israel
17Tochihi Cancer Center, Utsunomiya/Israel
18Kure University Hospital of Tottori, Koto/Israel
19Tokushima Medical and Addiction Center, Yoko osuka/Israel
20Therapeutic Oncology, Kyoto University, Kyoto/Israel

Introduction: Multiple development of squamous cell carcinoma (SCC) in the upper

References

P0561 LONG-TERM OUTCOMES OF ENDOSCOPIC RESECTION VERSUS SURGICAL RESECTION FOR MM-SM1 ESOPHAGUS
SQUAMOUS CARCINOMA
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Introduction: Squamous cell carcinoma in the esophagus confined to the muscularis mucosae (MM) or submucosa up to 200 μm (SM1) has a risk of lymph node metastasis, it is defined as relative indication for endoscopic submu-

Results: 54 lesions in the ESD group and 51 lesions in the surgery group met the pathological criteria of relative indication for endoscopic resection. 10 patients underwent additional chemoradiation and were included in both groups. 8 patients underwent additional chemotherapy and 1 patient underwent additional chemoradiation in the surgery group. Lymphovascular invasion, submucosal invasion, and ASAP was significantly associated with mortality using Cox analysis. Adjusted for risk factor, and perioperative complication rate.

Conclusion: ESD does not compromise the long-term outcome compared to surgery. Further large number randomized controlled trials are necessary to confirm these results.

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

References
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 dyslastic 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 = 610/432) were used as an historical control.

Results: Between Sep 2005 and May 2010, 330 patients (M = 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 (46.6%, 19.6%, 20.8%, and 20.7%, respectively, p < 0.0001), not eating green-yellow vegetables almost every day (55.0%, 48.9%, 54.9%, and 71.1%, respectively, p < 0.0001), and not eating fruit almost every day (51.6%, 74.3%, 68.0%, and 75.3%, respectively, p < 0.0001). The risk of 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 (OR = 13.9; 95% CI 1.5-13.9) than non-temporaneous SCC in the controls (OR = 2.0; 95% CI 1.0-4.0). OR of LVL grade C associated with heavy drinking was significantly stronger in inactive ALDH2 (OR = 358) than active ALDH2 (OR = 138) (p < 0.05).

Conclusion: The development of dyslastic 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

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 squamous cell carcinoma (SCC) of the oesophagus and the head and neck often occur 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 hospitals1. 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 gene2 (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 at Hokkaido University Hospital. All patients were followed up by using endoscopic examination for ≥ 2 years. Overall, 126 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 from the patients before the endoscopy. The subjects were classified as regular drinkers who consumed ≥ 1 units/week, current drinkers who consumed 1 to 8.9 units/week (light drinkers), 9 to 17.9 units/week (moderate drinkers), or ≥ 18 units/week (heavy drinkers); alcohol consumption (1 unit = 22 g, the ethanol content of one serving of sake). The physicians recommended all subjects to temperate in drinking and smoking. We retrospectively evaluated the risk of metachronous SCC of the oesophagus and the head and neck after ER for SCC of the oesophagus, based on the genetic polymorphisms for ADH1B and ALDH2 and the drinking and smoking histories.

Results: During a median follow-up period of 80 months (range, 24-228 months), a secondary SCC of the oesophagus and the head and neck was detected in 46 patients (36.5%). The high incidence groups had inactive heterozygous ALDH2 (rs671 GA, 36.3%; p < 0.05), moderate and heavy drinkers (42.9%; p < 0.01), continuous moderate and heavy drinkers after ER (21.5/35; p < 0.01). Multivariate analysis revealed that the inactive heterozygous ALDH2 (OR = 2.24; p < 0.05), moderate and heavy drinkers (OR = 3.4; p < 0.05) and continuous heavy drinkers after ER (OR = 2.7; p < 0.05) were independently associated with the risk of developing a secondary SCC after ER. A third SCC was detected in 19 patients (15.1%), and the high incidence groups had inactive heterozygous ALDH2 (17/83; p < 0.05), moderate and heavy drinkers (19/93; p < 0.05). A fourth SCC was detected in seven patients (5.6%), who were all cases of continuous moderate and heavy drinkers after ER. Six of the seven patients had an inactive heterozygous ALDH2. We analyzed the 63 patients with inactive heterozygous ALDH2 and moderate and heavy drinkers before ER based on their temperature history and found 38 patients in the temperature group (≤ light drinkers after ER) and 25 patients in the non-temperance group. The 5-year cumulative incidence rate of a secondary SCC was detected in the temperature group (20.5%) vs. non-temperature group (35.2%) (p < 0.05). The 5-year cumulative incidence rate of a third SCC revealed an incidence of 0% vs. 28.3% respectively (p < 0.01). The 7-year cumulative incidence rate of a fourth SCC revealed an incidence of 0% vs. 16.9% respectively (p < 0.05).

Conclusion: Among the patients who underwent ER for oesophageal SCC, an inactive heterozygous ALDH2 with a continue drinking habit were the significant risk factors of developing metachronous multiple SCC. These are the greater risk factors for developing a third (or more) SCC. Patients with inactive ALDH2 and a drinking habit should receive strict instruction for temperance.

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

Reference

P0565 IS IT FEASIBLE TO TREAT ESOEPAHEAL SQUAMOUS CELL CARCINOMA WITH CLINICAL DEPTH OF MM/MM1 BY ENDOSCOPIC RESSECTION?
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Introduction: According to the Japanese guidelines for the treatment of esophageal cancer, T1a-EP or T1a-LPM squamous cell carcinoma (SCC) is definitive indication for endoscopic resection (ER) which is considered curable in them. T1a-MM or T1b-SM1 is a relative indication of ER, because 10-20% of the cases has metastasis in the previous analysis of operation cases. Recent advances in ER such as endoscopic submucosal dissection (ESD) and steroid injection for the prevention of stricture, provide us increasing opportunity to treat clinical MM/MM1 which means preoperative predicted invasion depth of MM/MM1. Recently we start to treat them because MM without lymphovascular invasion were reported to have very low risk of metastasis and occupy majority part of MM/MM1. There is no report about long term outcome of ER for clinical MM/MM1.

Aims & Methods: This study aimed to evaluate the clinical outcomes in patients having esophageal SCC with a predicted invasion depth of MM/MM1. We retrospectively reviewed 45 patients having esophageal SCC with a predicted invasion depth of MM/MM1. We predicted the invasion depth using conventional endoscopy, magnifying endoscopic classification of Japan esophageal society, and endoscopic ultrasonography (EUS). The patients were diagnosed and treated at our hospital from 2010 to 2013. All patients had T1a-MM/SM1 invasion in 28 patients, and SM2 invasion in 3 patients. The overall accuracy rate of diagnosing MM/MM1 invasion was 62% (28/45). Among patients with MM/MM1 invasion, 20 had no lymphovascular invasion, and
they were not recommended additional therapy. The remaining eight patients had tumors that were classified as deep invasive according to the Japan Esophageal Society (JES) guidelines. In total 33 cases were treated only by ER without additional therapy. In 24% of high risk case for metastasis were treated appropriately with additional therapy.

Conclusion: Our study suggests that ER is a valid treatment for superficial SCC with a preoperative predicted invasion depth of MM/MM/SM1. Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0566 TRIAMCINOLONE INJECTION AND SHIELDING WITH POLYGLYCIC ACID SHEETS AND FIBRIN GLUE FOR THE PREVENTION OF POSTOPERATIVE STRICTURE AFTER ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD): A RETROSPECTIVE COMPARISON OF TWO PILOT STUDIES AND A HISTORICAL COHORT

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Introduction: Triamcinolone injection is an effective and widely used method for prevention of post-ESD deep infiltration. In our previous study, we had found that the combination of triamcinolone injection and the shielding with polyglycic acid sheets (PGA sheets) and fibrin glue is another novel and effective method for the prevention of postoperative stricture. Aims & Methods: 2 consecutive single-arm pilot studies were performed, and retrospectively compared with the results of a historical control group. After approval by the Institutional Review Board and trial registry, we enrolled patients with a diagnosis of superficial esophageal squamous cell carcinoma covering over half the circumference of the esophagus. In study group A (UMIN0031014462), performed October 2014 to 2015, immediately after the enucleated patients underwent endoscopic submucosal dissection (ESD), a total of 40 mg of triamcinolone acetonide was injected into the submucosal layer of the ESD defect, followed by adhesion of a PGA sheet to the post-ESD defect with fibrin glue. In study group B, performed July 2015 to 2016, a total of 40 mg of triamcinolone acetonide was injected into the submucosal layer of the ESD defect, followed by adhesion of a PGA sheet to the post-ESD defect with fibrin glue. As historical control group C, all patients at our institute who had undergone ESD for superficial esophageal squamous cell carcinoma covering over half the circumference of the esophagus during 2002 to June 2013 were enrolled. After exclusion of patients who did not undergo follow-up for at least 1 month, and patients who underwent salvage surgery after non-curable ESD, statistical analysis was performed on the incidence of postoperative stricture and required endoscopic balloon dilation (EBD) sessions in each of these 3 groups was performed.

Results: During the study period, 15 patients were enrolled in study A, 13 patients in study B, and 37 patients were enrolled as group C. After exclusion, 11 cases in group A (3 circumferential, 9 semi-circumferential), 11 cases in group B (11 semi-circumferential, and 30 cases in group C (3 circumferential, 27 semi-circumferential) were analyzed. Analysing postoperative stricture occurred in all circumferential cases in group A, it was successfully prevented in 1 case of circumferential ESD, 2 cases in semi-circumferential ESD. A sub-analysis comparing the semi-circumferential ESD cases was performed. There were no significant differences in tumor size (A: 34.9±8.1, B: 31.5±7.0, C: 34.8±13.8 mm) and operation times (A: 95.4±23.8, B: 108.2±31.1, C: 112.1±50.3 min) in the 3 groups. Group A demonstrated the most effective results in both the incidence of postoperative stricture (A: 11.1%, B: 6.3%, C: 55.6%), and the number of EBD sessions required (median A: 0, B: 0, C: 3).

Conclusion: The combination of triamcinolone injection and the shielding method with PGA sheets and fibrin glue is a promising method for preventing stricture after esophageal ESD. Prospective studies for confirmation of efficacy and safety are required.

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

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 cure 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 macroscopy evaluation including Lugol staining and endoscopic ultrasonography (EUS). Curative resection was defined as pT1a with free resection margins, without lympho-vascular embols.

Results: Between 1998 to 2016, 132 patients were enrolled and 148 tumors were resected (ER: 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% in ESD groups with respectively 30% (24/80) and 68.8% (p < 0.0001). The mean follow-up period was 22 months. The recurrence rate was 14.2% (9/60) in the EMR 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 ESD (p = 0.001), piecemeal resection (p = 0.016), and microscopic positive margins (p = 0.044). In multivariate analysis, risk factors for recurrence were: resection by EMR (OR = 7.315; IC [1.685–31.762]; p = 0.008) for additional therapy (OR = 2.635; IC [1.0–6.519]; p = 0.036). At 24 months, recurrence-free survival rate were 95.2% in ESD group, versus 59.8% in EMR group (p = 0.001). For infiltrating tumors ≥3 m3, metastasis free survival rate at 24 months was 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 is associated with a higher cure 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/MM1 ESOPHAGEAL SQUAMOUS CELL CARCINOMA BASED ON LONG-TERM OUTCOMES

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Introduction: Oesophageal squamous cell carcinoma (ESCC) with invasion into muscularis mucosae (MM) or submucosa (SM1) (MM/MM1) 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/MM1 ESCC are as follows: (1) lymph node invasion, (2) SM1, (3) positive vertical margins, and (4) diffuse pattern of infiltration (INF). However, the clinical validity of the JES guidelines has not been established. We evaluated the curative conditions after ER for MM/ MM1 ESCC based on long-term outcomes.

Results: We enrolled 98 consecutive MM/MM1 ESCC patients (88 males; mean age, 67 ± 9 years; e-curable group, 39 patients; non-e-curable group, 59 patients; mean follow-up period, 75 ± 44 months). There were no significant differences in 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 (9%, 39/397) than in the e-curable group (23%, 9/39, 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 (35 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% (4/45), respectively. The local recurrence rates in the e-curable and non-e-curable groups were 0% (0/39) and 7% (4/45), respectively. The 5-year recurrence-free survival rates in the e-curable and non-e-curable groups were 100% and 98%, respectively. The 5-year recurrence-free survival rates in the group with INFa and no lymphovascular invasion and in the group with INFb, INFc, or lymphovascular invasion were 100% and 87%, respectively. The recurrence-free survival rate was signiﬁcantly higher in the group with INFa and no lymphovascular invasion than in the group with INFb, INFc or lymphovascular invasion.

Conclusion: Our study supports the clinical validity of the e-curable conditions after ER for MM/SM1 ESCC of the JES guidelines. However, MM/SM1 ESCC with INFa and no lymphovascular invasion may have more possible curative conditions after ER without additional treatment.

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

Table 1: Outcomes of ESD vs Lap Gastrectomy

<table>
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<th>Parameters</th>
<th>Lap Gastrectomy</th>
<th>ESD</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drinker (No/Social/Heavy)</td>
<td>12/1/3</td>
<td>14/2/2</td>
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</tr>
<tr>
<td>Operation time (mins)</td>
<td>263.5 (165-365)</td>
<td>97.5 (30-195)</td>
<td>&lt;0.001†</td>
</tr>
<tr>
<td>Hospital stay (days)</td>
<td>(Median/range)</td>
<td>8 (4-14)</td>
<td>4 (3-6)</td>
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<tr>
<td>Days to resume full diet</td>
<td>(Median/range)</td>
<td>5 (3-12)</td>
<td>2 (1-5)</td>
</tr>
<tr>
<td>Complications (%)</td>
<td>7 (38.9)</td>
<td>1 (5.6)</td>
<td>0.041†</td>
</tr>
<tr>
<td>30 days mortality</td>
<td></td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Reintervention (Gastrectomy/ESD)</td>
<td>0/0 (0)</td>
<td>5 (27.8)</td>
<td>&lt;0.001†</td>
</tr>
<tr>
<td>Postop CRP Day 1 VAS pain</td>
<td>49 (8-80)</td>
<td>23 (5-70)</td>
<td>0.013†</td>
</tr>
<tr>
<td>Postop CRP Day 3 VAS pain</td>
<td>39.5 (6-65)</td>
<td>5 (3.7)</td>
<td>&lt;0.001†</td>
</tr>
<tr>
<td>Postop CRP Day 7 VAS pain</td>
<td>21 (5-53)</td>
<td>0 (0-10)</td>
<td>0.003†</td>
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<tr>
<td>Postop CRP Day 3</td>
<td>1 (11.2)</td>
<td>0.899</td>
<td>0.001†</td>
</tr>
<tr>
<td>Pathology T1a</td>
<td>27 (8)</td>
<td>14</td>
<td>0.144†</td>
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<tr>
<td>Pathology T1b</td>
<td>3</td>
<td>3</td>
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<tr>
<td>Pathology T2</td>
<td>0</td>
<td>0</td>
<td>0.001†</td>
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<tr>
<td>Pathology T3</td>
<td>3</td>
<td>0</td>
<td>0.001†</td>
</tr>
</tbody>
</table>

Conclusion: Our prospective randomized study showed that patients treated by ESD had significantly lower complication rate and better perioperative outcomes when compared laparoscopic gastrectomy. ESD should be the first 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

Table 1: - Outcomes of ESD vs Lap Gastrectomy

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Lap Gastrectomy</th>
<th>ESD</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male (%)</td>
<td>7 (38.9)</td>
<td>11 (61.1)</td>
<td>0.317</td>
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<tr>
<td>Age (mean ±/ SD)</td>
<td>62.5±/−10.4</td>
<td>61.7±/−11.2</td>
<td>0.899</td>
</tr>
<tr>
<td>ASA (I/II/III)</td>
<td>5/8/5</td>
<td>5/8/5</td>
<td>1.0</td>
</tr>
<tr>
<td>Complications (Median)</td>
<td>2 (0-5)</td>
<td>0 (0-4)</td>
<td>0.905</td>
</tr>
<tr>
<td>Smoker (No/Ex/Current)</td>
<td>10/3/3</td>
<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 not included.

Results: Only 148 patients were admitted to the study. The mean age was 49.7±
3 years, 60% were female (CE: 52-67, 95%). 264 via were sent with biopsies of the different areas of the stomach distributed as follows: 148 of antrum, 54 of atrophic gastritis, and 48 (32.4%) patients had biopsy 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 positive rate of 38.6%.

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

P0571 CORRELATION BETWEEN THE COMBINATION OF HELICOBACTER PYLORI ANTIBODY AND PEPINSONOG AND OLGA/OLGUM STAGING SYSTEM FOR RISK ASSESSMENT OF GASTRIC PRECANCEROUS LESIONS
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Introduction: Prognosis of GC has a noticeable relation with its clinical stage. Atrophic gastritis (AG), intestinal metaplasia (IM) and dysplasia are well-recognized risk factors for intestinal type GC (GC). A large cohort study has confirmed that the annual incidence of GC were approximately 0.1% for patients with AG, 0.25% for IM and 6% for high-grade dysplasia, which were much higher than those with normal mucosal. In addition, long-term follow-up studies have recognized risk factors for intestinal type GC (GC). A large cohort study demonstrated that the annual incidence of GC were approximately 0.1% for patients with AG, 0.25% for IM and 6% for high-grade dysplasia, which were much higher than those with normal mucosal. In addition, long-term follow-up studies have recognized risk factors for intestinal type GC (GC). A large cohort study demonstrated that the annual incidence of GC were approximately 0.1% for patients with AG, 0.25% for IM and 6% for high-grade dysplasia, which were much higher than those with normal mucosal. In addition, long-term follow-up studies have recognized risk factors for intestinal type GC (GC). A large cohort study demonstrated that the annual incidence of GC were approximately 0.1% for patients with AG, 0.25% for IM and 6% for high-grade dysplasia, which were much higher than those with normal mucosal. In addition, long-term follow-up studies have

Aims & Methods: We aimed to discuss the correlation between the combination of Helicobacter pylori antibody and pepipsonog and OLGA/OLGUM staging system in gastric precancerous lesions risk assessment. A total of 331 patients were enrolled after the examination of endoscopy at Endoscopy Center, the First Affiliated Hospital of Jiaxing Chinese Medical University from October 2014 to December 2015. According to the result of gastroscopy, gastric secretory and serum Helicobacter pylori antibody test, all patients were divided into four groups: Group A: Hp (+)PG (+), Group B: Hp (+)PG (-), Group C: Hp (-)PG (+), and Group D: Hp (-)PG (-). Positive definition was defined as PG1≥70 μL/g and PGR7.0. According to the range and degree of atrophy/intestinal metaplasia, patients were divided into five groups on the basis of OLGA staging system. The levels of Hp infection rate, PGI, PGI II and PGR were compared between different groups, and the correlation between ABC method and OLGA/OLGUM staging system were evaluated. Statistical analysis was accomplished by chi-square test and logistic regression modeling analysis.

Results: A total of 331 patients were enrolled. 214 patients were classified into group A, 106 patients into group B, 4 patients into group C and 7 patients into group D, respectively. According to the pathological results, 177 cases were non-advanced precancerous atrophic gastritis. 177 patients were divided into stage-0 group, 82 patients into stage-I group, 49 patients into stage-II group, 16 patients into stage-III group and 7 patients into stage-IV groups. The Hp infection rate was significant higher in patients with high-grade dysplasia, which was associated with a larger lesion size and the presence of high-grade dysplasia or adenocarcinoma. usual use of antiplatelet or anticoagulant did not increase the risk of bleeding after pre operative management. A prophylactic hemostasis was realized for 61.9% 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 a complete endoscopic resection rate of 96.2% which was associated in multivariate analysis with the lesion size and depressed expression. The en-bloc resection’s rate was of 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 antiplatelet or anticoagulant did not increase the risk of bleeding after pre operative management. A prophylactic hemostasis was realized for 61.9% 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 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 amplifiable sporadic adenomas (SDA) in two tertiary centers in a large series and to try to determine the predictive factors of outcomes with a long follow-up.

Aims & Methods: This retrospective study was conducted in two tertiary centers between 12/2003 to 03/2016. All the patients who underwent at least one endo-scopic 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 congecurrent 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 20.7mm (5-50 mm), mostly level 1. The second duodenal adenomas (PAF) and morphologically high-grade dysplasia gastric mucosal. While the gold standard for atrophy assessment is histology, the combination of serum pepipsonog and Helicobacter pylori antibiotic (Hp) antibody, known as the ABC method, has been suggested as a predictive marker for patients with GC.

Disclosure of Interest: All authors have declared no conflicts of interest.
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7Kitakyushu Medical Center, Kitakyushu/Japan
8Nara Medical University, Nara/Japan
9Japanese Red Cross Society Kyoto Daiichi Hospital, Kyoto/Japan
10Shimizu University School Of Medicine, Nagano/Japan
11Teyama Prefectural Central Hospital, Teyama/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.

Aims & Methods: The aim of this study was to clarify the results of salvage surgery for recurrence after non-curative ESD for EGC using data from a multi-center retrospective study (EAST study). Of 15,785 patients who underwent ESD for EGC at 19 participating institutions from January 2000 to August 2016, we only selected patients who met the current curative criteria for ESD who 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 the non-treatment group. Recurrence was classified regional LNM, and distant metastasis.

Results: Over a median follow-up period of 64 months, recurrence was detected in 27 patients. Among them, 2 patients were excluded from this study due to missing data. Of the 25 patients with recurrence, 8 patients were excluded due to local only site recurrence (inter-gastric recurrence and regional LNM 7), and distant metastasis 15 (60%). The first treatments for recurrence were endoscopic treatment 1, salvage surgery 7 (28%), chemotherapy 6, and best supportive care 11. Only one patient was alive without any recurrence for 31 months after salvage surgery. And one patient died of acute myocardial infarction just one month after salvage surgery. In the remaining 5 patients, recurrence was detected at 0, 2, 3, 5, 30 months after salvage surgery, and all of them died of gastric cancer. Median survival time of all 25 patients with recurrence was 6 months after salvage surgery. And median survival time of 7 patients who underwent salvage surgery was only 7 months from salvage surgery.

Conclusion: More than half of recurrence after non-curative ESD without additional surgery 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 T. Nagai, S. Matsui, H. Kashida, Y. Komaeda, T. Sakurai, M. Kudo
Dept. Of Gastroenterology And Hepatology, Kindai University Faculty of Medicine, Osaka-sayama/Japan

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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 endoscopic mucosal resection (EMR) or endoscopic submucosal dissection (ESD) if the agent is not combined with other antithrombotic drugs (monotherapy). On the other hand it is recommended that anticoagulants should be substituted with heparin before EMR/ESD. The aim of this study is to clarify the efficacy of the recommendations of the guideline.

Aims & Methods: In this study 888 early gastric lesions in 783 patients who underwent EMR/ESD at our hospital between January 2012 and March 2017 were retrospectively analysed. Postprocedure bleeding was defined as: (1) hematemesis or melena for which an emergency endoscopy was required and (2) bleeding which were confirmed with a repeat endoscopy after a drop ≥2 g/dL of haemoglobin level.

Results: The total number of patients undergoing antithrombotic therapy was 78, out of which 38 patients were taking anticoagulants only, 29 were taking antiplatelet agents only, 29 were taking anticoagulants and antiplatelet agents, and 11 were taking both. The antithrombotics were suspended in 22 cases (Group A), substituted with heparin in 18 (Group B), and kept continued in 38 (Group C). 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 suggesting 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: 7.415–34.288, 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
Aim: 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 upper gastrointestinal endoscopy. Biopsies were taken from the greater curvature, antrum, and body for histological analysis. H. pylori infection was assessed by modified Giemsa stain, rapid urease test and culture. The OLGA stage (0–IV) was recorded by combining antral with body atrophy of antrum in case of diffuse type in which gastric cancer develops in case of intestinal type. The OLGIM staging systems have been suggested to provide risk estimation for GC.

Methods: Atrophic gastritis and intestinal metaplasia are the cancerization field in which gastric cancer (GC) develops. The OLGA and OLGIM staging systems have been suggested to provide risk estimation for GC. In the multivariate logistic analysis, age (odds ratios (ORs), 1.932; P < 0.001 for ages in the 40–59 and >60, respectively), family history of GC (OR, 2.119; P < 0.001), and H. pylori infection (OR, 1.963; P < 0.001) were independent risk factors for GC in the diffuse type 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 significantly associated with increased risk of GC in comparison to low-risk (OR, 3.051; P < 0.001): intestinal-type GC (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 status 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.

References

Abstract No: P0576

<table>
<thead>
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<th>Gastric cancer patients (n=607)</th>
<th>Intestinal-type (n=354)</th>
<th>Diffuse-type (n=233)</th>
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<tr>
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<td>95% CI</td>
<td>p-value</td>
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<td><strong>Sex</strong></td>
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<tr>
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<tr>
<td>Male</td>
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<td>Age(year, mean±sd)</td>
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<tr>
<td>&lt;40</td>
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<td>2.584</td>
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P0579 THE FEASIBILITY STUDY USING KUMC ROBOTIC MANIPULATOR IN ENDOCUTURAL SUBMUCOSAL DISSECTION

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Introduction: Gastrintestinal 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 ESD 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 porcine stomachs were used for the test. Porcine stomachs were assigned randomly to 2 groups and ESD was performed on mucosa of stomach using conventional technique and new 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 complications 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 = 0.001, odds ratio 0.53, CI 0.32-0.83). Both endoscopic experts and novice endoscopists completed the ESD procedure for in 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.

Abstract No: P0579

Disease cancer mortality associated with baseline BMI according to BMI ranges

<table>
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<th>BMI Range</th>
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<tbody>
<tr>
<td></td>
<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></td>
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<tr>
<td>Esophagus</td>
<td></td>
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<td></td>
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<tr>
<td>&lt;0.001</td>
<td>0.53 (0.43-0.65)</td>
<td></td>
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</tr>
<tr>
<td>Stomach</td>
<td></td>
<td></td>
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<tr>
<td>0.001</td>
<td>0.77 (0.72-0.83)</td>
<td></td>
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<tr>
<td>Colon and rectum</td>
<td></td>
<td></td>
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<tr>
<td>0.001</td>
<td>1.01 (0.92-1.11)</td>
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<tr>
<td>Colon</td>
<td></td>
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<tr>
<td>0.001</td>
<td>1.06 (0.94-1.19)</td>
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<tr>
<td>Rectum</td>
<td></td>
<td></td>
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<tr>
<td>0.001</td>
<td>0.93 (0.80-1.08)</td>
<td></td>
<td></td>
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<tr>
<td>Small intestine</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>0.004</td>
<td>0.64 (0.41-1.00)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liver</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.601</td>
<td>0.95 (0.95-1.09)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pancreas</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.937</td>
<td>1.00 (0.90-1.12)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GB and Biliary tract</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.012</td>
<td>1.16 (1.03-1.31)</td>
<td></td>
<td></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, 000, 500-990, 000, 1, 000, 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.

P0580 DEVELOPMENT OF NOVEL ENDOCUTURAL IRREVERSIBLE ELECTROPORATION 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 mechanism to remove undesired cells by affecting the cell membrane without thermally destructing blood vessels, nerves and the surrounding tissues. Several clinical trials for applying IRE to human organs such as liver, pancreas, and kidney are conducted and studies about IRE ablation for gastrointestinal tumors also have been conducted recently. Here, we developed new 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 0.63 mm nitinol wire and the distance between each electrode is 10 mm. The electrodes are loaded within braided tube for stent delivery system then deployed when IRE catheter put in stomach through the endoscope. We performed endoscopy and IRE ablation was done on pig’s stomach mucosa by using endoscopy with newly developed IRE catheter. We divided pig’s stomach into 2 parts (antrum & body), and IRE ablation was applied on each part of the stomach. Pigs were sacrificed after 24 hours, and we collected their stomachs with surgical technique. Following fixation, tissues were stained with H&E.

Results: Ten male Yorkshire pigs and in vitro stomachs were used in this study. The tissue with H&E stain showed diffuse cell death 24 hr after IRE ablation.
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.

P2052 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 (SlF) were used (April 2010–March 2011), and the second comprised patients evaluated during the period when small biopsy forceps (SmF) were used (April 2011–March 2013). Standard caliber endoscopy was used for all esophagogastroduodenoscopy (EGD). We count the number of GIN and gastric carcinoma lesions. Patient characteristics, lesion characteristics (e.g., site, macroscopic appearance, and color tone), endoscopist experience level, biopsy specimen type, and 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 5420 patients who underwent EGD in the first period, 2, 584 (30.7%) underwent gastric biopsy with SlF. Among the 15,988 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% (317/4204) of the SlF and SmF groups, respectively (P = 0.556). GIN was diagnosed in 0.73% (19/2583) and 1.25% (52/4204) of the SlF 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, the lesion characteristics, endoscopist experience level, biopsy specimen type, and groups diagnosed as GIN. The mean minor-axis lengths of the biopsy samples were 1.50 ± 0.50 mm and 1.38 ± 0.40 mm in the SlF and SmF groups, respectively. The SmF group samples tended to be shorter (P = 0.088). In both groups, 40% of the final diagnoses were epithelial neoplasias; 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

P2053 THE ROLE OF STRESS AND NITROSAMINES IN THE DEVELOPMENT OF GASTRIC CANCER: A NEW MODEL OF ADENOCARCINOMA FORMATION WITH METASTASES IN RATS

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Introduction: Stomach cancer is a leading cause of cancer-related deaths in the world. A lot of studies are carried out to find out 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 epide- miological evidences 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 in 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 (2g/kg) in food and water with nitrates (2g/l); 3) the combined effects of stress + nitrosamines. The
upper endoscopy was performed using our in-house custom-made multichannel endoscopy system. Histological assay performed to analyze the changes in the gastric tissues.

Results: Using upper gastroscopy, we studied the stomach tissues during 9 months of lining of rats in chronic stress. There were no changes in the gastric mucosa during the first 2 months. In the third month 35% (7/20) of animals demonstrated multiple small peptic ulcer (n = 11). These changes progressed during other time of observation. 9 months of experiment. So, this time all rats showed peptic ulcers both types with significant increase in the number of ulcers (n = 21 and large, n = 9). Thus, this series of experiments clearly showed that chronic stress plays provoking role in the peptic ulcer formation in the stomach of rats. The deleterious effects of nitrosamines on the gastric mucosa observed 4 months after the beginning of daily using of toluidine and nitrites in 75% of gastric mucosa. 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. In the same 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 migration of metastatic tumor cells through the bloodstream in the liver. The number of metastatic nodes varied from 1 to 5.

Conclusion: Thus, in our research we clearly show that only combination of two provoking factors such as stress and nitrosamines cause development of gastric cancer with metastasis in the liver while the presence of these factors alone contribute mucosal injuries without oncolgical changes in the stomach.

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

References
6. A370 methionine, isoleucine, leucine, tyrosine, phenylalanine, lysine and arginine, patients, GC patients had higher levels of threonine, serine, alanine, valine, methionine, isoleucine, leucine, tyrosine, phenylalanine, l 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 3 AAs 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 early GC.

Table 1: Differential GJFAAs between GC and NGD patients and their discriminating 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>FC</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>1.054</td>
<td>0.766</td>
<td>0.561–0.771</td>
<td></td>
</tr>
<tr>
<td>AA03</td>
<td>PEIN</td>
<td>0.007</td>
<td>0.018</td>
<td>&lt;0.001</td>
<td>1.028</td>
<td>0.606</td>
<td>0.718–0.820</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>0.729–0.830</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>0.831–0.903</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>1.765</td>
<td>0.712–0.814</td>
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<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>1.248</td>
<td>0.797–0.837</td>
<td></td>
</tr>
<tr>
<td>AA18</td>
<td>Ile</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>
<td></td>
</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>
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<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>1.926</td>
<td>0.835–0.902</td>
<td></td>
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<tr>
<td>AA21</td>
<td>Phe</td>
<td>0.066</td>
<td>0.032</td>
<td>&lt;0.001</td>
<td>1.365</td>
<td>1.754</td>
<td>0.803–0.882</td>
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<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>0.884–0.925</td>
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<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>0.772–0.868</td>
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</table>

*p*-value, Statistically significant difference using Mann-Whitney U test; VIP, variable importance in projection; FC, Fold Change; AUC, area under the ROC curve; 95% CI, 95% confidence interval.

Conclusion: GJ_AA 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 metabolomic biomarkers for GC.

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

References

POS08 THE ASSOCIATION BETWEEN MMP-2/9 AND TYPE IV COLLAGEN AND THE LEVELS OF AROMATIC AMINO 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 a series of explorations on the reasons to cause such phenomenon before. The candidate molecules: 1) L-type amino-acid transporer 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 autophaugy, (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 issues, 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 metallo-proteinase-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 simultaneously collected from 29 GC patients, while MMP-9 was mainly and gender-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 of GC patients 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 MMP-9 was mainly lower 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 level 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 = 0.262, P < 0.05; MMP-9: rho = 0.297, P < 0.05). Furthermore, the levels of AAAs in gastric juice were positively correlated with the expression level of MMP-2/9 and Col IV (rho = 0.475, P < 0.01; rho = 0.457, P < 0.01, respectively).

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>Col IV</th>
</tr>
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<tbody>
<tr>
<td>Tyrosine</td>
<td>0.262**</td>
<td>0.457***</td>
</tr>
<tr>
<td>Phenylalanine</td>
<td>0.295**</td>
<td>0.455***</td>
</tr>
<tr>
<td>Tryptophan</td>
<td>0.293**</td>
<td>0.477***</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 SERUM PG2 LEVEL IN GASTRIC CANCER

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3Dept. Of Gastroenterology, Gastroenterology Dept Maggiori hospital, Crema, Italy
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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 parameters in population at risk for GC and in GC patients.

Aims & Methods: Gastric function of 180 patients (67 GC, 71 first-degree relatives of GC patients (FDR-GC) and 42 autoimmune chronic AG (ACAG)) was assessed by gastropanel test. We investigated the PG2 TATA BOX polymorphism frequencies in relation to serum PG2 (sPG2) expression level, HP positivity and risk for GC. TATA BOX DNA fragments were amplified by PCR and analyzed by the capillary-electrophoresis (GeneMapper software). Association among clinical data and PG2 polymorphisms were estimated by Receiver operating characteristic (ROC) curve and linear regression analyses.

Results: After ROC curve analysis, the sensitivity to discriminate GC at 15 ng/mL PG2 cut-off was 70.15% and 79.65% sensibility and sensitivity, respectively.

Conclusions: Accordantly to the literature, we confirm sPG2 level as a marker of some tumor including the gastric cancer. However, the modulation of the protein and its role in cancer is not fully understood. The aim of this study was to analyse the polymorphisms in the TATA BOX region, by interfering with the transcriptional factor and then with the transcription characteristic (ROC) curve and linear regression analyses.

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

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, and education level, the hazard ratio (HR) for NAFLD development in participants with H. pylori-infection compared to those without infection was 1.21 (95% confidence interval [CI], 1.10–1.34). The association persisted after further adjustment for metabolic variables, inflammatory marker, and liver enzymes. The association between H. pylori and NAFLD was still evident in an analysis using fatty liver index as a surrogate marker of NAFLD. In addition, the association between H. pylori infection and incident NAFLD did not differ across clinically relevant subgroups evaluated.

Conclusion: H. pylori infection was significantly associated with the development of NAFLD, independent of metabolic and inflammatory risk factors. H. pylori infection may play a pathophysiological role in NAFLD development, indicating that H. pylori eradication might play a role in reducing risk of NAFLD.

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

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 as end points of HIV 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.

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.

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>34,960.7</td>
<td>1301</td>
<td>37.2</td>
<td>1.00 (reference)</td>
</tr>
<tr>
<td>H. pylori (+)</td>
<td>48,169.3</td>
<td>2080</td>
<td>43.2</td>
<td>1.14 (1.06–1.22)</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. H. pylori, helicobacter pylori; HR, hazards ratio; CI, confidence intervals.

References:
P0592 HELICOBACTER PYLORI INFECTION REDUCES THE RISK OF BARRETT’S OESOPHAGUS AND IG UNE INDEPENDENT FROM THE GEOGRAPHICAL LOCATION, A META-ANALYSIS

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Introduction: European and Northern American populations a decreasing prevalence of H. pylori infection has been observed, along with an increasing prevalence of Barrett’s oesophagus and an increasing incidence and prevalence of the adenocarcinoma of the oesophagus and gastro-oesophageal junction stenosis. H. pylori infection has been proven a protective factor against Barrett’s oesophagus, but some individual studies suggested the opposite.

Aims & Methods: Our aim was to scrutinise all data available on the relationship between H pylori infection and Barrett’s oesophagus prevalence, to see, if H pylori has a protective role for Barrett’s oesophagus and if it is dependent from the geographical location. A meta-analysis was performed using the preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P). We conducted a systematic search in PUBMED, EMBASE and COCHRANE databases from inception to December 2016, for the keywords of Barrett’s, Barrett’s metaplasia, Barrett’s oesophagus, Barrett’s oesophagus, Barrett’s oesophagus, Helicobacter pylori, H pylori and Helicobacter. We also used information from the references of relevant publications to find further eligible studies. We have conducted a meta-analysis of the data from all studies included. We used the random effects model from DerSimonian and Laird.

Results: We have found 568 articles in PUBMED, 741 in EMBASE and 15 in COCHRANE databases. After exclusion of the articles without sufficient data on the prevalence of H pylori and Barrett’s oesophagus, we have identified 83 articles suitable for statistical analysis. This meta-analysis involved 98 665 patients with Barrett’s oesophagus and 720 800 patients without Barrett’s oesophagus. The statistical analysis from all 83 studies from five continents and 27 countries showed a protective effect of H pylori for Barrett’s oesophagus, except in Africa, overall Odds Ratio = 0.63 (95% CI:0.55, 0.71). The OR and 95% CI values were 0.34 (0.17, 0.67) for Asia, 0.71 (0.55, 0.91) for Europe, 3.05 (0.59, 15.73) for Africa, 0.60 (0.51, 0.71) for North-America, 0.95 (0.56, 1.64) for South-America and 0.56 (0.39, 0.82) for Australia. The OR and 95% CI values were 0.84 (0.43, 1.64) for Eastern Europe; 0.68 (0.52, 0.90) for Western Europe and 0.71 (0.55, 0.91) for all of Europe, suggesting that the protective role of H pylori infection is not different across Europe.

Conclusion: This large meta-analysis has given further evidence, that Helicobacter pylori infection has a protective role for Barrett’s oesophagus and this protective role is independent from the geographical location, apart from Africa. In view of the decreasing prevalence of H pylori in developed countries and the epidemiological rise of Barrett’s oesophagus and adenocarcinoma, it would be important to conduct further large, prospective, multinational studies on the effect of H. pylori infection on Barrett’s oesophagus.

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

References

The reference list for all studies involved in this meta-analysis will be presented at the conference.

P0593 THE IMPACT OF HELICOBACTER PYLORI ON MORTALITY AND OTHER OUTCOMES IN PATIENTS WITH HEPATIC ENCEPHALOPATHY: A NATIONWIDE ANALYSIS

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Introduction: Helicobacter Pylori (H. Pylori) has been implicated in worsening outcomes in patients with hepatic encephalopathy. This is believed to be the result of its urease enzyme that increases the production of ammonia. Small studies so far have yielded contradictory results on whether the presence of H. pylori worsens treatment outcomes in hepatic encephalopathy. Therefore, the aim of this study was to assess the impact of H. pylori on mortality, morbidity and resource utilization among patients with hepatic encephalopathy using a national database.

Aims & Methods: This was a case-control study using the National Inpatient Sample 2013, the largest publicly available inpatient database in the United States. All patients with an ICD-9 CM code for a principal diagnosis of hepatic encephalopathy were included. There were no exclusion criteria. Patients positive for H. pylori were identified using the appropriate ICD-9CM codes. The primary outcome was all cause mortality. The secondary outcome was resource utilization as measure by use of abdominal imaging (CT scan and ultrasound of the abdo- men), length of hospital stay (LOS), total hospitalization charges and costs.

Multivariate regression analyses were used to adjust for the following confounders: Age, sex, race, income in patients’ zip code, Charlson Comorbidity Index, hospital region, location, size and teaching status.

Results: A total of 55,560 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 analy- sis, 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 ratios (aOR: 0.92, 95% CI: 0.88–10.40, p = 0.003), 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 charges compared to 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 differ 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.

References

**PO595** 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. Laboratory evaluation for Helicobacter pylori antigen within the stool was done 6 weeks after cessation of Helicobacter pylori treatment regimens to assess the response.

**Results:** The response to treatment was significantly higher in group 1 of Nitazoxanide treatment regimen than group 2 of traditional treatment regimen. Group 1 (49.4%) of 114 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.

**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</td>
<td>24/45 (53, 3%)</td>
<td>65/68 (95, 5%)</td>
<td>&lt;0,001</td>
</tr>
<tr>
<td>B: Concomitant</td>
<td>37/44 (84, 1%)</td>
<td>61/62 (98, 4%)</td>
<td>0,0085</td>
</tr>
<tr>
<td>Total</td>
<td>61/89 (68, 5%)</td>
<td>126/130 (96, 9%)</td>
<td>&lt;0,001</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.

**Reference:**

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**PO596** PREVIOUS INTAKE OF MACROLIDES PREDICTS FAILURE TO ERADICATE HELICOBACTER PYLORI WITH CLARITHROMYCIN-CONTAINING REGIMENS

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**Introduction:** There is 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 in 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 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 contained 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.

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

**References:**
P0598 ERADICATION OF HELICOBACTER PYLORI INFECTION WITH A TRIPLE FORMULATION CONTAINING METRONIDAZOLE AND TETRACYCLINE WITH ESOMEPRAZOLE: A REAL-LIFE STUDY
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Introduction: Background: Eradication of Helicobacter pylori (H. pylori) infection represents a clinical challenge. The current requirements demand eradication rates of ≥70%, which has made that the use of triple treatment including clarithromycin or metronidazole had been gave 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 carbonate 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 carbonate potassium 140mg, metronidazole 125mg, and tetracycline 125mg, three capsules four times daily, and esomeprazole 40 mg twice daily and probiotic during 30 days. The primary endpoint was H. pylori eradication rate. Ninty five percent of the area 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.
Results: Two hundred and forty-two patients, which excluded patients who did not complete the study or who had major protocol violations, were also included to conduct 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) [40.0 to 52.0] years. Twenty-five (25.0%) patients had a prior history of using medications to treat H. pylori, most often 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% (20/21) 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.

P0599 COST EFFECTIVENESS OF HELICOBACTER PYLORI POPULATION SCREENING: ECONOMIC EVALUATION ALONGSIDE A RANDOMIZED CONTROLLED TRIAL WITH 13-YEARS FOLLOW-UP (THE HEF-PFY STUDY)
M. Bonme1, J. Hallas2, O.B. Schaffalitzky De Muckadell1
1A REAL-LIFE STUDY
H. 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 40–65 were randomized and invited in 1998–99; 12,530 were enrolled and of these 8658 individuals have been successfully followed up at 1, 5, and 13 years after intervention. Questionnaires included Gastrointestinal Symptom Rating Scale and the quality of life instrument SF-36. From SF-36 responses an SF-6D score was derived and used for calculation of quality adjusted life years (QALY). EQ-5D-5L was incorporated in the analysis. From SF-36 responses an SF-6D score was derived and used for calculation of quality adjusted life years (QALY) and Life-years gained. The evaluation has a National Health Sector perspective.
Results: There was no significant difference in index scores and in mean QALY between groups. Hp population screening and eradication with 13-years follow-up was not effective in regards to quality of life and the cost of screening was higher than not screening (14,372 DKK; 95% CI: 4,155−24,499). The probability of being cost-effective was 80% with a willingness to pay of 400,000 DKK per life-year gained. When including only peptic ulcer disease related costs the probability was 85% a willingness to pay of 100,000 DKK per life-year gained.
Conclusion: Hp population screening and eradication with 13-years follow-up was not effective in regards to quality of life and the cost of screening was higher than not screening.
Disclosure of Interest: All authors have declared no conflicts of interest.

P0600 A SEVEN-DAY TRIPLE THERAPY CONTAINING A POTASSIUM-COMPETITIVE ACID BLOCKER COMPARED WITH PROTON PUMP INHIBITORS, AMOXICILLIN AND CLARITHROMYCIN FOR FIRST-LINE HELICOBACTER PYLORI ERADICATION IN JAPAN: A SINGLE-CLINIC RETROSPECTIVE STUDY
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Introduction: This study was evaluated the effectiveness and safety of Vonoprazan, a potassium-competitive acid blocker (P-CAB) compared with proton pump inhibitors (PPIs) 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 amoxicillin) on consecutive patients (n = 348) between April 2008 and February 2017 at Sadamoto GI clinic, Japan. Patients who received 7-day P- CAB therapy (vonoprazan 20 mg twice daily; n = 498) were compared with those who received 7-day PPI therapy (lansoprazole 30 mg/day; n = 250). The eradication rates were calculated by intention-to-treat (ITT) and by 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%/86.8%, 63.9%/76.2%, 68.0%/79.5%, and 63.2/70.8%, respectively. The vonoprazan eradication rates were significantly higher than those of these PPIs (P < 0.05). There was no significant difference in the adverse events between the two therapies. Conclusion: Seven-day P-CAB 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.

P0601 AN OPEN-LABEL, RANDOMIZED CONTROLLED TRIAL OF VONOPRAZAN VERSUS ESOMEPRAZOLE AS PART OF FIRST-LINE TRIPLE THERAPY FOR HELICOBACTER PYLORI ERADICATION
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Introduction: Vonoprazan (VPZ) is a novel, orally bioavailable, potassium-competitive acid blocker 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).
Aims & Methods: The aim of the current study was to evaluate the efficacy and safety of VPZ. CAM (400 mg/day), and esomeprazole (ABPC; 1500 mg/day) triple therapy in post-marketing use in Japan. A randomized, open-label, single-center study was conducted to verify the superiority of VPZ to esomeprazole (EPZ) as part of first-line therapy in patients with HP infection. Three hundred and forty-nine Japanese patients with HP infection diagnosed using a rapid urease test were enrolled between June 2015 and October 2016. The patients were randomly allocated to VPZ group (VPZ 40 mg/day, ABPC 1500 mg/day, CAM 400 mg/day) or EPZ group (EPZ 40 mg/day, ABPC 1500 mg/day, CAM 400 mg/day) with stratification according to endoscopic findings of gastric/duodenal ulcer and H. pylori resistance determined via a microbial sensitivity test. The eradication rates were evaluated using the urea breath test 8 to 12 weeks after cessation of therapy.
Results: Three hundred and forty-five patients (177 men, 168 women; mean age 64.7 years [range 27–89 years]; VPZ group, 169; EPZ group, 176) completed the study. One patient in the VPZ group and three patients in the EPZ group discontinued the treatment because of adverse events. One patient in the VPZ group and three patients in the EPZ group were lost to follow-up. There was no significant difference in the overall first-line eradication rate between the two groups (81.7% [138/169] in the VPZ group vs. 74.4% [131/176] in the EPZ group [P = 0.10]). Furthermore, there was no significant difference in the first-line eradication rate in patients with CAM-sensitive HP (87.2% [82/92] versus 84.6% [77/91]) in the VPZ and EPZ groups, respectively, [P = 0.60]). The eradication rate was significantly higher among patients with CAM-resistant HP in the VPZ group than that in the EPZ group (73.6% [30/41] vs. 55.6% [35/63], [P = 0.044]). The first-line eradication rate in the patient with high estimated glomerular filtration rate (eGFR; > 60 ml/min/1.73 m²) was significantly lower than that in the patients with low eGFR (> < 60 ml/min/1.73 m²). 86.4% [32/37] in
the patients with low eGFR, 65.3% [34/53] in the patients with high eGFR [P = 0.034]. It was significantly higher in the VPZ group than that in the EPZ group (79.3% [23/29] versus 50% [11/13], respectively, [P = 0.023]). 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 400 mg/day CAM and 1500 mg/day ABPC was similar to that of EPZ-based triple therapy in all groups except in patients with CAM-resistant HP and high eGFR.

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

Reference

P0602 THE IMPACT OF AMOXICILLIN RESISTANCE ON THE EFFICACY OF AMOXICILLIN-CONTAINING REGIMENS FOR HELICOBACTER PYLORI ERADICATION—A POST-HOC ANALYSIS OF FIVE RANDOMIZED TRIALS

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Introduction: The impact of amoxicillin resistance on the efficacy of regimens containing amoxicillin for Helicobacter pylori (H. pylori) eradication remains inconclusive. Therefore, we aimed to investigate whether the efficacy of amoxicillin-containing regimens is affected by amoxicillin resistance and to identify the optimal breakpoint of amoxicillin resistance.

Aims & Methods: This was a post-hoc analysis of five randomized trials conducted in Taiwan from 2007 to 2016. Patients who received amoxicillin-containing regimens were recruited. The minimum inhibitory concentrations (MICs) were determined by agar dilution test. Meta-analysis was performed to assess the risk ratio of eradication failure in amoxicillin resistant strains compared to susceptible strains of seven different regimens. We further performed pooled analysis and logistic regression in patients treated with clarithromycin triple therapy to identify the optimal breakpoint of amoxicillin resistance.

Results: A total of 2339 patients with available data of amoxicillin MICs were enrolled. Meta-analysis showed that the presence of amoxicillin resistance was an independent risk factor of treatment failure of H. pylori infection. However, GAFG is also found in adenocarcinoma with low-grade atypia occurring in the mucosa of the fundic gland type and H. pylori infection susceptibility. Atrophic gastritis (AG) or gastric cancer (GC) was observed. 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 400 mg/day CAM and 1500 mg/day ABPC was similar to that of EPZ-based triple therapy in all groups except in patients with CAM-resistant HP and high eGFR.

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

Reference

P0604 ASSOCIATION BETWEEN GASTRIC ADENOCARCINOMA OF THE FUNDIC GLAND TYPE AND H. PYLORI INFECTION

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Introduction: Gastric adenocarcinoma of the 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 cannot deny 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 = 5) and Hp-infected (n = 5). We analyzed both micromorphological and immunohistochemical features. The association with Hp infection was not clear. In immunohistochemical staining, MUC6 positive, MUC5AC positive, and MUC2 negative, CD 10 negative in all cases, whereas the ratio of MUC5AC/MUC2 positive was significantly higher in the Hp-infected group as 0.20 (P = 0.045). We reported that black pigmentation is recognized in GAFG (stomach and intestine 50:151–151, 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) or no pigmentation (n = 4) are 50%, and it is suggested that the pigmentation in GAFG may relate with PPI (p = 0.091).

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

References
Conclusion: Hp infection is suggested to be related to the invasion depth of CD. Hp prevalence was noted in 66.7% of cases. Specific management of hepatic cirrhosis has been established with ligation of esophageal varices in 2 patients after bleeding esophageal varices until eradication of varices. A treatment with β blockers was prescribed in primary prophylaxis of digestive bleeding by rupture of esophageal varices in 4 patients. Diuretic therapy and aspiration of the ascites fluid are performed in cirrhotic patients with ascites. A GFD is established in addition to the specific management of liver cirrhosis. Liver tests were standardized in 100% of patients with cryptogenic transaminasemia following GFD. 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 etiology and in the presence of a chronic cryptogenic or dysimmune liver diseases.

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

Reference

P0607 CELLIAC DISEASE ASSOCIATED WITH VASCULAR THROMBOSIS
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Introduction: Celiac disease (CD) is a life-long autoimmune disease affecting multiple organs of genetically susceptible individuals. One of the extra intestinal manifestations of the disease is thromboembolic events like strokes and veins' thrombosis.

Aims & Methods: The aim of this work is to determine the prevalence and clinical characteristics of the thrombosis observed during CD. Prospective multicenter work involving 154 adult celiac patients (42H, 112F), with an average age of 36.1 years ± 13.6, recruited between 01-01-2013 and 30-06-2014 with a minimum follow-up of 12 months. The diagnosis of CD was in all cases based on clinical, serological and histological arguments. Thrombotic complications were noted as well as their modalities of occurrence.

Results: Vascular thrombosis was diagnosed in 13 patients (8.4%), and occurred almost exclusively in women (84.6%) (11 F - 2 H). There are 6 cases of portal cavernoma, one associated with lower limb thrombosis, 4 cases of stroke and 3 cases of thrombosis of the lower limbs. The diagnosis of thrombosis revealed the diagnosis of MC in 8 patients (61.5%) with an average delay of 11.6 months and extreme delays of 1 to 43 months. These include 4 cases of a portal cavernoma, one associated with deep limb thrombosis, 3 cases of stroke, and one case of deep thrombosis of the lower limbs. The diagnosis of CD was made on average 72 months after that of thrombosis in 4 patients (30.8%). In one case, thrombosis was complicated 39 years after diagnosis of CD diagnosed in childhood at the age of 5 years without gluten-free diet. The thrombophilia assessment was carried out in all patients and. The thrombophilia assessment was was negative in 11 cases (84.6%). A S protein deficiency associated with the CD in one case and an antithrombin III deficiency in another case were detected. The use of oral contraceptives and in all cases a micro-dosed oestro-progestin was found in 7 women (63.6%). The treatment of women involved an anticoagulant and corticosteroids.

Conclusion: The diagnosis of CD must be evoked when there is a thrombotic disease without obvious cause, factors of thrombophilia may be present during the CD. Early CD diagnosis with respect to the gluten-free diet may prevent the development of this complication.

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

P0608 DIFFERENT PROFILES OF TLR 2, 4, 7 AND 9 MRNA IN PBMC AND BIOPSY SPECIMENS OF PATIENTS WITH CELIAC DISEASE
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Introduction: Celiac disease (CD) is an organ-specific autoimmune disease, and both adaptive and innate immunity are involved in its development. Recent studies suggest the dysregulation Toll-like receptors (TLRs) in innate immunity can confer risk to autoimmune diseases such as CD.

Disclosure of Interest: All authors have declared no conflicts of interest.
Aims & Methods: In this study we investigated the TLRs 2, 4, 7, 9 genes expression in the ileum of patients 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.

Introduction: The mucus layer, covering the gastrointestinal mucosa, is considered as the first line of defence against mechanical, chemical, or microbiological aggressions arising from the luminal contents. Among all different cell types of the intestinal epithelium, the goblet cells are specialised in the secretion of mucus constituent. As an example of failing barrier function, patients with coeliac disease (CD) have been reported to have altered intestinal barrier. Human colonic mucus-secreting cells HT-29-16E are valuable tools to explore the effect of a specific treatment on permeability and mucus production by the human intestinal epithelium.

Aims & Methods: We investigated the new and innovative gluten detoxified bread (GFB; patent PCT/IB2013/007977) effects on mucus production by means of Alcian blue staining in comparison to the control bread (CB). In addition, MUC2 and MUC3 were quantified by ELISA and the permeability of the intestinal epithelium monolayer was evaluated by trans-epithelial resistance (TEER) measurement. The statistical analysis was conducted by one-way ANOVA followed by a Bonferroni post-hoc t-test.

Results: Mucin production by Alcian blue staining was expressed as % black pixels. As shown from Image J analysis, GFB increased the expression of MUC2 by % of 27.4 ± 1.82; P < 0.001, whereas CB did not (9.94 ± 0.67; P = 0.05). Higher MUC2 concentrations expressed as ng/ml were found on cells treated with GFB (10.82 ± 1.35; P = 0.01) compared to control. This result was not found for MUC3 (19.34 ± 0.18; P = 0.05). Alcian blue TEER values, expressed as a percentage of initial TEER, were observed after 24 hours of incubation with GFB in comparison to the control (163.2 ± 33.8; P = 0.01) which was not observed or CB (139.4 ± 28.8; P = 0.05).

Conclusion: It could be concluded that GFB has a potential of inducing MUC2 secretion by intestinal epithelial cells and improving intestinal epithelium permeability in vitro. Such observed potential may effectively contribute to consequent benefits such as higher gut barrier performance, decreased susceptibility to infections and better absorption regulation, thus ameliorating such alterations in colonic patients.

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 =45%) which contained questions on whether the participant had ever been told by a physician that they had CD, and questions regarding GI symptoms to establish whether they had co-existent functional GI disorders. Adherence to a gluten-free diet was not assessed. Prevalence of CD, FD and IBS are reported with 95% exact confidence intervals. The difference between symptoms in those with CD compared with the unaffected population was tested for significance by Pearson chi-square test.

Results: The prevalence of doctor-diagnosed CD was 1.2% (95% CI 0.84–1.59) in this cohort. Subjects with CD reported significantly higher levels of GI symptoms than unaffected individuals, including abdominal pain associated with abnormal bowel habit, diarrhoea, bloating, distension, epigastric burning and early satiety (see Table). The prevalence of CD, FD and IBS are reported with 95% exact confidence intervals. The difference between symptoms in those with CD compared with the unaffected population was tested for significance by the Pearson chi-square test.

Table: Gastrointestinal symptoms reported by patients with and without self-reported coeliac disease (CD). Items reported as greater than once a day per week (*) or greater than or equal to “often” (**) 

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Self report</th>
<th>Self report</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abdominal pain associated with loose bowel movements **</td>
<td>16/37 43.2%</td>
<td>600/3234 18.6%</td>
<td>P &lt; 0.001</td>
</tr>
<tr>
<td>More bowel movements associated with pain **</td>
<td>13/38 34.2%</td>
<td>504/3248 15.5%</td>
<td>P &lt; 0.002</td>
</tr>
<tr>
<td>Bloating</td>
<td>13/40 32.5%</td>
<td>436/3381 12.9%</td>
<td>P &lt; 0.001</td>
</tr>
<tr>
<td>Distention</td>
<td>12/40 30%</td>
<td>395/3371 11.7%</td>
<td>P &lt; 0.001</td>
</tr>
<tr>
<td>Abdominal pain *</td>
<td>9/39 23.1%</td>
<td>362/3738 10.7%</td>
<td>P = 0.014</td>
</tr>
<tr>
<td>&gt;3 bowel movements per day **</td>
<td>7/40 17.5%</td>
<td>740/175 4.9%</td>
<td>P &lt; 0.001</td>
</tr>
<tr>
<td>Epigastric burning</td>
<td>8/40 20%</td>
<td>165/3380 4.9%</td>
<td>P &lt; 0.001</td>
</tr>
<tr>
<td>Early satiety *</td>
<td>8/40 20%</td>
<td>230/3738 6.8%</td>
<td>P = 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 those without such diagnosis. Studies of anti-CD 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.

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

References

P0613 MALE GENDER AND UNDERWEIGHT ARE ASSOCIATED WITH OSTEOPOROSIS IN PATIENTS WITH NEW DIAGNOSIS OF COELIAC DISEASE

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Introduction: Osteoporosis is a systemic skeletal disorder characterized by low bone density and micro-architectural deterioration with increase of bone fragility and consequent fracture risk. About 50–75% of patients (pts) with untreated coeliac disease (CD) suffer from bone mass loss (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 years, pts with overt malabsorption or with a history of fragility fractures. Studies on bone mineral density (BMD) in CD pts led to disparate 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 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 atrophic disease and were invited to undergo a DEXA within 3 months from diagnosis to screen for osteoporosis (T-score < −2.5) or osteopenia (T-score < −1 and ≥−2.5). A total of 214 (82.9%) pts underwent the DEXA scan and were included in the study (F = 71.5%, median age 38, range 18–72 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, smoking) and serological PTH values were assessed. The signs/symptoms leading to CD and their duration before diagnosis, autoimmune/not-autoimmune comorbidities, familiarity for CD, previous fractures and serological assays (specific antibodies for CD, ferritin, cholesterol, triglycerides, and albumin) were also assessed. All the variables described were analyzed and compared between the 3 groups. Logistic regression was performed including into the model those independent variables which showed a significant difference at univariate analysis.

Results: At the DEXA scan, 85 (39.7%) and 129 (60.3%) pts had normal or low BMD, respectively. Among pts with low BMD, 91 (42.5%) had osteopenia and 38 (17.8%) osteoporosis. At logistic regression, clinical features significantly associated with osteoporosis were male gender (OR 4.7; 95% CI 1.3 to 17.4), underweight (OR 8.1; 95% CI 1.8 to 35.3) and increased PTH values (OR 5.1; 95% CI 1.4 to 18.8), while age >50 years and gastrointestinal symptoms at diagnosis time, menopause, alcohol intake and previous fractures were not associated. Clinical features significantly associated with osteopenia were male gender (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 CD pts, the overall prevalence of BMD alterations was more than 60%, with osteoporosis in nearly 1/3. 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 12.5–14.5%). Only 11% (50/455) of these SRWS had received a doctor diagnosis of wheat or gluten intolerance. The most commonly reported GI symptoms (reported as more than weekly or often) associated with SRWS included abdominal pain relieved by bowel movements (54.5%), bloating (37.6%) and abdominal distension (30.8%). In a multivariate analysis, a diagnosis or SRWS was significantly associated with irritable bowel syndrome (IBS) and functional dyspepsia (FD) (Rome III criteria), female gender, and food allergy (see Table). Older age was negatively associated with SRWS. In this multivariate model, factors with no observed association included body mass index, depression, anxiety, sleep problems, proton pump inhibitor use, gastrointestinal infection, rheumatoid arthritis, scleroderma, migraine, Parkinson’s disease, asthma, pollen allergy, animal allergy, psychic stress and recent antibiotic use. The model provided useful although imperfect differentiation of SRWS from health (AUC = 0.76).

Table: Medical and demographic factors associated with a diagnosis of self-reported wheat sensitivity (SRWS).

<table>
<thead>
<tr>
<th>Odds</th>
<th>95% CI</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age: mean (SD)</td>
<td>51.9</td>
<td>59.3</td>
</tr>
<tr>
<td>Female gender</td>
<td>136/450</td>
<td>1.38</td>
</tr>
<tr>
<td>Functional dyspepsia</td>
<td>128/466</td>
<td>1.14</td>
</tr>
<tr>
<td>Irritable bowel syndrome</td>
<td>248/453</td>
<td>3.96</td>
</tr>
<tr>
<td>Food allergy</td>
<td>56/445</td>
<td>151/2878</td>
</tr>
</tbody>
</table>

Conclusion: SRWS has a prevalence of 13.5% in this Australian cohort. Those with SRWS are likely to report abdominal symptoms, including abdominal pain after a few hours or abdominal distension. SRWS is significantly associated with IBS and FD, younger age, female gender, and food allergy.

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

References

P0615 INSUFFICIENCY OF THE SMALL INTESTINAL ENZYMES MAY BE ONE OF THE CAUSES OF FUNCTIONAL BOWEL DISEASE

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Insufficiency of functional bowel disease is usually associated with disorders of visceral sensitivity and intestinal motility, which result from a dysfunction of the central nervous system, intestinal microflora and immune system.

Aims & Methods: We aimed to highlight importance of intestinal enzymes (glucose, amylase, sucrase and lactase) in the etiology and pathogenesis of functional bowel disease. 74 patients with functional bowel diseases in age from 18 to 50 years (36 men and 38 women) were examined. According to Rome IV criteria (2016), 21 had irritable bowel syndrome (IBS) with predominant diarrhoea, 33 - functional diarrhoea, 6 - IBS with predominant constipation, 4 - functional constipation and 10 - mixed type of IBS. Activity of the mucosa enzymes of the small intestine was determined by Dahlquist-Trinder method in duodenal biopsies obtained during esophagogastrodudenoscopy.

Results: Lactase deficiency was identified in 87.8% of patients, maltase deficiency - in 48.6%, sucrase deficiency – in 51.3%, the glucoamylase deficiency – in 85.1%. The activity of all investigated enzymes was reduced in 23 (31.1%) patients with functional bowel diseases, failure of 1 to 3 enzymes detected in 47 (63.5%). Normal activity of enzymes was observed in 4 (5.4%) patients.

Conclusion: In 70 of 74 (94.5%) patients with functional bowel disease and a disorder of the stool, abdominal pain and flatulence, there was a decrease in the activity of intestinal enzymes, which may be a cause of intestinal symptoms.

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

Reference

P0616 WHEAT PROTEIN ALLERGY OR SENSITIZATION TO WHEAT PROTEIN IN A CELIAC POPULATION

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Introduction: Epidemiological studies estimate a worldwide prevalence of CD of approximately 1:100 individuals, with a considerable proportion of patients remaining undiagnosed and untreated.

According to a study performed by the National Health and Nutrition Examination Survey in the United States, the prevalence of self-prescribed GFD in an unselected population of subjects aged 6 years or older was 0.5%. Epidemiological studies report a prevalence of WA in American population of around 0.4% until 0.6%.

The diagnosis of WA is basically based on skin prick tests (SPT), in vitro specific Immunoglobulin E (sIgE) assays and functional assays. SPTs and sIgE in vitro assays are the first-level diagnostics for WA. However, they are affected by a low predictive value. In particular, their low sensitivity can be explained by the fact that the commercial test reagents are mixtures of water/salt-soluble wheat proteins that lack allergens from the insoluble gluten fraction. The association between food allergy and celiac disease (CD) is still to be clarified.

Gluten-related disorders are an epidemiologically relevant phenomenon with a global prevalence that is estimated around 5%, drawing the attention of the scientific community.

Aims & Methods: We visited in our unit of celiac disease and gluten-related conditions during 2016 423 (F:312/111) new patients with clinical suspicion of CD. Of these 113 they were non celiac but were investigated for suspected non celiac gluten sensitivity. After in vitro tests for the exclusion of celiac disease, to verify the real prevalence of food allergy particularly to wheat protein, in non celiac patient referred our unit for symptoms after gluten ingestion, all these patients underwent allergicology study which consists on skin prick tests for food, including wheat (Alk-abello), LTP (lipid transfer protein) (peach Abello), alpha amylase, wheat flour, barley, corn, rice, grass pollen and histamine. Also all they performed patch tests for suspected allergy to nickel, if they reported sensitivity to nickel or allergy to local metal allergy (MA) diagnostics could overcome some limitations of sIgE in vitro assay using wheat flour extracts. We have used omega-5 gliadin (TRI 19) and mILP (TRI 14), glh admin, wheat, gluten that are available in the immunoCap assay, whereas the Afta – amylase/trypsin inhibitor in the microarray (TRI a A/TI) is available only in the ImmunoCAP, ISAC assay. The sIgE to omega-5 gliadin assay is highly reliable and now widely used to identify the patient with WDEIA.

Results: In our overall population, 113 (26.7%) non celiac patient had a history of immediate or not immediate reaction after ingesting gluten: the Allergologic tests found wheat protein sensitization in 14 patients of these (12.4%, 9 F). In addition we also found 5 (4.3%, 4F) patients with real allergy to wheat or wheat protein.

Conclusion: In our population 19/113 (16.8%) non celiac patient had real reaction after ingesting gluten: 14 (12.3%) had wheat protein sensitization and 5 (4.5%) had WA. These results are different and very high than that reported in the literature.

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

Reference
as colchicine. Short-term outcome of having BAD is well-described, but long-term effects remain unclear. The aim of the present study was to describe long-term symptoms, adherence to treatment and quality of life in a well-defined group of patients with BAD.

**Aims & Methods:** Between 2003 and 2016, 559 patients referred to our hospital for differently managed abdominal soft tissues were collected. The presence of clinically overt 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 serum 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-6 showed a significant increase (2.45 ± 1.75 pg/mL and 0.65 ± 0.31 pg/mL) as compared to mean fasting values (1.17 ± 1.49 pg/mL and 0.29 ± 0.15 pg/mL; p < 0.05). Mean post-prandial values of uric acid were also significantly lower (74.98 ± 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 d after the ingestion of the 20 gr gluten oral load. Symptoms were absent after both oral loads.

**Conclusion:** The ingestion of gluten may not be 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.
Aims & Methods: All obese patients treated with IGB in a specialized obesity center, and that underwent balloon removal from June 2009 to June 2013 were analyzed and compared with logistic multivariate analysis. Patients that agreed to participate were interviewed by a trained investigator in person and answered a questionnaire survey and had their body weight measured. Interviews started on July 2015 and ended on July 2016. Medical records were reviewed on all patients that underwent balloon removal. 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 = -0.585). In contrast, among non-insulin dependent patients, there was a non-significant decrease in HbA1C during the year post the device removal (6.5 ± 1.3 to 6.4 ± 0.8, p = 0.812). Ten patients (19.6%) of the initial 51 treated suffered from adverse events, 4(7.8%) of which were categorized as severe ones (two major bleedings and 2 hepatic abscesses).

Conclusion: IGB is an effective tool for weight reduction in obese patients with diabetes as it sustained metabolic achievements are preserved at least a year after device removal. Since DJBL bears a considerable amount of side effects, strategies to mitigate them are warranted.

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

% of weight regained * 2 years 3 years 4 years 5 years
<10% 20% (2) 15.6% (13) 18.5% (10) 33.3% (1)
Between 10 and 19% 70% (7) 62.7% (52) 59.3% (32) 66.7% (2)
Between 20 and 29% 10% (1) 14.5% (12) 14.8% (8) 0
Between 30 and 39% 0 2.4% (2) 1.9% (1) 0
Between 40 and 49% 0 1.2% (1) 5.6% (3) 0
Between 50 and 59% 0 2.4% (2) 0 0
Between 60 and 99% 0 1.2% (1) 0

Conclusion: IGB has a suboptimal long-term effect on body weight control after 2 to 5 years of balloon removal, with weight regain observed in up to two thirds of patients (66%). The following variables adversely affect long-term body weight control after IGB removal: lack of psychological support and nutritional counseling, sedentariness, and sedentary behavior. A multidisciplinary approach to assist obese patients treated with IGB in order to effectively maintain long-term body weight control.

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

8.66 ± 6.96 kg; 4 years [n = 54]; 9.9±± 3.44 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. The mean weight regained increased during follow-up, but without significant difference among groups: 2 years [n = 10]: 4.66±± 4.91 kg; 3 years [n = 83]: 8.66±± 6.96 kg; 4 years [n = 54]; 9.9±± ±3.44 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.

Conclusion: IGB has a suboptimal long-term effect on body weight control after 2 to 5 years of balloon removal, with weight regain observed in up to two thirds of patients (66%). The following variables adversely affect long-term body weight control after IGB removal: lack of psychological support and nutritional counseling, sedentariness, and sedentary behavior. A multidisciplinary approach to assist obese patients treated with IGB in order to effectively maintain long-term body weight control.

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

% of weight regained * 2 years 3 years 4 years 5 years
<10% 20% (2) 15.6% (13) 18.5% (10) 33.3% (1)
Between 10 and 19% 70% (7) 62.7% (52) 59.3% (32) 66.7% (2)
Between 20 and 29% 10% (1) 14.5% (12) 14.8% (8) 0
Between 30 and 39% 0 2.4% (2) 1.9% (1) 0
Between 40 and 49% 0 1.2% (1) 5.6% (3) 0
Between 50 and 59% 0 2.4% (2) 0 0
Between 60 and 99% 0 1.2% (1) 0

Conclusion: IGB has a suboptimal long-term effect on body weight control after 2 to 5 years of balloon removal, with weight regain observed in up to two thirds of patients (66%). The following variables adversely affect long-term body weight control after IGB removal: lack of psychological support and nutritional counseling, sedentariness, and sedentary behavior. A multidisciplinary approach to assist obese patients treated with IGB in order to effectively maintain long-term body weight control.

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

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Between 60 and 99% 0 1.2% (1) 0

Conclusion: IGB has a suboptimal long-term effect on body weight control after 2 to 5 years of balloon removal, with weight regain observed in up to two thirds of patients (66%). The following variables adversely affect long-term body weight control after IGB removal: lack of psychological support and nutritional counseling, sedentariness, and sedentary behavior. A multidisciplinary approach to assist obese patients treated with IGB in order to effectively maintain long-term body weight control.

Disclosure of Interest: All authors have declared no conflicts of interest.
Table 1: Body weight, BMI and HbA1c changes at different timepoints

<table>
<thead>
<tr>
<th>Timepoint (months)</th>
<th>Mean weight in kg (±SD, range)</th>
<th>Mean BMI (±SD, range)</th>
<th>Mean HbA1c in % (±SD, range)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>115.8 (45.4; 88-196)</td>
<td>40.9 (10.3; 35.3–59.2)</td>
<td>9.1 (1.3; 8-10.7)</td>
</tr>
<tr>
<td>6</td>
<td>97.4 (39.8; 72–164)</td>
<td>29.9 (2.2; 26.4–51.2)</td>
<td>7.0 (0.6; 6.6-8.3)</td>
</tr>
<tr>
<td>12</td>
<td>95.0 (38.8; 72–164)</td>
<td>33.5 (9.0; 29.549.5)</td>
<td>6.7 (0.9; 5.9-7.8)</td>
</tr>
<tr>
<td>16 (0)</td>
<td>91.7 (37.8; 75–164)</td>
<td>34.3 (8.6; 29.3–49.5)</td>
<td>7.7 (1.6; 6.2-9.9)</td>
</tr>
<tr>
<td>22 (6)</td>
<td>93.2 (40.6; 63–164)</td>
<td>32.8 (7.9; 24–69.5)</td>
<td>7.0 (1.0; 5.7-7.7)</td>
</tr>
<tr>
<td>28 (12)</td>
<td>92.5 (43.6; 61–160)</td>
<td>31.5 (9.1; 23.8–48.6)</td>
<td>7.0 (0.7; 6.3-7.7)</td>
</tr>
</tbody>
</table>

Conclusion: The results of this observational study show that re-implantation of the DJBL is viable and safe even only 4 months after explantation. After re-implantation, weight and HbA1c levels decreased one more time. Therefore, we have quite promising results that suggest re-implantation may be a viable option for a short-term BMI reduction, especially in obese, young patients.

Disclosure of Interest: All 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-study the effects of obesity treatments that reduce body mass index (BMI) in overweight and obese young people. A systematic literature review of EMBASE and MEDLINE databases was conducted. Studies were included/excluded based on pre-specified eligibility criteria. Included patients were 21 years or younger. Lifestyle modification and pharmacological therapy searches were restricted to randomised control trials.

Results: 16,712 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 moderate 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 present study demonstrates that surgical interventions provide smaller but statistically significant impacts on BMI reduction. There should be effective communication discussing the relative efficacy of all treatment options and their associated complications between those involved. This knowledge will assist clinicians in determining a holistic, patient-centred treatment programme for obese, young patients.

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

P0627 FOOD-DERIVED MICRORNA AND INFLUENCE ON THE FECAL MICRORNA EXPRESSION

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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 with great impact on tumor initiation and progression. Exogenous microRNA or xenomiRs have been identified in sera from different species suggesting an active transkingdom trespassing through biological barriers during digestive process.

Aims & Methods: In the present work, we evaluated whether miRNAs are present in various foods, and if miRNAs may be degraded through cooking and other forms of food processing. Furthermore, we tested if short-term vegetarian or meat-rich diet may influence human or plant-derived miRNA in feces and blood. For this purpose, six healthy subjects were asked to adhere to vegetarian or meat rich diet for 5 to 7 days and fecal and blood specimens were obtained at different time points. Plant-miRNAs were further investigated in gastric and colon mucosa. To evaluate the presence of miRNA in food, we selected several common foods prior and after cooking/processing. Quantitative real-time PCR was performed using TaqMan Assay.
Further intestinal [14C]-glucose uptake in isolated intestinal loops was assessed in presence or absence of NMU. During OGTT, blood was sampled to measure insulin secretion. [14C]-glucose uptake was assessed in isolated intestinal loops in presence or absence of NMU. A single intraperitoneal injection of NMU in C57Bl6 mice prevented the rise of glycemia following an oral but not an intraperitoneal load of glucose. Aims & Methods: The gut and brain peptide neuromedin U (NMU) is reported to stimulate gastric emptying and improves glucose tolerance. The gastric emptying blockade induced by NMU could also be 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 be through vagal-dependent mechanisms and improves oral glucose tolerance. A. Jarry1, N. Merah1, M. Fiamma2, L. Bodineau1, A. Bado1, J. Le Beye1, M. Le Gall1

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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 that NMU may exert an incretin-like effect. 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 that underwent a laparotomy or a troncular subdiaphragmatic vagotomy. During OGTT, blood was sampled to measure insulin secretion. [14C]-glucose uptake was assessed in isolated intestinal loops in presence or absence of NMU. Gastric retention of a phenol red gavage and total intestinal transit time were evaluated after an intraperitoneal injection of NMU or PBS. Activation of vagus nerve neurons by intraperitoneal injection of NMU was assessed by cFos immunostaining 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 activity was assessed ex vivo in isolated cannulated chambers.

Results: A single intraperitoneal injection of NMU in C57Bl6 mice prevented the rise of glycemia following an oral but not an intraperitoneal load of glucose (OGTT versus IPGTT). Unexpectedly, during the OGTT, NMU injection prevented insulin secretion and only slightly improved peripheral insulin sensitivity. Furthermore intestinal [14C]-glucose uptake in isolated intestinal loops was barely reduced by NMU addition (~17% P < 0.05 vs PBS). Actually NMU injection blocked gastric emptying (gastric retention of a phenol red gavage at 30 min: +285% P < 0.001 vs PBS). This effect was partly prevented in vagotomized mice. In addition, injection of NMU induced c-fos expression in the nucleus of the solitary tract (NTS) of control but not vagotomized mice. In isometric chambers, NMU directly induced pyloric contraction in a dose dependent manner (basal contraction +21%, 7 kPa at 10-6 M).

Conclusion: These data demonstrate that a single intraperitoneal injection of NMU blocks gastric emptying directly by inducing pyloric contraction and indirectly via afferent vagal fiber activation. Through the blockade of gastric emptying, NMU reduces intestinal nutrient absorption and thus improves oral glucose tolerance. The gastric emptying blockade induced by NMU could also contribute to its anorexic effect.

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

P0629 LOW FODMAP DIET & PREBIOTIC GALACTOOLIGOSACCHARIDES IMPROVE IRRITABLE BOWEL SYNDROME SYMPTOMS AND RESPONSE TO LOW FODMAP DIET IS PREDICTED BY URINE METABOLOME, STOOL SHORT-CHAIN FATTY ACIDS AND VOLATILE ORGANIC COMPOUNDS: A RANDOMISED CONTROLLED TRIAL

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Introduction: Dietary restriction of fermentable carbohydrates (low FODMAP diet, LFD) is effective at managing symptoms in 50-80 percent of patients with irritable bowel syndrome (IBS). Prebiotic B-galacto-oligosaccharide (B-GOS; HOST-G094) also reduce symptoms in IBS however the combination of the two therapies has not been investigated. This study investigated whether NMU affects the response 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, fecal short-chain fatty acids (SCFA) or volatile organic compounds (VOC) could identify factors at baseline that predict response. Sixty-nine adults fulfilling Rome criteria for IBS were recruited to a 3-arm RCT: control (sham diet/placebo), LFD (LFD/placebo) or LFD plus B-GOS (LFD/B-GOS) for four weeks. Validated questionnaires (Global symptom question and gastrointestinal symptom rating scale) assessed GI symptoms (response) and urine and stool samples were collected for analysis at baseline and week 4. To examine the relationship between responders and non-responders, urine metabolomics (700 MHz 1H-NMR), stool SCFA (gas liquid chromatography (GLC)) and stool VOC (GC-mass-spectrometry) were analysed on samples at baseline and 4-weeks. Urine metabolomics spectra and VOC profiles were analysed using unsupervised principal component analysis (PCA) and supervised pattern recognition methods (orthogonal partial least square 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). Interestingly, B-GOS symptoms improved markedly in the placebo group compared to 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). 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 markers to stratify responders and non-responders to the LFD at baseline (p = 0.04). VOC profiles, modelled by PLS-DA, reveal significant separation of VOC profiles across the three treatment groups at 4-weeks (p = 0.02).

Disclosure of Interest: B. Wilson: BW is funded by a PhD studentship provided by Claudios Bioscience

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, a condition where bacteria (mostly) from animal source are essential for the production to consume more poultry than other groups. There were no different studies of nutrition in SIBO patients. Protein consumption is considered important for SIBO, as the proteins from animal source are essential for growth of CH4/H2-producing microorganisms. Aims & Methods: The aim of the study was to assess the protein consumption patterns in patients with different types of SIBO. Three-day food diary was modelled by PLS-DA, reveal significant separation of VOC profiles across the three treatment groups at 4-weeks.

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

Results: All types of SIBO patients consumed less meat than control (no signs of SIBO), however patients with hyperproduction of CH4 only demonstrated high consumption of fish, and it was a trend in patients with isolated H2-hyperproduction to consume meat more 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 dieietic interventions in patients for prevention of SIBO. All authors have declared no conflicts of interest.

Disclosure of Interest: All authors have declared no conflicts of interest.
INTRODUCTION: Patients suffering from chronic radiation-induced small bowel disease (RISBD) after cancer treatment have similar symptoms as patients with IBS (irritable bowel syndrome), despite dissimilar 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 seemed effective in alleviating IBS symptoms, but evidence is needed 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. A severity Scoring System (IBS-SSS) and IBS Symptom Questionnaire (IBS-Q) were used to assess symptoms. The Ad hoc questionnaire measured grade of tissue damage and typical RISBD complaints (focal incontinence, rectal mucus and rectal bleeding). Short Form Nepean Dyspepsia Index (SF-NDI) and 12-item Short Form Health Survey (SF-12) were used to evaluate HRQOL. A 3-day food record was used to estimate baseline intake of FODMAPs, to reveal dietary changes and to assess adherence to the diet. All schemes were completed at baseline and at 4 weeks. The study included no control group.

RESULTS: FODMAP intake was successfully reduced, and main additional changes in the diet were reduced intake of energy, carbohydrates and fiber. The adherence to the diet was high (mean 94.8%). IBS symptoms improved significantly based on mean total score of IBS-SSS and IBS-Q, which changed from 310.2 ± 0.08 to 274.4 ± 0.11 (p = 0.001). The severity of abdominal pain, abdominal distension, belching/flatus, constipation, diarrhea, early satiety, dissatisfaction with bowel habits and interference with daily 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-NF1 total score, which changed from 30.5 ± 9.4 to 18.3 ± 8.2 (p = 0.001) and based on mental (p = 0.047) and physical (p = 0.134) component summary score of SF-12.

CONCLUSION: The low FODMAP diet seems effective in alleviating IBS symptoms, and improving HRQOL in patients with RISBD. High compliance to LFD is possible with adequate diet counseling and continuous guidance. Further controlled studies with larger sample size should be conducted to verify our results and hopefully enable the implementation of LFD as a future management strategy for chronic RISBD.

DISCLOSURE OF INTEREST: All authors have declared no conflicts of interest.

Table 1: Consumption of protein products in SIBO patients.

<table>
<thead>
<tr>
<th>Food</th>
<th>No SIBO</th>
<th>H2 SIBO (&gt; 20 ppm)</th>
<th>CH4 SIBO (&gt; 12 ppm)</th>
<th>H2/CH4 SIBO</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Meat</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>n = 65</td>
<td>n = 312</td>
<td>n = 77</td>
<td>n = 123</td>
<td></td>
</tr>
<tr>
<td>0.58 ± 0.71</td>
<td>0.37 ± 0.58</td>
<td>0.42 ± 0.67</td>
<td>0.31 ± 0.45</td>
<td>p = 0.015 no SIBO vs H2 SIBO; p = 0.001 CH4 SIBO vs H2/CH4 SIBO; p = 0.059 no SIBO vs CH4 SIBO</td>
<td></td>
</tr>
<tr>
<td>Poultry</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.38 ± 0.49</td>
<td>0.52 ± 0.63</td>
<td>0.41 ± 0.50</td>
<td>0.39 ± 0.48</td>
<td>p = 0.074 H2 SIBO vs H2 SIBO</td>
<td></td>
</tr>
<tr>
<td>Eggs</td>
<td>0.11 ± 0.19</td>
<td>0.14 ± 0.22</td>
<td>0.13 ± 0.21</td>
<td>0.10 ± 0.17</td>
<td>NS</td>
</tr>
<tr>
<td>Fish</td>
<td>0.27 ± 0.37</td>
<td>0.22 ± 0.43</td>
<td>0.56 ± 0.75</td>
<td>0.33 ± 0.77</td>
<td>NS</td>
</tr>
<tr>
<td>Processed meat products (sausages, etc)</td>
<td>0.08 ± 0.11</td>
<td>0.12 ± 0.14</td>
<td>0.07 ± 0.11</td>
<td>0.08 ± 0.12</td>
<td>NS</td>
</tr>
</tbody>
</table>
is similar to the oral glucose-stimulated secretion of glucagon-like peptide 1 (GLP-1). GLP-1 is an incretin hormone secreted by endocrine L cells (ECC) from the distal gut. GLP-1 and glucagon, both originate from the same proglucagon precursor, differentially processed by prohormone convertase 2 (PC2) into glucagons in pancreatic α cells and by prohormone convertase 3 (PC3) into GLP-1 by enteroendocrine L cells (ECC) from the distal gut.

Aims & Methods: We hypothesized that, after pancreatectomy, proglucagon can also be processed into glucagon in EEC. We developed a 75% subtotal pancreatectomy model in C57Bl/6 mice. Control (Ct) mice underwent a laparotomy. Post-surgery, blood glucose levels were measured, and oral glucose tolerance tests (OGTT) were performed after 1 week. Insulinemia and glucagonemia were also measured in fed and fasted mice and during OGTT. After 2 weeks, animals were sacrificed and the remnant pancreas was sampled for glucagon and insulin immunohistochemistry. 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 secretion of glucagon and GLP-1 were measured in the supernatant.

Results: As soon as one day post-surgery, pancreactectomized (Px) mice developed a hyperglycemia that maintained for over a week (351 mg/dl in Ptx 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 = 278% in Ptx mice, P < 0.01 vs Ct mice, 1 week post-surgery). During OGTT, intestinal glucose absorption increased (slope between 0 and 15 minutes = 69.9% in Ptx mice P < 0.01 vs Ct mice, 1 week post-surgery). Glucagonemia increased in fasted pancreactectomized mice (+146.6% in Ptx mice P < 0.01 vs Ct mice 1 week post-surgery). After sacrifice, alpha cell mass was decreased in the remaining pancreas (~79.2% in Ptx mice P < 0.05 vs Ct mice, 2 weeks post-surgery). Hypertrophy of the proximal colon to secrete glucagon was observed (~290.6% in Ptx mice P < 0.05 vs Ct mice, 2 weeks post-surgery). In pancreactectomized mice, an hypertrophy of the duodenum was associated with an increase in crypt depth (~77.7%, in Ptx mice P < 0.05 vs control mice, 2 weeks post-surgery) and villus height (~53.3% in Ptx 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 may be used to improve glucose intolerance by to absorb 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
Complications and Early Mortality in Percutaneous Endoscopic Gastronomy Placement in Lombardy: A Multicenter Prospective Study


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Introduction:

Endoscopic procedure was necessary in 9.7% of cases. The informed consent (36%) patients. The indications for PEG replacement were obstruction/mal- buried bumper syndrome (0.2%). PEG replacement was carried out in 330 more common modality for sedation (69.8%). The complication and mortality (63.2%) had antiplatelet and/or anticoagulant concomitant therapy.

Results:

Complications and early mortality in PEG were assessed.

References

3. Association of a safety report from the National Patient Safety Agency BMJ 2011;342:d2586
4. We aimed to prospectively evaluate the complication rates and mortality in patients after PEG placement or replacement. This is a multicenter prospective cohort study. Between 15th September 2015 and 15th September 2016, all patients that underwent PEG insertion or replacement, were included. Details about patient’s characteristics, ongoing therapies, comorbidities, indication for PEG placement/replacement, informed consent form signature were collected. Early and late (30 days) complications and mortality were assessed.

Results:

912 patients (426 [46.7%] male) were enrolled in 34 centers. Patients mean age was 72y (SD16.01, range 18-99). ASA status was 1 in 4.0%, 2 in 23.4%, 3 in 58.4%, 4 in 14.1%. PEG 1st placement was performed in 582 (64%) patients. Indications were: dysphagia for neurodegenerative diseases in 33.3%, degenerative neurologic illness in 21.3%, dementia in 14.6%, head and neck cancer in 14.4%, management of patient after the discharge from the hospital in 8.9%, nutritional support in oncological patients in 3.4%, medication administration in 1.5%, gastric decompression in 0.2%. The consent informed consent form was signed by a relative (without legal guardianship) in 49.6%, patient in 28.2%, legal guardian in 16%, medical director in 7% of patients. 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% of the cases PEG was placed for an early discharge (more than for real clinical indication).

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

Disclosure of Interest:

All authors have declared no conflicts of interest.

References


References:


References:

Despite a lack of clarity between guidelines about the frequency of CRP.

Further patients had never had micronutrients checked due to a persistently raised
been to clinic within the past year. One of these commenced PN in 2015 and
of audit but results were not yet available. Two were out of area and had not
micronutrients checked had them done within the last six months. 6 patients had
57 home parenteral nutrition patients were identified. 51 (89.5%) of
Results:

clinics and 33 (13%) from surgical disciplines. The median aggregate score
was 6.0 ± 1.8. However, gastroenterologists performed significantly better than non-gastroenterologists (median aggregate score 9.0 ± 2.2 vs

Pironi L et al. ESPEN guidelines on chronic intestinal failure in adults:

Micronutrient screening on admission

Conclusion: Our study highlights that knowledge on nutrition and its clinical application to hospitalized patients remains inadequate across all physician grades, especially amongst non-gastroenterologists. The current state of clinical nutrition-related teaching during residency training falls short of achieving its goals, and may need re-examination.

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

References
Nutrition support for adults: oral nutrition support, enteral feeding and parenteral nutrition. NICE Clinical guideline [CG32] Published date: February 2006

P0639 CLINICAL NUTRITION - ARE WE IGNORANT OR NEGLIGENT?
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Singapore

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Introduction: Early recognition and delivery of nutritional care by physicians has been shown to improve outcomes in malnourished hospitalized patients. However, physicians encounter multiple barriers in providing appropriate nutrition support. ESPEN guidelines on comprehensive hospital nutrition and nutritional training in medical education have been introduced to overcome these barriers, there appears to be a discrepancy in practice amongst physicians despite the availability of these resources.

Aims & Methods: We aim to assess the knowledge and attitudes of physicians towards clinical nutrition in a large tertiary teaching hospital in Singapore. An anonymous questionnaire comprising 15 multiple-choice questions from standard nutrition textbooks was administered. The questionnaire was designed to

assess (a) recognition of nutritional needs of hospitalized patients, (b) knowledge on the impact of clinical nutrition, and (c) application of nutritional intervention in common clinical practice. We included consultants, fellows and residents working in units where nutritional problems were common. Finally, we conducted a separate 5-question opinion survey to assess each participant’s nutritional training and exposure, based on a 5-point Likert scale ranging from “strongly agree” to “strongly disagree”.

Results: A total of 305 physicians volunteered to participate in this study. Forty (13%) did not reveal their specialty or staff grade and were excluded from analysis. The remaining 265 responders comprised 77 (29%) consultants, 58 (22%) fellows, and 130 (49%) residents. Amongst them, 232 (87%) were from medical disciplines and 33 (13%) from surgical disciplines. The median aggregate score (out of a maximum of score of 15) was obtained by consultants, fellows and residents was 6.0 ± 2.2 (range 2-12), 7.0 ± 1.8 (range 3-11), 7.0 ± 1.8 (range 1-10) respectively. All 3 grades of physicians achieved less than 50% of the maximum possible score. No significant difference in median aggregate score was observed between physicians from medical disciplines (6.5 ± 1.9) and those from surgical disciplines (7.0 ± 1.8). However, gastroenterologists performed significantly better than non-gastroenterologists (median aggregate score 9.0 ± 2.2 vs 6.0 ± 1.8, p < 0.001). In the opinion survey, a majority of physicians (63%) believed that nutrition-related teaching was inadequate during residency training and 44% felt that clinical nutrition was accorded insufficient attention during ward rounds. Only 33% of responders reported that they performed nutritional screening on admission, and a mere 10% were confident in providing nutrition counselling to malnourished patients. Interestingly, their overall performance was not different from that of other participants (see Table 1).

Table 1: Median aggregate scores by grade, specialty and response in opinion survey

<table>
<thead>
<tr>
<th>Physician Grade</th>
<th>Median aggregate score ±SD</th>
<th>Range</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physician Grade</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consultants</td>
<td>6.0 ± 2.2</td>
<td>2.0–12.0</td>
<td>0.617</td>
</tr>
<tr>
<td>Fellows</td>
<td>7.0 ± 1.8</td>
<td>3.0–11.0</td>
<td></td>
</tr>
<tr>
<td>Residents</td>
<td>7.0 ± 1.8</td>
<td>1.0–11.0</td>
<td></td>
</tr>
<tr>
<td>Specialty</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medical disciplines</td>
<td>6.5 ± 1.9</td>
<td>1.0–12.0</td>
<td>0.193</td>
</tr>
<tr>
<td>Surgical disciplines</td>
<td>7.0 ± 1.8</td>
<td>2.0–10.0</td>
<td></td>
</tr>
<tr>
<td>Gastroenterologists</td>
<td>9.0 ± 2.2</td>
<td>3.0–12.0</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Non-gastroenterologists</td>
<td>6.0 ± 1.8</td>
<td>1.0–11.0</td>
<td></td>
</tr>
<tr>
<td>Performed nutrition screening on admission</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agreed (n=81)</td>
<td>7.0 ± 1.2</td>
<td>0.0–10.0</td>
<td>0.321</td>
</tr>
<tr>
<td>Disagreed (n=99)</td>
<td>7.0 ± 2.2</td>
<td>2.0–11.0</td>
<td></td>
</tr>
</tbody>
</table>

Confident in providing nutrition counselling

Agreed (n=23) | 7.0 ± 2.0                     | 3.0–10.0 | 0.467   |
| Disagreed (n=137) | 7.0 ± 2.0                   | 2.0–11.0 |         |

Conclusion: Our study highlights that knowledge on nutrition and its clinical application to hospitalized patients remains inadequate across all physician grades, especially amongst non-gastroenterologists. The current state of clinical nutrition-related teaching during residency training falls short of achieving its goals, and may need re-examination.

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

MONDAY, OCTOBER 30, 2017 09:00-17:00
PAEDIATRIC: UPPER GI - HALL 7

P0640 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-oral endoscopic myotomy in children We retrospectively evaluate 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: Paediatric intubating-tubed 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 ± 3.32 (4–18) years, underwent POEM during the specified period. The sub-types of AC were type 1 (6), type 11 (9) and type III (11). 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%). Mean total length of myotomy was 10.9 ± 2.25 cm, with 7.9 ± 2.09 cm on esophageal and
GASTRODUODENAL DISEASE

RESISTANCE IN ARMENIAN CHILDREN WITH

Results:

Hp-associated GDD was diagnosed in 40 patients out of 47: 37 (92.5%) children were resistant to nifuratel. 34 (85%) children were resistant to triple therapy, of whom 25 (60.5%) were resistant to clarithromycin (25%), and 66.6% to doxycycline. All strains were susceptible to metronidazole. Significant improvement of epigastric symptoms and timed barium esophagogram (>50%) was documented in 94.4% of children. At median follow up of 504 days (30-1290) clinical success was noticed in 29 children (96.7%). Mean Eckardt score before and after POEM were 6.8±1.65 and 0.3±0.77, respectively (p<0.0001). Gastroscopy revealed erosive gastroduodenal and phlegal reflux in five children at 1 year (27.8%).

Conclusion:

Disclosure of Interest:

All authors have declared no conflicts of interest.

References


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Introduction: Because of high prevalence of gastric malignancies in the adult population, high Helicobacter pylori (Hp) prevalence in Armenia is suspected. Risks of Hp infection in children and adults lead to decrease of effectiveness of standard eradication therapy [1, 2]. The aim of this study is to determine frequency of Hp antibiotic resistance in Armenian children.

Aims & Methods: 47 children with suspected gastroduodenal disease (GDD), hospitalized in Arabkir MC, were selected from April to December 2016 (23 boys and 24 girls, average age 8.98±4.40). Hp-associated GDD were diagnosed according to clinical, endoscopic and histological criteria.

Antral biopsy was cultured on 3% sheep blood Columbia agar and selective Hp media. Antibiotic susceptibility testing by disk diffusion method was conducted.

Results: Hp-associated GDD was diagnosed in 40 patients out of 47: 37 (92.5%) had gastritis and/or duodenitis, 3 (7.5%) had peptic ulcer disease (PUD). Seven out of 47 children were excluded from the study due to both histology and culture negative for Hp. Thirty-four (85%) were treatment-naïve patients and 6 (15%) had received eradication therapy previously. Main clinical symptoms were recurrent epigastric pain 34 (85%), nausea 28 (70%) and vomiting 13 (32.5%). By endoscopic criteria gastritis and/or duodenitis was seen in 18 (45%), non-erosive gastritis in 16 (40%), PUD in 3 (7.5%), normal mucosa in 3 (7.5%). Rapid urease test was positive in all antral biopsies (100%). Histology showed chronic gastritis and/or duodenitis in 2 (5%), gastric metaplasia of duodenal mucosa in 3 (7.5%), normal mucosa in 2 (5%). Hp was positive in 38 (95%) and negative in 2 (5%). Cultures were positive for Hp in 14 of 40 patients (35%). Susceptibility test was possible in 12 Hp strains from available14: all but 2 were resistant to metronidazole (83.3%), 4 to clarithromycin (33.3%), 3 double resistant to both metronidazole and clarithromycin (25%), and 66.6% to doxycycline. All strains were susceptible to amoxicillin and levofloxacin (100%), 6 strains were tested and found susceptible to rifabutin.

Conclusion: The data indicate a high rate of resistance to conventional triple therapy antibiotics: metronidazole (83.3%) and clarithromycin (33%). High resistance to doxycycline also was seen, despite limited use of this antibiotic in Armenian paediatric practice. High susceptibility to rifabutin might be useful for future treatment of specific eradication schemes for Armenia. High frequency of both erosive and non-erosive gastritis as well as high rate of gastric atrophy and dysplasia in these patients were noticed.

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

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 Helicobacter pylori–related peptic ulcer disease. However, the characteristics of such co-infection in children are not sufficiently studied.

Aims & Methods: The aim of this study is to estimate the role co-infection of highly pathogenic strains of Helicobacter pylori and Epstein-Barr virus in pediatric patients with chronic Hp-associated gastritis. Methods: 190 children aged 8–16 years were included in the study. All patients had chronic Hp-associated gastritis. All patients underwent clinical and laboratory examinations and endoscopy. Gastric biopsies were taken and inflammation graded according to the Sydney system. Polymerase chain reaction (PCR) was used to detect the presence of Epstein-Barr virus (EBV), Helicobacter pylori (Hp) and its highly pathogenic strains in the gastric mucosa of the patients.

Results: Persistent EBV infection was found in 83 children (43.7%) with chronic gastritis of the antral and (or) gastric body areas. Helicobacter pylori strains that possess the virulence factors (cytotoxin-associated gen A (CagA), vacuolating cytotoxin gen A (VacA), induced by contact with epithelium (IceA), and blood group antigen-binding adhesion (BabA)) were detected in 49 patients (25.8%). In most cases, the association of two or more virulence factors in one patient was observed. It was found that 39 pediatric patients had co-infection of the highly pathogenic strains of Hp and EBV. The study revealed no significant effect of the variant of the gastric mucosa infection on the clinical manifestations of gastritis - the nature of intoxication, abdominal and dyspeptic syndromes. At the same time, the endoscopic and morphological data analysis has revealed a severe gastritis with the development of paragastriatic and Signs of gastric mucosa atrophy observed mainly in the antral region, in patients with co-infection (highly pathogenic strains of Hp + VEBS). In addition, by correlation analysis, we found that the increase and development of the inflammatory process in the gastric mucosa was mostly influenced by the presence of CagA-positive strains of H. pylori in combination with EBV. We found that children infected by EBV without highly pathogenic Hp strains had mild mononuclear and polymorphonuclear cell infiltration without atrophy.

Conclusion: Co-infection with highly pathogenic Hp strains and the Epstein-Barr virus in pediatric patients is significantly associated with severe gastritis.

Disclosure of Interest: All authors have declared no conflicts of interest.
tion rates were significantly higher with sequential treatment (OR = 3.43; p = 0.06 for ITT analysis and OR = 5.30; 95% CI: 0.30–95% CI: 0.30; 95% CI: 0.12–0.77; p = 0.30–95% CI: 0.12–0.77; p = 0.03 for PP analysis). A second-line therapy was recommended in 26 of 134 cases (19.5%) for triple therapy 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 to the first-line standard therapy (76.99% for PP analysis).

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

P0645 GUT MICROBIOTA ALTERATIONS UNDER OLIGOFRUCTOSE-ENRICHED INULIN ADMINISTRATION IN PAEDIATRIC COELIAC DISEASE PATIENTS ON A GLUTEN-FREE DIET: RANDOMIZED CONTROLLED TRIAL

U. Krupa-Kozak1, N. Drabinska1, L. H. Markiewicz2, E. Jarocka-Cyrta3
1Department Of Gastroenterology And Nutritional Sciences, Medical University of Warsaw, Poland
2Department Of Internal Medicine, Medical University of Warsaw, Poland
3Department Of Internal Medicine, Medical University of Warsaw, Poland

Introduction: Imbalanced gut microbiota is suggested to be involved in the pathogenesis of coeliac disease (CD). In many CD patients, despite a long-term treatment with a gluten-free diet (GFD), the intestinal dysbiosis is not completely restored. Prebiotics, substances of the unique ability to shape intestinal microbiota, may be used as a non-invasive, 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-week dietary intervention was conducted on 34 CD children (62 % female, mean age 10 years) on GFD who were randomly assigned to prebiotic (OEI: 10 g/day) or placebo group (maltodextrin; 7 g/day). Before (baseline) and after the intervention, the anthropometric (weight, height) and biochemical blood parameters (C-reactive protein, creatinine, aspartate aminotransferase, alanine aminotransferase), quantitative gut microbiota characteristics (by real-time PCR) and concentration of short-chain fatty acids (by gas chromatography with a flame ionization detector) were assessed.

Results: Thirty CD patients completed the study. After 12-weeks intervention, the biochemical blood parameters remained normative in all CD patients, and the gut microbiota counts within 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 prebiotic group did not show the decreasing tendency along with the time of GFD as observed in placebo group. The changes were reflected into bacterial number after the intervention that was constant in prebiotic group but tended to fall in placebo group. Microbiota counts corresponded well with microbial metabolic activity. In comparison with placebo group, the concentration of short-chain fatty acids was higher in OEI group (50.27 ± 69.95 mg/g, p < 0.05), mainly due to a significantly higher acetate formation (28.82 ± 44.06 mg/g, p < 0.05).

Conclusion: OEI administration significantly improved gut microbiota characteristics in CD patients.

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

Acknowledgment: The research was supported by statutory funds of the Department of Chemistry and Biodynamics of Food of the Institute of Animal Reproduction and Food Research PAS. Travel expenses were funded by KNOW (Leading National Research Centre) Scientific Consortium: "Healthy Animal - Safe Food" (decision of Ministry of Science and Higher Education No. 05/1/KNOW/2015).

P0646 EVALUATING GLUTEN IMMUNOREACTIVE PEPTIDES AS NON-INVASIVE MARKER OF GLUTEN-FREE DIET ADHERENCE IN PAEDIATRIC CELIAC DISEASE

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2Department of Microbiology and Parasitology, Facultad de Farmacia, Universidad de Sevilla, Sevilla/Spain
3Servicio De Analisis Clinicos., Hospital Universitario INGENSA de Ceuta, Ceuta/Spain
4Biomedal, Sevilla/Spain

Introduction: Treatment for celiac disease (CD) is a lifelong strict gluten-free diet (GFD). Patients should be followed-up with dietary interviews and serology as CD markers to ensure adherence to the diet. However, none of these methods
offer an accurate measure of dietary compliance. Presence of gluten related sub- stances in faeces after a gluten-free diet that transit through gastrointestinal tract happened and confirms gluten ingestion.

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. A prospective, non-randomized, multi-centre follow-up study, 2 years long, including 64 CD patients started on GFD when diagnosed (age range 0–18 years).

Fecal GIP was quantified by enzyme-linked immunosorbent assay (ELISA). Anti-tissue transglutaminase (anti-TTG) IgA and anti-deamidated gladin peptide (anti-DGP) IgA antibodies were measured simultaneously, during basal and follow-up visits at 6, 12, and 24 months. Correlations between fecal GIP and serum anti-gluten antibodies were established by Cochran’s and Friedman tests.

Results: 62 patients (97%) had detectable GIP levels in stools, during basal visit, before initiation of the GFD, whereas 20.3% of the patients were found to have positive GIP after treated with a GFD. Dietary transgressions were more frequent in 12% of patients; 3 years of age (p < 0.05).

Conclusion: The GIP ELISA enabled direct and quantitative assessment of gluten exposure early after ingestion. Detection of GIP in stools revealed lack of efficacy of traditional serological methods to verify GFD compliance in CD paediatric patients. The antibodies can be measured several times or even years to decrease after initiation of the GFD and reduction (but incomplete suppression) of gluten intake. The results are consistent with previous studies in sera. Faecal ELISA may be a useful tool: 1) on the diagnosis of CD, to ensure that a sufficient amount of gluten has been ingested to allow a correct CD diagnosis. 2) on treatment, for monitoring of short-term and long-term GFD compliance. 3) on the differential diagnosis of CD versus non-compliance.

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

References


increase in specific antibodies IgE to cow’s milk in 18 (47.3%) children. In these

Conclusion: Mother’s GSTM1 is an independent risk factor for newborns’ W > 3000 g, while mother’s GWG seems to be a protective factor for W > 3000 g. Further studies are needed in order to determine the clear role of these polymorphisms in newborns’ obesity risk. This research was supported by the Research Grants of the University of Medicine and Pharmacy Tirgu Mures, Romania - “The role of genetic determination of the mother in child’s obesity correlated with measurements of biomass and anthropometry” no.275/4/11.01.2017.

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

References
Aims & Methods: The aim of this study was to evaluate hepatic FGFR21 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 FGFR21 and omentin-1 mRNA was assessed by quantitative real-time PCR, while their serum concentration with commercially available enzyme-linked immunosorbent assays.

Results: FGFR21 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 discriminatory power for FGFR21 serum level in differentiation between more and less extensive steatosis with AUC = 0.666. There was evident tendency to higher levels of hepatic FGFR21 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 FGFR21 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 conclusion our study, which focused on hepatic FGFR21 and omentin-1 mRNA expression, confirmed a marked expression of both molecules in the liver of morbidly obese patients with NAFLD. mRNA levels were affected by the extent of pathological abnormalities. In the case of maximal extent steatosis was associated with evident change in serum FGFR21 concentration in morbibly obese women with NAFLD. The vast amount of fat, both visceral and subcutaneous in severely obese patients may affect FGFR21 and omentin-1 serum levels. Disclosure of Interest: All authors have declared no conflicts of interest.

References

TUESDAY, OCTOBER 31, 2017 09:00-17:00
LIVER & BILIARY II - HALL 7
P0656 HYPOXIA CAUSES HEPATIC STELLATE CELLS ACTIVATION IN THE ABSENCE OF CUX1
E. Becker1, P. Dr Fazio2, J. Hänze3, T.M. Gress4, D. Bartsch1, T.T. Wozniakowski1
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Introduction: CUX1 (CUTL1) is a transcription factor belonging to homeobox proteins. It is responsible for driving the transcription of genes deemed to many cellular functions like proliferation, differentiation and cell death. It has been shown that its role can change and drive tumorigenesis. Up to now, its role is unknown in hepatic stellate cells. 

Aims & Methods: We focused on CUX1 activity in hepatic stellate cells undergoing hypoxic stress. LX-2 cells were treated with 100 ng/ml CoCl2 or kept at 37°C at low oxygen (<0.5%). Expression of CUX1 markers and activation markers was performed by RT-qPCR. Western blotting was performed to analyze the protein level of CUX1 and HIF-1alpha. Transfection with plasmid containing a promoter sequence for HIF-1alpha was performed simultaneously with CUX1 knock-down.

Results: LX-2 cells treated for 6 hours with CoCl2 or low oxygen showed an over-expression or a restoration of COL1A1 and ACTA2 after knock down of CUX1. Additionally, CDKN1A, CDKN1B, VEGFA and HIF1alpha were up-regulated in LX2 cells previously transfected with siCUX1. Protein level of CUX1 was significantly down-regulated, whereas HIF1alpha protein was strongly up-regulated by hypoxic condition. Transcriptional activity of HIF1alpha is not correlated with CUX1 expression.

Conclusion: CUX1 controls the activation of hepatic stellate cells. Its knock down promotes the hypoxia response. CUX1 could represent a key factor for 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

P0657 HEPATIC FIBROBLAST GROWTH FACTOR-21 AND OMENTIN-1 mRNA LEVELS IN MORBIDLY OBESSE WOMEN WITH NON-ALCOHOLIC FATTY LIVER DISEASE

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Introduction: Fibroblast growth factor-21 (FGFR21) and omentin-1 have been recognized as potent antidiabetic agents, with potential hepatoprotective activity. Aims & Methods: The aim of this study was to evaluate hepatic FGFR21 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 FGFR21 and omentin-1 mRNA was assessed by quantitative real-time PCR, while their serum concentration with commercially available enzyme-linked immunosorbent assays.

Results: FGFR21 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 discriminatory power for FGFR21 serum level in differentiation between more and less extensive steatosis with AUC = 0.666. There was evident tendency to higher levels of hepatic FGFR21 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 FGFR21 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 conclusion our study, which focused on hepatic FGFR21 and omentin-1 mRNA expression, confirmed a marked expression of both molecules in the liver of morbidly obese patients with NAFLD. mRNA levels were affected by the extent of pathological abnormalities. In the case of maximal extent steatosis was associated with evident change in serum FGFR21 concentration in morbibly obese women with NAFLD. The vast amount of fat, both visceral and subcutaneous in severely obese patients may affect FGFR21 and omentin-1 serum levels. Disclosure of Interest: All authors have declared no conflicts of interest.

References
P0659 MACROPHAGE CONTRIBUTES TO STEATOHEPATITIS THROUGH MEDIATING INFLAMMATORY CYTOKINES, AUTOPHAGY AND THE Crosstalk WITH HEPATOCYTES

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Introduction: Macrophages play a pivotal role in the pathogenesis of non-alcoholic steatohepatitis (NASH) and are a major component of inflammatory cells infiltrated in NASH. However, the precise mechanism of how macrophages contribute to the pathogenesis of NASH remains unexplored.

Aims & Methods: We aimed to characterize the role and molecular regulators of macrophages in NASH and the therapeutic effects of macrophage depletion on NASH. C57BL/6 wildtype (WT) mice and transgenic LysM-Cre/DTR mice were fed with methionine-and-choline-deficient (MCD) diet for 5 weeks to induce steatohepatitis. Hepatic macrophages were depleted in WT mice by injecting liposomal clodronate (i.p. 50 mg/kg/week) and in LysM-Cre/DTR mice by injecting diptheria-toxin (DTox) (i.p. 100 mg/mice). Primary macrophages were isolated from bone marrow of WT mice. For the in vitro study, mouse immortalized hepatocytes AML-12 were cultured with primary macrophage conditioned medium and mouse primary macrophages were cultured with AML-12 hepatocytes conditioned medium to evaluate the interaction between macrophages and hepatocytes in steatohepatitis. A series of assays including cytokine profiling assay, DNA binding activity, flow cytometry and Western blot were performed.

Results: Hepatic macrophage marker CD68 expression was significantly higher in human NASH patients compared with normal controls (P < 0.001). Steatohepatitis was established in WT mice and LysM-Cre/DTR mice fed MCD diet, concomitant with significantly enhanced hepatic macrophage infiltration as indicated by F4/80 staining. Macrophage depletion by liposomal clodronate or DTox attenuated steatohepatitis in both animal models. This was also associated with reduced hepatic necroinflammation, oxidative stress, hepatic triglyceride accumulation, and secretion of pro-inflammatory cytokines in both liposomal clodronate-treated WT mice and DTox-treated LysM-Cre/DTR mice as compared to the corresponding control mice. Macrophage depletion was also accompanied by the reduction of neutrophils, which together can reduce inflammation. Upregulated macrophages were associated with the increased expression of hepatic pro-inflammatory cytokines including interleukin (IL)-1α, IL-1β, IL-12, IL-17, granulocyte-macrophage colony-stimulating factor, Monocyte chemotactant protein-1 (MCP-1) and macrophage inflammatory protein 1α (MIP-1α), and the activation of NF-κB and JNK signaling pathways in the liver. Macrophage-induced steatosis was mediated by increased hepatic lipogenesis and decreased hepatic lipolytic genes (P < 0.01), TGFβ (p < 0.05) secretion in the cultured HSCs' supernatant in different degree by the ELISA assay, and RT-PCR results revealed that Loureirin B down-regulated the expressions of F4/80 and α-SMA genes in the level of mRNA.

Conclusion: The Loureirin B mediated anti-hepatic fibrosis through repressing the Wnt signaling pathway. Disclosure of Interest: All authors have declared no conflicts of interest.

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P0660 NEWLY SYNTHESIZED ACID DERIVATIVES PREVENT LIVER STEATOSIS IN VITRO THROUGH TARGETING OF NRI SUBFAMILY NUCLEAR RECEPTORS

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Introduction: Non-alcoholic fatty liver disease (NAFLD) is considered the hepatic manifestation of metabolic syndrome, with simple liver steatosis being capable of gradually progressing to inflammation, fibrosis, cirrhosis and even hepatocellular carcinoma. Still, disease pathogenesis is complex and no targeted therapies have yet been approved for NAFLD. Bile acids (BAs) constitute a wide class of steroid molecules with pleiotropic functions, contributing to the homeostasis of lipids and glucose. In the liver, they specifically modulate nuclear receptors from the NR1 subfamily, such as Farnesoid X Receptor (FXR) and Liver X Receptor (LXR), thus tightly regulating bile acid synthesis and oxidation and storage of triglycerides.

Aims & Methods: Our aim was to screen BA derivatives for their potential to selectively activate FXR, thus protecting liver cells against free fatty acid (FFA)-induced lipid accumulation and lipotoxicity. Nineteen novel BA derivatives were analyzed in a in silico molecular docking study for FXR and LXR activation, followed by 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 FFAs led to a ~25% reduction in cell viability and ~55% increase in cell death, with a dose-dependent accumulation of lipid droplets. Pre-incubation of cells with selected derivatives efficiently prevented FFA-induced cell death and lipid accumulation. Finally, incubation of both HepG2 cells and primary mouse hepatocytes with BA derivatives strongly induced FXR, RXR, SHP, BSEP, FGFR19 and VLDLR mRNA levels, and repressed PARP1, LXR, SREBP-1c and CYP7a1 mRNA expression. Molecular docking studies and FXR reporter assays confirmed ligand affinity to FXR. Furthermore, chenodeoxycholic acid (CDCA) and related fatty alcohol-based derivatives were shown to be active activators of FXR at lower concentration compared with the parent molecule.

Conclusion: In conclusion, we identified novel BA derivatives that directly modulate liver nuclear receptors, such as FXR and LXR, thus protecting liver cells against lipotoxicity. New biomedical applications of these new molecules may be used as scaffolds for the development of targeted therapies for NAFLD.

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

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P0661 DISSECtING AUTOPHAGy IN A NAFL/NASH MOUSE AND HUMAN MODEL

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Introduction: NAFLD is currently classified in non-alcoholic fatty liver (NAFL) and non-alcoholic steatohepatitis (NASH). It is a liver disease related to metabolic syndrome with rising socio-economic impact worldwide. NAFLD is defined by significant lipid deposition in hepatocytes that is unrelated to alcohol consumption. This high prevalence of liver disease occurs after a protracted inflammation, fibrosis and eventually cirrhosis. This disease is considered a manifestation of fructose-rich foods as shown by the multi-parallel hit theory. Autophagy is a self-digesting mechanism that helps the cells to overcome stress conditions derived by nutrient deprivation and massive storage, e.g. lipid and proteins. Autophagy dysfunction has been implicated in lipid accumulation related diseases. Up to now, it is yet fully understood the role exerted by autophagy in liver diseases not related to alcohol.

Aims & Methods: Here, autophagy has been analyzed in a mouse model of NAFL/NASH and in human in vitro model. Liver specimens were collected from 24 weeks old FLS and FLS-ob/ob mice. Liver tissue was snap frozen and kept at –80°C. RNA and proteins were isolated. RT-qPCR and western blotting was performed. HepG2 cells were incubated for 24h with 2mM oleic acid (OA) (HSCs), which were separated from Sprague-Dawley rat, were treated with different concentrations of Loureirin B. MTT assay was employed to determine HSCs proliferation, western blot was used to test the expressions of Frizzled-4 receptor protein and α-SMA. In addition, enzyme-linked immunosorbent assay (ELISA) was performed to measure the content of α-SMA, TGF-β1 and VEGF in the cultured HSCs' supernatant, and reverse-transcription PCR (RT-PCR) were utilized to detect the expressions of Frizzled-4 and α-SMA genes.

Results: MTT test showed that the proliferation of HSCs was inhibited significantly with a time and dose dependent relationship by the treatment of Loureirin B and liposomal clodronate, and dosedependent inhibition of Liposomal clodronate (IC_{50} = 0.1808g/L). Western blot analysis showed that the expressions of Wnt receptor protein and α-SMA were obviously lower in the group of Loureirin B treatment than that in the control group. Moreover, the Loureirin B and liposomal clodronate inhibited approximately 50% of p62/SQSTM1 (p < 0.05) secretion in the cultured HSCs' supernatant in different degree by the ELISA assay, and RT-PCR results revealed that Loureirin B down-regulated the expressions of Frizzled-4 and α-SMA genes in the level of mRNA.

Conclusion: The Loureirin B mediated anti-hepatic fibrosis through inhibiting the proliferation of HSCs through repressing the Wnt signaling pathway. Disclosure of Interest: All authors have declared no conflicts of interest.

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3. et al. Rosmarinic acid and baicalin epigenetically derepress peroxisomal pro-pathway.

Disclosure of Interest: All authors have declared no conflicts of interest.
Results: FLS-ob/ob mice, representing a NASH mouse model, showed an over-expression of markers BECN1, MAP1LC3B, SQSTM1, UVRAG, TFE2B, PRKAA_1_1 and PRKAA_2_2 in comparison with FLS mice that represent the NAFL model. Furthermore, the protein level of BECN1 and MAP1LC3B was down-regulated in FLS-ob/ob mice, whereas SQSTM1 and UVRAG were up-expressed. Interestingly, the phosphor forms of AMPKα2 was found up-regulated in FLS-ob/ob mice, while FLS mice did not show a quantifiable expression of P-AMPKα2. AMPKα2 was found stably expressed in both FLS-ob/ob and FLS mice. HepG2 cells treated with oleic acid showed a down-regulation of BECN1, MAP1LC3B, UVRAG and SQSTM1 proteins. AMPKα2 and its phosphorylated form resulted unvaried. Interestingly, Caffeine treatment caused a stronger reduction of autophagy markers, including the reduction of P-AMPKα2 also. The combination of Caffeine and OA had the most effect compared to single compounds by causing a stronger reduction of autophagy markers protein level. Baflomycin caused a reduction of MAP1LC3B and UVRAG only. Its combination with OA caused a stronger reduction of protein level. HepG2 MAP1LC3B-GFP-RFP showed an increase of red fluorescence after 48 h of treatment with 2 mM OA.

Conclusion: Autophagy mechanism is significantly activated in FLS-ob/ob mice, that lack of Leptin expression, and in HepG2 treated with OA, supporting that autophagy is strongly implicated in NASH. Targeting autophagy could represent a valid future therapeutic strategy for patients affected by NASH. Further studies are needed to better understand the role exerted by Leptin during autophagy in NASH.

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

References:

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P0662 MODULATION OF MITOCHONDRIAL DYNAMICS BY MiRNAs IN NAFLD

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Introduction: Non-alcoholic fatty liver disease (NAFLD) pathogenesis associates with intracellular lipid accumulation in the liver. In addition, recent evidence supports a functional role for both mitochondrial dysfunction and microRNAs (miRNA/miRs) in NAFLD pathogenesis. In particular, deregulation of mitochondrial dynamics proteins, like mitofusin-2 (Mfn2) is frequently observed in obese and diabetic patients.

Aims & Methods: Our aims were to profile global liver miRNA expression changes during NAFLD progression and correlate them with the development of simple steatosis or NASH. mRNA quantification in both experimental and human NAFLD, C3Bl/B6 mice were fed either a standard or a fast food (FF) diet for 25 weeks; or a methionine- and choline-deficient (MCD) diet for 2 and 8 weeks. miRNA profiling was performed using liver RNA from 8 weeks MCD-fed mice, in TigaMan MicroRNA arrays. qPCR array data was analyzed using the HTqPCR package in Bioconductor. Liver biopsies were obtained from patients with simple steatosis or NASH. mRNA and protein expressions were analyzed by qRT-PCR and immunoblotting, respectively. miRNA targeting was evaluated by dual-luciferase reporter assays.

Results: Both FF- and MCD-fed mice developed NAFL-like features, including liver steatosis, inflammation and insulin resistance; as well as progressive steatohepatitis, severe liver damage and fibrosis. Strikingly, liver Mfn2 protein levels significantly decreased in both models (p < 0.05). Inversely, expression of Drp1, a mitochondrial fission protein, was found increased (p < 0.05). Other mitochondrial proteins, such as the voltage-dependent anion channel (VDAC), presented no expression changes. In human patients, Mfn2 protein levels decreased from no expression changes. In human patients, Mfn2 protein levels decreased from no expression changes. In human patients, Mfn2 protein levels decreased from no expression changes. In human patients, Mfn2 protein levels decreased from no expression changes. In human patients, Mfn2 protein levels decreased from no expression changes. In human patients, Mfn2 protein levels decreased from no expression changes. 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mononuclear layer containing stem cells is a novel approach for regeneration of liver cells which can be a therapeutic option for those 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) injection intrasplenic. Group II: consisted of 20 patients underwent (ABMSC) injection intrahepatic; after trans differentiation into hepatocytes with the double amount of growth factor. Group III: consisted of 20 patients underwent (ABMSC) injection intrahepatic and peritoneal after trans differentiation into hepatocytes with regular amount of growth factor. Group Ib: 10 patients underwent (ABMSC) injection intrahepatic after trans differentiation into hepatocytes with regular amount of growth factor. Group IIb: 10 patients underwent (ABMSC) injection intrahepatic after trans differentiation into hepatocytes with the double amount of growth factor. Group IIIb: (Control Group); consisted of 20 patients received treatment for chronic hepatitis C (MetS). The aim of this study was to determine how much impact the risk factors of metabolic syndrome has on ultrasonographic fatty liver, especially NAFLD.

Aims & Methods: A total of 41,258 adults who underwent routine comprehensive health checks, including abdominal ultrasonography, were selected. We calculated the adjusted prevalence ratios (PRs) for components of MetS (high blood pressure (BP), impaired fasting glucose, low-high density lipoprotein cholesterol (HDL-C), and high triglycerides) according to NAFLD.

Results: NAFLD was found in 13.8% of non-obese subjects and 52.3% of obese subjects. NAFLD was associated with most components of MetS in both obese and non-obese subjects. However, non-obese NAFLD patients had significantly higher PRs for certain components of MetS than did obese patients, especially among women. Body mass index, waist circumference, fasting blood glucose, triglyceride, HDL-C and aspartate aminotransferase, alanine aminotransferase, γ-glutamyl transpeptidase 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 components has 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

P0667 LEAN-NAFLD IS THE STRONGEST PREDICTOR OF FUTURE OBESITY AMONG URBAN ADULT SRI LANKANS: RESULTS FROM A PROSPECTIVE, COMMUNITY COHORT FOLLOW-UP STUDY


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Introduction: Obesity is a global problem. Data from the South Asian region is limited.

Aims & Methods: In a cohort follow-up study we investigated obesity from urban, adult, Sri Lankans [selected by age-stratified random sampling from Ragama-MOH area, Gampaha District; initial screening 2007 (aged 35–64 years); re-evaluation 2014 (aged 42–71 years)]. On both occasions structured interview, anthropometry, liver ultrasound, biochemical and serological tests were performed. Total body fat (TFB) and visceral fat percentage (VFP) were assessed by impedance in 2014. General obesity (GO) was BMI >25 kg/m². Central-obesity (CO) was waist circumference (WC) >80 cm males and >90 cm females. Non-alcoholic fatty liver disease (NAFLD) was diagnosed on ultrasound criteria, safe alcohol consumption and absence of hepatitis B/C markers. Multinomial logistic regression was fitted to assess associations.

Results: In 2007 (n=2967), 614(20.7%) were overweight [51.9%-women] and 1584(53.4%) were obese [71%-women]. In a cohort follow-up study we investigated obesity among urban adult Sri Lankans: results from a prospective, community cohort follow-up study.

Disclosure of Interest: All authors have declared no conflicts of interest.
P0668 THE USE OF THE FATTY LIVER INDEX TO DETERMINE THE PREVALENCE OF FATTY LIVER DISEASE (HEPATIC STEATOSIS) IN AN IRISH POPULATION

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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 based on Body Mass Index (BMI), waist circumference, TG and GGT was used to stratify patients into groups based on risk of having FLD. A FLI score of >60 is highly suggestive of having FLD, a score of 30-60 is indeterminate and a score of <30 is considered low risk for FLD. Ethical approval for this research was granted by the ethics committee of AMU.

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 (45%) of participants were >60 on the FLI; 57.3% of which were male. Only 16% of males had a FLI <30, compared with 44% of females. Males had a significantly higher FLI than females; 60.9 vs. 43.12 (p = 0.0001). Those with a FLI >60 had a mean weight = 93.5 kg and BMI = 31.5, vs. 64.9 kg and 22.4 respectively for FLI <30 (p = 0.0001). There was a statistically significant difference in all parameters measured between all 3 groups (p < 0.0001), apart from height, although there was a trend toward lower height in the FLI <30 group, most likely due to the fact that it was 73% female. When overweight and obese 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.

P0669 ROLE OF BISPHENOL A AS AN ENVIRONMENTAL FACTOR IN THE PROMOTION OF NON-ALCOHOLIC FATTY LIVER DISEASE (Hepatic Steatosis) in an Irish Population

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Introduction: Bisphenol A (BPA) is an endocrine disrupting chemical, a heterogenic group of chemicals usually found in food packaging or insecticide residues on vegetable crops, associated with type 2 diabetes mellitus (T2DM), cardiovascular disease and altered liver enzymes abnormalities, and in general with the whole blood glucose homeostasis.

Aims & Methods: We have evaluated BPA plasma and urine levels in non-alcoholic fatty liver disease (NAFLD) patients compared to healthy subjects and we evaluated the possibility to eliminate this environmental factor after a BPA-free diet regimen. Furthermore, we evaluated, in human HepG2 cells, the effects of exposure to different BPA concentrations on both oxidative stress induction and cell proliferation. We enrolled 60 patients with histologic diagnosis of NAFLD with or without T2DM, before a BPA-free diet, and healthy subjects, by subjecting them to evaluation of body composition using bioimpedance analysis. In vitro, the proliferation of BPA-exposed HepG2 cells at two different concentrations (0.025 and 0.05 mM) was evaluated, both at high (H-HepG2), in order to simulate human hyperglycemia, and at low (L-HepG2) glucose concentrations, for the potential hypoglycemic effect prescribed by T2DM patients.

Results: BPA levels were significantly higher in 60 NAFLD subjects, both in urine and in plasma (p < 0.0001) if compared to controls and, among this group, it appeared to be higher in 30 non-alcoholic steatohepatitis (NASH) patients compared to 30 simple steatosis (NAFL) ones (p < 0.05), independently from the presence of T2DM. After following a BPA-free diet for one month, NAFLD patients showed a significant reduction of BPA circulating levels (p < 0.05) without a significant reduction of urine levels, which represents the only way to eliminate BPA amount released into circulation by the food reservoir. In fact subjects with a higher fat percentage in body composition showed higher BPA levels in plasma and urine. In our population study, NASH patients showed a higher fat percentage in body composition in comparison with NAFL patients. BPA increased TBARS levels at 48 h in H-HepG2 cells versus controls.

Conclusion: Our study reveals a possible role of BPA as an environmental factor in the progression of NAFLD, particularly in obese and/or T2DM patients.

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

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 META VIR scoring system and using non-invasive markers of hepatic fibrosis (NAFLD fibrosis score (NFS), BARD score, FIB4 score, NASH fibrosis score), for the prediction of MeS. In our study all patients were divided into two groups: 1. patients with NAFLD and NAFPD. Neither NAFLD non-invasive markers nor histological findings, NASH or MeS were significantly different between non fatty pancreas and grade I light FP patients. 2. patients with NAFL and NAFPD. Both groups were compared with grade I light FP patients. Only group with severely FP showed a higher fat percentage in body composition in comparison with non fatty pancreas in our study cohort. In multivariate analysis of FP predictors in our study cohort, logistic regression approach was used. Model of predicting occurrence of FP was designed from multivariate logistic regression analysis. The probability was estimated with the equation: 0.627 + 0.640 * 0.593 * glucose (fasting glucose level) – cholesterol level + 0.016 * triglycerides / cholesterol + 0.071 * serum lipase / triglycerides + 0.068 * serum glucose/insulin ratio + 0.015 * serum glucose/creatinine. In multivariate analysis of FP predictors in our study cohort, logistic regression approach was used. Model of predicting occurrence of FP was designed from multivariate logistic regression analysis. The probability was estimated with the equation: 0.627 + 0.640 * 0.593 * glucose (fasting glucose level) – cholesterol level + 0.016 * triglycerides / cholesterol + 0.071 * serum lipase / triglycerides + 0.068 * serum glucose/insulin ratio + 0.015 * serum glucose/creatinine.

Results of our study determined highly significant association of NAFLD and NAFPD. Neither NAFLD non-invasive markers nor histological reports of liver fibrosis showed significant association with presence of fatty pancreas. In 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 + 0.016 * triglycerides / cholesterol + 0.071 * serum lipase / triglycerides + 0.068 * serum glucose/insulin ratio + 0.015 * serum glucose/creatinine.
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 severely FP in NAFLD with best ability in the prediction in score values above 6.5.

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

P0671 SERUM THYROID STIMULATING HORMONE IS INDEPENDENTLY ASSOCIATED WITH HEPATIC STEATOSIS AND STEATOHEPATITIS IN EUHYPOTHYROID 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 in hospital liver histology. They were divided into two groups: 250 subjects of T and Q groups. After liver transplantation, Liver function tests, age, gender, weight, height, fasting plasma glucose, thyroid hormones, and lipid profile were recorded. Liver biopsy specimens were reviewed by an expert pathologist individually.

Results: A total of 210 individuals (130 women and 80 men) were included. Seventy six individuals (36.19 %) had hepatic steatosis and 19 individuals had steatohepatitis. Individuals with a history of chronic disease, hepatitis B or C infection, hepato-billiary cancers, those with > 20 grams/day alcohol consumption, and individuals receiving medications causing hepatic steatosis were excluded from the study.

Results: A total of 210 individuals (130 women and 80 men) were included. Seventy six individuals (36.19 %) had hepatic steatosis and 19 individuals had steatohepatitis (9.04 %) in liver histology. Mean age of individuals with and without hepatic steatosis were 32.9 ± 6.69 and 31.8 ± 6.72 years respectively (P < 0.05).

In univariate analysis higher weight, triglyceride, total cholesterol, alanine aminotransferase (ALT), alkaline phosphatase, fasting blood sugar (FBS) and thyroid stimulating hormone (TSH) were associated with hepatic steatosis (P < 0.05). In regression analysis, higher FBS, higher alkaline phosphatase, higher ALT and higher TSH (OR = 1.36; 95 % CI: 1.02–1.80, P < 0.03) were independent predictors of hepatic steatosis. In regression analysis, higher serum TSH was independently associated with steatohepatitis compared to those without steatohepatitis (6.83 ± 6.04 mIU/L and 2.10 ± 1.27 mIU/L) (OR = 2.11; 95 % CI: 1.45–3.07, P < 0.001). A cutoff value of 3.75 mIU/L for TSH was predictor of presence of steatohepatitis in liver biopsies (sensitivity = 73%; specificity = 89%; AUC = 0.754; P < 0.004).

Conclusion: Higher serum TSH is associated with hepatic steatosis and steatohepatitis in euthyroid subjects. Thyroid hormones may have crucial role in hepatic steatosis and may be targeted for treatment of NAFLD patients.

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

Reference

P0672 IDENTIFICATION AND IN SILICO CHARACTERIZATION OF SIX NOVEL GANAB MUTATIONS IN POLYCYSTIC LIVER DISEASE

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Introduction: Glucosidase II is part of the functional pathway of co-translational protein translocation and maturation in the endoplasmic reticulum. It is implicated in autosomal dominant polycystic liver disease (ADPLD) and autosomal dominant polycystic kidney disease (ADPKD). The β-subunit of glucosidase II, encoded by GANAB and PRKCSH, has been identified as one of the causative genes of ADPLD. Recent data suggest that the α-subunit of glucosidase II (Glua), encoded by GANAB, is associated with ADPKD and ADPLD. We aimed to identify GANAB mutations in an independent cohort of patients with the primary phenotype of polycystic liver disease (PLD) and to predict the influence of these mutations on glucosidase II function.

Aims & Methods: We identified genetic mutations in GANAB using molecular inversion probe (MIP) analysis in a cohort of PLD patients. Both patients with ADPKD and ADPLD were included for analysis. Mutations identified with MIP analysis were validated using Sanger sequencing. Bioinformatics prediction tools (PolyPhen-2, Align GVGD, SIFT, MutationTaster) were used to predict the functional significance of the mutations. YASARA&WHAT IF were used for analysis of the structural effects of the mutations. Primary cholangiocytes obtained from a patient with GANAB mutation (c.2515C > T) were used to study loss of heterozygosity.

Results: We identified and validated 6 new bona fide GANAB mutations in 7 different families. These are 2 frameshift (c.687delT and c.11_16delTACGGG), 1 splicing (c.2691-28C > G), 2 nonsense (c.250C > T and c.256C > T) and 1 missense (c.1835G > C). In silico analysis showed c.687delT and c.11_16delTACGGG are located in N-terminal domain of the protein. These mutations probably lead to a total defective protein. c.1835G > C is located in the active site of the protein. It is predicted to disrupt the composition of the active site and reduce enzymatic activity. The remaining mutations (c.2691-28C > G, c.250C > T and c.256C > T) are located in C-terminal domain, which interacts with PRKCSH. The mutations could result in early termination of this domain. It is speculated this disrupts the ability of the two subunits to interact. Western Blot showed no differences in Glucose expression in an ADPKD patient with GANAB mutation c.2515C > T 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.

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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 typically considered as the second line intervention. The main surgical procedures are the gastric bypass (G) and sleeve gastrectomy (SG) and gastric bypass (GBP), and they are choices in function of BMI, age and comorbidity. Both techniques have proven effective in weight loss. It is known that liver fibrosis evaluation with Point Shear Wave Elasticography (pSWE) is sufficient in these patients.

Aims & Methods: To study the difference between SG and GB and their impact on main clinical and laboratory hepatic metabolic indicators and scores 6 and 12 months after the intervention and pSWE at 12 months. We studied 68 obese subject candidate to bariatric surgery (45 female, 23 male). 28 underwent GBP and 40 SG. Blood tests, physical examination were assessed before surgery, after 6 months (68 patients) and after 12 months (51 patients) and pSWE after 12 months.

Results: In the comparison between GBP vs SG there was a statistically significant difference in the reduction in Fatty Liver Index (61% vs 37%, p = 0.015), waist circumference (26% vs 18%, p = 0.045), BMI (34% vs 28%, p = 0.016), total cholesterol (23% vs 0.05%, p = 0.001), ALT (increased by 15% in GBP, decreased by 27% in SG, p = 0.023) while 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 terms between the two types of intervention, in fact GBP seems to have a more powerful effect on weight loss and all related markers: all steatosis scores (FLI, HSI, LAP), BMI, waist circumference. This can be explained by better malabsorptive effect of this intervention and by a lower BMI starting point for reasons related to the intervention technique.

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

References

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 hepaticomegaly 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 hepaticomegaly 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 for whom height adjusted total liver volume was measured prior to liver reducing therapy. We performed univariate and multivariate analyses to explore risk factors associated with severity of disease.

Results: Out of a total 1674 patients in the PLD registry, 1222 patients (1110 ADPKD, 112 ADPLD) could be selected. In the ADPKD > PLD group height adjusted liver volume is significantly lower compared with ADPLD patients (1050 ml/m vs 1922 ml/m; p = 0.000). Females have higher htTLV than men in both ADPLD and ADPKD. Severe height difference (htTLV > 3.200 ml/m) is more prevalent in ADPLD. Diagnosis, gender and age are independent predictors for severity of disease.

Conclusion: In this cohort more ADPLD patients had moderate to severe PLD compared to ADPKD patients. The severity of the disease is strongly associated with ADPLD and ADPKD patients and to identify new risk factors.

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: Nonalcoholic fatty liver disease (NAFLD) affects about 1 billion people worldwide. Those with non-alcoholic steatohepatitis (NASH) among NAFLD patients have increased mortality rates compared to the general population, with cardiovascular diseases being the leading cause of death. Identifying patients at risk for developing cardiovascular events is of major importance, both in terms of prognosis, as in terms of the therapeutic attitude.

Aims & Methods: Our aim was to quantify the risk of developing atherosclerosis as a major cardiovascular risk factor, in NAFLD patients and to identify a screening strategy for those patients. We included patients with NAFLD and metabolic syndrome (MS) into 2 arms: with NAFLD and MS, and with NAFLD without MS. NAFLD diagnosis was based on clinical, biological and ultrasound determinations. We used FibroMax for evaluating the hepatic modifications (presence of steatosis and fibrosis). We have used the Collagen Proportion Area (CPA) computed by the software which was annotated manually using the NDP.view2 to facilitate machine learning. Each image was then analysed by the automated software, fat percentage (fat%) and Collagen Proportion Area (CPA) computed by the software were compared with the manual annotation. They were also correlated with LSM and CAP.

Results: There was an excellent concordance between manual and automatic measurements, with inter-class correlation coefficient, ICC = 0.98, (95%CI = 0.96-0.99, p = 0.0001). There was good correlation between fat% and steatosis grade, but with significant overlap between groups. Results were significantly higher CPA and fibrosis 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% specificity, 60% specificity), but could not distinguish between grades.

Conclusion: We have developed and validated a system using automated software, using low-resolution images to provide a rapid, easily performed, objective assessment of steatosis and fibrosis in NAFLD, with excellent correlation with experts’ annotation. Objective measures would be helpful in the assessment of therapeutic response in clinical practice and in clinical trials for patients with non-alcoholic fatty liver disease.

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

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 quantitation using biopsies of NAFLD patients. We further validated Liver Stiffness Measurements (LSM) and controlled attenuation parameter (CAP) in this group, using quantitative assessment as reference. 246 consecutive patients with biopsy-confirmed NAFLD and transient elastography within 3 months of the biopsy were evaluated. Biopsies were independently scored by two histopathologists and digitalised at 2x magnification. Areas of steatosis and fibrosis were annotated manually using the NDP.view2 to facilitate machine learning. Each image was then analysed by the automated software. Steatosis grade and fibrosis stage have been 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 significantly higher CPA and fibrosis stage. LSM was significantly associated with CPA (Rho = 0.8, p = 0.001).CAP score correlated significantly with fat% (Rho = 0.45, p = 0.002) and effectively diagnosed steatosis > 5% (AUROC 0.82, 95% sensitivity, 60% specificity), but could not distinguish between grades.

Conclusion: We have developed an automated software, using low-resolution images to provide a rapid, easily performed, objective assessment of steatosis and fibrosis in NAFLD, with excellent correlation with experts’ annotation. Objective measures would be helpful in the assessment of therapeutic response in clinical practice and in clinical trials for patients with non-alcoholic fatty liver disease.

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

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.

In all patients with NAFLD, there was a correlation between the presence of ats plaque and fibrosis, with 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 univariate model of the risk of developing ats plaque, we included presence of NASI, 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[1.86,27.2]). 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 of fibrosis has proved to be an important predictive 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 NAFLD patient.

Disclosure of Interest: All authors have declared no conflicts of interest.
Aims & Methods: Aim of our study was to compare two non-invasive methods: fibrosis on serum markers and transient elastography (TE). We included 152 patients with NAFLD, 40 males (26.31%) and 112 females with age from 23 to 79 years.53 patients (23.02%) were overweight, 9 patients had normal weight and 24 (15.79%) had severe obesity. In all patients we calculated BARD, FIB-4 and NAFLD-FS fibrosis score (NAFLD-FS). Blood samples were collected to determine amionotransferases, glucose, albumin level, platelet count. The abdominal ultrasonography was performed by the same physician and steatosis was graded using a semi-quantitative scale of 1 (mild) to 3 (severe). TE was also performed by a single physician using a 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%, 0.252–0.394) (p < 0.0001). 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.

P0678 EFFECTS OF UDCA AND STATIN COMBINATIONS ON LIPID PROFILE IN NAFLD PATIENTS
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Introduction: Dyslipidemia has an important role in NAFLD and inflammation progress and insulin resistance development. The studies suggested the role of UDCA in lipid profile correction. UDCA replaced bile acid imbalance and improved triglyceride and cholesterol levels in NAFLD patients, has immunomodulatory action.

Aims & Methods: The aim of study was estimation of the efficacy of different dosage of ursodeoxycholic acid (UDCA) with statin combination treatment in patients with NASH and NAFLD. There are 180 patients with NAFLD. It was divided into two subgroups: fatty liver (90 subjects) – patients with normal level of ALT, and nonalcoholic steatohepatitis (NASH, 90 subjects) – patients with elevated level of ALT (the median is 78.5 U/l). All patients were divided in 3 groups. The blood test, liver enzymes, lipid profile, HOMA-IR, Fibroscan and stool test was checked every 2 weeks of treatment. First group was taken UDCA 10 mg/kg/day + simvastatin for 3 months. Second group was taken UDCA 15 mg/kg/day + simvastatin. Third group were fed the low-lipid and low-glyceric diet index only (900 kcal/day). After 3 months of treatment patients of third group (diet only) add UDCA 15 mg/kg/day to treatment for extra 3 months.

Results: The subgroups did not show any difference in terms of initial total cholesterol (TC), low-density lipoprotein cholesterol (LDL-C), and triglycerides (TG). After correction of the lipid spectrum showed a more intense dynamics in the group of patients taken UDCA combined with statin. After 3 months of follow-up there was a significant reduction in TC to 4.2 mmol/l, LDL-C to 1.8 mmol/l and TG to 1.2 mmol/l in the fatty liver subgroup, and TC to 4.1 mmol/l, LDL-C to 1.8 mmol/l and TG to 1.2 mmol/l in the NASH subgroup. Changes were similar in the subgroups. The level of total cholesterol, triglyceride and liver enzymes were decreased faster in group taken UDCA and statin independent from UDCA dosage. There is no side effects or liver enzyme elevation in group treated with UDCA and statins. In the NASH subgroup there was a significant decrease in ALT to 35 U/l. At the end of the first month of statin therapy combined with UDCA in the NASH subgroup a significant positive dynamics of ALT was found in patients with NASH (initially 78.5 U/l; after treatment decrease to 35 U/l). Stage of liver fibrosis was significant in patients taken UDCA and statin, as evidenced by the decrease in the index of fibrosis.

Conclusion: 3-month statin therapy in combination with UDCA showed significant lipid-lowering effects in patients with NASH, as well as normalization of A400

References:

P0679 EFFECT OF GRANULOCYTE COLONY-STIMULATING FACTOR (G-CSF) ON MORTALITY AND COMPLICATIONS VIZ. SEPSIS, ENCEPHALOPATHY, HEPATORENAL SYNDROME, AND GASTROINTESTINAL BLEED IN SEVERE ALCOHOLIC HEPATITIS- A RANDOMIZED CONTROLLED STUDY
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Introduction: Severe alcoholic hepatitis has very high short-term mortality. Compared to standard medical therapy (SMT), GCSF improves clinical and biochemical profiles, morbidity and mortality in these patients. We evaluated efficacy of G-CSF in modulating the disease course of severe alcoholic hepatitis over period of 3 months in terms of mortality, morbidity by Discriminant function (mDF), Child–Turcotte–Pugh (CTP) and Model for End-Stage Liver Disease (MELD) score in patients with severe alcoholic hepatitis. 50 patients with severe alcoholic hepatitis were randomly assigned to groups A and B (25 in each). Both groups were given SMT, while in addition, patients in group A were given 5 mg/kg GCSF subcutaneous (10 doses for 5 days). We assessed survival, changes in CTP, MELD and mDF scores and the development of complications.

Results: The baseline parameters in both groups were comparable. On day 6 group A had higher mean leukocyte and CD34 counts than group B (P < 0.05). The 90 days followed up 17 patients in group A (68%) and 9 in group B (36%) survived (P < 0.04). Mean changes for different scores were greater in group A then group B i.e. CTP (–41.97% vs –8.844%), MELD (–50.89% vs 10.09%) and mDF (–74% vs 18%) (P < 0.01). The percentages of patients who developed HRS, HL, or sepsis were lower in group A than in group B (28% vs 64%, 32% vs 64% and 28% vs 68%, respectively) (P < 0.01). There was no significant difference in GI bleed in both groups.

Conclusion: In severe alcoholic hepatitis, GCSF therapy significantly improves the survival. It also significantly reduces CTP, MELD and mDF scores and prevents the development of complications.

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

P0680 ALCOHOLIC LIVER DISEASE/NON ALCOHOLIC FATTY LIVER DISEASE INDEX (AN): HOW TO DISTINGUISH ALCOHOLIC FROM NON ALCOHOLIC LIVER DISEASE WITHOUT HISTOLOGY
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Introduction: Steatosis/steatohepatitis is one of the most common liver diseases with increasing prevalence and results from excessive alcohol consumption (alcoholic liver disease) or as nonalcoholic fatty liver disease (NAFLD). The differential diagnosis is of paramount importance as they have different management and therapeutic approaches, being liver biopsy the gold standard for establishing the diagnosis. The distinction between these two entities without biopsy is
difficult due to the unreliable history of alcohol consumption and lack of sensibility in the single angle. It is also important to overcome these difficulties. A non-invasive diagnostic and reliable tool that may be used to distinguish NAFLD from ALD, decreasing the need for live biopsy. GGT greater than 1.96 suggests the diagnosis of ALD and ANI lesser than −1.96 suggest NAFLD.

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

P0682 PROBIOTICS REDUCE ETHANOL-INDUCED HEPATIC INJURY BY MODULATING GUT MICROBIOTA AND INTESTINAL BARRIER INTEGRITY IN MICE

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Introduction: Gut-liver axis plays an important role in the pathogenesis of ALD. The probiotics of intestine enter the blood through the damaged intestinal mucosal barrier and cause liver damage. Nowadays, probiotics have been used in the prevention and treatment of a variety of diseases, including ALD. It has become a hot spot for the study of regulating intestinal micro ecological balance and enhancing intestinal barrier function, to prevent alcoholic liver injury. In this study, ALD mice were given probiotics to observe the protective effects on ALD and explore the possible mechanism.

Aims & Methods: Gut-liver axis plays an important role in the pathogenesis of ALD. The intestinal products of intestine enter the blood through the damaged intestinal mucosal barrier and cause liver function damage. Nowadays, probiotics have been used in the prevention and treatment of a variety of diseases, including ALD. It has become a hot spot for the study of regulating intestinal micro ecological balance and enhancing intestinal barrier function, to prevent alcoholic liver injury. In this study, ALD mice were given probiotics to observe the protective effects on ALD and explore the possible mechanism.

Results: HE and oil red O staining of liver tissues in alcohol group showed significant steatosis and inflammation response, and probiotics treatment can reduce liver injury. Compared with the control group, the LPS of alcohol group was significantly higher than that of the control group (62.36 ± 0.95 vs 12.23 ± 1.19 mg/ml, p < 0.05) and TNF-α (779.4 ± 1.01 vs 2724 ± 6.78 mg/ml, p < 0.05) was significantly increased. Probiotics can effectively cease endotoxemia (35.63 ± 1.84 vs 6 ± 2.36 ± 3.05 mg/ml, p < 0.05) and inflammatory factors TNF-α (526.6 ± 25.04 vs 779.4 ± 10.01 mg/ml, p < 0.05) induced by alcohol. RT-PCR results showed that probiotics increased the expression of Reg3b and Claudin-1 (P < 0.05). Compared with the alcohol group, the mRNA levels of intestinal tight junction protein Occludin and Claudin-1 were increased with probiotics treatment (P < 0.05). However, compared with the alcohol group, the mRNA level of ZO-1 showed no significant difference (P > 0.05). WB results showed the expression of Occludin and Claudin-1 increased in probiotic treatment group (P < 0.05).

Conclusion: Probiotics show protective effects on ALD by reducing alcohol-induced endotoxemia and liver inflammatory injury as well as improving the intestinal mucosal barrier and restoring the intestinal micro ecological imbalance. Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0683 THE OVERWEIGHT ROLE IN THE OCCURRENCE OF HEPATOTOXIC REACTIONS DURING CHEMOTHERAPY OF ACUTE LEUKEMIA

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Introduction: Chemotherapeutic drugs have a direct hepatotoxic effect, which leads to multiple increase in the risk of liver injury in patients with acute leukemias (AL). The development of hepatotoxicity limits the chemotherapy (CT) providing in full doses.

Aims & Methods: We aimed to assess the overweight role in an increase of risk level of hepatotoxic reactions in AL chemotherapy dynamics. The study involved 84 patients with newly diagnosed AL (64 – acute myeloid leukemia (AML), 20 – acute lymphoblastic leukemia (ALL)), ECOG II-II, aged 24-67 years, 41(48.8%) females, 43(51.2%) – men. The body mass index (BMI) and waist circumference (WC) function was assessed by the activity of alanine aminotransferase (ALT), aspartate (AST) aminotransferase, alkaline phosphatase (ALP), gamma-glutamyltranspeptidase (GGT), total bilirubin, total protein in the blood serum three times: at baseline and on the 28th and 56th day after starting induction of remission therapy, according to the ALL (prednisolone, doxorubicin, vincristin, asparagi nase, cyclophosphamide, cytarabine, mercaptopurine) and AML (cytarabine, doxorubicin) treatment protocols. To assess the severity of hepatotoxic reactions
lipid peroxidation, cytokines and mitochondrial dysfunction. Ferroptosis is an injury is not clear yet, and its pathogenesis is mainly related to oxidative stress, also increased year by year. However, the mechanism of alcohol-induced liver

Introduction:

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

References


P0864 RESEARCH ON FERROPTOSIS IN HEPATOCYTE INJURY INDUCED BY ALCOHOLIC

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Introduction: Alcohol abuse and alcohol dependence have become the world's greatest public health challenges. In 2016, the World Health Organization (WHO) estimated that 3.8% of the global population (approximately 265 million people) had alcohol use disorders. Use of hazardous amounts of alcohol results in more than 3 million deaths annually, and alcohol is also one of the major risk factors for the development of alcoholic liver disease (ALD), which occurs in the human population. Chronic consumption of alcohol in large quantities can cause serious damage not only to the liver but also to the heart, central nervous system, and other organs. The liver is especially vulnerable to damage from alcohol due to its extensive metabolic and synthetic functions. This paper presents the results of a retrospective study of 50 ALD patients who were treated at the Gastroenterology Department of the University of Rome, Italy.

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

References


4. Ganzert’s criteria and 40.7% (n = 9) met Escudier criteria. In the sub-group of patients who met criteria but were not transplanted (n = 6): in 66.7% (n = 4) the reason was absence of donor, in 16.7% (n = 1) there was liver function recovery and in 16.7% (n = 1) a contraindication was found (irreversible intestinal ischemia diagnosed intraoperatively). The mortality in this sub-group was 83.3%. The mortality rate in transplanted patients was 60%. All patients without emergent liver transplantation criteria survived.

Conclusion: Amanita phalloides poisoning has a severe and rapidly progressive presentation, often with indication for liver transplant. Patients are admitted late into ICU. Mortality rate is even higher in transplanted patients.

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

References


P0865 AMANITA PHALLOIDES HEPATOTOXICITY: 20-YEAR EXPERIENCE IN A GASTROENTEROLOGY INTENSIVE CARE UNIT

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Introduction: Ingestion of amatoxin-containing mushrooms is a rare medical emergency. Amatoxin can cause massive hepatic necrosis and acute liver failure. Liver transplantation can be life saving but liver transplantation criteria are complex and not consensual. Mushrooms poisoning is associated with a high mortality rate.

Aims & Methods: We conducted a retrospective analysis of demographic, clinical, therapeutic and prognostic data of all patients with Amanita phalloides poisoning admitted to a Gastroenterology Intensive Care Unit (GIUC) of a tertiary hospital between 1997 and 2017.

Results: A total of 27 patients were included: 55.6% were male and the mean age was 53 ±15 years old (range, 18–75). The most frequent initial symptoms were vomiting (100%), diarrhea (93%), and abdominal pain (71%). The mean time between ingestion and onset of symptoms was 10.1 hours and GIUC admission was 50.9 hours. At admission 33.3% presented hepatic encephalopathy (25.9% grade 1; 3.7% grade 3 and 3.7% grade 4). Laboratory characterization at admission: mean INR was 4, total bilirubin 3.5 mg/dL, creatinine 1.9 mg/dL and factor V 25.8%. The different criteria for emergent liver transplantation were assessed: 37% (n = 10) met Clichy’s criteria, 59.3% (n = 16) met King’s College criteria, 35.3% (n = 9) met Ganzert criteria and 40.7% (n = 11) met Escudier criteria. In the sub-group of patients who met criteria but were not transplanted (n = 6): in 66.7% (n = 4) the reason was absence of donor, in 16.7% (n = 1) there was liver function recovery and in 16.7% (n = 1) a contraindication was found (irreversible intestinal ischemia diagnosed intraoperatively). The mortality in this sub-group was 83.3%. The mortality rate in transplanted patients was 60%. All patients without emergent liver transplantation criteria survived.

Conclusion: Amanita phalloides poisoning has a severe and rapidly progressive presentation, often with indication for liver transplant. Patients are admitted late into ICU. Mortality rate is even higher in transplanted patients.

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

References

1. Gaddolotaro1, G. A. Vassallo1, G. Antonelli2, M. Antonelli1, C. Tarli1, A. Mirijello1, C. Mosoni1, M. M. Rando1, L. Sestito1, M. Barbara3, M. F. Maida1, C. Cammà1, A. Gasbarrini1

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Aims & Methods: This study was performed on 2704 subjects attending high school. Questionnaires regarding socio-demographic data, anthropometric characteristics, pattern and amount of alcohol intake, smoking habits, use of illicit drugs, and physical activity were administered to students. Moreover Italian versions of AUDIT, STAI-Y1, STAY-Y2 and ZUNG scale were administered.

Results: Alcohol intake was reported by 2126 students (79%); among them 1278 versions of AUDIT, STAI-Y1, STAI-Y2 and ZUNG scale were administered. Among students that reported binge drinking behavior than in those that did not report binge drinking (p < 0.0001).

Conclusion: Alcohol consumption and abuse among young students is alarming. Binge drinking behavior among young students seems to be very common and it seems a risk factor for the development of AUD.

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

Reference

Abstract No: P0685

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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 according to the ICA-AKI criteria. The hospital length of stay of 11.6% of patients with AKI was longer hospitalizations (14.55 vs. 9.78 days, 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 criteria were prospectively used in determining prognosis. Frontline Gastroenterol. 2013;4(3):191–197. doi:10.1136/igastro-2012-100291.

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
predictors of in-hospital mortality. Patients with Sepsis-3 had higher incidence of ascites (36 vs 11%), palor (25 vs 17%), septic shock (15 vs 0%, p < 0.001) and transfer to the ICU (16 vs 2%; p = 0.001) than those 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

P0691 A SUBCLINICAL HIGH TRICUSPID REGURGITATION PRESSURE GRADIENT IS A RISK FACTOR FOR SURVIVAL AFTER LIVING DONOR LIVER TRANSPLANTATION
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Introduction: Portopulmonary hypertension (POPH) is characterized by pulmon- ary vasoconstriction, while hepatopulmonary syndrome (HPS) is characterized by vasodilatation. Given that HPS could be resolved after orthotopic liver trans- plantation (OLT) even when hypoxemia were severe (PaO2 < 80 mmHg), impli- cations for OLT is accepted not only for deceased donor LT (DDLT), but also to living donor related LT (LDLT). However, the post-OLT course of POPH com- plicated patients are often unsatisfactory and severe (mPAP > 45 to > 50 mmHg) patients are considered as an absolute contraindication for OLT. The Japan Liver Transplant Society Practice Guidelines indicate that, unlike HPS, there are no data to support the concept that POPH (treated or untreated) should be an indication for OLT. Furthermore, the Practice Guidelines recommend that patients with mPAP < 35 mmHg be indicated for OLT, and PA-targeted therapy should be initiated in patients with mPAP > 35 mmHg. However, almost all of the patients in these articles had received DDLT, and no such analyses have been for LDLT patients. Given that left or right lobe LDLT grafts are smaller than DDLT grafts, PH-induced hepatic venous pressure may result in a strong congestive impact on the LDLT grafted liver. Although patients with confirmed POPH and HPS are rare, relatively pulmonary hypertensive patients and mild HPS patients may be more common.

Aims & Methods: The present objective is to investigate the clinical impact of subclinical PH on the inevitably small survival in grafted living donor OLT (LDLT). We recruited 84 OLT candidates for liver cirrhosis in a retrospective cohort study. Patients exhibiting a tricuspid regurgitation pressure gradient (TRPG) > 25 mmHg (median) on echocardiography were categorized as poten- tially having POPH (subclinical PH: n = 34). We evaluated pulmonary artery pressure (mPAP) measured after general anesthesia with FIO20.6 (mPAP-FIO20.6) was also also included as advisory data. Patients exhibiting PaO2 < 80 mmHg and an arterial-venous oxygen gradient (AaDO2) > 15 mmHg were categorized as potentially subclinical HPS. The clinical course after LDLT was investigated according to subclinical PH or HPS.

Results: Subclinical PH was correlated with a worse 1-year survival (p = 0.003). Subclinical PH (n = 1.021) and older donors (p = 0.008) were correlated with a poor 40-month survival. Although a higher mPAP-FIO20.6 was expected to correlate with a worse survival, a high mPAP-FIO20.6 was not a significant risk factor for the post-LDLT survival. When the post-LDLT survival was inves- tigated according to the TRPG and mPAP-FIO20.6 status, it was worst in patients who had a high TRPG and low mPAP-FIO20.6. The patients with a high mPAP-FIO20.6 had mPAP-FIO20.6 > 40 mmHg. When comparing the two-tailed p value < 0.05 was defined as indicating statistical significance.

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

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Introduction: The ALBI score was recently developed to assess the severity of liver dysfunction, taking into account albumin and bilirubin levels. We aimed to assess its prognostic performance in patients with liver cirrhosis complicated with upper gastrointestinal bleeding (UGIB) while comparing it with Child-Pugh (CP) and MELD scores.

Aims & Methods: Retrospective uncenter study, including consecutive adult patients with cirrhosis admitted for UGB between January 2011 and November 2015. Clinical, analytical and endoscopic variables were assessed and ALBI, CP and MELD scores at admission were calculated. Statistical ana- lysis 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 57.4 ± 12 years, 76.6% were males. Liver cirrhosis was most frequently alcoholic (89.2%) and the most common etiology for UGIB was variceal hemorrhage, in 75.5% of patients. During the first 30 days of follow-up another 10 patients died (1st year mortality of 18.8%). When comparing the three scores, regarding in-stay and 30 days mortality, only ALBI score showed statistical significant results, with an area under the curve (AUC) of 0.82 (p < 0.01) for both outcomes. Regarding 1st year mortality, AUC for ALBI, CP and MELD scores, were 0.71 (p < 0.01), 0.64 (p < 0.05) and 0.66 (p = 0.02), respectively, while for global mortality AUC were 0.75 (p < 0.01), 0.72 (p < 0.01) and 0.72 (p < 0.01), respectively. When comparing the AUC of the three scores, no significant differences were found regarding 1st year mortality and global mortality.

Conclusion: In our series, ALBI score accurately predicted both in-stay and 30 days mortality (0.82 (p < 0.01)), while CP and MELD scores weren’t able to predict these outcomes. All scores showed a fair prognostic prediction performance regarding 1 year global mortality. These results suggest that ALBI score is particularly helpful in the assessment of short term outcomes, with a better performance than the most commonly used scores, and may assist the clinician in the stratification of care at admission and maybe even in the referral to liver transplant.

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

P0693 CARVEDILOL VERSUS PROPRANOLOL EFFECT IN THE PRIMARY PROPHYLAXIS OF VARICEAL BLEEDING IN CIRRHOTIC PATIENTS WITH PORTAL VEIN THROMBOSIS
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Introduction: Portal vein thrombosis (PVT) is recognized as an independent factor of variceal bleeding. Beta blockers are the mainstream treatment to prevent variceal bleeding in cirrhotic patients. Carvedilol has been shown to be equal to propra- nolol in preventing first bleeding in cirrhotic patients, however, the efficacy of this policy in patients with PVT is unknown.

Aims & Methods: The aim of this study was to evaluate the efficacy of carvedilol versus propranolol in the 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 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 varical 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 49.2 ± 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 = 0.002), bleed related mortality (9.5% vs. 11.1%, P = 0.027) and overall mortality (23.8% vs. 22.2%, P = 0.004) 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 propra- nolol 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.
PATIENTS WITH COMPENSATED LIVER CIRRHOSIS

FIRST EPISODE OF OVERT HEPATIC ENCEPHALOPATHY IN

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2Emergency And Organ Transplantation, University of Bari, Bari/Italy
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Introduction: Liver failure frequency (CFF: values $\leq 39$ Hz) identify cirrhotic patients with minimal hepatic encephalopathy (mHE) and predict their risk of developing overt hepatic encephalopathy (oHE). However, these results have been obtained in cirrhotics with advanced liver disease suffering a previous episode of liver decompensation (74% of patients) or oHE (14% of patients).

Aims & Methods: Herein, we evaluated the effectiveness of CFF in predicting the first episode of oHE in compensated outpatients undergoing a long-term follow-up. A total of 134 selected patients and 150 healthy subjects were evaluated using CFF. CFF was correlated with several non-invasive modalities, in an asymptomatic Fontan patient cohort may further elucidate this study.

Aims & Methods: Consecutive patients with a Fontan circulation are prospectively included for screening of liver fibrosis. This screening consists of a blood test for several non-invasive modalities, in an asymptomatic Fontan patient cohort may further elucidate this study.

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

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

References:
randomized to placebo or LRGG treatment, for 2 months. In all intention to treat analysis, patients demographic characteristics, laboratory test, model for end-stage liver disease (MELD) score, and Child-Pugh class were evaluated.

**Results:** CFF value increased in both LRGG and placebo groups at the end of treatment. In subgroup analysis, the CFF value increased in LRGG group at the end of treatment compared to placebo (46.5 ± 5.7 vs. 41.1 ± 4.4 Hz, p = 0.015), thus indicating a better therapeutic outcome on mHE. Moreover, mHE reversal was achieved in 75.0% vs. 35.7% of the patients from LRGG and placebo groups, respectively (p = 0.047).

**Conclusion:** For the first time, we demonstrate that LRGG improves mHE (expressed by a significant CFF increase).

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

**References**


**P0700 ASSOCIATIONS OF GENETIC POLYMORPHISM OF TOLL-LIKE RECEPTOR 3(TLR-3) AND SEX-LINKED TOLL-LIKE RECEPTOR 7 (TLR-7) ALLELES WITH THE HEPATITIS C VIRUS INFECTION OUTCOME IN EGYPTIAN POPULATION: A MULTICENTRE FAMILY-BASED STUDY**


**Aims & Methods:** The aim of this study was to assess the association between genetic polymorphism of TLR 3 and Sex-linked Toll-like receptor 7 alleles with HCV infection outcome in Egyptian families. A total of 135 Egyptian families (622 individuals) were recruited in this study from upper and lower Egypt (East and West delta). We compared the risk of allele carriage of selected markers in different groups. These groups included spontaneous clearance (SVC) (108 subject), chronic HCV (CHC) (patients 216), and negative control (298) individuals. The rs3775291 (C/T) was genotyped for TLR3. While the rs3853839 (C/G) was genotyped for TLR7 by real-time PCR using TaqMan® allele discrimination kit (Applied Biosystems) according to the manufacturer protocol. The distribution of the TLR7 rs3853839 (C/G) polymorphism was assessed separately in female and male subpopulations of the study due to the X-linked nature of the TLR7 gene.

**Results:** As regard TLR3 the frequency of the C allele was 88.5%, 83.4% and 71.06% for the SVC, control and CHC groups respectively. While the allele frequency of the T allele was found to be 11.5%, 16.5%, 30.9% in SVC, control and CHC groups respectively. When these alleles were compared between the 3 studied groups, The T allele of TLR3 rs3775291 was found to be significantly higher in both SVC spontaneous clearance (SVC) and control groups when compared to chronic HCV group [OR 0.42 (95% CI 0.21 to 0.82, Pc < 0.0372) and OR 0.40 (95% CI 0.23 to 0.71, Pc < 0.0054)] respectively. The same results was also reported in the male subpopulation as the same allele was found to be significantly higher in both HCV spontaneous clearance (SVC) and control groups when compared to chronic HCV group [OR 0.289 (95% CI 0.14 to 0.59, Pc < 0.0021) and OR 0.17 (95% CI 0.1009 to 0.28, Pc < 0.0001)] respectively.

**Table 1:** Association of the allele T of TLR3 rs3775291 polymorphism among the studied groups.

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<th>CHC vs Control</th>
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<td>2.3038 to 11.6406</td>
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</table>

**Conclusion:** The risk of development of chronic HCV infection was associated with T allele carriage of TLR3rs3775291 SNP. While the carriage of C allele of TLR7 rs3853839C allele was associated with spontaneous HCV clearance in both male and female subpopulations in Egyptian families.

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

**References**


resulting in cirrhosis and graft failure within 5 years after transplant. Different studies are studying efficacy and safety of treatment with DAAs in the early post-transplant period in LDLT recipients with HCV genotype 4

Aims & Methods: This study aimed to identify which of the several treatment schemes for genotype 4 patients would constitute the best option. Twenty-four Italian centers were involved in this real-life study where HCV genotype 4 patients were treated with DAA drugs.

Results: Twenty-six patients completed the treatment course. Sustained virological response (SVR) at week 12 was achieved in 80.8% (21/26) of recipients, 100% (11/11) for Sofosbuvir-Daclatasvir and Sofosbuvir-Simeprevir group versus 66.7% (10/15) for Sofosbuvir-Ribavirin group (p < 0.05). No major side effects had been reported, anemia developed in patients received ribavirin respond to treatment with erythropoietin and reduction of the ribavirin dose.

Conclusion: Use of Daclatasvir/Sofosbuvir or Simeprevir/Sofosbuvir in early treatment of HCV genotype 4 post living donor liver transplant recipient achieved higher rates SVR than Sofosbuvir/Ribavirin.

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 (DAAs).1,2 The Baveno VI guidelines1,3 propose that patients with compensated advanced chronic liver disease (cACLD), LS measurement < 20kPa and a platelet count > 150000/μL can avoid screening endoscopy as their combination is highly specific for excluding clinically significant oesophageal varices (EV). These data need to be validated recently.1,4

Aims & Methods: The aim of this study was to quantify LS regression both (measured in Kilopascals) and qualitatively (Stages of F0-F4 fibrosis) in a stationary phase after the sustained virological response (SVR) in patients with cACLD (F4). The secondary objective was to assess whether this improvement in LF measurements has a clinical correlation with changes in platelet numbers and the presence of varices according to Baveno VI criteria.

Results: 94 patients (49 men and 35 women) with cACLD were included in the study. Median TE on baseline (BL) prior to DAA treatment was (mean range), 23.86 (12.5–75) kPa and decreased to [mean (range)] at SVR 24 and [mean range], 16.19 (3–62.7) kPa at SVR > 54. Both were statistically significant, showing a decrease in LS about 30% between BL and SVR > 54 and about 33% between BL and SVR > 54. We did not find statistically significant differences between SVR 24 and SVR > 54. Regarding the probability of qualitative improvement of the LS (from F4 to F3 or less) the AUC was 0.8 with 17.9 kPa as the cut-off point which has a Sensitivity of 0.76 and Specificity of 0.81. NPV = 78.12, PPV = 78.57. 32 patients with highly suggestive cACLD (LS > 15kPa) underwent upper endoscopy (UE): 10 (32%) had varices (5 small EV and 5 big EV).17 (53%) fulfilled the Baveno VI criteria (3 with small EV and 4 with big EV). There were only 3 cases of EV misdiagnosed by Baveno VI Criteria. We did not find any significant differences in platelet levels or in the regression of varices.

Conclusion: There is a significant improvement in LS data after treatment with DAAs both at SVR24 and SVR > 54. This improvement seems to be more likely to occur in patients with lower TE values in our study 17.9 kPa. We did not have enough available data in our study to support that this improvement in LS measured by TE has a relevant impact on the clinical management of the patient. The Baveno VI criteria are a useful tool in daily practice to avoid unnecessary UE. Further investigation with larger samples is needed.

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

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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 regimens of ledipasvir plus sofosbuvir in patients with hepatitis C virus (HCV) genotype 1 infection without cirrhosis, treatment naïve, 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 >125 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).

Conclusion: Patients with chronic hepatitis C 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.

P0706 CLINICAL FEATURES OF PATIENTS DEVELOPING HCC AFTER ACHIEVING SVR WITH DAA AGAINST CHRONIC HEPATITIS C

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Introduction: Although the conventional IFN-based therapy has made a significant achievement in treating patients with hepatitis C virus (HCV), the improving effects of hepatocarcinogenesis after achieving sustained virological response (SVR), patients intolerant of IFN, such as those with advanced age or liver cirrhosis (LC), could not save its privilege. The appearance of direct-acting antivirals (DAAs) has provided almost every patient with the chance to receive the treatment without any serious adverse effects (AEs). In addition, SVR could be highly expected in more than 95% of patients treated with DAAs. However, the preventive effects of the future hepatocarcinogenesis following eradication of HCV remains unknown. In our facility, the adoption of DAA to HCV infection management (P0707) and the achievement of SVR (P0707) in 157 of SVR, among which 5.9% (9/157) of patients developed hepatocellular carcinoma (HCC) within 2 years after achieving SVR.

Aims & Methods: We evaluated the clinical features of patients developing HCC after achieving SVR with DAAs against HCV. One hundred and fifty-three patients achieving SVR defined as negative HCV-RNA 12 weeks after cessation of DAA (oral combination therapy with Daslatavir/Asunaprevir, Ombitasvir/Paritaprevir/Ritonavir, Sofosbuvir/Ledipasvir, or Sofosbuvir/Ribavirin) were enrolled in this study (Age 69 ± 6.8, male/female 71/52, genotype1/2 122/31, chronic hepatitis/LC 124/29, PLT 15.3 ± 6.8/mL, Alb 3.8 ± 0.5 g/dL, WFA(þ)-M2BP, FIB-4 index 3.3 ± 0.5 COI, AFP 12.1 ± 2.4 ng/mL, PI(K)VA-I 2.8 ± 4.3 mAU/mL). All patients were divided into 2 groups (A: 9 patients with HCC developing after SVR achievement, B: 144 without HCC after SVR achievement). Serum parameters (PLT, WFA(þ)+M2BP, FIB-4 index, APRI, ALT, Alb, AFP, PI(K)VA-I) and age were evaluated between 2 groups.

Results: In group B, significant declining (pre-DAA treatment/the time of achieving SVR) was observed in ALT(A44.8 ± 3.6/19.5 ± 1.1 IU/L), AFP(11.9 ± 3.1/ 4.1 ± 0.3 nm/g/mL), WFA(þ)+M2BP(3.2 ± 0.5/1.9 ± 0.3 COI), FIB-4 index(3.7/2.0 ± 0.2) and APRI(1.2/1.0 ± 0.7 ± 0.5), and significant increase in Alb(4.1 ± 0.4/3.5 ± 0.4 g/dL) and PLT(15.3 ± 6.8/20.9 ± 13.2 mAU/mL). In group A, significant declining was observed only in ALT (45.1 ± 10.9/ 16.7 ± 2.2 IU/L). This result indicates that DAA treatment significantly ameliorates parameters related with hepatic fibrosis as well as hepatic inflammation in group B, however, it led to the significant amelioration only in the serum parameters and hepatic inflammation in group A. Next, focusing on parameters after achieving SVR, WFA(þ)+M2BP (A:3.4 ± 0.6/B:1.7 ± 0.2 COI) and FIB-4 index (5.7 ± 1.6/ 3.0 ± 0.2) were significantly higher and Alb(3.8 ± 0.2/3.4 ± 0.4 g/dL) was significantly lower in group A comparing with group B. When dividing group A into 2 groups (C: new occurrence/D: recurrence), AFP(3.0 ± 1.3/6.2 ± 1.8 mg/mL), WFA(þ)+M2BP (2.0 ± 0.8/3.8 ± 0.7 COI), FIB-4 index (3.6 ± 2.4/ 6.3 ± 2.0) and APRI (0.6 ± 0.1/1.0 ± 0.3) were higher and Alb(4.3 ± 0.1/ 3.6 ± 0.3 g/dL) and PLT (20.9 ± 13.2/13.4 ± 3.4 mAU/mL) were lower in group D than group C, although no significant difference was seen between 2 groups. This result suggests that there might be more patients with progressive hepatic fibrosis in group D comparing with group C. Finally, while univariate analysis showed WFA(þ)+M2BP, FIB-4 index and Alb were significantly associated with the development of HCC after achieving SVR with DAA against HCV, multivariate analysis revealed only Alb was the significantly independent factor contributing to HCC development after achieving SVR.

Conclusion: Low level of serum albumin as well as the progression of hepatic fibrosis could be associated with the development of HCC after achieving SVR with DAA to HCV. Disclosure of Interest: All authors have declared no conflicts of interest.

P0707 EARLY OCCURRENCE OF HEPATOCELLULAR CARCINOMA IN PATIENTS WITH HEPATITIS C VIRUS TREATED WITH DIRECT-ActING ANTIVIRALS

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Introduction: Direct-acting antivirals (DAAs) are novel antiviral drugs for hepatitis C virus (HCV) and have enabled the achievement of a high rate of sustained
virological response (SVR) [1]. However, the impact of DAAs on the occurrence of hepatocellular carcinoma (HCC) and HCC recurrence after curative hepatic resection of HCC has been recently discussed [2, 3], but remain unclear.

Aims & Methods: The clinical data of 97 patients who underwent curative hepatic resection for primary HCC with HCV at our department between January 2012 and January 31, 2017 was reviewed to check 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, 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 = 25), 90.9% and 71.8% in patients with IFN-based regimens (n = 26) and 57.8% and 19.7% in patients without SVR (n = 46), respectively, regardless of the timing of 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

P0709 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 FACIT- 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 FACIT- F utility scores (43.2 ± 3.5 vs 49.5 ± 3.0, p < 0.05). Severe fatigue was present in 30% (33 patients) of the HCV group compared to 11.6% (7 patients) in controls. Subgroup analyses of respondents age 60 years and older revealed lower MCS score in HCV patients compared to controls (41.95 vs 49.72, p < 0.05). Control group registered higher PCS score (53.30 vs 45.2, P < 0.05) compared to the study group.

Conclusion: Although the results were obtained on a small group we observed that in untreated patients with chronic HCV infection, HRQoL is significantly impaired due to fatigue severity and age. Our result underline the need for effective antiviral treatment to decrease the burden of fatigue in this segment of population.

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

P0710 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. Advent of Directly acting antivirals (DAAs) like Sofosbuvir (SOF) has dramatized the treatment and is the corner stone in treat- ing causes towards cirrhosis and hepatocellular cancer and it is to be considered nowadays a major health-related quality of life (HRQoL) burden.

Aims & Methods: We aimed to evaluate the safety and efficacy of SOF plus Ribavirin (RIB) in patients with compensated and decompensated cirrhosis. This is a prospective real-world cohort study of HCV with compensated or decompensated cirrhosis. Efficacy was assessed by Sustained Viral Response after 6 months of completion of treatment. Adverse events were recorded on designed proforma on serial follow-up visits.

Results: The cohort consisted of 9 1 consecutiive 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%) treatment naïve patients compared to treatment experi- enced patients where 5 (80%) achieved SVR. In decompensated cirrhosis SVR was achieved in 22 (77.3%) treatment naïve patients, whereas 13 (76.9%) patients achieved SVR in treatment experienced group. In 72% patients with cirrhosis, there were no side effects whereas most common adverse event was fatigue and drop of Hemoglobin by 1.0 g/dl. Furthermore, CTP and MELD scores decreased to 6.9 and 8.7 respectively after treatment.

Conclusion: Sofosbuvir in combination with Ribavirin in GT-3 HCV patients achieved good SVR in compensated cirrhosis than decompensated cirrhosis whereas fatigue and drop of Hb were the most common adverse effects.

Disclosure of Interest: All authors have declared no conflicts of interest.
P0711 RECURRENTITY OF HEPATOCELLULAR CARCINOMA (HCC) FOLLOWING TREATMENT WITH PARITAPREIVIR/OMBITASVIR/RITONAVIR, DASABUVIR WITH RIBAVIRIN: A NATIONAL COHORT STUDY

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Introduction: New direct-acting antivirals (DAAs) 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 recurrence following DAA treatment, but more data are needed [3–5].

Aims & Methods: From a national prospective cohort, enrolling 3717 Romanian patients with hepatitis C virus compensated liver cirrhosis who received reimbursement by Ombitasvir/Ribavirin, respectively, Dasabuvir and Ribavirin (OVB/PTV+ + DSV + RBV) for 12 weeks, from December 2015 to August 2016, we analyzed 21 patients with previous HCC. Most of them were treated through surgical resection (9/21), followed by radiofrequency ablation (RFA) 6/21, transarterial chemoembolisation (TACE) 5/21 and only one percutaneous ethanol injection (PEI). The patients received DAA treatment only if they had no cancer relapse 6 months after their last therapy session for HCC. All these patients were evaluated through CT scan or MRI 3 to 6 months after having finished their DAA therapy. The median follow-up is 6 months (3–12). Data were obtained from the Romanian National Health Agency.

Results: Two female patients decompensated and died because of acute liver failure following their having finished the 12 weeks therapy and the other one in week 7 of DAA therapy. This cohort was 52% females, median age 64 years (51–77), 76% IFN pre-treated, 50% associated NASH, 67% with severe necroinflammatory activity (severity score 3–Fibromax), 30% with co-morbidity 24% with Child Pugh A6. The median MELD score was 9 (6 + þ 3). SVR was reported in 19/21 as per protocol analysis (90.5%). Recurrence rate of HCC was 29%, higher in males (40%) than females (18%), higher in patients treated with TACE (40%) than in those with hepatic resection (33%), and the lowest risk of recurrence was observed in RFA (17%). These differences were not statistically significant because of the small sample size. The pattern of recurrence was: intrahepatic growth (1 patient), new intrahepatic lesion (1 nodule in 2 patients, up to 3 nodules less or equal to 3 cm in 1 case) and infiltrative ill-defined growth (1 case) in 1 patient. The conclusion was the presence of fibrosis, making CAUS a feasible tool for screening and evaluation of treatment efficacy in HCC patients not undergoing interferon-free therapy. The median follow-up is 6 months (3–12).

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.

P0712 SHEAR WAVE ELASTOGRAPHY FOR THE DIAGNOSIS OF ESOPHAGOGRADIC VARIANCES

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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 (EGV) associated with portal hypertension was evaluated. 550 patients who underwent measurements of liver stiffness (LS), spleen stiffness (SS) and EGV evaluation between January 2011 and July 2016 were included (no varices, n = 340; esophageal only, n = 107; stomach only, n = 14; esophagus and stomach, n = 89). Virtual Touch Quantification (VTQ) was used for measurements of LS and LS/SS. The spleen index was calculated as the sum of the echo levels (SI) (Linear regression analysis).

Results: LS, SS and SI showed significant increase in accordance with the severity of varices (p < 0.01). The area under the receiver operating characteristic curve (AUC) of LS, SS and SI for detecting varices was 0.8526, 0.9048, 0.8199, with the cut off values 1.67 m/s, 2.81 m/s, 18.5 cm2, respectively, and SS showed usefulness in detecting EGVs. When LS, SS and SI were compared for their ability to detect varices which were > F2 or with RC sign positive, LS, SS and SI were significantly higher for EGVs which require treatment (p < 0.001).

Conclusion: LS, SS and SI for detecting EGVs which require treatment were 0.8131, 0.8693, 0.8270, respectively. All modality showed good detecting ability, and SS particularly showed better performance. When each modality was compared in detection of gastric varices, LS and SS were significantly higher with the presence of gastric varices, but SI did not show a significant difference. The AUROC of LS, SS and SI for detecting gastric varices were 0.7359, 0.8611, 0.8470, and SS and SI showed a superior detecting ability while LS and SI showed decreased abilities.

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

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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 macro-vesicular hepatic steatosis) under condition of chronic diffuse liver disease (CCDL) 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 №2014 111234).

Aims & Methods: From total of 3274 patients who underwent abdominal US examination at our clinic: 90.0% were diagnosed with the CCDL; 9.0% were healthy according to Hamaguchi criteria. All these patient we provide ACM (dB/cm) measurement on SonoSite P7 device (Ultrasound, Ukraine), with a 1–6 MHz convex transducer in the right and left lobes. For diagnostic accuracy assessment (used ROC-analysis) we included 142 patients for subanalysis. Evaluation of diagnostic accuracy of ACM performed using ROC-analysis.

Results: Depending on the stage of steatosis according to B-mode median, 25 and 75% percentiles for ACM were as follows: control group 157 (1, 32–1, 53); 1, 86 (1, 78–2, 11); S2–2, 26 (2, 0–2, 49) and respectively for S3–2, 40 (2, 0–2, 82) dB/cm.

ACM value increase parallel the hepatic steatosis progression (p < 0.001), which was also accompanied with presence of very strong correlation between these parameters (r = 0.814, p < 0.001). In patient with NAFLD the association between maximum value of ACM and duration of T2DM and triglycerides (model 1, multiple correlation coefficient r = 0.55; R² = 0.26; p = 0.0044) and ALT (model 2, multiple correlation coefficient r = 0.55; R² = 0.25; p = 0.0005) were observed. After adjustment by the duration of T2DM the level of triglycerides (r = 0.44, p = 0.012) and activity of ALT (r = 0.44, p = 0.012) significantly correlated with ACM. The AUROC of ACM for steatosis diagnosis was 0.925 (95% CI 0.877–0.973). The optimal cutoff point was >2.27dB/cm, with sensitivity, specificity, PPV and NPV respectively 91.5, 77.3, 84.6 and 83.8%. ACM value significantly correlated with CAP (r = 0.630, p < 0.001). Conclusion: The ACM as novel real-time ultrasound approach can be used for noninvasive hepatic steatosis diagnosis, allows clinicians to monitor disease progression and response to treatment.

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

References
Usefulness of a New Three-Dimensional Simulator System for Radiofrequency Ablation of Liver Tumours: a Prospective Study in 30 Patients
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Introduction: CUXI (CUTL1) is a transcription factor able to promote the expression of onco genes 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 condition was established by 24h treatment with 150 μM CoCl2 or with 0.5% O2 atmosphere. Hypoxia markers and CUXI were analysed by RT-qPCR. Transfection qith plasmid expressing a reporter sequence for HIF-1alpha was performed in combination with CUXI knock-down.

Results: Hypoxia determined the up-regulation of HIF1-alpha (Hypoxia inducible factor-1-alpha) and a stable or up-regulated expression of its inhibitor FH1 (SLC2A1) up to 24h prolonged hypoxia. VEGFA was significantly
overexpressed. Knock-down of CUX1 determined a significant down-regulation of HIF-1alpha, FHI-1 and VEGFA. Interestingly, the expression of CDKNA1 was only attenuated after CUX1 knock down and hypoxic stress. HIF1alpha transcriptional activity is dependent by CUX1 expression.

Conclusion: CUX1 exerts an oncogenic role in liver cancer by sustaining the survival mechanism and hypoxia. CUX1 silencing results in suppression of the hypoxia inducible factor and its target VEGFA causing a block of cell cycle in liver cancer cells modulated by the stable expression of CDKNA1.

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

P0718 S-ADENOSYLMETHIONINE AFFECTS CELL CYCLE PATHWAYS AND SUPRESSES PROLIFERATION IN LIVER CELLS

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Introduction: S-Adenosylmethionine (SAMe) is a kind of common liver-protecting medicine. Recent studies have shown that SAMe has the inhibitory effects on hepatocellular carcinoma (HCC). But the specific mechanism has not been elucidated.

Aims & Methods: Here, we examine the effects and relevant mechanism of SAMe on human hepatocellular carcinoma cell HepG2 and mouse hepatocyte AML12. 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 expression of these genes. MTS and flow cytometry-based assays were carried out in response to SAMe treatment.

Results: A total of 472 SAMe-related genes were identified by RNA-Seq. We found that differentially expressed genes were enriched in cell cycle related signaling pathway significantly by the KEGG and GO Pathway enrichment analysis. Through the construction of protein-protein interaction network, we observed the module associated with cell cycle is in the middle of the whole network. All these results implied that cell cycle pathway may play a very important role in the regulation of SAMe effect on HepG2 cells. Then the RNA-Seq characterized genes involved in cell cycle (MCM3, MCM4, and E2F1) were confirmed by Western blot and qRT-PCR in HepG2 and AML12 cells. MTS analysis showed that SAMe could diminish cell proliferation. And flow cytometry-based assays indicated that treatment with SAMe altered cell cycle kinetics S phase cell cycle arrest.

Conclusion: Altogether, our data enforce the evidence of SAMe possessing of modulating CYCLINB, D, E and MATRIX subunit of the SWI/SNF complex, that is known to be mutated in hepatocellular carcinoma (HCC) remains unclear. The aim of this work is to investigate the role of BRG1 in human HCC cell lines by qRT-PCR and Western Blot. We used siRNA to down-regulate BRG1 in human HCC cell lines. Cell growth and cell invasion decreased in HuH7 and HepG2 cell lines. A positive modulating effect of BRG1 on cell cycle, cell invasion and its effect on the expression of target genes were observed.

Aims & Methods: We examined the expression of BRG1 in human tissue samples and HCC cell lines by qRT-PCR and Western Blot. We used siRNA to down-regulate BRG1 in human HCC cell lines. Cell growth and cell invasion of siRNA transfected cells were assessed by MTT assay and colony formation assay. The expression of target genes after BRG1 downregulation was investigated by qRT-PCR.

Results: BRG1 was found to be significantly increased in HCC samples compared to non-HCC samples. After BRG1 downregulation by siRNA, cell growth and cell invasion decreased in HuH7 and HepG2 cell lines. A positive modulating effect by BRG1 was shown for the expression of CyclinD1, D, E and MMP7 in either HepG2 or HuH7 cell lines.
Conclusion: Our results support the hypothesis that overexpression of BRG1 increases cell growth and cell invasion in HCC. Furthermore, the data highlight genes promoting proliferation and invasion that are being regulated by BRG1 during hepatocarcinogenesis. In particular, CyclinB, D, E and MMP7 appear to play a major role in this context and might be an important link between BRG1 expression and HCC development.

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

P0720 PROGNOSTIC ROLE OF NEUTROPIL-TO-LYMPHOCYTE RATIO IN HEPATOCELLULAR CARCINOMA (HCC)

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 (6/18)). 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 multifocality (P = 0.01) and higher incidence of AFP > 200 ng/ml (P = 0.04).

Conclusion: Elevated NLR indicates a poor prognosis for patients with HCC. The NLR is a readily available and inexpensive biomarker, and its addition to established prognostic scores for clinical decision making warrants further investigation.

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

P0722 SURGICAL OUTCOME OF PATIENTS WITH FIBROLAMELLAR HEPATOCELLULAR CARCINOMA. DOES IT DIFFERS FROM COMMON HEPATOCELLULAR CARCINOMA?

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Introduction: Fibrolamellar hepatocellular carcinoma (FL-HCC) has conventionally been considered to be a histologic variant of hepatocellular carcinoma (HCC), with distinct clinicopathologic features. It is a rare primary hepatic malignancy that was first described as a pathological variant of HCC by Edmondson in 1956 [1]. The etiology of FL-HCC remains unclear. It typically occurs in normal livers without underlying liver fibrosis or cirrhosis [2]. In contrast to HCC which usually found in the presence of cirrhosis or chronic hepatitis [3], FL-HCC has been reported to occur in association with focal nodular hyperplasia (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.

Disclosure of Interest: None.

Number
- Single 19 (86%)
- Multiple 3 (14%)

Size (cm)
- Median 12 cm (range, 5–20)

Location
- Hepatectomy 4 (18%)
- 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%)

Repeatec hepatectomy
- 4 (18%)

Number
- Age (year)
  - <40 16 (73%)
  - ≥40 6 (27%)
- Gender
  - Female 11 (50%)
  - Male 11 (50%)
- Tumor size (cm)
  - <10 8 (36%)
  - ≥10 14 (64%)
- Number
  - < 1 19 (86%)
  - ≥ 1 3 (14%)
- Hepatic resection
  - Hepatectomy 16 (73%)
- Overall survival (month)
  - p value

Factor
- No. (%)
- Age (year)
  - <40 16 (73%)
  - ≥40 6 (27%)
- Gender
  - Female 11 (50%)
  - Male 11 (50%)
- Tumor size (cm)
  - <10 8 (36%)
  - ≥10 14 (64%)
- Number
  - < 1 19 (86%)
  - ≥ 1 3 (14%)
- Hepatic resection
  - Hepatectomy 16 (73%)

(continued)
Aims & Methods: To investigate the efficacy and safety of Microwave versus Radiofrequency Ablation in management of HCA. Out of 320 Patients presented with hepatic focal lesions over 1 year, data of 15 patients diagnosed to have HCA were collected retrospectively. The diagnosis of HCA in those patients was based on radiological findings using triphasic pelvi-abdominal CT, dynamic MRI or ultrasound. The diagnosis of HCA in those patients was based on radiological findings using triphasic pelvi-abdominal CT, dynamic MRI or ultrasound.

Results: Patients with single and multiple hepatocellular adenomas. Of note Microwave ablation is thermal Ablation is safe, feasible and able to eradicate the targeted hepatic focal lesion and prevent known complications of HCA.

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 0.07] 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
motility, nodule size, BCLC stage, portal vein thrombosis and metastasis were independent predictors of lead-time adjusted survival.

Conclusion: Our “real-world” study suggests that motility disorders shape the clinical presentation of HCC but do not seem to play a major role in setting the patient survival, except for diabetes.

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

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 this is not well established. Therefore, liver volume was measured on portal venous phase of CT image and correlated 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 liver cirrhosis compared with non-cirrhotic patients (P < 0.001). Presence of liver nodules was also associated with higher risk for HCC. (P < 0.001), whereas age, sex, alpha-fetoprotein and HCV RNA level were not significant predictors of HCC. Multivariate analysis show that LVI > 1 and presence of LC were independent predictors of HCC (HR: 63.53, CI: 1.24-124.28, P < 0.001/HR: 3.10, CI: 1.26-7.51, P = 0.012, respectively).

Conclusion: Decreased liver volume is an independent predictor of HCC in chronic hepatitis C. Liver volume index is useful in predicting risk of HCC in CHC.

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

P0727 HAND AND FOOT SYNDROME AS A PREDICTOR OF OUTCOME IN PATIENTS WITH HEPATOCELLULAR CARCINOMA TREATED WITH SORAFENIB

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Introduction: Sorafenib is a multi-thyrosine kinase inhibitor classified as a neo-vascularization inhibitor. A previous study indicated that the administration of sorafenib is a multi-thyrosine kinase inhibitor classified as a neo-vascularization inhibitor. 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–phased dynamic CT imaging studies during sorafenib administration 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 liver cirrhosis compared with non-cirrhotic patients (P < 0.001). Presence of liver nodules was also associated with higher risk for HCC. (P < 0.001), whereas age, sex, alpha-fetoprotein and HCV RNA level were not significant predictors of HCC. Multivariate analysis show that LVI > 1 and presence of LC were independent predictors of HCC (HR: 63.53, CI: 1.24-124.28, P < 0.001/HR: 3.10, CI: 1.26-7.51, P = 0.012, respectively).

Conclusion: Decreased liver volume is an independent predictor of HCC in chronic hepatitis C. Liver volume index is useful in predicting risk of HCC in CHC.

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

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. Extrahepatic metastasis of HCC occurs in about 30–50% of patients, and it depends on HCC stages. I. The most frequent site is lung, followed by lymph node, bone, and adrenal gland. 2 Extrahepatic metastases to unusually sites from HCC have been reported in a few case reports. We report cases of patients with unusual extrahepatic metastatic sites from HCC.

Aims & Methods: We carried out a retrospective study of 16 patients with unusual extrahepatic metastasis of 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 within anoncirrhotic liver. All patients had one or more HCC, ranging in size from 2 to 10 cm. The AFP was normal in 11 cases and elevated in 4 cases (> 200 ng/mL). We collected 4 cases of adrenal metastases, 3 costovertebral metastases, 2 gastric metastases, 2 brain metastases, 1 cranial metastasis, 1 caval metastasis, 1 ovarian metastases, 1 nasopharyngeal metastasis, and a case of metastasis in the path of percutaneous biopsy of HCC. In 4 cases the diagnosis of HCC and metastasis was synchronous while in 12 cases median time from diagnosis of hepatocellular carcinoma and extrahepatic HCC was 15.5 months. Therapeutic abstention was decided in 14 patients for the advanced stage of the disease. Cautious metastasis was resected surgically and HCC occurring in healthy liver was treated by laparotomy and upper pole gastrectomy in gastric metastasis. The average survival was estimated at 14 months with a decline of 17.3 months, 6 cases were lost to follow and 6 deaths occurred in our series.

Conclusion: The incidence of unusual and extrahepatic metastasis of HCC diagnosed during clinical course was not frequent. The diagnostic procedures for extrahepatic metastasis have been standardized, however considering the substantial advances in treatment of HCC, the detection of extrahepatic HCC is crucial for patients to receive appropriate therapy, which ultimately determines patient survival.

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

P0730 EPIDEMIOLOGICAL STUDY OF HISTOLOGICALLY PROVEN ADVANCED HEPATOCHOLANGIOCARCINOMA: AN AGED MULTICENTER RETROSPECTIVE STUDY IN FRANCE

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Introduction: Hepatocellular carcinoma is a rare primary hepatic tumor comprising features of both, cholangiocarcinoma and hepatocellular carcinoma (cHCC-ICC). Few data concerning the epidemiology of cHCC-ICC have been reported, mainly from surgically treated cases in Asian and American populations.

Aims & Methods: The main objective of this retrospective multicenter study was to evaluate epidemiological features and overall survival of histologically proven advanced CHCC patients in a French population. Data from patients treated for histologically 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 R software (R Foundation for Statistical Computing).

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 hepatocellular carcinomas with hepatic involvement. We conducted a retrospective study of patients diagnosed with hepatic hepatitis 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 (44.4%) 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 3 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, and 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

Aims & Methods: The aim of this study was to modify the Barcelona Clinic Liver Cancer (BCLC) staging system for hepatocellular carcinoma (HCC). This study aimed to modify BCLC system based on PS to derive more relevant modified BCLC system for HCC patients.

Results: This study aimed to modify BCLC system based on PS to derive more relevant modified BCLC system for HCC patients. The patients with PS 1 or 2 without VI or EHS were categorized to BCLC C regardless of tumor burden, VI or EHS. The C1-C4 sub-groups showed significant different OS distribution between groups (P = 0.001). The mBCLC#2 stage C was further sub-classified into C1, C2, C3 and C4 according to the variables which selected by statistical and clinical importance. The C1-C4 sub-groups showed significant different OS distribution between groups (P = 0.001). The conclusions of this study provide clinical data to improve the Barcelona Clinic Liver Cancer System.

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

References

Aims & Methods: The use of bile acids as a regulator of gut microbiota.

References

Aims & Methods: The use of bile acids as a regulator of gut microbiota.
NECROPTOSIS IN EXPERIMENTAL CHOLESTASIS

P0734 MIRNA-21 IS OVEREXPRESSED IN PRIMARY BILIARY CHOLANGITIS AND MEDITATES 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. miR-21 expression was evaluated in the liver of primary biliary cholangitis (PBC) patients. C57BL/6 wild-type (WT) or miR-21-deficient (miR-21−/−) mice were subjected to BDL or sham surgeries, with biochemical, molecular and histological analysis of hepatic damage, fibrosis, necroptosis and bile acid metabolism, after either acute (3 days) or chronic (14 days) injury.

Results: Studies in miR-21−/− primary mouse hepatocytes established a functional link between miR-21 and necroptosis through cyclin dependent kinase 2 mediating pro-fibrotic gene expression. Hallmarks of necroptosis were observed in the liver of BDL miR-21−/− mice, via relieved repression of cyclin dependent kinase 2. Further, miR-21−/− mice displayed improved adaptive response in the expression of bile acid homeostasis-associated genes.

Conclusion: miR-21 ablation ameliorates liver damage and necroptosis in BDL mice; as such, inhibition of miR-21 should arise as a promising approach to treat cholestatic liver diseases. Supported by FCT, Portugal through grants PTDC/IM-MEC/0895/2014 and UID/DTP/04138/2013, and fellowships SFHR/BD/9119/2012 (MBA), SFHR/BD/88212/2012 (PMR), and SFHR/BD/104160/201 (ALS).

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

P0735 IS COMPLETE STONE REMOVAL ALWAYS NECESSARY IN EXTREMELY ELDERLY PATIENTS?


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Introduction: Endoscopic sphincterotomy, endoscopic papillary balloon dilation, and radial peripapillary incision are widely recognized as safe and effective treatments of choledocholithiasis. However, endoscopic stone removal does have some complications. Although the life expectancy of elderly patients has increased dramatically worldwide, little information is available on the necessity of complete endoscopic stone removal in extremely elderly patients.

Aims & Methods: The aim of this study was to evaluate the safety and efficacy of complete endoscopic stone removal in extremely elderly patients. We retrospectively evaluated all extremely elderly patients (older than 90 years) who had undergone complete stone removal for choledocholithiasis at Ise Red Cross Hospital between January 2012 and December 2016. Included patients were divided into complete stone removal and incomplete stone removal (failure to achieve complete stone removal and insertion of a plastic stent) groups. We compared the complication rate, overall survival (OS), and disease-specific survival (DSS) rate between the two groups.

Results: In total, 67 patients were included in this study; 36 (54%) had complete stone removal and 31 (46%) had incomplete stone removal. The median age of the patients was 92 years (range 90–100 years), median follow-up period was 462 days (range 6–1449 days) and the male-to-female ratio was 15:52. Baseline characteristics (age, body mass index, performance status, and comorbidities), rate of complications (perforation, bleeding, hypoxemia, or decreased blood pressure during the endoscopic procedure), and total number of endoscopic procedures did not significantly differ between the two groups. The median number of stones was one (range 0–5) and two (range 1–5) (P = 0.013), while the median diameter of the largest stones was 9 mm (range 0–27) and 14 mm (range 5–32) (P = 0.001) in the complete and incomplete stone removal groups, respectively. During the referral period, OS was 33.5% and 41.9% and DSS was 5.56% and 3.22% in the complete and incomplete stone removal groups, respectively. Kaplan-Meier analysis found no significant difference in OS and DSS between the two groups (P = 0.187 and P = 0.581, respectively).

Conclusion: Patients in the incomplete stone removal group tended to have more numerous and larger stones. This single-centre retrospective study revealed no significant difference in OS and DSS between the two groups. Complete stone removal might not be always necessary in extremely elderly patients aged 90 years and older.

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

P0736 THE EVALUATION OF TRANSPAPILLARY ENDOSCOPIC GALLBLADDER DRAINAGE WITH THE USE OF INTRADUCTAL ULTRASONOGRAPHY


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Introduction: The number of indications for endoscopic transpapillary gallbladder drainage (ETGBD) to treat cholecystitis patients is increasing with the aging of the population and prescribing antithrombotic agents. ETGBD is one of the challenging procedure because it is difficult to identify the cystic duct (CD) orifice. From November 2015, we performed with ETGBD using intraductal ultrasonography (IDUS) complementarily. The CD orifice can be identified using IDUS, resulting in cannulation to the CD. We investigated the success rate and clinical outcomes of ETGBD in combination with using IDUS.

Aims & Methods: ERCP was performed in 1000 patients (1400 times) at New Tokyo Hospital between July 2015 and November 2016. Among them, 47 patients underwent ETGBD, 58 patients with IDUS and 39 without IDUS. In this study, we investigated the success rate of ETGBD retrospectively. The success of ETGBD was defined as cannulation into the gallbladder within two trials. Results: The mean age and male proportion of patients in the group with IDUS was similar to that in the group without IDUS (74.5±14.1 vs 73.3±11.3; P = 0.600 and 18/40 and 13/26; P = 0.828). The procedure success rate was 78.4% (76/97) in total; 86.2% (50/58) in the group with IDUS and 66.7% (26/39) in the group without IDUS (P = 0.026). Using IDUS under fluoroscope image all allowed patients in the group with IDUS to identify the CD orifice. ETGBD procedures in eight patients were unsuccessful because of a highly flexion of the CD in seven patients and an obstruction of the CD orifice caused by tumor invasion in one patient. Although both groups developed mild pancreatitis (one patient in the group with IDUS, and two patients in the group without IDUS), no significant difference was observed in the two groups (P = 0.563). All patients were successfully managed with conservative treatment. There were no any other complications in the two groups.

Conclusion: The success rate of ETGBD in the group with IDUS was significantly higher than that in the group without IDUS. IDUS may be useful as a complementary option of endoscopic gallbladder drainage.

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

P0737 THE RENDEZVOUS PROCEDURE FOR THE MANAGEMENT OF BILIARY DUCT INJURIES AFTER CHOLECYSTECTOMY: SHORT AND LONG-TERM OUTCOMES AND PREDICTORS FOR SUCCESS

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Introduction: Bile Duct Injury (BDI) following laparoscopic cholecystectomy is a persisting problem. The rendezvous procedure (RV) provides a combined endoscopic and percutaneous approach in order to re-establish bile duct continuity in complex BDI.

Aims & Methods: The aim of this study is to assess short-term and long-term outcomes of the RV. All consecutive patients with BDI referred to our tertiary center were analyzed retrospectively. RV procedure was performed when endoscopic stenting or PTC failed and when deemed feasible by a dedicated multidisciplinary team including a hepatopancreato-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 D3/Naraberg type E injury). Primary success rate of RV was 94% (44/47 patients). Reasons for failure (N = 3) were inability to pass a stricture and inability to make contact between the two wires. In 26/47 patients (55%) RV was the final successful treatment. In 17/47 patients (36%) RV acted as a bridge to
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
2. Booji KAC, de Reuver PR et al. Long-term Impact of Bile Duct Injury on Morbidity, Mortality, Quality of Life, and Work Related Limitations. 2017

P0739 TRANSGRECTAL 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 intracolonic 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 (TRGCP) and 3 transrectal gallbladder preserving polypectomy (TRGPP) and 2 combined cases by pure NOTES. Moreover, 1 case of TRGCP 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 endolips. Peritoneal cavity lavage was performed with sterile saline. The rectal incision was closed with endolips and endolamps 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 felt 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. TRGCP and TRGPP 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, multietnereted, 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 (NaAs2O3: 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, Konipharm International Co., Ltd.) was administrated 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 63±10.0 years, and mean performance status (ECOG PS) was 2.2±0.8. Among them, 18 patients were enrolled in the control arm and 44 patients were in the treatment arm. The median duration of follow-up was 7.3 months (range 0.01–24.8). The mean KML001 dose was 13.4±4.9 mg daily. The most common adverse events were grade 1–2 fatigue, nausea, and anorexia. No grade 3–4 adverse events were experienced. The median survival was 11.3 months (95% CI 5.6–17.0).

Disclosure of Interest: All authors have declared no conflicts of interest.
The number of liver segment drained with the number of liver segment. The drain was confirmed by removing the drains that had the segments resected in case of surgery, and/or the segments with invasion of more than 50% by tumor. The aim of the study was to evaluate the effect of the quality of the drainage on the patients survival. Quality of the drainage was defined by the percentage of liver segments drained. Results: 60 (38 men) patients were included from 01/2015 to 07/2016. Mean age = 69.84 years old. The classification of the stenosis was type II for 17 (29%) patients, type III for 20 patients (34%), type IV for 22 (37%). Histology corresponded to cholangiocarcinoma for 15 patients (25%) and others cancers for 19 (32%). Median follow-up was 8.5 months (5.5–16.5). The median of survival was 5 months (2.3–12.3). In unvaried and multi varied analysis there was a significant correlation between the percentage of segments drained > 50% (p < 0.05) and the survival. 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 = 0.7 (0.65–0.88). Conclusion: The survival of patient with a malignant stenosis of the biliary confluence is highly correlate with the rate of the liver segment drained. Disclosure of Interest: All authors have declared no conflicts of interest.

Table 1: Treatment outcomes

| Study period, mean, mo (range) | 1.5 (0.5–10.0) |
| 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 (%) | 3 (6.5%) |
| SD | 23 (52.3%) |
| Not evaluated | 18 (40.9%) |
| ECOG, n (%) | 19 (43.2%) |
| Increased | 2 (4.5%) |
| Main | 8 (18.6%) |
| decreased | 31 (72.1%) |
| Adverse event, n (%) | 4 (9.3%) |
| Grade 1 | 16 (36.4%) |
| Grade 2 | 29 (65.9%) |
| Grade 3 | 12 (27.3%) |
| Grade 4 | 0 (0%) |
| Drop out cause, n (%) | 1 (2.3%) |
| - drug reaction | 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 TRANSABDOMINAL 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 true or pseudo polyp. 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 pseudo polyps and differentiating between (pre)malignant and benign polyps. Studies of TAUS and EUS were identified using the Cochrane Library and EMBASE. Search terms included: gallbladder polyps, benign polyps, malignant polyps, adenoma, dysplasia, dysplastic polyp, carcinoma, adenocarcinoma, true polyp, pseudo polyp, histology, accuracy, sensitivity, specificity, positive likelihood ratio, negative likelihood ratio, pooled estimates of sensitivity and specificity. Otherwise the principal of pretest probability were used to test whether TAUS or EUS was superior. Post-test probabilities were calculated using the median prevalence (as pre-test probabilities) and summary positive and negative likelihood ratios.

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 pseudo polyps, 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 0.91 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.

No studies were of high methodological quality. The results of the pooled sensitivities, specificities and post-test probabilities are shown in Table 1. HRSOC analysis showed no significant difference between the diagnostic accuracy of TAUS and EUS for differentiating between true and pseudo polyps and for...
differing between (pre)malignant and benign polyps (p=0.174 and p=0.589 respectively).

**Conclusion:** Diagnostic accuracy of TAUS for diagnosis gallbladder polyps is moderate and decreases further when differentiating between polyp types. TAUS would regularly provide false positive results, leading to unnecessary surgery. There was no evidence that diagnostic test accuracy of EUS was better than TAUS. Further studies of high methodological quality are needed to determine diagnostic accuracy of EUS and TAUS for differentiating between polyp types.

This abstract is based on a pre-peer review draft of a Cochrane Review.

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

**Reference**


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**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 investigations have reported the utility of contrast-enhanced ultrasonography (CEUS) in low mechanical index (MI) contrast mode using a microbubble contrast agent for gallbladder lesions. However, CEUS images with low MI setting are influenced by the echogenicity of background B-mode and cannot depict precise vessel images, in contrast with high MI contrast mode.

**Aims & Methods:** The aim of this study was to assess the diagnostic value of CEUS in high MI contrast mode for characterizing polyloid 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% (13/19), and 73% (25/34) in B-mode, 94% (16/17), 89% (17/19), and 92% (25/28) in 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.

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**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% (0.12–0.90) Median: 6.4% (0.55–0.89) Maximum: 53.3% (0.97–0.95)</td>
<td>0.10 (0.07–0.11)</td>
<td>0.05 (0.03–0.08)</td>
</tr>
<tr>
<td>TAUS</td>
<td>True gallbladder polyp</td>
<td>7 studies (1272 patients)</td>
<td>0.77 (0.48–0.92)</td>
<td>0.78 (0.59–0.90)</td>
<td>Minimum: 9.1% (0.86–0.90) Median: 20.2% (0.47–0.62) Maximum: 60.0% (0.84–0.91)</td>
<td>0.26 (0.16–0.39)</td>
<td>0.03 (0.01–0.07)</td>
</tr>
<tr>
<td>EUS</td>
<td>True gallbladder polyp</td>
<td>4 studies (267 patients)</td>
<td>0.84 (0.54–0.96)</td>
<td>0.84 (0.70–0.92)</td>
<td>Minimum: 9.1% (0.86–0.90) Median: 20.2% (0.47–0.62) Maximum: 60.0% (0.84–0.91)</td>
<td>0.35 (0.20–0.53)</td>
<td>0.02 (0.01–0.07)</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% (0.75–0.97) Median: 20.1% (0.30–0.83) Maximum: 95.6% (0.89–0.97)</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% (0.75–0.97) Median: 20.1% (0.30–0.83) Maximum: 95.6% (0.89–0.97)</td>
<td>0.28 (0.12–0.54)</td>
<td>0.01 (0.00–0.02)</td>
</tr>
</tbody>
</table>

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**P0744**

**ASSOCIATION OF CIRCULATING ADIPONECTIN LEVELS AND TUMOR STAGE IN CHOLANGIOCARCINOMA**

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**Introduction:** Multiple recent studies have indicated that some of adipose tissue-derived hormones may significantly influence the growth and proliferation of GI tumors including liver cancer (1, 2). However, the role of adipokines such as adiponectin and leptin in biliary tract cancer have not been well studied before. The aim of the study was to analyze plasma concentrations of adiponectin and leptin in cholangiocarcinoma (CC) patients and to compare these concentrations to clinicopathological parameters.

**Aims & Methods:** Baseline levels of adiponectin and leptin were determined in 38 consecutive patients with newly diagnosed cholangiocarcinoma and 38 healthy control subjects. The association between adiponectin and leptin and tumor stage was evaluated using nonparametric Spearman’s correlation test. Control subjects were matched to case patients by age, sex and BMI. Survival analysis used the Kaplan-Meier curve and the Cox proportional hazards model.

**Results:** Overall median adiponectin concentrations were lower in CC patients versus control subjects (5.1 vs 9.3 mg/mL, P = 0.001). In CC patients with T stage 2–4 (n = 22) median adiponectin concentrations were significantly lower than in CC patients with T stage 1 (n = 16) (3.8 vs 6.6 mg/mL, P = 0.001). The mean leptin levels were not significantly decreased in CC patients (P = 0.45). Adiponectin concentrations were inversely correlated with tumor T stage (r = -0.811, P = 0.01) of CC patients. Higher adiponectin levels at baseline were associated with increased overall survival in T stage 2-4 patients (Cox F test = 2.139, P < 0.05).

**Conclusion:** This study identified an association between adiponectin levels and tumor stage suggesting a potential role for adiponectin in progression of cholangiocarcinoma. Furthermore these results suggest, for the first time, that serum adiponectin levels might represent a prognostic indicator in patients with CC. Our results support the hypothesis linking adipose tissue-derived hormones levels to growth of obesity-associated cancers (3). Adipokines appear to play an important role in risk prediction and management of cholangiocarcinoma patients.

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

**References**

Recent many studies have been conducted to investigate the association between obesity and cancer incidence. Most of the studies were on the relationship between obesity and cancer outcomes. There is evidence that obesity can affect the progression of cancer and influence on the nutrient status of patients and obesity can affect the pharmacokinetics of anticancer 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 weight 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**


**Conclusion:** PHC patients undergoing exploratory laparotomy have a high risk of an adverse outcome. A preoperative risk score for adverse outcome may help clinicians to inform patients.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
Meier curves, and calibration curves revealed good predictive abilities. The risk score identified patients with a 1-year survival probability ranging from 15% to 73%.

Conclusion: We developed a prognostic score to predict overall survival for PHC patients using eight independent prognostic factors available at presentation. This score may help to inform patients and guide individualized treatment decision making.

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


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Introduction: Malignant biliary obstruction has a poor prognosis unless secondarily 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 intrahepatic bile duct malignancy (19.4%). Mortality was 4.16%, 10.9% and 19.6% for 7 days, in hospital and 30 day respectively. In multivariate analysis male gender (OR 1.14, (95% CI 1.08–1.20) p < 0.001); increasing by age quintile 64–71 (1.34, (1.23–1.47) p < 0.001), 72–77 (1.57, (1.44–1.72) p < 0.001); most deprived quintile (1.22, (1.12–1.33), p < 0.001); 11 to 15 (1.49, (1.33–1.66), p < 0.001) 16 to 20 (2.78, (2.55–3.03), p < 0.001); most deprived quintile (1.22, (1.12–1.33), p < 0.001); increasing co-morbidity score 1 to 5 (1.09, (1.02–1.16), p = 0.012), 6 to 10 (1.23, (1.12–1.35), p < 0.001) 11 to 15 (1.49, (1.33–1.66), p < 0.001) 16 to 20 (2.78, (2.55–3.03), p < 0.001); advancing year of ERCP 2013/14 (0.78, (0.74–0.80), 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 increasing 30 day mortality. Asian ethnicity (0.82, (0.67–0.99), p = 0.036); Cancer of the extrahepatic and unpaired 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, greater deprivation and previous renal failure predicted death at 30 days.

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

TUESDAY, OCTOBER 31, 2017 09:00-17:00

PAEDIATRIC: LIVER, BILIARY AND PANCREAS - HALl 7

P0750 EARLY DEVELOPMENT OF NONALCOHOLIC FATTY LIVER DISEASE IN GENETICALLY PREDISPOSED CHILDREN: WITH OVERWEIGHT AND OBESITY DOES NOT COINCIDE WITH METABOLIC DERANGEMENTS

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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 (rs738409) and TM6SF2 (rs58542926) contribute to the development of NAFLD. It is however unknown whether liver pathological and cardiometabolic disturbances coincided in carriers 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 rs738409 and TM6SF2 rs651781. Anthropometric, cardiometabolic risk and liver-related parameters were determined.

Results: Anthropometric parameters did not differ significantly between carriers and non-carriers of the risk alleles. ALT and AST were significantly higher in PNPLA3 G allele carriers as compared to the C allele carriers (ALT; CC 21, (19–23); GG 26, (20–30), p = 0.034, (0.034, (0.034–0.034), GG 27, (21, (0.00–0.00), GG 30, (26, (0.06, (0.06), p = 0.048)). The odds ratio for having ALT levels above the cut-off values increased for every PNPLA3 G allele, with an OR of 2.51 (1.22;5.18; p = 0.004) for the PNPLA3 GG genotype, compared to the CC genotype. Carriers of the PNPLA3 risk allele did not show a deteriorated metabolic profile compared to non-carriers.

The TM6SF2 T allele carriers also showed a tendency increased transaminase levels, but a significantly healthier cardiometabolic profile compared to the GG genotype carriers. The metabolic syndrome was more prevalent in risk allele carriers. These results suggest that hepatic aberrations and metabolic disturbances apparently do not develop concurrently in this specific population. Furthermore, these children with a high liver health risk may not be identified by measuring cardiometabolic parameters.

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

TUESDAY, OCTOBER 31, 2017 09:00-17:00

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 pancreatitis. Angiembolization with conventional trans-catheter approach is the standard treatment. Direct percutaneous embolization has been commonly used for treatment of peripheral artery pseudoaneurysm when trans-catheter approach is not feasible. However, very limited data is available regarding its safety and efficacy in visceral artery pseudoaneurysm.
Aims & Methods: We aimed to assess the technical feasibility, safety and effic-acy of percutaneous embolization as an alternative treatment option for visceral pseudo aneurysms. We retrospectively evaluated the data of patients who underwent percutaneous embolization at our institution from Feb 2007 to March 2017. All procedures were performed under ultrasound (US) guidance. Embolization materials, technical feasibility, 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 34.4±4.21 (7–72) years, under- went direct percutaneous embo-lization for visceral pseudoaneurysm. Most common aetiology for pseudoaneurysm was pancreatitis (21), parac-terteny (3) and surgery (1). The site of pseudoaneurysm was splenic artery (23), left gastric artery (3), hepatic artery (3), inferior mesenteric 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 feeding artery in 5 patients, and recurrence after pre-evious embolization in 6 patients. Agents used for embo-lization- glue with lipiodol (21), coil (1) and coil with glue (1). Mean procedural time was 11.3±1.14 (6–16) 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 - spleen 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 90 days (30–3186) there was no recurrence of pseudoaneurysm (clinical success-100%).

Conclusion: Percutaneous embo-lization 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 FROM P21-MEDIATED PANCREATIC INFLAMMATION

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4Institute Of Virology, Technische Universität München, Helmholtz Center Munich, Munich/Germany

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Introduction: Chronic (CP) and autoimmune pancreatitis (AIP) are characterized by chronic and repetitive episodes of processes. Whether CP is pro-gressive for autoimmune is still unclear. AIP is considered mostly a T-cell mediated disease; how- ever, in induction of chronic pancreatitis macrophages play a pivotal role. Cyclin dependent kinase (cdk) inhibitors are critical regulators in inflammatory disease and proliferation, activation, differentiation, development and apo-tosis. In particular, p21 has been described as a mediator of inflammation and various autoimmune diseases by regulating T-cell activation and promoting macrophage development. We therefore examined the role of p21-mediated inflammation in AIP.

Aims & Methods: Human pancreas samples from CP and AIP patients were evaluated for p21 expression. To investigate the effects of p21 in pancreatitis, we intercrossed lympho-typox overexpressing mice (Tg(Elat1-LTa, b/h)) a model to study CP and AIP – with p21 deficient (p21-/−) mice. Infiltrating cells were visualized by immunohistochemistry, supported by gene expression analysis in an early and a progressive phase. Circulating autoantibodies and the presence of tertiary lymphoid organs (TLOs) were analysed to assess autoimmunity.

Results: p21 was upregulated in human CP patients but remained unchanged in AIP patients. p21 deficiency in LT mice (Lp21+/−) prevented early pancreatic injury. LTp21+/− mice had normal serum amylase, reduced inflammatory gene expression and cell influx. In acinar cells diminished proliferation and abrogated activation of non-canonical NF-κB pathway was observed. In contrast, 12 months old LT mice with and without p21 had similar inflammatory gene expres-sion and T & B cell infiltration. Interestingly, LT and LTp21−/− mice had compar-able tertiary lymphoid organs (TLOs), autoantibodies and elevated IgG levels. However, acinar cell proliferation, acinar-to-ductal metaplasia and acinar non-canonical NF-κB pathway activation remained impaired in LTp21+/− pancreata.

Conclusion: Our findings indicate that p21 is crucial for pancreatitis in LT-driven pancreatic injury. p21 is involved in early acinar secretion of inflammatory mediators that attract innate immune cells. However, p21 is not essential for humoral immune response, accountable for autoimmunity and lack of p21 does not rescue AIP. Importantly, p21 intercrossing in LT mice and protected acinar cells less susceptible to proliferation and transdifferentiation. We therefore suggest that chronic and autoimmune pancreatitis follow different inflammatory processes.

Disclosure of Interest: All authors have declared no conflicts of interest.
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Introduction: Infectious complications are main causes of mortality in severe acute pancreatitis (AP). Most infections in AP are intestinal origin (2). The Nucleotide oligomerization domain 2 (NOD2) is a NOD-like receptor family member that senses and responds to bacterial wall peptides (3). Guenther et al. reported that p.R702W mutation was found to be associated with multiple 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 comprised 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. 1007Ts 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.

Disclosures: All authors have declared no conflicts of interest.

References


P0757 A LUMEN AMPOUS METAL STENT WITH ANTI-REFUX VALVE FOR ENDSOCOPIC 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, biliary obstruction or infection occur. With technological advances, endoscopic ultrasound (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 endoscopic ultrasound 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 flared 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 stent 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 = 0.095), clinical success rate (70% vs. 77.8%; p = 0.491), resolution rate (76.8% versus 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, and 2 patients showed peritonitis due to immediate stent migration. In both stent groups, one patient in LAMS group and 3 patients in plastic stent group had active bleeding. Procedure time (30.7 minutes vs. 40.0 minutes; p = 0.106) and fasting period after treatment (3.1 days vs. 2.1 days; p = 0.344) were also not different between two groups.

Conclusion: For EUS-guided drainage, LAMS showed acceptable treatment outcomes and the rate of complications even in relatively more severe cases of pancreatic fluid collection. And no additional fasting period was required in the LAMS group compared to the plastic stent group. Further well-designed prospective studies are needed to validate these findings.

Disclosures: All authors have declared no conflicts of interest.
P0759  THE PREDICTORS OF STEP UP APPROACH USING ENDOSCOPIC ULTRASOUND-GUIDED TRANSMURAL DRAINAGE FOR WALLEDED-OFF NECROSIS

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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 approach such as direct endoscopic necrosectomy (DEN) and surgical necrosectomy may be required. The association with the outcome of endoscopic treatment for WON remain unclear.

Aims & Methods: This study aimed to retrospectively correlate the clinical characteristics and progression to chronic pancreatitis after the first episode of acute pancreatitis from September 2012 - September 2015. We collected relevant information of disease course and follow up until June 2016. We performed univariate and multivariate regression of the factors associated with the outcome of endoscopic treatment for WON.

Results: The mean size of WON was 126.63 ± 46.79 mm. EUS-TD was technically successful in 48/49 (97.9%) patients and 26 (54.2%) improved with EUS-TD alone while 14 patients were re-treated with step up approach. The mean size of WON in patients who needed step up approach had multi-locular (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 may help to perform necrocectomy 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 transcutaneous arterial embolization.

Conclusion: The step up approach is safe and effective for the treatment of WON. Multi-locular, 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 necrocectomy.

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

References

P0761  CROSSTALK BETWEEN INFLAMMATION AND COAGULATION IN PANCREATITIS-INDUCED ACUTE RENAL FAILURE

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Introduction: Clinical data has indicated that severe acute pancreatitis is a serious inflammatory disease with a systemic inflammatory response and multiple organ dysfunction. Acute renal injury caused by acute pancreatitis is a common complication that is associated with a high rate of mortality. Although the pathogenesis of acute necrotizing is not completely clear, the activation of inflammatory cytokines and coagulation are keys in the etiology.

Aims & Methods: We examined 155 patients with acute necrotizing pancreatitis. According to the international classification in 98 patients we diagnosed the moderate severe AP, and in 57 patients the severe AP. Disorders of kidney function were in 48 patients. We determined the creatinine level, indicators of hemostasis and inflammation.

Results: Analysis of the relationship of inflammation and hemostasis in patients with severe pancreatitis and renal dysfunction is accompanied by decreased of activated partial thrombin time (FVIIa = 25.227, p < 0.0001), increased of thrombin time (FVIIa = 19.428, p = 0.00004), fibrinogen concentration (FVIIa = 4.6046, p = 0.03568), D-dimers level (FVIIa = 28.456, p < 0.00001), and level of soluble fibrin-monomer complexes (FVIIa = 34.015, p < 0.00001), lack of activity of antithrombin III (FVIIa = 42.123, p < 0.00001), increased synthesis of C-reactive protein (FVIIa = 15.591, p = 0.00020), excessive production of proinflammatory cytokines (FVIIa = 19.997, p < 0.00001), IL-6 (FVIIa = 21.076, p = 0.00002), and TNF-a (FVIIa = 25.643, p < 0.00001). In acute pancreatitis patients with renal dysfunction was shown a direct correlation between severity of renal failure (SOFA score) and concentrations of IL-6 (R = 0.416484, p = 0.000504), CRP (R = 0.510742, p = 0.002376), D-dimers (R = 0.321619, p = 0.000856), soluble fibrin-monomer complexes (R = 0.290750, p = 0.017688), and duration of thrombin time (R = 0.296007, p = 0.015814).

Conclusion: The mechanism of the acute renal injury following acute necrotizing pancreatitis is complicated by the inflammatory cascades and hypercoagulable state is initiated this pathologic process.

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

P0762  A NEW IL13/FN1 RATIO PREDICTS SEVERITY IN ACUTE PANCREATITIS

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Introduction: Acute pancreatitis (AP) may be severe in up to 20% of patients with substantial morbidity and mortality, which is related to a generalized inflammatory response. In some patients, this severe inflammatory response is down-regulated; in others it escapes control. Our group has previously described a TH1 profile associated with poor prognosis in AP, and a TH2 profile associated with a mild or moderate condition.

Aims & Methods: Our aim was the development of an index for an early assessment of prognosis in AP. We analyzed 12 cytokines in 117 patients, upon
admission to hospital. A receiver operating characteristic (ROC) analysis was built 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 TH1 cytokines IL6, IFNγ and TNF-α can be measured for the prediction of severe AP, while TH2 cytokines IL4, IL13, GMI-CSF, for the prediction of a mild or moderate condition. A stepwise analysis showed that IL13 and IFN-γ were the biomarkers which contributed most to the discrimination between mild and moderate/severe AP (Wilks' lambda = 0.855, p < 0.0001; Wilks' lambda = 0.747, p < 0.0001, respectively). The calculated IL13:IFNγ index. This ratio was significantly higher in patients with mild AP when compared between groups (p = 0.73–10–8). 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.

Considering an IL13:IFNγ ratio that could be of great interest in the assessment of prognosis in AP. A high value of the IL13:IFNγ ratio at hospital admission is associated with a good prognosis of AP.

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

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**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 h. We investigated the cutoff serum amylase level that suggested ERCP-induced pancreatic inflammation in a prospective multicenter study.

**Aims & Methods:** Three high-volume centers, 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 12–24 h) to investigate the presence or absence of a WON. Two expert radiologists diagnosed the images blinded and judged the presence or absence of pancreatitis based on the Balthazar grade. Patients with a preexisting high amylase level, clinically determined nosocomial infection had a difficult diagnosis due to the overlap of features of cancer before ERCP were excluded from analysis. Correlations of the serum amylase level after 2 h, that on the following day, abdominal pain under 4 h, and that persisting longer than 4 h with the presence or absence of pancreatitis were investigated using ROC analysis and the chi-square test.

**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 (10.8%). 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: 79.0%, positive likelihood ratio: 3.48, negative likelihood ratio: 0.34) with an AUC of 0.80. The cutoff level after 2 h was 2.73 times higher than the institutional upper limit (sensitivity: 45.6%, specificity: 79.7%, positive likelihood ratio: 2.24, negative likelihood ratio: 0.68) with an AUC of 0.63. Abdominal pain under 4 h was noted in 36 of the 204 patients in the pancreatitis group, and 12 of 136 patients in the non-pancreatitis group with a sensitivity of 17.7%, specificity: 91.1%, positive likelihood ratio 1.99, and negative likelihood ratio 0.90. Abdominal pain that persisted longer than 4 h occurred in 75 patients in the pancreatitis group and 12 in the non-pancreatitis group with a sensitivity of 36.7%, specificity: 91.1%, positive likelihood ratio, 4.12, and negative likelihood ratio, 0.69.

**Conclusion:** The appropriate cutoff serum amylase level for judging ERCP-induced pancreatitis on the day following ERCP is 2.73 times higher than the institutional upper limit. The diagnostic value of serum amylase levels 2 h after ERCP in predicting abdominal pain persisting for longer than 4 h, that specificity was high but the sensitivity was low. Therefore, setting a cutoff serum amylase level on the day after ERCP is very useful to diagnose ERCP-induced pancreatitis.

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

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**P0764 CLINICAL EFFICACY AND SAFETY OF EUS-GUIDED LUMEN-APPOSING METAL STENT ASSISTED Pancreatic WALL-OFF NECROSIS DRAINAGE: A REAL-LIFE EXPERIENCE IN A TERTIARY HOSPITAL**

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**Introduction:** Recently, lumen apposing metal stent (LAMS) has been developed and employed in abscess drainage. However, its use is limited by its cost [1] and its safety rises concerns as apparently associated with more adverse events [2]. The aim of this study was to investigate the efficacy and safety of LAMS in endoscopic ultrasound (EUS)-guided pancreatic wall-off necrosis (WON) drainage.

**Aims & Methods:** Patients All consecutive patients with necrotizing pancreateatitis with WON who underwent EUS-guided drainage using LAMS during the period of 1st Jan 2012 and 30th Jun 2016 were retrospectively retrieved from the institution database. Necrotizing pancreateatitis and WON were defined as according to the revised 2012 Atlanta classification. Those encapsulated fluid collection outside the pancreas were excluded from this study. The following data were collected: patient demographics, EUS and microbiologic features of the necrosis, procedural characteristics and their outcomes. Procedures All procedures were performed by 2 endosonographers. Once the WON was identified, a 19-gauge needle was inserted with 0.035-inch guidewire to allow for navigation of the AXIOS device, which was then advanced to create the fistula tract using the electrocautery tip. Once the delivery catheter was inside the WON, the distal and proximal flange of the stent were deployed subsequently under EUS and endoscopic guidance respectively. Outcome measures Primary outcome measures were: 1.technical success defined as stent deployment without any difficulty nor reposition; 2. clinical success defined as symptom resolution with the abscess size ≤2 cm on computed tomography (CT); Secondary measures are: 1. Stent revision due to its migration/dislodgment in case of unresolved abscess; 2. Adverse events; 3. WON recurrence Data analysis Continuous variables were expressed as median and IQR. Categorical data were expressed as absolute numbers and percentages.

**Results:** The clinical characteristics of the patients and their WONs are shown in Table 1. In the cohort, the deployment of LAMS (AXIOS: 15 ± 10 mm, n = 38; 10 ± 10 mm, n = 8) was technically success in 45 (97.8%, 3 cases required 2nd attempt for proper deployment) cases while one case required to switch over to a fully-covered metal stent due to the lengthy insertion tract. 26(60.9%) cases were managed with necrosectomy (median 1, IQR 2) in which 15(32.6%) of them had concurrent nasocystic drainage prior to each procedure. 43(93.5%) patients were treated successfully while two refractory cases required superin- posed 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 intervention such as administration dual antiplatelet and 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>
</tr>
</thead>
<tbody>
<tr>
<td>Age, year</td>
</tr>
<tr>
<td>70(26)</td>
</tr>
<tr>
<td>Male sex</td>
</tr>
<tr>
<td>32(69.6)</td>
</tr>
<tr>
<td>Comorbidities</td>
</tr>
<tr>
<td>Diabetic mellitus1</td>
</tr>
<tr>
<td>6(13.0)</td>
</tr>
<tr>
<td>Cardiovascular disease2</td>
</tr>
<tr>
<td>19(43.2)</td>
</tr>
<tr>
<td>Chronic obstructive airway disease</td>
</tr>
<tr>
<td>3(6.5)</td>
</tr>
<tr>
<td>Malignancy on chemotherapy3</td>
</tr>
<tr>
<td>8(18.6)</td>
</tr>
<tr>
<td>Cause of pancreatitis</td>
</tr>
<tr>
<td>Gallstones</td>
</tr>
<tr>
<td>Miscellaneous4</td>
</tr>
<tr>
<td>APACHE II score</td>
</tr>
<tr>
<td>10(7)</td>
</tr>
<tr>
<td>White cell count (x1000/μL)</td>
</tr>
<tr>
<td>13(7.20)</td>
</tr>
<tr>
<td>C-reactive protein (mg/L)</td>
</tr>
<tr>
<td>150(2.29)</td>
</tr>
<tr>
<td>Total bilirubin (mg/dL)</td>
</tr>
<tr>
<td>0.7(0.57)</td>
</tr>
<tr>
<td>ALT (U/L)</td>
</tr>
<tr>
<td>45(41.5)</td>
</tr>
</tbody>
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Reference

Table 1 Continued

<table>
<thead>
<tr>
<th>Feature</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Diameter (cm)</td>
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</tr>
<tr>
<td>Location</td>
<td></td>
</tr>
<tr>
<td>Head</td>
<td>13 (28.3)</td>
</tr>
<tr>
<td>Body/tail</td>
<td>31 (67.4)</td>
</tr>
<tr>
<td>Whole</td>
<td>2 (4.3)</td>
</tr>
<tr>
<td>Features</td>
<td></td>
</tr>
<tr>
<td>Poorly-defined wall</td>
<td>4 (8.7)</td>
</tr>
<tr>
<td>Loculation</td>
<td>11 (23.9)</td>
</tr>
<tr>
<td>Lumpy mass content</td>
<td>18 (39.1)</td>
</tr>
<tr>
<td>Organism</td>
<td></td>
</tr>
<tr>
<td>Gram positive</td>
<td>7 (15.2) (^2)</td>
</tr>
<tr>
<td>Gram negative</td>
<td>4 (8.7)</td>
</tr>
<tr>
<td>Mixed</td>
<td>15 (32.6)</td>
</tr>
<tr>
<td>Unknown</td>
<td>20 (43.5)</td>
</tr>
<tr>
<td>Site of cyst enterostomy</td>
<td></td>
</tr>
<tr>
<td>Stricture</td>
<td>36 (78.3)</td>
</tr>
<tr>
<td>Duodenal bulb</td>
<td>10 (21.7)</td>
</tr>
<tr>
<td>Necrosectomy</td>
<td></td>
</tr>
<tr>
<td>Patient (n, %)</td>
<td>28 (60.9)</td>
</tr>
<tr>
<td>Number of Necrosectomy (n, IQR)</td>
<td>1 (2)</td>
</tr>
<tr>
<td>Nasocystic drainage (n, %)</td>
<td>15 (32.6)</td>
</tr>
<tr>
<td>Technical success</td>
<td>45 (97.8) (^2)</td>
</tr>
<tr>
<td>Stent revision</td>
<td>12 (26.1)</td>
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<tr>
<td>Spontaneously migration</td>
<td>8</td>
</tr>
<tr>
<td>Dislodged during necrosectomy</td>
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</tr>
<tr>
<td>Ineffective drainage</td>
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<tr>
<td>Adverse events</td>
<td>20 (43.5)</td>
</tr>
<tr>
<td>Bleeding</td>
<td>9</td>
</tr>
<tr>
<td>Migration</td>
<td>10</td>
</tr>
<tr>
<td>Outcomes</td>
<td></td>
</tr>
<tr>
<td>Duration of hospital stay (days)</td>
<td>64 (33)</td>
</tr>
<tr>
<td>Duration of stent insertion (week)</td>
<td>10 (4.5)</td>
</tr>
<tr>
<td>Clinical success</td>
<td>43/95.3 (^9)</td>
</tr>
<tr>
<td>Recurrence</td>
<td>3 (6.5)</td>
</tr>
</tbody>
</table>

Data are either median (IQR) or no. (%) of patients, unless otherwise indicated. \(^1\)coexisting dyslipidemia; \(^2\)coexisting congestive heart failure; \(^3\)myeloproliferative disease (n = 4), colon (n = 4), lung (n = 1); \(^4\)alcohol/obesity, post ERCP (n = 1); \(^5\)idiopathic (n = 3); \(^6\)Enterococusspp (n = 5); \(^7\)Methicillin-sensitive Staphylococcus aureus (n = 2); \(^8\)AIOS 10 × 10 mm: n = 6 (transgastric); \(^9\)n = 2 (transduodenal); \(^10\)mal-deployed stent: n = 4, all successfully placed in 2nd attempt (among them, one changed into Wallflex stent 60 × 10 mm); \(^11\)diverted to a tubular metal stent (n = 1); \(^12\)percutaneous drainage (n = 1): immediate bleeding: n = 6, among them, one case managed by a fully-covered tubular metal stent placed co-axially within lumen of LAMS: early bleeding: within 48 hr; n = 3, embolisation required delayed bleeding: all spontaneously subsided; \(^13\)refractory cases: managed by percutaneous drainage (n = 1), superimposed fully-covered tubular metal stent co-axially (n = 2): \(\text{NE LAMS, lumen-apposing metal stent.}

Conclusion: Pancreatic WON can be effectively treated by EUS-guided LAMS 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


INTRODUCTION

Post-endoscopic retrograde cholangiopancreatography (ERCP) pancreatitis (PEP) is a common and serious adverse event following ERCP, with a reported incidence of 9.7% in unselected patients [1]. Given huge economic and clinical burden, effective approaches for post-ERCP pancreatitis prophylaxis remains a major priority for research. Nonsteroidal anti-inflammatory drugs (NSAIDs) have also been shown the potential efficacy in prophylaxis PEP across high-risk patients, especially for diclofenac or indomethacin [3–5].

Recent, a prospective, double-blind, controlled trial conducted by Levenick [6] and colleagues in the USA showed that the reduction in PEP using indo-methacin was not as significant as previously reported. In fact, even in more cases of pancreatitis occurred in indomethacin group compared with placebo group. Subsequently, a high-quality meta-analysis also concluded that there is no prophylaxis for the prevention of PEP among average-risk patient(s) [7]. These findings raised the question that whether administration of rectal indomethacin should be recommended in average-risk patients.

Aims & Methods: We aimed to determine the beneficial effect of rectal indomethacin in the prevention of post-ERCP pancreatitis in average-risk of patients. We systematically searched Medline and EBMbase, Web of Science, and Cochrane library before October 2016. Studies that evaluated rectal administration of indomethacin in the prevention of post-ERCP pancreatitis were included in the analysis. We adopted a random-effects model to calculate overall relative risk (RR) and 95% confidence interval (CI).

RESULTS: We identified ten randomized clinical trials from initial search and finally included in the meta-analysis. Administration of rectal indomethacin significantly reduced the incidence of PEP in combined population (RR, 0.63; 95% CI, 0.50–0.77). There was no significant heterogeneity across included studies (I² = 14.2%, P = 0.31). In subgroup analysis, rectal indomethacin was effective in both high-risk (RR, 0.49; 95%CI, 0.35–0.71) and average-risk (RR, 0.69; 95%CI, 0.55–0.86) patients and reduced the risk of mild and moderate to severe pancreatitis. The overall results remained unchanged and robust in sensitivity analysis. There was no evidence of significant publication bias among this meta-analysis.

Conclusion: Rectal administration of indomethacin is an effective approach to prevent the incidence of post-ERCP pancreatitis both in high-risk and average-risk population undergoing ERCP. However, more high-quality randomized controlled trials are needed to further investigate the optimal timing for administration of indomethacin.

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

REFERENCES


P0766 THE IMPACT OF THE SPECIALISTIC GASTROENTEROLOGICAL UNIT ON THE OUTCOME OF ACUTE PANCREATITIS (AP) IN THE VENETO REGION (NORTH-EAST OF ITALY)

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Introduction: Acute pancreatitis (AP) is one of the most common gastrointestinal diseases requiring hospitalization with an annual incidence of 13–50 cases per 100,000 persons. It is a potentially fatal disease with an overall mortality ranging from 2 to 8%. Both epidemiology and outcomes are variable according to the different countries. Furthermore, few studies have considered the impact of hospital units on AP outcomes.

Aims & Methods: To evaluate both the trend and outcomes of acute pancreatitis according to the admitting hospital units: Surgery, Internal/General Medicine, Gastrointestinal (GI) Unit, Intensive Care Unit (ICU). This is a retrospective
cohort study based on the anonymous computerized database of hospital discharges in Veneto Region (North-East of Italy). The principal diagnosis of AP according to the International Classification of Diseases 9th revision, Clinical Modification (ICD 9-CM, code 577.0) of the hospital discharges was selected. The period from January 2001 to December 2015 was analysed. Veneto population was considered as the reference population (in the period, it varied from 4,529,823 to 4,927,527 inhabitants, with 51% females). Hospitalization, Length of stay (LOS), in-hospital mortality, need for surgery (according to the DRG 191–194, 199–201 which identified biliopancreatic surgery) were reported according to hospital Units. Statistics: Chi squared for trend and Odds Ratio (OR) were applied.

Results: During the analysised period, 23,389 overall hospitalizations for AP, annual hospitalizations of 32 patients/100,000 inhabitants and in-hospital mortality of 7.2% were observed. Characteristics of the patients were: mean age: 62.2 +/-19.3ys, 54% Males (M); Female (F) mean age: 65ys +/-19.3ys, male mean age: 59.4+/−19.3ys (p = 0.05). Hospitalizations was higher in males (M: 35.4, F: 28.4, OR 1.24 (95% CI: 1.20–1.27, p < 0.05) and it increased in a stepwise progression from youngest to oldest patients (from 4.4 to 44.1 to 51.2 to 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 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 was the lowest in GI Units with a NFS of 3.6% (see Table).

Admitting Hospital Unit Number of Lengths of In-Hosp. Mortality NFS (%) (2001–2015) cases (%) stay (days) 

| General Medicine (Non GI) | 6,980 (30%) | 13.5 ± 10.7 | 4.3% | 88 (1.3%) |
| General Medicine (Non GI) | 3,797 (16%) | 12 ± 11.2 | 1.7% | 135 (3.6%) |
| Gastrointestinal (GI) Units | 12,112 (52%) | 13 ++ 13.6 | 2.7% | 443 (3.7%) |

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 better 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
N. Berry, D. Sharma, J. Samanta, N. Dhaka, S. K. Sinha, R. Kochhar, R. Paswan, S. Ghosh, V. Gupta, L. Yadav Gastroenterology, Postgraduate Institute of Medical Education and Research, Chandigarh/India
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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 those with 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 renal support, 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). AP as compared to RAP (18.80 ±14.58.82 ±11.2.36 ±4.4, p < 0.001) whereas ICU requirement was seen in significantly more patients in AP group (59.37%) than in ACP (5.11%) and RAP (0.6%) (p < 0.001). 41 (26%) of AP, 2 (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). Patients with first attack of AP had more severe disease course as compared to those with ACP, while those with RAP had the least severe course.

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

P0768 ACUTE PANCREATITIS IN PATIENTS WITH IPMNS: RETROSPECTIVE STUDY OF 346 PATIENTS OBSERVED FROM 2009 TO 2016
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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 with often pancreatitis occurring before surgery was included. Furthermore, most of the studies include in the dictio 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 severity of IPMN and acute pancreatitis to determine the frequency of AP, the severity of AP, the frequency of complications of AP, the mortality of AP, and the frequency of complications of AP. The apoB/A-I ratio positively correlated with Atlanta classification criteria (Atlanta 2012).

Conclusion: Almost all patients with IPMN had had symptoms. Although many indices have been developed to classify the severity of acute pancreatitis (AP), there is no ideal method for predicting SAP. The severity of AP, the frequency of complications of AP, the mortality of AP, and the frequency of complications of AP were significantly lower in patients with IPMN.

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

References
28.4, OR 1.24 (95% CI: 1.20–1.27, 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 was the lowest in GI Units with a NFS of 3.6% (see Table).

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| Gastrointestinal (GI) Units | 12,112 (52%) | 13 ++ 13.6 | 2.7% | 443 (3.7%) |

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 better 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
References

P0770 IMAGING IN CHRONIC PANCREATITIS – DATA FROM THE SCANDINAVIAN BALTIIC PANCREAS CLUB DATABASE
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Introduction: The Scandinavian-Baltic Pancreas-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 to 2 and C: Moderate/marked = 3 to 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. The database contains 932 patients (623 men). The M-ANNHEIM-score correaltion to the clinical data.

P0771 OSTEOPATHY IS COMMON IN PATIENTS WITH CHRONIC PANCREATITIS, BUT IT 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 vitamin 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 faecal elastase. Standardized 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 relation 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 20 ng/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 low levels of fecal elastase (p 0.02) and with lower level of vitamin D (p 0.001) 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 0.89 95% CI 0.77–0.94 p 0.001).

Conclusion: The present data confirm a high rate of osteoporosis in CP patients. However, there was apparently no correlation between BMD, pancreatic exocrine function, severity of the disease or vitamin D levels. Other factors, such as vitamin K might deserve investigation for their possible relationship with bone mineral density in CP patients.

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

P0772 NATURAL HISTORY OF PANCREATITIS ASSOCIATED WITH SPINK1 MUTATIONS
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Introduction: SPINK1 is a gene coding for the inhibitor of the cationic trypsinogen. 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 41 years (26-70 years). Diagnosis was 20 [2–73] and 29 years [3–76]. During follow-up (median length:7.45 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.
Cancer screening should be discussed especially in case of pancreaticitiss with calcification.

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

P0773 EXOCRINE FUNCTION, NUTRITION AND ENZYME TREATMENT IN THE SCANDINAVIAN BALTIC PANCREAS CLUB DATABASE - PRELIMINARY DATA

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Introduction: The Scandinavian-Baltic-Pancreatic-club database collects patients with chronic pancreatitis (CP) from Nordic countries. Description of exocrine pancreatic insufficiency (EPI) and consequences is important in characterization of CP cohorts.

Aims & Methods: Characterise EPI from CP in a Northern European cohort. Patients with definitive or probable CP (M-ANNHEIM diagnostic criteria) were included from nine centres. Demographic data, body-mass index (BMI), faecal elastase (FE), enzyme-doses and lab-parameters were collected. Values: Mean (SD) unless otherwise stated. EPI-classification grouped patients as follows: A: Normal; B-Mild: EPI not requiring enzymes, C-Proven: EPI requiring enzymes.


Clinical parameter (A) Normal (B) Mild insufficiency (C) Proven insufficiency

Exocrine pancreatic function (%)
33 16 51

Faecal Elastase (μg/g) (mean (SD)) p < 0.001
368 (161) 128 (144) 51 (69)

Nutrition: BMI (kg/m²) (mean (SD)) p < 0.005
24.6(4.9) 23.7(4.3) 22.6(4.3)

Frequency BMI > 18.5 (%) p < 0.005
5 16

Vitamin D: Frequency <25μg/L (I) vs II) p < 0.005
7.4 23.7 17.6

Enzyme Treatment (lipase-units/day) (median [IQ range])
700–75000 120000

Hemoglobin: (median [IQ range]) p < 0.05
11.8(2.7–3.0) 10.7(2.8)

Faecal Elastase and disease duration (years)**
<10: 143(175) >10: 91(188)

*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-/C0- 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 ductal alkaline fluid (which is regulated mostly by the anion exchanger and C0- secretion) 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-/C0- 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 extraction (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. CFTF 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-/C0- secretion in guinea pig pancreas. CSE dose dependently decreased fluid and HCO3-/C0- 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 smoking inhibitory effects may be regulated by calcium signalling.

Conclusion: Cigarette smoking and CSE inhibits pancreatic ductal fluid and HCO3-/C0- 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 UNKPs.

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

P0775 HISTOLOGICAL DIAGNOSIS WITH RAPID ON-SITE EVALUATION IN ENDOSCOPIC ULTRASOUND-GUIDED FINE-NEEDLE ASPIRATION OF PAPILLARY SOLID LESIONS

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Introduction: Rapid on-site cytologic evaluation (ROSE) for determining the suitability of a specimen often provides high efficacy of endoscopic ultrasound-guided fine needle aspiration (EUS-FNA). In our center, we propose an additional role of ROSE in histological diagnosis aimed at improving diagnostic accuracy.

Aims & Methods: From January 2009 and December 2015, 215 patients were evaluated who underwent both EUS-FNA for pancreatic solid lesions and surgery. All adenocarcinomas suspected by ROSE were malignant tumors. It is suggested that ROSE may also have high agreement in final histological diagnosis. It is proposed that ROSE may also be useful for diagnosis of special type tumor.

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

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6. Mansy SS, Abbas MA, Yehia HA, Abdelrazik SM, Ghaneem LY, Amrn TM. Value of the innovated technique agarose cell block in improving the
Introduction: Pancreatic ductal adenocarcinoma (PDAC) has one of the most dismal prognoses of all cancer types. Diagnostic techniques for early malignan
t lesions are limited, which shows an evident need to understand the pathomechan-
ism leading to PDAC and find a suitable marker for early detection. Initial pro-
cesses 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
dominated 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 expression of GKNs in vivo. We will further analyze the involvement of GKNs in the development and progression of PDAC and explore the possibility to use them as biomarkers.

Aims & Methods: GKN1 & GKN2 expression was confirmed by qPCR in human and mouse pancreas samples. The expression of GKN1 was verified by western blot and immunohistochemistry (IHC) in mouse pancreas. Mouse pancreatic tissue and serum were analyzed by proteomic analysis. To investigate the role of GKNs in pancreatic carcinogenesis in vivo, we established mouse models by intercrossing KC mice with Gkn1−/− and Gkn2−/− mice respectively. The capability of acinar cells lacking Gkn1 and Gkn2 to transdifferentiate into ductal cells in vitro was tested.

Results: GKN1 was upregulated during early stages of pancreatic carcinogenesis in mouse and peri-tumoral human pancreas. GKNs were absent in healthy pan-
creas 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
cellular tissue. Preliminary results from the first time point of analysis showed accelerated tumor development in GKN1−/− mice. Wild type acinar cells transdifferentiated into ductal cells in vitro only in the presence of TGFA. On the contrary, Gkn1−/− and Gkn2−/− acinar cells transdifferentiated spontaneously, and resulted in GKNs in pancreatic ductal tissue.

Conclusion: We identified for the first time specific pancreatic carcinogenesis in pre-
neoplastic lesions in human and mouse pancreatic tissue. The secretion into
cellular tissue 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 in pancreatic carcinogenesis in vivo, we established mouse models by intercrossing KC mice with Gkn1−/− and Gkn2−/−. Gastrokine 1 & 2 (GKN1 & GKN2) are secreted proteins
dominated 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 expression of GKNs in vivo. We will further analyze the involvement of GKNs in the development and progression of PDAC and explore the possibility to use them as biomarkers.

Aims & Methods: GKN1 & GKN2 expression was confirmed by qPCR in human and mouse pancreas samples. The expression of GKN1 was verified by western blot and immunohistochemistry (IHC) in mouse pancreas. Mouse pancreatic tissue and serum were analyzed by proteomic analysis. To investigate the role of GKNs in pancreatic carcinogenesis in vivo, we established mouse models by intercrossing KC mice with Gkn1−/− and Gkn2−/− mice respectively. The capability of acinar cells lacking Gkn1 and Gkn2 to transdifferentiate into ductal cells in vitro was tested.

Results: GKN1 was upregulated during early stages of pancreatic carcinogenesis in mouse and peri-tumoral human pancreas. GKNs were absent in healthy pan-
creas 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
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Disclosure of Interest: All authors have declared no conflicts of interest.

References:
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Introduction: Pancreatic ductal adenocarcinoma (PDAC) has one of the most dismal prognoses of all cancer types. Diagnostic techniques for early malignan
t lesions are limited, which shows an evident need to understand the pathomechan-
ism leading to PDAC and find a suitable marker for early detection. Initial pro-
cesses 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
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Disclosure of Interest: All authors have declared no conflicts of interest.

References:
Disclosure of Interest: The plasma levels of ezrin were analyzed using western blot. The t test was used to determine the difference between the two groups. No relationship between ezrin level and the patients age, sex or tumor size was noted. Patients with ezrin high expression had a shorter survival time than PDAC patients with ezrin low expression (Log-rank = 4.35, p = 0.03).

Conclusion: Activin pathway is related to cachexia and the local spread of PDAC, but not in metastasis or survival.

References:
P0785 PLASMA DNA GENOTYPING USING DIGITAL PCR FOR SURVEILLANCE OF Pancreatic CANCER IN HIGH-RISK INDIVIDUALS

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Introduction: Cell-free DNA (cfDNA) shed from tumors into the general circulation offers new opportunities to study genetic and epigenetic evolution of malignancies. Although ddPCR-based assays have rather high precision and sensitivity for detecting the rare fraction of circulating tumor-derived DNA (ctDNA) in patient plasma remains a technical challenge. Initial efforts have been made to quantify the ctDNA using conventional PCR, but the low sensitivity of this approach has limited its feasibility as a routine clinical test. New technologies for quantifying ctDNA are now sensitive enough for reliable application in the clinic (ref 1). Pancrætic ductal adenocarcinoma (PDAC) is among the most lethal human malignancies. Intraductal papillary mucinous neoplasias (IPMNs) are precursors of PDAC and provide models of neoplastic progression from a benign intraductal tumor through increasing grades of dysplasia to PDAC, and mutations in KRAS and/or GNAS mediate key signaling during early development of the tumors (ref 2). Better prediction of historical grades using non-invasive tools is urgently needed for IPMN patients to make appropriate management decisions.

Aims & Methods: In the current study, we sought to determine if quantification of major driver mutations such as KRAS and GNAS in the plasma cfDNA could serve as biomarkers for diagnosis of localized PDACs and risk stratification of IPMNs. We first established protocols for absolute quantification of the target mutant alleles using a Bio-Rad QX200 droplet digital PCR platform (ddPCR). Using this novel protocol, feasibility of the assay was tested. At present, 92 PDA and 145 IPMN patients with either benign or malignant disease have been recruited (UMIN00012810).

Results: Although ddPCR-based assays have rather high precision and sensitivity (0.01%), limited plasma cfDNA yields in patients with resectable PDAs (Stage 0-III) and IPMNs (Stage 0-II) in significant intrinsic errors due to “subtracted previous positive” that our approach allows the detection of localized early-stage disease and offers an alternative tool to monitor IPMN progression non-invasively.

Conclusion: By setting an appropriate protocol for ddPCR-based cfDNA assay, serial blood sampling allows physicians to conduct real-time detection and monitoring of tumor genomic alterations (ref 4). Although larger validation studies are required before introduction into the clinic, early results of the study indicate that our approach allows the detection of localized early-stage disease and offers an alternative tool to monitor IPMN progression non-invasively.

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

References:
Results: The median follow-up period was 7.4 months (range 1.5–14.9 months); the overall response rate, severity grade and dose-intensity were analyzed. Treatment efficacy (overall survival (OS), progression-free survival (PFS), objective response rate) and treatment-related adverse events (AE) of patients (occurring during this period, 21 (31.8%) patients died. Median cumulative dose of 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 administered. The incidence of neurotoxicity was 54.5% and 12 (18.2%) patients experienced grade ≥ 3 neurotoxicity. 30 (45.5%) patients showed grade ≥ 3 neutropenia and 10 (15.2%) patients had febrile neutropenia. Grade ≥ 3 gastrointestinal AE was observed in 11 (16.7%) patients and 26 (42.4%) patients experienced dermatologic AE such as alopecia and skin eruption. About 59% of patients experienced treatment delays due to adverse events. Dose reduction was performed in 39 (59.1%) patients and 14 patients experienced treatment cessation due to severe AE.

Table 1: Treatment efficacy and treatment-related adverse events of gemcitabine with nab-paclitaxel

<table>
<thead>
<tr>
<th>Variables</th>
<th>Duration of chemotherapy</th>
<th>Efficacy of Chemotherapy</th>
<th>Adverse events</th>
<th>Dose reduction due to AE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration</td>
<td>Cycles (28-day schedule)</td>
<td>Cycles, days</td>
<td>Overall survival - months (95%CI)</td>
<td>Progression-free survival - months (95%CI)</td>
</tr>
<tr>
<td>7.4 months</td>
<td>5 (2–14 months)</td>
<td>141 (32–435)</td>
<td>12.0 (9.515–14.485)</td>
<td>7.8 (5.021–10.579)</td>
</tr>
<tr>
<td>39 (59.1%)</td>
<td>n (%)</td>
<td>39 (59.1%)</td>
<td>14 (21.2%)</td>
<td></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 antitumor activity and myelosuppression. Careful monitoring and proper management during chemotherapy is required.

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

References

P0788 HENT1 & DPD EXPRESSION IN EURINAF SAMPLES OF PANCREATIC DUCTAL ADENOCARCINOMA: TECHNICAL FEASIBILITY AND PROGNOSTIC SIGNIFICANCE OF GEMCITABINE-SI-BASED CHEMORADIOThERAPY
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Introduction: Gemcitabine (Gem) therapy had been the standard treatment for advanced pancreatic ductal adenocarcinoma (PDAC) for long time. Even though FOLFIRINOX, a combination of fluorouracil, oxaliplatin and irinotecan, and gemcitabine-nab-paclitaxel (GnP) therapy are currently recommended as frontline drugs, Gem is still one of the important options. Efficient permeation of Gem into cells requires specialized integral membrane transporter proteins to cross plasma membranes. Among these transporters, the major mediators of Gem uptake into human cells are the human equilibrative nucleoside transporter 1 (hENT1). In the previous study started since 2005, we found hENT1 expression in endoscopic ultrasonography-guided fine-needle aspiration biopsy (EUS-FNAB) samples to be a useful prognostic marker of Gem-based chemoradiotherapy (Gem-CRT) for pancreatic ductal adenocarcinoma (PDAC) (Pancreas 2016). Since November 2011, our institution has replaced Gem + tegafur/gimeracil/oteracil (S-1) (GS-CRT) with Gem-CRT in an attempt to improve clinical response and prognosis. Aggregate median survival time (MST: months) of GS-CRT was compared with previous Gem-CRT result, and the superior efficacy of GS-CRT was observed (MST: 16 versus 20, respectively), particularly in hENT1-negative patients (MST: 9 versus 14, respectively). However, there were no differences in
hENT1-positive patients (MST: 25 versus 25, respectively). We suspect that gene expression could be related both to the rate of proliferation and to the rate of apoptosis.

Aims & Methods: In the present study, we evaluated hENT1 and dihydropyrimidine dehydrogenase (DPD: enzyme involved in the degradation of tegafur) expression in EUS-FNA samples for evaluating and predicting the clinical effect of endoscopic EGFR-TKI (n = 59) or chemotherapy (n = 10) with subsequent biopsy (n = 10) in order to have a valid indication for surgery. In the present study, we examined correlation between hENT1 and DPD expression in 38% of the cases and a plastic stent placement in 33%. There were 4 postoperative complications, which were 2 wound infections (20%), 1 bile duct stricture (10%), 1 recurrent acalculous cholecystitis (10%), and 1 pleural effusion requiring drainage (10%).

Results: Using the EUS-FNA specimens after diagnosis of PDAC, hENT1 and DPD expression could be successfully assessed in 79.2% (76/95) and 61.1% (58/95) of these cases, respectively. In those sufficient for hENT1 testing, 67.1% (51/76) were found to be positive. In those sufficient for DPD testing, 27.6% (16/58) were found to be positive. MST was significantly longer in hENT1-positive patients (MST: 30 versus 24, respectively; P = 0.0015). As for DPD, MST was significantly longer in DPD-negative patients (33 versus 14, positive; P = 0.001). In the multivariate model including pretreatment clinical factors (age, sex, tumor location, size, UICC-T classification, hENT1 expression, and DPD expression) and the clinical response after GS-CRT (response of GS-CRT, reduction rate in CA19-9 level, and distant metastasis after GS-CRT), only hENT1 expression (HR = 3.511; 1.545-7.981, P = 0.003) and DPD expression (HR = 0.232; 0.108-0.496, p < 0.001) were found to be significant independent prognostic factors.

Conclusion: hENT1 and DPD expression observed in EUS-FNA samples can be useful clinical predictors in PDAC cases treated with GS-CRT.

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

References

P0790 STATIN USE DECREASES THE RISK OF PANCREATIC CANCER OCCURRENCE: A META-ANALYSIS
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Introduction: Statins are widespread prescribed both for primary and secondary prevention of coronary artery disease and for the treatment of dyslipidemia. Several studies evaluated the association between statin use and the onset of pancreatic cancer (PDAC) in order to evaluate a possible chemopreventive effect, with controversial results. Systematic reviews and meta-analyses evaluating researches published up to 2012 did not find any association to the risk, but the lastest years new studies with interesting results have been published.

Aims & Methods: The aim of our study was to conduct a new systematic review and meta-analysis to clarify this association. A comprehensive literature search of PUBMED for articles published up to November 2016 and abstracts presented between 2012-2016 at the DDW and ASCO conventions was carried out. Eligible studies were case-control studies (CC), cohort studies (C) and randomized controlled trials (RCTs) assessing the effect of statin use on the risk of PDAC, compared with placebo or no treatment. Studies had to report Odds Ratio (OR), Relative Risk (RR), or Hazard Ratio (HR), estimates with 95% confidence interval (CI), or provide sufficient data for their calculation. Pooled adjusted ORs with corresponding 95% CIs were calculated using random effect model. Publication bias was assessed through Egger and Mazumdar test. Heterogeneity was assessed by means of the I² value.

Results: A total of 21 studies (12 CC, 6 C, 3 RCTs) contributed to the analysis. A total of 1383 PDAC patients and 299,304 controls were included. The pooled incidence of PDAC was 0.27% (3161/1167130) among statin users and 0.44% (8144/1835153) among the non-users. The overall pooled result for all studies evaluated a reduced risk of PDAC among statin users (OR 0.82; 95% CI 0.68–1.06; p = 0.019), compared to non–statin users. A 28% protective effect was limited to case-control studies (OR 0.72; 95% CI 0.56–0.93) and not to cohort (OR 0.93; 95% CI 0.73–1.19) nor RCTs (OR 1.04; 95% CI 0.70–1.58). No publication bias was found.

Conclusion: This is the first meta-analysis showing that statins exert a protective effect on the incidence of PDAC. Further studies taking into account statin dose, duration and subgroups of patients are needed in order to clarify the association.

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

P0791 AN IMPROVED DIGESTIVE POLYMERASE CHAIN REACTION PROTOCOL TO CAPTURE LOW-COPY KRAS MUTATIONS IN PLASMA CELL-FREE DNA BY RESOLVING “SUBSAMPLING” ISSUES
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Introduction: Genetic alterations responsible for the initiation of cancer may serve as immediate biomarkers for early diagnosis. Plasma levels of circulating cell-free DNA (cfDNA) were found to be higher than those of corresponding cancerous individuals; however, the major technical challenge for the widespread implementation of cfDNA genotyping as a diagnostic tool is the insufficient sensitivity and specificity of detecting early-stage tumors that shed low amounts of cfDNA. Droplet Digital PCR (ddPCR) has rather high precision and sensitivity for absolute quantification (0.01%). However, due to very low target concentrations of cfDNA in plasma, there may be an intrinsic error due to “subsampling” (Ref. 1). This is caused by limited cfDNA yield and missing targets at very low abundance during compartmentalization in ddPCR-based liquid biopsy assays. Such issues potentially result in large variations or errors in quantification, even when using highly accurate platform. Using ddPCR technology for early cancer diagnosis and risk stratification is still challenging.
Results: Limited cfDNA yields in patients with resectable colorectal and pancreatic cancers did not meet the requirement for efficient capture and quantification of rare tumor cell-derived mutant alleles within a limited cfDNA pool, two-step multiplex ddPCR targeting eight pre-amplification cycles followed by a second-run ddPCR were sufficient to approximate 5000–10,000 target alleles/ng cfDNA, resolving the subsampling issue; furthermore, the signal-to-noise ratio for rare mutant alleles against the massive background presented by the wild-type allele was significantly enhanced. The cut-off limit of reference intervals for mutant KRAS was determined to be approximately 50%.

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 OUTCOME OF FIRST-LINE CHEMOTHERAPY FOR THE PATIENT OF ADVANCED PANCREATIC CANCER
J.E. Lee1, H.S. Lee1, M.J. Chung2, J.Y. Park2, S. Bang2, S.W. Park2, S.Y. Song2
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Introduction: Benefit of second line chemotherapy (SL) after failed first-line chemotherapy for advanced pancreatic cancer has not yet been established. We intend to identify prognostic factors and ultimately devise a model of clinical parameters for decision of SL versus basic supportive care (BSC) after failure of FL chemotherapy.

Aims & Methods: 408 patients who received gemcitabine-based first-line chemotherapy for advanced pancreatic adenocarcinoma at Yonsei University Hospital between January 2010 and December 2014 were retrospectively reviewed. Significant clinical parameters regarding second line related survival were chosen for predictive factor analysis.

Results: 161 of 408 (39.5%) received SL therapy. Median overall survival from the beginning of SL (OS2) was 20.0 weeks (14.0–28.0 weeks). In agreement with the reported evidence, ROSE along EUS-FNA was associated with a significantly improved survival (p = 0.001) and ECOG 0–1 (199 vs 109, p = 0.001), presence of peritoneal metastasis (p = 0.001) and duration of FL (p < 0.001). More patients with gemcitabine-based concurrent chemo-radiotherapy (CCRT) (p = 0.029) compared to FL only patients presented somatic mutations significant to OS2 were Braf at mutation (p = 0.019), HR = 0.870), duration of FL therapy (median duration 16 weeks (8.0–28.0 weeks) p = 0.004, HR = 0.986), presence of peritoneal metastasis (p = 0.002, HR1.732) at diagnosis, malignant thrombotic event during firstline chemotherapy (p = 0.001, HR > 0.428), Experience of CCRT was also a significant prognostic factor (p = 0.001, HR = 2.245); initial staging of the CCRT group was TNM stage3, which might be the ultimate factor impacting OS2.

Conclusion: Study suggests that SL chemotherapy may be beneficial for patients with longer duration of FL chemotherapy, higher BMI at diagnosis, patients without peritoneal metastasis at diagnosis, no malignant thrombotic event in 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 L, Mayo Clinic School, Porto/Portugal

P0793 RAPID ON SITE EVALUATION (ROSE): AN ESSENTIAL TOOL IN ECHO-ENDOSCOPIC (EUS) STUDY OF SOLID LESIONS OF THE PANCREAS
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Introduction: Rapid on site evaluation for endoscopic ultrasound-guided fine-needle aspiration (EUS-FNA) of the pancreas provides immediate information regarding cellular adequacy, avoiding repeated procedures.

Aims & Methods: The aim of this study was to evaluate the impact of ROSE in EUS-FNA of solid pancreatic lesions. Retrospective study of consecutive EUS-FNA of solid pancreatic lesions, in a tertiary center, between 2012 and 2016. A total of 259 EUS-FNA patients were included, 197 patients with EUS-FNA of solid pancreatic lesions with mean age of 63.4 (+/-12.8) years. The anatomical distribution of the lesions was: 56.4% in the head, 17% in the body, 10% in the uncinate process and 5.8% in the tail. The mean number of passes were 3.3 (+/-1.4) and the needle size was 25G in 60.8% and 22G in 33.8%, ROSE was performed 34.7% of the punctures (23.6% along with the initial EUS-FNA), with a mean number of passes 3.4 (+/-1.9). The diagnostic yield of initial EUS-FNA without ROSE was 44.8% vs 83.6% when ROSE was performed (p < 0.001). When not conclusive, there was no significant differences in the diagnostic yield of the repeated EUS-FNA with (and without ROSE). Beyond ROSE in the first puncture, higher levels of Ca 19.9 (199 vs 10g/mL, p = 0.001), size of the lesion (36.1 vs 29.8 mm, p < 0.001), invasion of adjacent structures (64.6% vs 43%) was noted, lymph node and malignancy (73.2% vs 25.4%, p < 0.001) was associated with EUS-FNA diagnostic accuracy. In multivariate analysis, ROSE (p = 0.001) and the size of the lesion (p = 0.023) were independent predictors of adequate diagnostic samples. In this study, ROSE allowed definitive diagnosis in 94.6% of the cases (ductal adenocarcinoma 54.7%), benign in 25.8% and indeterminate in 9.3%.

Conclusion: In agreement with the reported evidence, ROSE along EUS-FNA improved the diagnostic yield in solid pancreatic lesions and should be considered whenever possible in the first puncture, until an overall adequate diagnostic yield (>80%) is achieved.

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

TUESDAY, OCTOBER 31, 2017 09:00-17:00

ENDOSCOPY AND IMAGING II - HALL 7

P0794 ESOPHAGEAL FISTULA HEALING BY MESENCHYMAL STEM CELL-DERIVED EXTRACELLULAR VESICLES IN A THERMORESPONSIVE GEL: A PRE-CLINICAL STUDY
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Introduction: Postoperative digestive fistula remain a challenging condition associated with a high morb-mortality, unsatisfactory healing rates and high refractoriness. The limitation of current approaches highlights the need for a better therapeutic strategy in terms of both long-lasting efficacy and safety. Mesenchymal stem cell (MSCs) are strongly involved in tissue injury repair. MSCs feature an immune-privileged status while displaying pro-angiogenic,
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 a porcine model, the healing potential of EVs: MSC EVs delivered through a thermoresponsive gel (Pluronic F127) allowing the administration in a sol state through a catheter and gelation in situ at body temperature to retain EVs at ﬁstula site.

Aims & Methods: Seventeen esophageal ﬁstulas were surgically created by placing two plastic stents during 30 days into the neck of 9 pigs and randomized into control group (n = 6) and treated groups (gel alone n = 6 and gel-EVs n = 5). In the gel-EVs group, Pluronic F127 gel contained allogeneic EVs collected from the swine adipose stem cell conditioned medium. In the EVs group, radiological evaluation of ﬁstula healing was performed at day 30 and day 45, before histological assessment.

Results: All ﬁstulas were successfully induced at day 30. At day 45, the control group featured a large ﬁstula and perifistula inﬁltration in all pigs. For this group, radiological evaluation showed open ﬁstula tracts, which were conﬁrmed by histology. In the gel group and gel-EVs groups, radiological examination showed a complete ﬁstula closure in 66% (4/6) and 100% (5/5) of the animals, respectively. In the gel group, histological analysis conﬁrmed a complete ﬁstula closure for 3 from 6 cases while a partial closure was observed for 1 case from 6. In the gel-EVs group, histological complete ﬁstula closure was reported for 4 from 5 cases while a partial closure was evidenced in 1 from 5. In comparison with control group, treated ﬁstulas showed a reduced inﬂammatory inﬁltration and ﬁbrosis and an enhanced angiogenesis, especially in the gel-EVs group.

Conclusion: This study provides the ﬁrst evidence in the literature that MSC-EVs may provide a novel antiﬁbrotic effect in a pre-clinical esophageal model. EVs were fully administrated via a thermoresponsive Pluronic F127 hydrogel, gelling in situ to enable EV retention in the ﬁstula tract. Besides, the gel further provided a proangiogenic and an anti-inﬂammatory effect. The combined action of MSC EVs and the gel enhanced the healing associated pathways. This study demonstrates the feasibility to deliver EVs through a subcellular localized therapy.

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

P0795 REAL-TIME MULTIPHOTON MORPHOLOGICAL IMAGING FOR DIAGNOSING GASTRIC ATYPICAL HYPERPLASIA AND ADENOCARCINOMA

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Introduction: Compared with histopathology, real-time histology or virtual histoscopy and H&E histopathology. MPM to histologically diagnose gastric diseases, compared with other chromoen- doscopy and H&E histopathology.

Aims & Methods: A pilot study was performed between March 2016 and August 2016. 30 gastric tissue slides (normal, low-grade dysplasia (LGD), high-grade dysplasia (HGD), and cancer) were examined under MPM. MPM and H&E histological assessment.

Results: Histological complete ﬁstula closure was reported for 4 from 5 cases while a partial closure was evidenced in 1 from 5. In comparison with control group, treated ﬁstulas showed a reduced inﬂammatory inﬁltration and ﬁbrosis and an enhanced angiogenesis, especially in the gel-EVs group.

Conclusion: This study provides the ﬁrst evidence in the literature that MSC-EVs may provide a novel antiﬁbrotic effect in a pre-clinical esophageal model. EVs were fully administrated via a thermoresponsive Pluronic F127 hydrogel, gelling in situ to enable EV retention in the ﬁstula tract. Besides, the gel further provided a proangiogenic and an anti-inﬂammatory effect. The combined action of MSC EVs and the gel enhanced the healing associated pathways. This study demonstrates the feasibility to deliver EVs through a subcellular localized therapy.

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

Reference

P0797 UPPER GASTROINTESTINAL ENDOCOSMIC FINDINGS IN ASYMPTOMATIC HEALTHY INDIVIDUALS WITH NORMAL AND DECREASED SERUM PEPINOGENS FROM THE GISTAR PILOT STUDY

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Introduction: Limited data are available with regard to the prevalence of upper gastrointestinal endoscopic ﬁndings in asymptomatic healthy individuals as an endoscopy is an invasive and costly procedure.

Aims & Methods: Individuals were recruited from general population in Latvia as part of the GISTAR pilot study. The study group has been referred for an upper endoscopy and was tested for serum pepinosins and pepinosin I/II ratio <3

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Introduction: Type 2 diabetes mellitus is characterized by a fatty liver disease which 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 upregulation of the insulin receptor agonists, TGDs, and bariatric surgery. Duodenal Mucosal Resurfacing (DMR) is a minimally invasive endo-scopic procedure that has demonstrated glycemric eﬀect in patients with T2D seemingly via an insulin sensitizing mechanism.1 We report data supporting 12- mo durability of improved metabolic indices in patients with T2D after a single 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 (- lower (ALT ≤ 28 U/L), middle (28 ≤ ALT ≤ 37 U/L), and upper (ALT ≥ 37 U/L)), and diﬀerences from baseline in glycemic and HOMA-IR were analyzed using repeated measures ANOVA. Data are reported as mean(sd).

Results: Baseline ALT and HbA1c in the mITT cohort (n = 27, age; 55(9) y; diabetes duration, 6(2.5) y; BMI, 32.5(4.2) kg/m2) were 37.0(20.6) U/L, and 6.0(1.3)% (P = 0.005), 37.0(20.6) U/L, and 6.0(1.3)% (P = 0.005), respectively. In the middle and lowest tertiles, 12-mo ALT reductions were 12(15) (P = 0.024), and 12(15) U/L (P = 0.72); respective body weight changes were −3.8(2.9) kg (P = 0.24), and −1.9(5.9) kg (P = 0.09). 12-mo reductions in AST, HbA1c and HOMA-IR were: −9.7(3.2)% (P = 0.13), −11.0(5.5)% (P = 0.002); and −4.7(5.2) (P = 0.048). In the lowest tertiles, 12-mo ALT reductions were −4(11) and −2(3) U/L.

Conclusion: A single DMR procedure in patients with T2D produced signiﬁcant reductions in HbA1c up to 12 months in the total cohort. In the highest baseline ALT group, ALT was signiﬁcantly lower at 1 month while remaining lower than baseline at 12 months accompanied by signiﬁcant lowering of hyperglycemia up to 12 months. Further studies are planned to quantify the eﬃcacy, safety and durability of the hepatic and glycemric effects associated with DMR.

Disclosure of Interest: R. Batterham: I consult for Novo Nordisk and I have participated in Speakers’ Bureau of for Oxenon and Novo Nordisk.
J. Deviere: Research support and consulting fees, Fractyl R. Haidry: Educational Research grants from Cook Endoscopy and Pentax Medical Europe to support research infrastructure.
L. Rodriguez: Research support from Fractyl Laboratories, Inc.
M. Galvao Neto: Serves on the scientiﬁc advisory board of and receives research funding from GI Dynamics, Inc., and Fractyl Laboratories, Inc.
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G. Mingrone: Unknown at time of abstract submission.
All other authors have declared no conﬂicts of interest.

Reference
In this group of asymptomatic healthy individuals, only 20% showed ulcer in HE stained sections under microscope. The width of the fibrosis was defined as the maximum diameter of SMA-positive area in the depth direction from the submucosa to the muscle layer at a site of ESD-induced ulceration or ulcer scarring. The safety and the treatment results of rebamipide at two sites (control group) and with base solution alone at the other two sites (rebamipide group) were assessed. The gastric ulcer stages were evaluated by endoscopy at four sites in the stomachs of three pigs. An endoscopy performed at an 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. The protocol was approved by the ethics review board of our institution. Four pigs were included in the study, and one was used as a control group for pathological evaluation of ESD-induced ulceration. All endoscopic procedures were performed between February 2014 and June 2016. The study was approved by local ethics committees and the Ethics Committee of the United Kingdom for Research on Cancer.

**Introduction:**

The shrinking rate of ESD-induced ulcer at 4 weeks after ESD were not significantly different from those at 1 week and 4 weeks, but not to a significant extent. The safety and the treatment results of rebamipide at two sites (control group) and with base solution alone at the other two sites (rebamipide group) were assessed. The gastric ulcer stages were evaluated by endoscopy at four sites in the stomachs of three pigs. An endoscopy performed at an 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. The protocol was approved by the ethics review board of our institution. Four pigs were included in the study, and one was used as a control group for pathological evaluation of ESD-induced ulceration. All endoscopic procedures were performed between February 2014 and June 2016. The study was approved by local ethics committees and the Ethics Committee of the United Kingdom for Research on Cancer.

**Results:**

The shrinking rate of ESD-induced ulcer at 4 weeks after ESD were not significantly different from those at 1 week and 4 weeks, but not to a significant extent. The safety and the treatment results of rebamipide at two sites (control group) and with base solution alone at the other two sites (rebamipide group) were assessed. The gastric ulcer stages were evaluated by endoscopy at four sites in the stomachs of three pigs. An endoscopy performed at an 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. The protocol was approved by the ethics review board of our institution. Four pigs were included in the study, and one was used as a control group for pathological evaluation of ESD-induced ulceration. All endoscopic procedures were performed between February 2014 and June 2016. The study was approved by local ethics committees and the Ethics Committee of the United Kingdom for Research on Cancer.

**Conclusion:**

The safety and the treatment results of rebamipide and base solution alone showed no significant difference from those at 1 week and 4 weeks, but not to a significant extent. The safety and the treatment results of rebamipide at two sites (control group) and with base solution alone at the other two sites (rebamipide group) were assessed. The gastric ulcer stages were evaluated by endoscopy at four sites in the stomachs of three pigs. An endoscopy performed at an 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. The protocol was approved by the ethics review board of our institution. Four pigs were included in the study, and one was used as a control group for pathological evaluation of ESD-induced ulceration. All endoscopic procedures were performed between February 2014 and June 2016. The study was approved by local ethics committees and the Ethics Committee of the United Kingdom for Research on Cancer.
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 5.7 ± 4.6 days and 7.0 ± 6.8 days, respectively, without significant difference (p = 0.48). Of 153 patients taking antithrombotic agents, 126 continued antithrombotic agents (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 cessation group was 45.8% (5/11), which was not significantly different compared to that of heparin bridge group (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 taking 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.

P0802 LOW-DOSE ASPRIN DELAYS THE ULcer HEALING AND INCREASES THE RISK OF POSTOPERAtoVE BLEEDING AFTER GASTRIC ENDOSCOPIC SUBMUCOSAL DISSECTION THROUGH THE DUODENOGASTRIC REFLUX

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Introduction: Endoscopic submucosal dissection (ESD) permits en bloc resection for early 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 healing 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 affect the ESD procedure-induced ulceration and ESD postoperative bleeding rate, we compared ulceration reduction rate (one month after ESD), postoperative bleeding rate and gastric bile acid contents among the patients treated with low dose aspirin, other anti-thrombotic agents and non-anti-thrombotic agents. On the day of ESD and one day after ESD, gastric juice was taken in endoscopy and total bile acids were measured spectrophotometrically after the enzyme reaction.

Results: Ulcer reduction rate in the patients treated with LDA was significantly higher (p = 0.0036) higher compared to that in the patients with non-anti-thrombotic agents. On the other hands, the number of patients taking antithrombotic agents are increasing because of evidence of antithrombotic therapy for prevention of thromboembolic events has been established and population aging advances, which is thought to be a serious problem related to increasing delayed bleeding after ESD.

Aims & Methods: To assess the influence of antithrombotic therapy on delayed bleeding after ESD, we retrospectively investigated the delayed bleeding rate after ESD among the continuation of antithrombotic agents, the cessation of antithrombotic agents and heparin bridge therapy. 735 lesions in 665 patients were treated with ESD from January 2006 to December 2016. We compared 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 continuing antithrombotic therapy with that in the patients with the cessation of antithrombotic therapy or with heparin bridge therapy. The patients who were anti-thrombotic agents were treated with continuation aspirin or clopidogrel. The cessation period of antithrombotic therapy before ESD followed the guidelines for therapeutic endoscopy in antithrombotic agents-users from Japan Gastrointestitinal Endoscopy Society. We defined delayed bleeding as a hematoma, a melema, 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 5.7 ± 4.6 days and 7.0 ± 6.8 days, respectively, without significant difference (p = 0.48). Of 153 patients taking antithrombotic agents, 126 continued antithrombotic agents (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 cessation group was 45.8% (5/11), which was not significantly different compared to that of heparin bridge group (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.

P0804 TRANSPANTATION OF AUTOLOGOUS ESOPHAGUS MUCOSA TO PREVENT STRICTURE AFTER CIRCUMFERENTIAL ENDOSCOPIC SUBMUCOSAL DISSECTION OF EARLY SQAMOUS CELL

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Introduction: Esophageal endoscopic submucosal dissection (ESD) to remove superficial esophageal neoplasms is gradually becoming the standard treatment for superficial esophageal cancer, but is associated with esophageal stenosis, particularly when ESD involves the entire circumference of the luminal. Many methods to prevent post-ESD stricture, such as repeated Endoscopic balloon dilatation (EBD), temporary stent insertion, and oral steroid and intralesional steroid injection, have been used in different institutions. In recent years, new technologies such as autologous oral mucosal sheets or extracellular matrix scaffold material have also been suggested to manage esophageal strictures. There are no standard guidelines to prevent stricture in a patient with circumferential mucosal defect after ESD. In this study, we aimed to assess the effectiveness and safety of endoscopic transplantation of autologous esophagus mucosa in preventing formation of strictures after ESD.

Aims & Methods: We performed a single-arm, single-institute study. Nine patients who underwent wholly circumferential ESD for superficially extended
Patients with 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 pieces were affixed to the “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: In 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 esophageal mucosa was successfully transplanted to the “ulcer surface” using an endoscope. The number of mucosal patches ranged from 8 to 28. Complete re-epithelialization occurred within a median time of 8.6 days with a graft survival rate at 93.06%. Postprocedural stricture accompanied by dysphagia occurred in seven patients on post-procedure day 24.7 (range, 18–34 days). The median sessions of EBD and intralesional steroid injection was 3.3 (range 1–6). No other serious complications occurred in these patients, such as overall bleeding and perforation. Eight patients were still alive during the mean follow-up period of 11.6 months (range, 2.5 to 21 months). One patient developed lung metastasis and died of the disease 15 months after ESD.

Conclusion: Transplantation of autologous esophageal 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

PD0806 A PROSPECTIVE STUDY USING A NEW DEVICE FOR ENDOSCOPIC RESECTION OF EARLY NEOPLASIA IN BARRETTS 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±1.92 resections per procedure. Indication for ER was high-grade dysplasia (HGD) in 65%, early adenocarcinoma in 20%, visible lesion with low-grade dysplasia in 10%, and a visible lesion suspicious for neoplasia without pre-treatment histology in 5%. The primary endpoint of successful ER of a target lesion
was reached in 290/301 (96%) procedures. A perforation occurred in 3/301 ER procedures (1%, 95% CI 0.21%–3.88%). Two perforations were detected with the new MBM device in 1/301 (0.33%) procedures. Perforations were in 1% and significant post-procedural bleeding in 2%, complications were effectively managed endoscopically.

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

**P0807** COST-EFFECTIVE ANALYSIS COMPARING STANDARD BIOPSIES VS. DIGITAL BIOPSY BY CONFOCAL ENDOMICROSCOPY

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Introduction: Endoscopy has greatly influenced gastroenterological diagnosis. However, most lesions can be suspected but not certainly diagnosed only on the basis of endoscopic findings and therefore, histology is needed. On the other hand the reliability of detecting lesions historically depends on the site, number, and size of biopsies (Bx) specimens with a 20–30% probability of sampling mistakes. Probe based Confocal Laser Endomicroscopy (p-CLE) allows endoscopist to perform intra-vivo mucosal cellular evaluation of the gastrointestinal (GI) tract with a high (90%) diagnostic accuracy. It allows to perform target Bx. Moreover, the NPV is >98%. There is no information in the literature regarding the economic impact of performing digital biopsies (DBx) by p-CLE.

Aims & Methods: The purpose of this study is to perform a cost-effectiveness analysis comparing the diagnosis of upper GI tract pathologies using only standard Bx following the literature recommendations (LR) vs. the diagnosis with DBx using p-CLE. This was a retrospective study with prospective collection data of patients included from Jan 2014 to Nov 2016. The pathologies included for p-CLE evaluation are summarized in Table 1. The diagnosis costs using standard Bx was calculated following the literature recommendations (Table 2). The standard Bx costs included the histological process and physician honoraria per Bx (USD 50.00), and one biopsy forceps per patient (USD 38.00). The DBx cost by p-CLE included the probe, the processor and the physician honoraria (USD 500.00). Baseline characteristics, p-CLE indications, the diagnostic accuracy of p-CLE and costs were described.

Results: 78 patients were included, 51.2% were female. The mean age was 50.18 years old. p-CLE indications distribution was: esophagus 29 (37.2%), stomach 46 (59%) and duodenum 3 (3.8%) subgroups. Biopsies were performed in 71/78 cases (91.0%). Table 1 shows the procedure cost reached with the different pathologies, by following the Bx LR for initial diagnosis and follow-up. The efficacy of p-CLE in our study was 91.7% sensitivity, 89.8% specificity, 64.7% PPV, 98.2% (59%) and duodenum 3 (3.8%) subgroups. Biopsies were performed in 71/78 and costs were described.

Table 1: Cost analysis following the Literature Recommendations (LR) for initial diagnosis and follow-up

<table>
<thead>
<tr>
<th>Pathology</th>
<th>No. of Bx by LR</th>
<th>No. of Bx by p-CLE</th>
<th>No. of total system</th>
<th>Total cost of Bx/USD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Esophageal Tumor</td>
<td>8</td>
<td>8</td>
<td>23.08</td>
<td>438.00</td>
</tr>
<tr>
<td>Barrett’s Esophagus</td>
<td>1 3.9 cm</td>
<td>4</td>
<td>4</td>
<td>238.00</td>
</tr>
<tr>
<td>Barrett’s Esophagus</td>
<td>4 cm</td>
<td>8</td>
<td>8</td>
<td>438.00</td>
</tr>
<tr>
<td>Gastric Tumor</td>
<td>5</td>
<td>5</td>
<td>13</td>
<td>688.00</td>
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<tr>
<td>Gastric Atrophy</td>
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</tr>
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<td>Metaplasia</td>
<td>8</td>
<td>8</td>
<td>13</td>
<td>688.00</td>
</tr>
<tr>
<td>Gastric Ulcer</td>
<td>8</td>
<td>8</td>
<td>13</td>
<td>688.00</td>
</tr>
</tbody>
</table>

Bx: biopsies; LR: Literature Recommendations. a. For initial diagnosis. b. For follow-up. c. Cost includes histological process and physician honoraria per biopsy (USD 50.00), and the Bx forceps per patient (USD 38.00).

Conclusion: In our population, the digital biopsy by p-CLE proved to be more cost-effective, when ≥10 biopsies were indicated, like in cases of a Barrett’s Esophagus ≥4 cm, a Gastric Tumor, or in the context of two or more suspected pathologies (e.g.: esophageal and gastric disease).

Disclosure of Interest: C. Robles-Medranda: KOL for Pentax Medical, Boston Scientific Consulting. US Endoscopy Consulting. All other authors have declared no conflicts of interest.

**P0808** GASTRIC PER-ORAL ENDOSCOPIC PYLOROMYOTOMY (G-POEM) IN THE TREATMENT OF REFRACTORY GASTROPARESIS: EXPERIENCE OF THE FIRST 9 CASES IN MEXICO

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Introduction: Gastroparesis is a syndrome characterized by a delayed gastric emptying with absence of a mechanical obstruction. Reduction in QOL scores have been observed. Etiologies include: idiopathic, diabetic, post-surgical. Diagnosis is based on the combination of symptoms and a delayed gastric emptying scintigraphy(GES) of >10% after 240 min. Multiple treatments have been used but temporary results with morbidity, so no new treatment options have been explored. G-POEM is a new endoscopic treatment which is based in the POEM treatment for achalasic patients and consist in a creation of a submucosal tunnel in order to perform an endoscopic pyloromyotomy. Initial results have been promising.

Aims & Methods: The aim of this study was to evaluate the safety and efficacy of G-POEM in a group of Mexican patients with refractory gastroparesis. This prospective study was carried out in a tertiary care center in Mexico city, between December 2016 and April 2017. We included patients with refractory gastroparesis defined as presence of symptoms such as: nausea, vomiting, early satiety with inability to finish a normal meal, bloating and upper gastrointestinal pain. These patients were considered to be on medical treatment and did respond and have a positive gastroparesis cardinal symptom index (GCSI) score combined with a >10% of retention at 240 min in the GES study. Exclusion criteria were malignancy, peptic ulcer disease, normal GES and coagulation disorders. Procedure steps were performed in POEM procedure, beginning 5cms behind pyloric arch with an longitudinal incision, then submucosal tunnel creation, myotomy of the pyloric arch up to the serosa and 2cms before this point and finally closure with clips. Follow-up included GCSI, endoscopy and GES at 3 months after procedure.

Conclusion: Initial results have been promising.

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

References

**P0809** ENDOSCOPIC MANAGEMENT OF FOREIGN BODIES IN THE UPPER GASTROINTESTINAL TRACT: A RETROSPECTIVE STUDY OF 1294 CASES

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Introduction: Foreign body (FB) ingestion including food bolus impaction is frequently encountered in clinical practice. Few studies with large sample size...
towards endoscopic management of FBs had been reported. No direct evidence has demonstrated the relationship between duration of FB impaction and outcomes of endoscopic management. Moreover, it remains unclear whether endoscopic management of FBs under general anesthesia could improve endoscopic outcomes when compared with topical pharyngeal anesthesia.

**Aims & Methods:** The aim of the present retrospective study is to analyze our endoscopic outcome and explores the best timing and anesthesia methods of endoscopical intervention with FB ingestion. All consecutive patients suspected of FB ingestion were enrolled. The demographic, clinical and endoscopic data were collected and analyzed.

**Results:** Totally, 1294 cases were recruited in this retrospective research. The ages ranged from 7 months to 94 years, with a median age of 47.0 (31–63) years. The majority of patients (1191/1294 cases, 92.0%) presented with some symptoms after FB ingestion, in order of frequency odynophagia (415 cases, 32.1%), foreign body sensation (340 cases, 26.3%) and sore throat (267 cases, 20.1%). The most common underlying pathologies were oesophageal stricture (35 cases, 39.3%) and oesophageal cancer (11 cases, 12.5%). The procedure was performed under general anesthesia in 126 cases (9.8%) and under topical pharyngeal anesthesia in 1168 cases (89.2%). The mean time of FB impaction ranged from 4 hours to more than 2 years with a median time of 1 (0.63–3) days. Bony FBs, jujube pit, food bolus and dental prosthesis were the most frequent FBs in population. Anatomically, FBs were mostly impacted in the oesophagus (n = 1025, 86.9%), especially in the upper oesophagus (n = 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 (336 cases, 27.5%) and ulcers (210 cases, 16.2%). The most common underlying pathologies were oesophageal stricture (35 cases, 39.3%) and oesophageal cancer (11 cases, 15.5%). As the duration of FB impaction increased, positive finding and successful removal of FB by endoscopy significantly decreased (p = 0.001). Furthermore, complication rate significantly increased with time (p < 0.001). Age (OR = 1.15, 95%CI: 1.20–1.91, p < 0.001), type and location of FBs (OR = 4.51, 95%CI: 2.95–6.90, p < 0.001) and some symptoms (OR = 2.26, 95%CI: 1.48–3.46, p < 0.001), anesthesia methods (OR = 1.35, 95%CI: 1.05–1.75, p = 0.02) and duration of FB impaction (OR = 1.74, 95%CI: 1.50–2.00, p < 0.001) were verified as risk factors for development of FB-related complication by logistic regression analysis. General anesthesia could not improve positive FB detection (p = 0.181) or success rate of endoscopic management of FBs (p = 0.135), as well as decrease the complication rate when compared with topical pharyngeal anaesthesis (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 ENDOCUTIVE 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 them, we perform additional therapy such as chemo radiotherapy (CRT) or operation considering the risk of metastasis and patients’ condition.

**Aims & Methods:** To know the difference of metastatic risk and long time outcomes, retrospectively studied 121 cases of ESCC with pathological MM/SM1 invasion (MM/SM1:97/24) resected by ER from 2003 to 2013 in Cancer Institute Hospital. After pathological diagnosis of resected lesions, we performed additional therapy such as CRT, radiation therapy (RT) or operation, to the cases with lymphovascular invasion (LVI) or droplet infiltration (DI). Median observation period was 48 months.

**Results:** Enrolled cases included 112 males and 9 females and their median age was 66 (39–86). We resected ESCC by ESD in 71 cases and by EMR-C in 50 cases and their median size was 27 mm. Local recurrence was observed in 6 cases which were all after EMR (12%). As for local recurrence 5 cases were treated by re-EMR and 1 case by APC, resulted in no re-recurrence. Of 97 cases of MM, 15 cases (15.5%) had LVI, 10 cases (10.3%) had DI. We recommended additional therapy in 12 cases (10.5%). Additional therapy was performed in 15 cases (15.5%) (ope/CRT/RT/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 25 cases (20.5%). Additional therapy was performed in 9 cases (37.5%) (ope/CRT/RT/chemotherapy: 3/4/1/1). Three cases died of ESCC and 5 cases (20.8%) died of other diseases. Comparing both groups, tumor size and local recurrence rate were not different each other. The frequency of LVI was significantly higher in SM1 than in MM (p < 0.05) and the frequency of DI was higher in SM1, although not significant (p = 0.161). The metastatic recurrence was observed significantly frequently in SM1 than MM (16.7% vs 2.1%; p < 0.01). The 5-year overall survival (OS) disease specific survival (DSS)/relapse free survival (RFS) were 81.7%/100%/94.1% for MM and 62.9%/87.9%/91.7% for SM1. OS and RFS were not different each other, however, CSS was superior in MM than in SM1 (p < 0.01).

**Conclusion:** ESCC with MM invasion was superior in metastatic recurrence and CSS than ESCC with SM1 invasion, although we treat MM/SM1 in the same way. Additional therapy should be considered more positively in cases of 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 generally is still under evaluation. The one-piece resection of lesions larger than 2 cm has many advantages against piece meal resection. One advantage of flexible preparation in opposite position of the instruments in ESD. 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 Anubiscope (Carl Storz, Germany). After insertion of the scope insufflations were done with the two arms of the scope using a grasper and a hook-knife. Also the grasper could use for coagulation. The specimen was removed with the scope after closing its valves.

**Results:** The procedure was successful in all animals with operation time ranging from 102 to 189 minutes with a learning curve. After weight gain in all cases, the animals were sacrificed after postoperative day 42 and the workup showed competent healing with a star-like scar.

**Conclusion:** The use of an operating platform like the Anubiscope 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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ME-NBI is an important modality to diagnose early gastric cancer.

Introduction: Contact E-mail Address: ness of ME-NBI has been often reported\[2, 3\], some cases are difficult to diagnose

Results: The biopsy rate of NBI-ME and conventional endoscopy in Group M was 0 and 0.2%, respectively, while in Group S it was noted to be 4.2 and 1.8%, respectively. Thus, the detection rate of NBI-ME was significantly higher than that of conventional endoscopy in Group S (p < 0.01). The accuracy of biopsy with NBI-ME and conventional endoscopy in Group M was 0 and 3.2%, respectively, but in Group S it was noted to be 36.4 and 14.1%, respectively. Thus, the biopsy rate of biopsy using NBI-ME is significantly superior to conventional endoscopy in Group S (p < 0.01).

Conclusion: NBI-ME as a screening test for gastric cancer is useful for patients with severe atrophy of the background gastric mucosa because this technique has shown a higher detection rate of gastric neoplasms and better accuracy of biopsy.

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

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P0814 BEST PRACTICE IN PLACEMENT OF PERCUTANEOUS ENDOSCOPIC GASTROSTOMY WITH JEJUNAL EXTENSION TUBE FOR CONTINUOUS INFUSION OF LEVDOPA CARBIDOPA INTESTINAL GEL IN THE TREATMENT OF ADVANCED PARKINSON’S DISEASE: THE ROLE OF GASTROENTEROLOGIST A.G. Gravina, I. Apicella, V. M. Ormando, M.R. Amato, M. I. Russo, M. Romano, P. Esposito Medical And Surgical Department Of Clinical And Experimental Intrinsich “f Magnacca”, Hepatogastroenterology and Digestive Endoscopy Unit, University of Studies “L. Vanvitelli”, Napoli/Italy

Introduction: Levodopa is the gold standard in pharmaceutical treatment of the advanced Parkinson’s disease (APD) and its oral administration in advanced disease is associated with development of symptoms and motor and non-motor complications. Due to its short plasma half-life, Levodopa requires repeated dosing (1, 2). Impaired gastric emptying is common in APD and reduces the absorption of Levodopa, requiring progressively higher doses and more frequent administrations. Continuous duodenal administration of modulated Levodopa/ Carbipen gel by jejunal Extension Tube Placement through Percutaneous Endoscopic Gastrostomy (PEG-J), is a new therapeutic protocol in advanced APD (3).

Aims & Methods: Aim of this work is to verify efficacy and safety of intestinal gel (LCIG) delivered continuously through an Intrajejunal percutaneous tube (PEG-J). 24 adult (14 M, 10 F, median age 71 years) with APD and preserved sensitivity to L-Dopa were enrolled. 7 days before PEG-J placement, to evaluate the possible presence of mucosal or anatomical gastric anomalies, each patient underwent endoscopic esophagogastroduodenoscopy (EGD). Treatment with LCIG consists in a water-based suspension containing micronized levodopa (20 mg/mL) and carbidopa (5 mg/mL) in methylcellulose, administered by continuous jejunal infusion for 12h/day using a portable pump by PEG-J. Clinical evaluations were performed at baseline(T0), before LCIG initiation, and after 3 (T3) and 6 (T6) months of therapy. To evaluate efficacy and safety outcomes it has been used Unified Parkinson’s Disease Rating Scale (UPDRS) parts II, III and IV. For the analysis of the differences between the clinical variables and to exclude biases due to the small number of the sample in the question, the non-parametric Kruskal-Wallis H test was used for the comparison of three samples. A statistically significant value of p was less than 0.05. The analyses were carried out using SPSS version 13 (SPSS Inc., Chicago, IL, USA).

Results: 1) Success rate for PEG-J placement was 100%; 2) Eighty-four patients (33%) dropped-out LCIG at T3; 3) Sixty-six/16 patients (100%) showed statistically significant (p < 0.05) higher performances in daily common activities and statistically significant (p < 0.05) lower incidence and severity of motor fluctuations at T6 compared to their best oral therapy; 4) During observational period, 6 patients experienced adverse events.

Conclusion: 1) This study demonstrates that continuous intrajejunal LCIG’s infusion treatment is highly effective in decreasing motor fluctuations in advanced PD patients compared to oral administration of levodopa-carbidopa; 2) This therapeutic approach should be proposed in well selected APD patients with preserved sensitivity to L-Dopa.

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

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Introduction: Post-endoscopic submucosal dissection (ESD) bleeding is the most common complication of ESD. In previous studies, the post-ESD bleeding occurred from 1.8% to 15.6% of total procedures [1–4]. Recently, many patients who underwent ESD, have been prescribed antiplatelets or anticoagu- lants, because of various underlying diseases such as cerebrovascular accidents or...
cardiovascular diseases [3]. Thus, the verified risk prediction model of post-ESD bleeding may help to determine preventive therapeutic options and restarting date of antiplatelet agents.

Aims & Methods: The aim of this study is to develop the predictive risk model of post-ESD bleeding. A total of 3574 patients, who were taken ESD from January 2007 to November 2016 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, multivariate logistic regression revealed renal disease (odds ratio [OR], 3.90; 95% confidence interval [CI], 1.48–9.09; P = 0.0029), anti-platelet agent (OR, 3.07; 95% CI, 1.44–6.05; P = 0.002), and en-bloc resection (OR, 3.83; 95% CI, 1.34–10.34; P = 0.0059) as significant risk factors (C-statistic = 0.607; 95% CI, 0.552–0.661). In the validation model also showed discrimination power (C-statistic = 0.580; 95% CI, 0.533–0.627). 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 days or medication schedules.

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

References
The histological assessment and biopsy sampling protocol has been standardized 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 nuclei (11.7%), 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 (9.9%) 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 12 and over 24 hours respectively. 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 perforation was 5.6%, which was strongly related with long retention time and sharp objects (P < 0.03), but not with locations or lengths of the objects (P > 0.05).

Conclusion: General anesthesia could largely improve the retrieval rate through endoscopy. Foreign bodies, especially sharp shoulds, be removed as soon as possible within 24 hours, to further decrease severe complications.

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

References
Introduction: In gastrointestinal stromal tumors (GISTs) without a risk of metastasis to other organs, local resection is acceptable. In small GISTs, however, it is controversial whether surgical resection is necessary because a risk of recurrence/metastasis in these tumors including ulcerated GISTs as a minimally-invasive surgical option towards the inside of the stomach, endoscopic muco-submucosal incision and suture with the lesion inverted intraluminally-/intramurally-growing type. In the NEWS procedure, a lesion was resected in a resected in a following manner: endoscopic mucosal markings, laparoscopic serosal markings just behind the mucosal markings, endoscopic submucosal injection, laparoscopic sero-muscular incision and suturing with the lesion inverted toward the stomach, endoscopic submucosal dissection and laparoscopic retrieval. Short-term outcomes of NEWS and a potential risk of recurrence/metastasis in each tumor according the Fletcher’s classification were assessed. Some small GISTs which could be retrieved transorally had a high malignant potential. NEWS was feasible, safe and therefore recommended for these tumors including ulcerated GISTs as a minimally-invasive surgical option to resect these tumors without an extended surgical scar for the retrieval of the specimen and a risk of iatrogenic tumor cell seeding into the peritoneum during the procedure.

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

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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 endoscope (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 guidance in palliative oesophageal stent placement. 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:

P0828 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 severe oesophageal damage 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. Orophageal 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%, Ilh-6.8%, Ihb-8.2%), gastric lesions in 58.9% and duodenal lesions in 13.7%, 53.4% were hospitalized, 51.3% in intensive/intermediate care units. The mean length of hospital stay was 14.9 days. Medical treatment prescribed: 76.7% proton pump inhibitors, 15.1% corticoids, 15.1% prophylactic antibiotics. Parenteral feeding was initiated in 28.8% of patients. Eight patients required invasive ventilation and two were tracheotomised. Early complications: infections in 12 patients (16.4%), perforations in 2 (2.7%); late complications: stenosis in 7 (9.6%); dilation in 6, surgery in 3. One patient died from gastric perforation after voluntary ingestion of acid. Severe oesophageal lesions were associated with increased inflammatory parameters, tachycardia and/or hypotension at admission and motivated longer hospital stays, requirement of intensive care and further complications (p<0.002). The ingestion of acidic substances (100% of voluntary intake) was associated with severe oesophageal damage in 3/7 (42.9%) patients, severe gastric lesion in 5/7 (71.4%), acidemia in 5/7 (71.4%), complications in 5/7 (71.4%) and 100% hospitalization.
Conclusion: Early changes in blood tests were seen in severe oesophageal lesions. Severe oesophageal lesions were associated with longer hospitalization and complications (infection/stenosis/perforation). Ingestion of acidic substances was a risk factor for severe digestive lesions.

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

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P0829 NOVEL IMAGE ENHANCEMENT TECHNOLOGY USING LINKED COLOR IMAGING WITH ACETIC ACID INDIGOCARMINE MIXTURE FOR DIAGNOSIS OF EARLY GASTRIC NEOPLASM
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Introduction: A value of the combination of magnifying endoscopy and of 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 CF-180AI, Tokyo, Japan). LCI acquires images by simultaneously using narrow-band short wavelength light and white light in an appropriate balance. This combination of light provides more information about the vasculature and architecture on the mucosal surface than that obtained with typical white-light imaging. While we use acetic acid indigocarmine mixture (AIM) with LCI mode, we reported that the magnifying images of early gastric cancer are very clear, three-dimensional and near to real histology. So, we examined the examined the utility of this method.

Aims & Methods: This was a prospective observational study performed at a single tertiary referral center. The subjects are 120 lesions of 115 patients with gastric neoplasm. We are 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 LCI 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 results, 92 lesions were gastric adenoma and 28 lesions were gastric adenoma. The differentiation ability of a cancer and the non-cancer (adenoma) did not have the significant difference between the LCI 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, 11 lesions were Invisible and 44 lesions were Invisible by BLI mode, On the other hand, 45 lesions were Clear, 64 lesions were Visible, 11 lesions were Invisible and 44 lesions were Invisible by AIM mode. In the visualization ability of the surface fine structure, LCI + AIM method is significantly clearer than LCI mode (p < 0.001).

Discussion: 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 combination of AIM and LCI, we can observe the endoscopic images closer to actual histological images. By this combination of AIM and LCI, we can observe the endoscopic images closer to actual histological images.

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

P0830 THE SAFETY AND EFFECTIVENESS OF ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD) FOR EARLY GASTRIC NEOPLASMS IN PATIENTS AGED 85 YEARS OR OLDER
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Introduction: Endoscopic submucosal dissection (ESD) is one of the most useful methods for treating early gastric neoplasms. The advantages of ESD include the ability to control the size and shape of the resection, permitting en bloc resection of large and ulcerated lesions. The frequency of gastric ESD for patients aged 85 years or older has increased along with increases in the average population age. However, few studies have reported the short-term and long-term outcomes of gastric ESD in elderly patients.

Aims & Methods: The aims of our study were to evaluate and compare the efficacy, safety, and clinical outcomes of gastric ESD in patients aged 85 years or older and in younger patients. The subjects were 705 patients who collectively presented with 876 gastric tumors (288 adenomas and 588 early gastric cancers). All patients underwent ESD at our hospital between June 2007 and December 2017. The patients were divided into two groups: elderly (≥85 years, consisting of 59 patients with a collective 71 lesions) and non-elderly (Group B; aged <85 years, consisting of 646 patients with a collective 805 lesions). We evaluated the clinical and pathological findings, resection rates, complications, and long-term outcomes, including the survival rate. The local and distant recurrence rates were analyzed in the cohort with curative resection and observationally managed with non-curative resection. The 3- and 5-year overall survival and tumor-specific survival rates were analyzed in the entire study cohort.

Results: The patients’ mean ages were 87 (Group A) and 71 years (Group B), and the male-to-female ratios were 30/29 (Group A) and 646/805 (Group B). No significant differences were found in the mean tumor size for Group A (15 mm) and Group B (20 mm). Regarding histopathological findings, the prevalence rates of tubular adenoma were 28.3% (21/71; Group A) and 33.8% (267/805; Group B); intramucosal carcinomas, 52.1% (37/71; Group A) and 53.8% (433/805; Group B); shallow submucosal invasive carcinomas (<500 μm), 7.0% (5/71; Group A) and 6.5% (52/805; Group B); and deep submucosal invasive carcinomas (>500 μm), 11.3% (8/71; Group A) and 6.6% (53/805; Group B). Once again, the groups showed no significant differences. The en bloc resection rates were 100% (71/71 lesions; Group A) and 97.1% (782/805 lesions; Group B); histological complete resection rates were 94.4% (67/71; Group A) and 92.9% (748/805; Group B), and the curative resection rates were 78.8% (56/71; Group A) and 86.3% (695/805; Group B). Among the non-curative cases, 13 (86.6%) of the 15 patients in Group A and 46.3% of the 35 patients in Group B received no additional treatment. These results were significantly higher for Group A than for Group B. Concerning complications, the postoperative hemorrhage rates were 2.8% (2/71 patients; Group A) and 2.6% (12/479 patients; Group B), and the perforation rates were 0% (0/71; Group A) and 0.5% (4/805; Group B). Regarding long-term outcomes, analysis of recurrence revealed the local and distant recurrence rates to be 0% for Group A and 0.9% (7/746; local) and 0.1% (1/746; distant) for Group B. Regarding survival analysis, the median survival period in Group A and Group B was 583 months and 1156 days, respectively.

Conclusion: Gastric ESD in patients aged 85 years or older can be effectively and safely performed. According to the long-term outcomes, gastric ESD performed as a local resection (total biopsy) in elderly patients may be acceptable, even in non-curative cases.

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

P0831 RESULTS FROM THE FIRST UK VIRTUAL COMPLEX POLYP MDM
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Introduction: Data from the UK Bowel Cancer Screening Programme (BCSP) has established that the assessment and management of large non pedunculated colorectal polyps (LNPCPs) varies markedly, leading to variable and often suboptimal outcomes, especially for the most complex lesions. A multicentre complex polyp multidisciplinary team meeting was created within the North East of England BCSP with the aim of ensuring more robust decision making and management of complex LNPCPs.

Aims & Methods: A virtual multidisciplinary MDM was conducted via audioconferencing within the North East of England between 2014-6 to discuss complex LNPCPs (LNPCPs with increased risk of malignancy or complexity associated with endotherapy, as defined in BSG/ACPGBI guidelines). Non-complex LNPCPs (LNPCPs with increased risk of malignancy or complexity associated with endotherapy, as defined in BSG/ACPGBI guidelines) were not discussed. Patient data was distributed securely via NHSmail. Outcomes were assessed prospectively using key performance indicators (KPIs) from the BSG/ACPGBI guidelines.2

Results: 63 complex LNPPC cases were managed via the MDM with 8 excluded from analysis (7: managed prior to MDM referral, 1: MDM advice not followed), 27 lesions were managed with primary endotherapy, 23 with primary surgery and 3 cases conservatively. Of the endoscopic cases, 2 required surgery due to failed endotherapy and went on to a finding of adenocarcinoma. The 22-month recurrence was 8.7% with no reported complications. The rate of surgical management using the BSG/ACPGBI KPI (including only surgically managed benign lesions or lesions subject to failed endotherapy) was 39.5%. The en-bloc resection

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

United European Gastroenterology Journal 5 (5S)
rate of complex LNPCPs with features suggestive of increased malignancy risk with a surgical approach.

**Breakdown via High Risk features of malignancy**

<table>
<thead>
<tr>
<th>Size</th>
<th>ADR-Group Mean</th>
<th>SD</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;0.5 cm</td>
<td>34.09</td>
<td>15.46</td>
<td>p = 0.029</td>
</tr>
<tr>
<td>≥0.5 cm</td>
<td>8.44</td>
<td>6.02</td>
<td>p = 0.01</td>
</tr>
<tr>
<td>≥2 cm</td>
<td>10.22</td>
<td>6.64</td>
<td>p = 0.047</td>
</tr>
</tbody>
</table>

**Conclusion**

Endoscopists with higher ADR tend to detect significant more SSA and adenomas with 1–2 cm in size, but have lower proportions of pedunculated adenomas than those with a low ADR. In our study cohort no significant differences in flat shape or diminutive size was measurable.

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

References


**P0832 DIFFERENCES IN DISTRIBUTION OF SIZE, SHAPE AND SERRATED HISTOLOGY OF COLORECTAL ADENOMAS BETWEEN ENDOSCOPISTS WITH LOW (<20%) AND HIGH (≥20%) ADENOMA DETECTION RATE**

**Aims & Methods:** Our study aim is to investigate the differences of size, shape and serrated histology of adenomas between low- and high-ADR group in our screening cohort. We analyzed 2354 screening colonoscopies performed by 26 endoscopists between 2007 and March 2017 within the austria certificate of screening colonoscopy. T-Test was used to assess differences.

**Results:** 39.1% of endoscopists were categorized in the ADR low- and 60.9% in the high-ADR group. Overall, mean ADR was 23.06% (SD 0.55) with a minimum of 0.3% and a maximum of 48.72%. In the low-ADR group mean ADR was 14.56 (SD 0.42) and 28.51 (SD 0.50) in the high-ADR group. Regarding to size, there was a significant difference (p = 0.029) in detection of adenomas of 1–2 cm in size with a mean of 8.44% (SD 6.02) in low- vs. 10.22% (SD 6.64) of all adenomas in high-ADR group but no differences between adenomas <0.5 cm, 0.5–1 cm and those bigger than 2 cm. Regarding shape, proportion of pedunculated adenomas in low-group-ADR differ significantly higher (p = 0.002), with a mean of 19.36% (SD 14.90) vs. 14.70% (SD 9.55) but there were no differences between flat and sessile adenomas. With a mean proportion of 4.43% (SD 5.61) vs. 6.64% (SD 5.97), the proportion of sessile serrated adenomas (SSA) differ significantly between low-ADR vs. high-ADR group (p < 0.01). There was no significant difference regarding traditional serrated adenomas (p = 0.800).

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

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Introduction: Patients of endoscopists with high (≥20%) adenoma detection rate (ADR) have less risk for interval cancer than those of low ADR (<20%). Lesion-related-factors, such as size, shape and histology influence the size, shape and histology of the lesions, and technical factors. 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 method for categorical data. The meaningful variables with a p value < 0.1 in the univariate analysis were included in the logistic regression model. Multivariate analysis was performed using binary logistic regression methods. Odds ratios (ORs) and 95% confidence intervals (CIs) were calculated to assess the strength of the influence of each individual variable.

**Results:** We included 265 lesions in 265 patients [mean age ± SD: 69 ± 10; 150 males (56.6%)]. They were recruited in 15 Spanish University Hospitals between January 2016 and March 2017. Location of the lesions were: esophagus (n = 7; 2.6%), cardia (n = 5; 1.8%); stomach (n = 48; 18.1%); duodenal bulb (n = 1; 0.3%); colon (n = 144; 54.3%) and rectum (n = 60; 22.6%). Mean lesion size was 38.6 ± 18.5 mm. Median duration of the procedure was 105 min. (8–375). In 73 cases (27.5%) criteria for difficult ESD were fulfilled. Endoscopic resection was aborted in 7 cases (2.6%). When endoscopic resection was achieved (n = 258; 97.3%) both situations, duration > 3 h and a piecemeal resection, were noted in 21 (8.1%) patients. Duration > 3 h in 25 cases (9.7%) and unsuccessful endoscopic resection was noted in 21 cases (8.1%).
resection in 20.7% were observed in isolation, respectively. Table 1 shows the univariate and multivariate analysis of factors regarding technically difficult ESD.

Table 1: Univariate and multivariate analysis of possible factors related to technically difficult ESD.

<table>
<thead>
<tr>
<th>Variables</th>
<th>UNIVARIATE ANALYSIS</th>
<th>MULTIVARIATE ANALYSIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Procedure</td>
<td>OR (C.I. 95%)  p</td>
<td>OR (C.I. 95%)  p</td>
</tr>
<tr>
<td>Case load ≤10</td>
<td>0.8 (0.4–1.6)</td>
<td>0.5</td>
</tr>
<tr>
<td>2 endoscopists (vs. 1 operator)</td>
<td>20.65 (9.7–72.6)</td>
<td>&lt;0.0001 9.7 (0.9–94.9)</td>
</tr>
<tr>
<td>Location</td>
<td>Colorectal</td>
<td>2.6 (1.2–5.7)</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</td>
<td>3.3 (1.7–6.4)</td>
<td>0.0002</td>
</tr>
</tbody>
</table>

Complications

Intraprocedural bleeding 4.1 (1.9–8.7) 0.0003 |

Conclusion: The factors independently associated with technically difficult ESD were: procedure time-consuming or finished with a piecemeal resection; 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 LAPAROSCOPIC ENDOSCOPIC COOPERATIVE SURGERY (LECS) (Y. Tamegai1, Y. Fukunaga2, A. Chino1, S. Saiito1, J. Fujisaki1, M. Ueno2
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Introduction: We established the Laparoscopic Endoscopic Cooperative Surgery (LECS) procedure to overcome the limitation of colorectal endoscopic submucosal dissection (ESD). This procedure is a local full-thickness resection of the combined procedure of laparoscopic 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 1341 patients (male: female = 1,131:210; 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 metastases does not become the indication for this full-thickness resection technique. From the above-mentioned basic concept, indications of the LECS procedure for colorectal tumors were thought to be as follows: 1) Intramucosal carcinoma (Tis) and adenoma with high-grade atypia (Vienna Classification:Category 3, 4) accompanied by wide and severe degree fibrosis in the submucosal layer (tumor recurrence after endoscopic and surgical resection); 2) submucosal tumors; 3) Intra-mucosal carcinoma (Tis) and adenoma with high-grade atypia involved appendix or diverticulum. We examined the clinical and pathological outcomes of the above-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 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 g/dl (3 to 20). We experienced no complications, and average post-operative hospital stay was 7.7 (6 to 12) days. Histological examination of the resected specimens revealed negative lateral and deep margins. The postoperative follow-up was carried out first a half year later, and it was every one year subsequently. In the above-mentioned follow-up schedule, blood examination, colonoscopy, CT scan were performed for clinical evaluation. The residual/local recurrence case was absent for 31.6 months (range 10–60 months) for the mean follow-up period. Also, without complications such as postoperative anastomotic stricture or adhesive ileus, we followed favorable course.

Conclusion: We developed a LECS procedure to overcome the limit of ESD, and accomplished 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

Aims & Methods:

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. 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: Colim 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

P0837 DEVELOPING PATIENT-REPORTED EXPERIENCE MEASURES FOR GI ENDOSCOPY: RESULTS OF PATIENT INTERVIEWS

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Introduction: Patient experience is increasingly recognised as a key measure of quality of care. Ensuring positive experience is important to patients and fundamental in maximising participation in screening programmes and re-attendance for surveillance procedures. Current measures of patient experience of gastrointestinal (GI) endoscopy are clinician derived. Patient Reported Experience Measures (PREMs) should be patient derived and incorporate pre-and post-procedure experience. We aimed to identify themes considered as important to patients undergoing GI procedures as a basis for developing PREMs.

Aims & Methods: We aimed to identify themes important to patients undergoing GI investigations, to enable questionnaire development. Patients who had undergone upper or lower GI investigations (gastroscopy, colonoscopy and CT pneumocolon) were invited to attend for a semi-structured interview. 32 interviewees were purposefully sampled to ensure diversity. Interviews were conducted by a research fellow trained in qualitative methods and were audio recorded and transcribed verbatim. Recruitment continued until saturation was achieved. Analysis used qualitative thematic methods focusing on anticipated and emergent themes, using constant comparison to ensure that all perspectives were included in the explanation of the data.

Results: 168 patients were approached. 32 interviews were completed (12 gastroscopy, 10 colonoscopy and 10 CT pneumocolon), with a male/female ratio of 18:14. The time interval from examination to procedure ranged from 5 to 44 days. Mean age was 63.1 years (SD 11.5)

Day 1 N = 315(51.2%)  Day 14 ± 2 days N = 360(58.5%)  Day 28 ± 2 days N = 264(42.2%)

Major 31(5.0%)  Major 16(2.5%)  Major 1(0.2%)

| Minor 284(46.1%) | Minor 344(55.9%) | Minor 25(4.1%)
<table>
<thead>
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<td>EMR 217(43.5%)</td>
<td>EMR 267(53.5%)</td>
<td>EMR 19(3.8%)</td>
</tr>
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<td>ESD 67(57.8%)</td>
<td>ESD 77(66.4%)</td>
<td>ESD 6(5.2%)</td>
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</table>

<table>
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<th>Bowel habit change</th>
<th>Abdominal bloating</th>
<th>Minor 284(46.1%)</th>
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<tr>
<td>EMR 156</td>
<td>ESD 41</td>
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<tr>
<td>Minor 284</td>
<td>Minor 344</td>
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| Major 16(2.5%) | Minor 344(55.9%) | Minor 25(4.1%)
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<td>EMR 11(2.2%)</td>
<td>EMR 267(53.5%)</td>
<td>EMR 19(3.8%)</td>
</tr>
<tr>
<td>ESD 5(4.3%)</td>
<td>ESD 77(66.4%)</td>
<td>ESD 6(5.2%)</td>
</tr>
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</table>

Table 1: Number of Patients with Adverse events on Day 1, 14, and 28.

P0838 RANDOMIZED CONTROLLED TRIAL OF ABDOMINAL VIBRATION STIMULATION AND WALKING EXERCISE FOR BOWEL CLEANSING PRIOR TO COLONOSCOPY

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Introduction: Adequate bowel preparation is important to perform colonoscopy for accurate mucosa examination, lesion detection and treatment. Walking exercise is known to be effective for colon cleansing. However, it is difficult for patients with uncomfortable walking to improve the status of bowel cleansing.

Aims & Methods: Therefore, we prospectively evaluated the clinical feasibility and clinical validity of the abdominal vibration stimulation for bowel cleansing.
preparation. In this randomized, prospective, investigator-blind study and single center setting, 141 inpatients for elective colonoscopy were randomized to two groups. PEG solution was used for bowel cleaning in all patients. The one is walking over 3000 steps and the other is having abdominal vibrator more than 30 minutes before colonoscopy. After examination we recorded procedure results, sedation information, patient’s satisfaction and adequacy of bowel preparation by using the Boston Bowel Preparations Scale (BBPS).

Results: There were no significant differences between vibrator group (n = 75) and walking group (n = 66) in bowel preparation quality (Total BBPS 7.40 vs 7.23, p = 0.519), withdrawal time (30.40 vs 30.05 mins, p = 0.829), number of polyps (4.09 vs 3.17, p = 0.085), patient satisfaction (4.39 vs 4.12, p = 0.249) and number of diarrhea after taking PEG (11.49 vs 11.42, p = 0.903). Viscosity group was superior than walking group in time of first defection after taking PEG (112. 89 vs 123.42 mins, p = 0.005) andecal intubation time (6.23 vs 8.52 mins, p = 0.011).

Conclusion: Bowel preparation accompanied with abdominal vibration stimulation showed almost similar results to a walking group which was conventional methods for adequate bowel preparation. The patients who received the conditions which cause uncomfortable gait such as old age, CVA, Parkinsons, or joint disease, bowel preparation with abdominal vibrator is expected to help in proper bowel cleansing for therapeutic colonoscopy.

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

References

P0839 COMPARATIVE STUDY OF ELECTRICAL AND RHEOLOGICAL PROPERTIES OF DIFFERENT SOLUTIONS TO PERFORM SUBMUCOSAL INJECTION
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Disclosure of Interest: No conflicts of interest.

Introduction: Electrical and rheological properties of the submucosal cushion solutions are crucial to avoid complications secondary to endoscopic resections. Electrical resistance (R) of a substance is a feature of the difficulty to pass an electric current through that solution. The higher the R, the resection will be easier and safer, with less temperature increase.

Results: The solutions that showed the best basal R were: PL, HA, GS, TB and TB + PRP. At 60 minutes, the best R were: PRP, TB, PRP + TB, HA and GS. The best durability at 60 minutes was for TB, PRP, TB + PRP and PL that maintained the height at around 80% of its original in comparison to the other substances with were at around 60%. During the resection the solutions that underwent a lower temperature increase were: TB + PRP, PL, and TB.

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

References
1. 2016 Commonwealth Fund International Health Policy Survey of Adults.

<table>
<thead>
<tr>
<th>Solution</th>
<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>
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</thead>
<tbody>
<tr>
<td>Basal</td>
<td>n.a.</td>
<td>10</td>
<td>83.5</td>
<td></td>
</tr>
<tr>
<td>Saline</td>
<td>0.0043</td>
<td>39.6</td>
<td>49.1</td>
<td></td>
</tr>
<tr>
<td>Gelaspan</td>
<td>0.009</td>
<td>45.5</td>
<td>116.6</td>
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<tr>
<td>Glycocol</td>
<td>0.009</td>
<td>26.3</td>
<td>44.9</td>
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(continued)

P0840 PATIENT SATISFACTION RELATED TO QUALITY OF INFORMATION GIVEN THROUGHOUT COLONOSCOPY
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Disclosure of Interest: No conflicts of interest.

Introduction: Patients with chronic diseases, such as inflammatory bowel disease, experience a lower degree of being involved in health care than others. Compared with other countries Swedish patients report lower possibility to be involved in their care and receive less information about care (1).

Aims & Methods: To investigate the perception of written and oral information given before and after a colonoscopy, the perceived knowledge of planned follow-up and preference to be more involved in decisions/participate in their care in different patient groups. Outpatients (>18 y) undergoing colonoscopy (all indications) were consecutively included (n = 862). Before the procedure patients completed questionnaires regarding sociodemographic data and the written information about bowel preparation and examination. After the procedure patients reported their perceptions about the information provided regarding the colonoscopy and the follow-up.

Results: Data from 862 patients were analyzed (447 females) (mean age 52; 18-90 y) A large number of patients (n = 740, 87%) rated the written information sent home before the colonoscopy as distinct, while a subset (n = 110, 13%) rated it as indistinct/very indistinct. When questions of importance were asked to the medical staff during the colonoscopy most patients were content with the answers from the physician or nurse. A small proportion of patients (n = 57, 7%) stated that they received too little information or that they did not understand the information about the colonoscopy results; these patients were mainly younger (<50 y) (p = 0.001). The majority of the patients (n = 602, 74%) reported thorough knowledge about the follow-up, while 26% (n = 207) lacked this knowledge. More than 1/3 (n = 275) of the patients wished to be more involved in decisions regarding their care and treatment. Desire for a higher degree of involvement were more pronounced in patients <40 y (p = 0.05) and in patients with IBD (p = 0.05) compared to patients with other indications for colonoscopy.

Patients referred from outpatient clinics in the hospital desires a higher degree of involvement than patients referred from primary care (p < 0.01).

Conclusion: The majority of the patients undergoing colonoscopy reported that they received satisfactory information about the procedure and preparation. However, there is room for improvement regarding follow-up information and patients’ involvement in their care and treatment. Specifically, improvements seem warranted for younger patients and patients with chronic diseases, such as IBD.

Disclosure of Interest: All authors have declared no conflicts of interest.
P0841 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 of AN lesion; divided into the right colon, left colon and rectum. A skirt was defined on the basis of the following endoscopic findings: spreading across the margins of the LST, consisting of a slightly elevated flat lesion, and containing wide pits. AN was defined as the presence of any of the following features: adenomas larger than 10 mm, adenomas with villous histology or high-grade dysplasia including intra-mucosal carcinoma and invasive cancer.

<table>
<thead>
<tr>
<th>Synchronous advanced neoplasias of rectal LSTs with and without skirts</th>
<th>Rectal LSTs with skirts (n = 25)</th>
<th>Rectal LSTs without skirts (n = 76)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients with advanced neoplasia</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>5 (20.0%)</td>
<td>36 (47.4%)</td>
<td>0.02</td>
</tr>
<tr>
<td>Right colon</td>
<td>2 (8.0%)</td>
<td>23 (30.3%)</td>
<td>0.03</td>
</tr>
<tr>
<td>Left colon</td>
<td>1 (4.0%)</td>
<td>21 (27.6%)</td>
<td>0.01</td>
</tr>
<tr>
<td>Rectum</td>
<td>3 (6.0%)</td>
<td>5 (6.6%)</td>
<td>0.41</td>
</tr>
<tr>
<td>Number of advanced neoplasia</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>7</td>
<td>74</td>
<td>0.02</td>
</tr>
<tr>
<td>Right colon</td>
<td>2</td>
<td>35</td>
<td>0.03</td>
</tr>
<tr>
<td>Left colon</td>
<td>2</td>
<td>34</td>
<td>0.04</td>
</tr>
<tr>
<td>Rectum</td>
<td>3</td>
<td>5</td>
<td>0.44</td>
</tr>
</tbody>
</table>

Results: A skirt was observed in 25 of 101 rectal LSTs (24.8%). Rectal LSTs with a skirt (median age 69 years, 52% female, mean size 51.7 ± 27.1 mm) had 22 high-grade dysplasia and 3 submucosal carcinomas, and rectal LSTs without a skirt (median age 72 years, 34% female, mean size 24.7 ± 16.0 mm) had 8 low-grade dysplasia, 45 high-grade dysplasia, and 23 submucosal carcinomas, respectively. The overall AN detection rate in rectal LSTs with a skirt (20.0%) was significantly lower compared with rectal LSTs without a skirt (46.8%, p = 0.02). As for the analysis of the AN detection rate according to the location, there were significant differences in the right colon (8.0% vs 29.9%, p = 0.03) and the left colon (4.0% vs 27.3%, p = 0.01) between LSTs with and without a skirt. In contrast, there was no significant difference with respect to the rectum (6.0% vs 6.5%, p = 0.41). The total number of AN in rectal LSTs with a skirt (n = 7; right colon: 2, left colon: 2 and rectum: 3) was significantly lower than in rectal LSTs without a skirt (n = 74; right colon: 35, left colon: 34 and rectum: 5). There were significant differences in the right colon (p = 0.03) and the left colon (p = 0.04), while, there was no significant difference between these groups with respect to the rectum.

Conclusion: The rectal LSTs with a skirt had significantly lower synchronous advanced neoplasia than rectal LSTs without a skirt, especially in the right and left colon. Our results may suggest that rectal LSTs with a skirt have different characteristics compared with rectal LSTs without a skirt in terms of the incidence of synchronous neoplastic lesion.

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

Reference

P0842 EVALUATION OF MUCOSAL HEALING WITH SHIELDS BASED ON DIFFERENT HYDROGELS IN A RAT MODEL OF THERMAL INJURY

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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 randomized to receive one of the following shields onto the lesions: PRP + TriBio and PRP and TriBio. Rats underwent endoscopic follow-up at 7 days and 2 weeks. Afterwards, animals were sacrificed and ulcers sites were macroscopically and histopathologically evaluated.

Results: Animals treated with PRP + TriBio obtained the best results in comparison with other hydrogels (PRP and TriBio). Mucosal healing rate (percentage of mucosal restoration) at 14 days was significantly higher with PRP + TriBio (100% vs 82% and 90%; p < 0.05). Histological study confirmed these data, showing total restoration of mucosal layer with PRP + TriBio.

Conclusion: The use of a combination of two covering agents (TriBio and PRP) is the best approach to obtain mucosal healing in a rodent model of endoscopic thermal injury in colon.

Disclosure of Interest: R. Bartolí: Authorship of the patent J. Boix: Authorship of the patent V. Lorenzo-Zúñiga: Authorship of the patent All other authors have declared no conflicts of interest.

References

P0843 EFFICACY OF ENDOSCOPIC PLACEMENT OF A DRUG-ELUTING PLATFORM WITH DIFFERENT ANTITUMORAL AGENTS TO EVALUATE ACUTE NECROSIS IN AN AZOXYMETHANE-INDUCED COLONIC TUMOURS IN RATS

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Introduction: Colonicom 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 anti-tumoral drugs (afibercept 2 mg/mL, cetuximab 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.
Results: Intratumoral injection was feasible in all animals with no adverse events. Biopsy size and size of tumors ranged from 6 to 8 mm. Approximately 1:1 anti-VEGF in comparison with Anti-EGF obtained the best results (significantly reduction in size and cell necrosis). However, only alfibrequin showed total acute tumoral necrosis.

Conclusion: Intratumoral injection of anti-VEGF in a drug-eluting platform is able to produce tumoral necrosis in an experimental model of CRC. This technique could open a new way to manage CRC.

Disclosure of Interest: R. Bartolli: Authorship of the patent J. Boix: Authorship of the patent V. Lorenzi: Authorship of the patent All other authors have declared no conflicts of interest.

P0844 A THREE-DIMENSIONAL IMAGING SYSTEM IMPROVES THE ENDOSCOPIC VISIBILITY OF NON-POLYPOID 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 colonic neoplasms compared with conventional 2D endoscopy. We studied non-polypoid colorectal neoplasms and recorded their videos using conventional 2D endoscopy and the 3D system. The movies were evaluated by 8 endoscopists (4 experts and 4 non-experts) and 4 medical students. Each neoplasm was assigned a visibility score between 4 (excellent visibility) and 1 (poor visibility).

Results: The mean visibility scores were 3.35±0.58 for 2D endoscopy and 3.75±0.44 for the 3D system. The score was significantly higher for the 3D system than for 2D endoscopy (p<0.01). When comparing the evaluations by the experts, non-experts, and medical students, the differences in the scores by the non-experts and medical students were noted to be higher (p<0.05). In contrast, the scores by the experts were also higher for the 3D system, but no statistical difference was observed (3.50±0.53 for 2D endoscopy and 3.87±0.35 for the 3D system, p=0.08). As a result, 10 out of 12 observers noted that the 3D system had better visibility than conventional 2D colonoscopy, and none of the observers noted deterioration in visibility with the 3D system.

Conclusion: The present findings suggest that the 3D imaging system improves the visibility of non-polypoid colorectal neoplasms, and this is more effective for non-experts. Our findings would contribute to improvement in the detection of these neoplasms.

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

References

P0845 PAIN DURING COLONOSCOPY: DIFFERENCES BETWEEN PATIENTS’ EXPERIENCES AND CAREGIVERS’ ASSESSMENT

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2Institute Of Medicine, Sahlgrenska Academy, University of Gothenburg, Gothenburg/Sweden
3Dept Of Internal Medicine, Sahlgrenska University Hospital - Dept of Internal Medicine, Sahlgrenska University Hospital; Gothe, Gothenburg/Sweden
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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.

Aims & Methods: To investigate congruence and differences between patients’ and caregivers’ report of pain during colonoscopy. Patients (≥18 years) undergoing an outpatient colonoscopy (all indications) have consecutively been included (n=862). Before the procedure the patients completed questionnaires regarding sociodemographic information and anxiety. After the colonoscopy the patients registered their pain experience on a six-grade scale, ranging from “no pain” to “extremely severe pain”. Caregivers (physicians and endoscopy nurses) estimated patient’s pain using the same scale.

Results: Data from 785 patients has been collected, mean age 52 (18–90) years; 42% female. The patients’ report of 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 anxiety among the group correlated negatively with the patient’s report. The agreement between pain reports from patients and caregivers were poor to fair, with slight differences between nurses (Kappa =0.37; p < 0.000) and physicians (Kappa =0.29; p < 0.000) in total, congruent pain reports between patients and caregivers were seen in 36% of all assessments.

Conclusion: Agreement between caregivers’ and patients’ pain reports is far from perfect, and the agreement is influenced by several factors such as the profession of the caregiver, as well as patient factors including pain severity, anxiety, age, gender and previous experience of colonoscopy. The goal for the future should be to individualize the use of analgesics based on every patient’s needs, which seems to be of special importance in specific groups of patients.

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

References
8
9

P0846 DEVELOPMENT OF A NEW ENDOSCOPIC CLASSIFICATION AND INTRA-INDIVIDUAL VALIDATION (FACILE GROUP) OF COLONIC LESIONS USING ADVANCED IMAGING MODALITIES IN IBD PATIENTS

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Introduction: The SCENIC consensus proposed recommendations for optimal detection and management of dysplasia during colonoscopic surveillance for IBD. 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 LSBims-FACILE Group). We developed an endoscopic classification of IBD lesions, based on morphology, colour, demarcation, surface pattern, vessel pattern, signs of inflammation (table). A library of 60 colonic lesions, including dysplasia, sessile serrated adenomas/polyps, invasive cancer and pseudopolyps collected at surveillance colonoscopy by using HD, DCE and VCE with i-scan or NBI were assessed. The diagnostic performance of the score was tested based on the final histopathology and the inter-observer variability of the eight examiners. The examiners have had to perform a pre-test (45 minutes) before analyzing the colonic lesions. Multivariate analysis with bootstrapping, of characteristics of the classification was performed to determine the strength of endoscopic predictors of dysplasia.

Results: Of the 60 IBD lesions, 33 (55%) were dysplasia, 6 (10%) cancer, 9 (15%) SSA/Ps and 12 (20%) pseudopolyps. Across the experienced academic raters sensitivity, specificity, PPV, NPV and accuracy in predicting histology, were 72%, 72%, 91%, 40%, 72%, 72% respectively. Individual rater accuracy ranged from 66% to 77% 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 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 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 = 0.27,95% CI: 0.19–0.38) to post test (Kappa = 0.34,95% CI: 0.23–0.45;P = 0.02) but was moderate.

Conclusion: We developed and validated the first endoscopic classification using all imaging modalities (HD, VCE, DCE) to characterize and differentiate dysplastic from non-dysplastic lesions in IBD. Non polypoid lesions, irregular surface and vascular pattern as well as inflammation within the lesions were predictive of dysplasia. The inter-observer variability of the score was moderate. The classification will be further refined based on the multivariate analysis and a prospective study is ongoing.

Table 1: Advanced endoscopic classification of IBD lesion

<table>
<thead>
<tr>
<th>Morphology (mm):</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyoid/non polyoid</td>
<td></td>
</tr>
<tr>
<td>Paris Classification (fp, Is, Ha, Ib, Hc, III)</td>
<td></td>
</tr>
<tr>
<td>Endoscopic inflammatory activity (within the lesion)</td>
<td></td>
</tr>
<tr>
<td>No ulceration</td>
<td></td>
</tr>
<tr>
<td>Ulceration</td>
<td></td>
</tr>
<tr>
<td>Endoscopic inflammatory activity (surrounding area)</td>
<td></td>
</tr>
<tr>
<td>No ulcerations</td>
<td></td>
</tr>
<tr>
<td>Ulcerations</td>
<td></td>
</tr>
<tr>
<td>Demarcation</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Colour of the lesion (relative to the background)</td>
<td></td>
</tr>
<tr>
<td>Paler</td>
<td></td>
</tr>
<tr>
<td>Same intensity</td>
<td></td>
</tr>
<tr>
<td>Darker</td>
<td></td>
</tr>
<tr>
<td>Surface architecture (tissue)</td>
<td></td>
</tr>
<tr>
<td>Roundish</td>
<td></td>
</tr>
<tr>
<td>Villous – regular</td>
<td></td>
</tr>
<tr>
<td>Villous – irregular</td>
<td></td>
</tr>
<tr>
<td>Irregular/non-structural</td>
<td></td>
</tr>
<tr>
<td>Vessel architecture</td>
<td></td>
</tr>
<tr>
<td>Non visible</td>
<td></td>
</tr>
<tr>
<td>Regular</td>
<td></td>
</tr>
<tr>
<td>Irregular</td>
<td></td>
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</table>

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

Reference

P0848 THE ROLE OF PROBE CONFOCAL LASER ENDOMICROSCOPY WITH ENHANCED ENDOCOSCOPY IN CHARACTERISATION AND ENDOSCOPIC RESECTION OF DYSPLASTIC LESIONS IN INFLAMMATORY BOWEL DISEASE PATIENTS

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Introduction: Detection, characterization and therapeutic management of flat dysplastic lesions during surveillance colonoscopy in inflammatory bowel disease (IBD) can be a challenge. The recent SCENIC consensus has introduced a new terminology and concept “endoscopically resectable” when the distinct margins of a detected lesion could be identified. New endoscopic techniques and skills are required to recognize the margins reliably and assess the surrounding mucosa to plan endoscopic removal successfully and organ sparing. We report our experience of the use of probe confocal endomicroscopy (pCLE) combined with selective electronic virtual (VCE) and dye chromoendoscopy (DCE) for management of challenging dysplastic lesions during surveillance in IBD.

Aims & Methods: IBD patients underwent surveillance colonoscopy using high-definition (HD)-iSCAN (Pentax EC-3940Fi; Japan) VCE and DCE in combination with pCLE (Cellvizio, Paris, France). pCLE was applied following IV injection of fluorescein 5% 10 ml to assess the histological features of the lesion, the margins and the mucosa surrounding the visible colonic lesion. Biopsies eventually proved dysplasia or SSA of the colonic lesions. The study was approved by the Calgary Conjoint Health Services Research Ethics Board of the University of Calgary. All patients gave informed consent.

Results: Seven patients with IBD and disease duration of ≥8 years and in clinical remission (Eaden, 2001 #2 (mean age 55 years; 6 male, UC = 4 CD = 3) were prospectively included. They underwent surveillance colonoscopy using HD-iSCAN (Pentax EC-3940Fi; Japan). When a colonic lesion was detected, selective iSCAN-VCE was performed with or without DCE (five out of seven had DCE)

Abstract No: P0848

<table>
<thead>
<tr>
<th>UC/CD</th>
<th>Kudo Paris Border</th>
<th>Endoscopic Findings</th>
<th>Endomicroscopy Findings</th>
<th>Histology</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Left sided UC</td>
<td>HO/IV</td>
<td>Ib Size &gt; 2.5 cm</td>
<td>distict</td>
<td>Villiform appearance of the crypts with stellar opening. The colonic mucosa surrounding the lesion was normal.</td>
<td>SSA</td>
</tr>
<tr>
<td>Crohn’s colitis</td>
<td>IIS/IHIL</td>
<td>Ib Size &gt; 2.5 cm</td>
<td>indistinct</td>
<td>Villiform elongated appearance of the crypts with dark epithelium, decreased number of the crypts</td>
<td>LGD</td>
</tr>
</tbody>
</table>

(continued)
with methylene blue 1% to characterize the surface, vascular pit pattern and the margins of the lesion. Each of the 7 patients had non polypoid colonic lesions, 4 were sessile (Paris Is) and 3 flat (IIa/IIb). Four of them were amenable to endoscopic therapy and were successfully removed using endoscopic mucosal resection (EMR) en-block or piecemeal technique. Interestingly, one patient with multiple scattered ‘pseudopolyps’ had a 8 mm sessile pseudopolypoid lesion with a suspicious areas of SSA in the midst that was confirmed by real pCLE.

The endoscopic, endomicroscopic and histological findings of all the lesions were described in Table 1.

**Conclusion:** This case series highlights the first successful use of pCLE in combination with VCE and DCE to predict, characterise and treat colonic neoplasia in IBD. pCLE may be an additional tool to aid the endoscopist in therapeutic management by deciding endoscopic resectability versus colectomy.

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

<table>
<thead>
<tr>
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<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, 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>II/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 IIb 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>I0 IS Size &gt; 5mm 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 IIb 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>
Serrated adenoma

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; Arita Sumitomo BAKEITE, 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, en bloc resection rate, procedural time, complications, and long-term outcomes, including survival rate. The 3-year overall survival and tumor-specific survival rates were analyzed in the entire study cohort, and the local and distant recurrence rates were analyzed in the cohort with curative resection and observationally managed with non-curative resection.

Results: The mean age was 80.0 years in group A and 64.3 years in group B. The male-to-female ratios were 45:50 and 103:73 in groups A and B, respectively. Regarding histopathological findings, the prevalence rates of tubular adenoma were 37.1% (36/97) and 36.1% (70/194); T1a, 39.2% (38/97) and 44.8% (87/194); T1a, 10.3% (10/97) and 10.3% (20/194); and T1b, 13.4% (13/97) and 8.8% (17/194) in groups A and B, respectively, showing no significant difference. The mean 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 minutes (range, 10-420 min) in group A and 75 min (range, 5-133 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 necrosis were observed 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 ± 489 days; group B, 628 ± 582 days), the 3-year overall and disease-specific survival rates were 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 and 9 patients (4.6%, 9/194) died of other diseases in group A, and 9 patients (4.6%, 9/194) died of other diseases in group B.

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 managed endoscopically.

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


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**P0851 DETECTION AND CHARACTERIZATION OF SSA/PS DURING SURVEILLANCE COLONOSCOPY IN LONG STANDING USING ADVANCED ENDOCOSCOPY 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 (polyloid/non polyloid), 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-polyloid appearance (51.5%), predominant localization in the proximal colon (vs distal) (87%), ≤5 mm in size (48.4%). Kudo pit pattern modified type I0 (79%). Kudo pit pattern modified type I0 had a sensitivity of 79% and specificity of 82% 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 I0. SSA/Ps can be recognized endoscopically by Kudo pit...
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 best results in histological prediction are a reflection of the clinical practice by trained endoscopists, and their application remains to be confirmed outside this context.

Aims & Methods: To evaluate the in vivo histological prediction accuracy of colorectal polyps (<10 mm) using WLE (White light endoscopy) and using FICE technology, by comparing both modalities. Prospective 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 adenomatous polyps showed a high value of sensitivity, specificity, positive and negative predictive value identical to WLE (100%, 62.5%, 60% and 100%, respectively). The individual acuity of the endoscopists ranged from 66% to 95%, with a mean of 81.7%, and the overall histology obtained values of sensitivity, specificity, positive and negative predictive value identical to WLE (100%, 62.5%, 60% and 100%, respectively).

Discussion: The lack of recourse to magnification may have contributed to these results. The low confidence level of polyps smaller than 10 mm in FICE has been reported by other studies.

Conclusion: FICE technology may help inexperienced endoscopists in the histological prediction of polyps with a confidence level higher than observed in 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 COLONOSCOPES PERFORMED UNDER GENERAL ANAESTHETIC COMPARED TO CONVENTIONAL SEDATION

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Introduction: Colonoscopies are performed under general anaesthesia (GA) for various reasons but mainly due to previous experience 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) was assessed in 404 colonoscopies, which 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 = 0.05).

Aims & Methods: This 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. Statistics: SPSS v23. A high PDR was significantly associated with a high PDR for colonoscopy. We propose to evaluate these factors in our daily practice, including all the endoscopists of our endoscopy unit.

Results: We evaluated 2719 Male patients (45.1%) and 3308 Female patients (54.9%). The median number of polyps per procedure 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 total number of Polyps (MNPD) 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 (>1.37% 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, 1 had a mean ADR < 55% and compared to 34% 5% for polyp detection and withdrawal time of more than 420 seconds (p > 0.05). In the univariate analysis, a high PDR was significantly associated with endoscopist-related factors: age, Male gender, a familial history of polyp/cancer, screening or positive faecal immunochemical test (FIT+) and quality of preparation. Regarding physician-related factors, a high PDR was significantly associated with Male gender, high volume (>140 colonoscopies per year) and withdrawal time. In the multivariable analysis, the only factor associated with a high PDR were: familial history of polyp/cancer, FIT+ and age of the patient.

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 a 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 that a high PDR was significantly associated with patient-dependant factors: age, Male gender, a familial history of polyp/cancer, screening or positive faecal immunochemical test (FIT+) and quality of preparation. Regarding physician-related factors, a high PDR was significantly associated with Male gender, high volume (>140 colonoscopies per year) and withdrawal time.

Acknowledgement to all the endoscopists and nurses of the Clinique de Bercy.

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

PO854 EFFICIENCY OF COLORECTAL CANCER SCREENING USING NEW FECAL IMMUNOCHEMICAL TEST: A PROSPECTIVE, MULTICENTER, RANDOMIZED,雙BLIND, CONTROLLED STUDY

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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 colorectal 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+).
Conclusion: for good Bowel preparation as compared to the traditional 4 L PEG. We PEG with bisacodyl does improve patient tolerability with a tendency to be better 22.5%) (p< 0.001). Nausea and vomiting were respectively (34% ¼
18.9% respectively compared to 1, 49.5% and 10% respectively in female 18 years of age, abdominal surgeries other than colonic, examinations done by residents in second and fifth year of training and specialists. Exclusion criteria: incomplete colonicoscopies or prior history of colonic surgery. Results: One hundred and eighty-eight colonoscopies (94 on each side) were included. There was no statistical difference in mean age (RLP:LLP = 61 Vs. 64 years; p > 0.05), gender (49 Vs. 52 males; p > 0.05), body mass index (27.4 Vs. 26.4; p > 0.05), previous history of abdominal surgery (44 Vs. 34; p > 0.05), surgical and overweight patients did not benefit from any of the positions (time to cecum: 650 Vs. 702 and 570 vs 657; p > 0.05), comfort: 4.2 Vs. 4.12 and 3.83 Vs. 3.96; p < 0.05, respectively).

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

Reference

P0858 COLONOSCOPY ON THE LEFT, RIGHT? I. Mocanu, A. Laranjo, S. Pires, N. Veloso, L. Gonçalves, R. Godinho, I. Medeiros 1 Gastroenterology, Hospital Espírito Santo de Évora, Évora/Portugal Contact Email Address: irma.mocanu.24@gmail.com

Introduction: With high variability of time spent to reach the cecum, depending on endoscopist experience, patient characteristics and type of colonoscope used. Recently, the ROLCOL study demonstrated an advantage in time and patient comfort during progression in right lateral position (RLP) when compared with traditional left lateral position (LLP).

Aims & Methods: To compare time to reach cecum, patient and endoscopist comfort (using a visual analogue scale (VAS) in colonoscopies with progression on RLP and LLP. Prospective study, between January and April 2017, of colonoscopies under conscious sedation, randomly assigned to RLP and LLP. Olympus 190 series and Fuji EC-530 W13 colonoscopes were used. Inclusion criteria: routine colonoscopies, patients > 18 years of age, abdominal surgeries other than colonic, examinations done by residents in second and fifth year of training and specialists. Exclusion criteria: incomplete colonoscopies or prior history of colonic surgery. Results: Conclusion: in our experience, progression in right lateral position did not show additional advantage over standard LLP in time to reach the cecum or patients comfort. We did not find any difference in time to progression or comfort between Olympus and Fuji colonoscopies. Disclosure of Interest: All authors have declared no conflicts of interest.

P0857 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. E.M. Amine1, Z. Abdelkrim1, E.M. Azira2, W. Khannous1, G. Kharrasse1, Z. Ismaili1 1Hepatogastroenterology, CHU Med VI Oujda, Oujda/Morocco 2Avicenne, Faculty of medicine Oujda, Oujda/Morocco

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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 with the 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 before colonoscopy with Bisacodyl for bowel cleansing is as effective and better tolerated as a large volume PEG (4L).

Aims & Methods: This study aims to study the efficacy and tolerance of the new regimen (2L of PEG associated with Bisacodyl) compared to the classical regimen (4L of PEG). Materials and methods: A prospective comparative random 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. Eight patients in the first group found the preparation 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%) in group A and (23% vs 13%) (p = NS). 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 for only 2 patients in group B (18.6% respectively). On the other hand, 6 out of 10 patients in group A were satisfied with the chosen procedure. 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 preparation in 4 cases (2 cases of each group). Abdominal pain and post-endoscopic distress; 66 patients scored with a maximum score of 10, 60% of patients rated this symptom in group B 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 new data with an associated confidence interval.

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

P0859 NON-GRANULAR LATERALLY SPREADING COLONIC LESIONS >20MM (LSL) ARE SMALLER AND MORE COMMONLY MULTIPLE THAN GRANULAR LSL: IMPLICATIONS OF A ‘COLONIC MUCOSAL PHENOTYPE’ FOR PRACTITIONERS OF ENDOSCOPIC RESECTION D. J. Tate1, H. Awadie1, L. Desomer1, M. Sidhu1, K. Goodrick1, N. G. Burgess1, S. Whitaker2 1Department Of Gastroenterology And Hepatology, Westmead Hospital, Sydney/ Australia/NSW 2Westmead Clinical School, University of Sydney, Sydney/Australia/NSW

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Introduction: The surface morphology of laterally spreading colonic lesions >20mm (LSL) can be described as granular (G) or non-granular (NG). NG lesions are more difficult to detect, harder to resect endoscopically and harbour a higher risk of submucosal invasive cancer (SMIC) than G lesions.

Aims & Methods: We aimed to characterise the population of LSL in patients undergoing EMR within a local cohort. Between January 2008 and April 2010, LSL were identified within a prospective observational cohort of patients undergoing endoscopic mucosal resection at a single academic tertiary centre. LSL were interrogated using high-definition white light (HDWL) at the time of EMR and the morphology of LSL were described along with patient, lesion and procedural factors. All LSL detected during the study period were eligible. LSL with mixed or indeterminate morphology were excluded. Serrated LSL were excluded. Lesions not attempted for EMR were excluded. Patients with multiple LSL were categorised according to the largest (dominant).
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. 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) (49.3%) 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>

Dominant LSL Morphology

<table>
<thead>
<tr>
<th>Number of synchronous LSL</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Granular (n = 49)</td>
<td>41 (83.7)</td>
<td>4 (8.2)</td>
<td>3 (6.1)</td>
<td>1 (2.0)</td>
<td>.029</td>
</tr>
<tr>
<td>Non-granular (n = 29)</td>
<td>27 (69.2)</td>
<td>10 (25.6)</td>
<td>0</td>
<td>2 (5.1)</td>
<td></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. A dominant NG LSL was 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.

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 electrocautery, principally delayed bleeding. Aims & Methods: We aimed to examine the feasibility and safety of piecemeal cold snare polypectomy (pCSP) for the resection of large SSP. Over 12 months 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 15mm (IQR 14.5–20), range 10–35mm. The median duration of procedures was 4.5 minutes (IQR 1.4–6.3). There was no evidence of perforation or significant intra-procedural bleeding. There were no significant adverse events at 2 week follow up including delayed bleeding and post polypectomy syndrome. 8/41 lesions underwent first follow-up at median 6 months with no evidence of recurrence.

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Duration, median minutes (IQR)</th>
<th>Intra-procedural bleeding requiring intervention (%)</th>
<th>Histopathology, serrated adenoma (%)</th>
<th>Low grade cytological dysplasia (%)</th>
<th>Outcomes</th>
<th>Adverse events</th>
<th>Follow up</th>
<th>Months to SC1, IQR</th>
<th>Recurrence at SC1, (%)</th>
<th>n = 8</th>
<th>Histologic recurrence at SC1, (%)</th>
<th>n = 5</th>
<th>0 (0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Procedure</td>
<td>4.5 (1.4 to 6.3)</td>
<td>0 (0)</td>
<td>41 (100)</td>
<td>3 (7.3)</td>
<td>pCSP (n = 41)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>6 (5–7)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>0 (0)</td>
</tr>
</tbody>
</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.
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 (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 10mm 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.

P0862 THE SMSA POLYP SCORE RELIABLY PREDICTS ROBUST ENDPONT OF ENDOSCOPIC MUCOSAL RESSECTION OF COLORECTAL LATERALLY SPREADING LESIONS

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Introduction: The ‘SMSA’ polyp scoring system is an objective method of 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 (LSL). The SMSA polyp score was applied to a prospectively collected multicentre database of LSL resected by EMR 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. Standard 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 retained 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 EMR. 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 (SMSA p < 0.001). Intra-procedural bleeding was significantly more common with increasing SMSA (SMSA 2, 19/229 (8.3%) versus SMSA 4 291/1158 (25.1%), p < 0.001). Clinically significant post EMR bleeding (CSPEB) was more common as SMSA increased with 4 (1.7%) in the SMSA 2 group and 90 (7.6%) in the SMSA 4 group, p = 0.001. Intraprocedural perforation and delayed perforation were no different between the groups. After EMR surgery at two weeks was more common in the SMSA 4 group (p < 0.001). Of those patients that underwent their first surveillance colonoscopy (SCI), endoscopic recurrence (EDR) was more common in the SMSA 4 group than the SMSA 2 group, 206 (23.7%) as compared to 9 (5.4%), p < 0.001. This was also the case for histologic recurrence (p < 0.001). The difference in EDR persisted to the second surveillance colonoscopy (SCI2) with no recurrences in the SMSA 2 group versus 9.1% in the SMSA 4 group.

Table 1: Outcomes after endoscopic mucosal resection at the initial procedure, 2 weeks and subsequent surveillance procedures.

<table>
<thead>
<tr>
<th>SMSA 2</th>
<th>SMSA 3</th>
<th>SMSA 4</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>229 (9.9)</td>
<td>918 (39.8)</td>
<td>1158 (50.2)</td>
</tr>
<tr>
<td>Successful EMR (%)</td>
<td>226 (98.7)</td>
<td>894 (97.4)</td>
<td>1088 (94.0)</td>
</tr>
<tr>
<td>Duration - min (median IQR)</td>
<td>10 (5–15)</td>
<td>15 (10–20)</td>
<td>30 (20–45)</td>
</tr>
<tr>
<td>IPB (%)</td>
<td>19 (8.3)</td>
<td>115 (12.5)</td>
<td>291 (25.1)</td>
</tr>
<tr>
<td>Deep injury * (%)</td>
<td>11 (4.8)</td>
<td>33 (3.6)</td>
<td>54 (4.7)</td>
</tr>
<tr>
<td>CSPEB (%)</td>
<td>4 (1.7)</td>
<td>46 (5.0)</td>
<td>90 (7.8)</td>
</tr>
<tr>
<td>Delayed Perforation (%)</td>
<td>0 (0)</td>
<td>2 (0.2)</td>
<td>5 (0.4)</td>
</tr>
<tr>
<td>Surgery at 2w (%)</td>
<td>20 (8.7)</td>
<td>50 (5.4)</td>
<td>117 (10.1)</td>
</tr>
<tr>
<td>Underwent SCI1 (%)</td>
<td>116 (49.3)</td>
<td>685 (78.7)</td>
<td>116 (10.1)</td>
</tr>
<tr>
<td>EDR SCI1 (%)</td>
<td>9 (5.4)</td>
<td>71 (10.4)</td>
<td>206 (23.7)</td>
</tr>
<tr>
<td>HCR SCI1 (%)</td>
<td>3 (6.4)</td>
<td>36 (13.4)</td>
<td>120 (28.7)</td>
</tr>
<tr>
<td>Surgery SCI1 (%)</td>
<td>1 (0.6)</td>
<td>7 (1.0)</td>
<td>12 (1.4)</td>
</tr>
<tr>
<td>Underwent SCI2 (%)</td>
<td>88</td>
<td>326</td>
<td>462</td>
</tr>
<tr>
<td>EDR SCI2 (%)</td>
<td>0 (0)</td>
<td>21 (6.4)</td>
<td>42 (9.1)</td>
</tr>
<tr>
<td>Surgery SCI2 (%)</td>
<td>0 (0)</td>
<td>1 (0.3)</td>
<td>3 (0.6)</td>
</tr>
</tbody>
</table>

EMR – endoscopic mucosal resection, IPB – intra-procedural bleeding, IPP – intraprocedural perforation, CSPEB – clinically significant post endoscopic bleeding (bleeding after EMR requiring admission to hospital or re-intervention), 2w – two weeks, SCI1/2 – surveillance colonoscopy 1/2. * target sign or actual hole corresponding to DMI type III/IV - Sydney Classification (1)

Conclusion: SMSA is a simple readily applicable clinical score that identifies a subgroup of patients who are at increased risk of EMR related complications including CSPEB and recurrence. This information is useful for planning EMR lists with respect to time and resource allocation. Moreover SMSA could have a major impact on training, both in identifying appropriate training cases and providing an objective benchmark against which to assess the progress of trainees in EMR.

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

References


P0863 USE OF ACETIC ACID FOR EVALUATING SESSILE SERRATED ADENOMA/POLYP: A PILOT STUDY

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Introduction: Sessile serrated adenoma/polyp (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 margin 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 polypl and recurrence after that.

Aims & Methods: The aim of this pilot study is to assess whether the acetic acid 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 alone 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, dilated crypts caused by acid contact, and aceto-whithish reaction on the surfical 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 among participants was 4.8; moderate agreement (p = 0.0016). All polyps were removed endoscopically after evaluation. All lesions were histologically diagnosed as SSA/P without dysplasia. Conclusion: Acetic acid was useful and promising to facilitate the endoscopic recognition of the precise margin of SSA/P in right side colon. Strength of this method is that it is very simple and needs no special equipment nor skill.

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

References

PO064 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 using India ink or autologous blood were included in this study. From February 2016, all patients who required localization of a target lesion before colorectal surgery underwent endoscopic tattooing using autologous blood at a single tertiary medical center, and the outcomes were collected prospectively. As a comparison, we retrospectively reviewed the medical records of a further 40 consecutive patients who underwent endoscopic tattooing using India ink before February 2016. The primary outcomes were the visibility of the tattooing in the peritoneal cavity and related adverse events.

Results: Endoscopic tattoos produced using India ink were visible in 38 (95%) patients, and tattoos created using autologous blood were visible in 36 (90%) patients. In the autologous blood group, the tattoo could not be identified in four patients due to excessive peritoneal fat, bleeding tendency, congenital anomaly, and 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 colorectal lesions.

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

PO0865 SUBMUCOSAL INVASION IN COLORECTAL LATERALLY SPREADING TUMORS (LST) AND ABILITY OF THE ENDOSCOPIST FOR CANCER DETECTION
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Introduction: Lateral spreading tumors (LSTs) are defined as lesions > 10 mm with a low vertical axis and lateral extension. They are separated in 2 groups with 2 subclasses for each of them: granular LST (LST-G) with, or without large nodule; and non-granular LST (LST-NG). Confirmed into flat lesions (Ha) and depressed lesions (Ha+Hc). Every subclass has been associated with a prominent risk of cancer and submucosal invasion (T2m)3,2. Knowing this aspect could help for the decision of the resection technique (endoscopic mucosectomy EMR, endoscopic submucosal dissection ESD, or surgery). The aim of our study was to determine the risk of cancer (submucosal and mucosal adenocarcinoma) in a western series of LST treated by endoscopic resection, and to evaluate the ability of the endoscopist to predict the depth of cancer invasion.

Aims & Methods: The entire patients with a LST ≥ 20 mm treated between January 2012 and December 2016 in our single center were included. Endoscopic data were collected (size, location, LST classification, analysis of pit pattern, endoscopic suspicion of cancer). We also reported the resection technique, histological results, and the follow-up at 1 year.

Results: 377 LST were included in our study. The average age was 67.7 years old. The mean size of lesion was 40.6 mm. LST were located in the right colon, the rectum, the left colon and the transverse colon in 44.5%, 32.6%, 14.0% and 8.8%, respectively. The resection technique used was a monocle EMR in 15.4%, piecemeal EMR (pEMR) in 42.9%, ESD in 27.3% and assisted ESD in 14.5%. ESD was associated with a significant lower rate 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 Ha, and 9.0% LST-NG with depression Ha+Hc. The overall rate of adenocarcinoma was 19.7%, and 9.0% with submucosal invasion. The rates of adenocarcinoma and the rates of submucosal invasion in every subtype of LST are reported in table 1. They were higher for LST-G with large nodule (34.5% and 15.9% respectively) and for LST-NG with depression (35.3% and 20.6%). Regarding the prediction of submucosal cancer by the endoscopist, we report a low sensitivity, and positive predictive value (respectively 64.7% and 32.8%). However, we had a good specificity and negative predictive value (86.0% and 96.0%). Endoscopic predictors of submucosal cancer were invasive pit pattern (HR 33.0; p = 5.78e-07) and depression (HR = 11.86; p = 0.049).

Conclusion: Our western series confirm similar rates of submucosal adenocarcinoma according to the type of LST as compared to Asian series. LST-G with large nodule, and LST-NG with depression were associated with a higher risk of submucosal invasion and invasive pit pattern was the stronger predictor of malignancy. Endoscopic submucosal dissection should be systematically performed in these cases.

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

References

PO0866 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 colonic 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 26,508 subjects, 2651 were randomly selected. Of 1300 subjects who met the inclusion criteria, abnormal findings were identified in 878 cases (67.54%), of which 452 cases had 940 polyps and 7 cancer lesions were found in 6 cases. Of 452 patients with polyps, half had only one polyp (53.76%) and were Asian (54.63%), followed by Caucasian (26.99%), Middle Eastern (15.71%), and other ethnic origins (2.65%) (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) and locate on the left side of the colon (38.05%), whereas 8.19% were large (> 10 mm) and 34.15% were large (> 10 mm). Hyperplastic polyp, tubular adenoma (TA), and tubulovillous (TVA) adenoma were identified in 43.19%, 53.83%, and 2.34%, respectively. Premalignant (TA + TVA) polyps were found in 56.08%, 50.19%, and 64.23% of the polyps of Asian, Caucasian, and Middle Eastern patients, respectively. Premalignant lesion 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

<table>
<thead>
<tr>
<th>Type of LST</th>
<th>Number (n/%)</th>
<th>LST G</th>
<th>LST-G with large nodule</th>
<th>LST-NG</th>
<th>LST-NG with large nodule</th>
</tr>
</thead>
<tbody>
<tr>
<td>LST G</td>
<td>102/27</td>
<td>0</td>
<td>107/28, 4</td>
<td>34/9</td>
<td>34/9</td>
</tr>
<tr>
<td>Cancer (%)/11/12, 8</td>
<td>11/8, 2</td>
<td>12/35, 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LST-NG</td>
<td>5/4, 9</td>
<td>17/15, 9</td>
<td>4/3, 0</td>
<td>8/20, 6</td>
<td></td>
</tr>
</tbody>
</table>


disclosure of interest: all authors have declared no conflicts of interest.

references
**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 colo-rectal neoplasms in Japan. In Europe, only few studies referred to discussing results, essentially 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 most often non-clinically significant in the rectal location (under peritoneal reflection) contrary to the colonic location. Here we reported our results of two years of colonic ESD performed by two French expert teams that began colonic ESD after a strong animal training and a strong experience in rectal and upper-digestive tract ESD.

**Conclusion:** Colonic ESD could be performed with similar results than rectal ESD in French expert teams with a strong experience in rectal ESD. 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 more risky because perforations are most often non-clinically significant in the rectal location (under peritoneal reflection) contrary to the colonic location. Here we reported our results of two years of colonic ESD performed by two French expert teams that began colonic ESD after a strong animal training and a strong experience in rectal and upper-digestive tract ESD.

**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 acromegalic 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 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 < 0.01 respectively). The median Body Mass Index (BMI) were 23.4 in the case group and 22.5 in the control group. There was a significant difference between two groups (p < 0.001). The frequency of colorectal neoplasm was 66.8% (119/178 patients) in the case group and was significantly higher than control group of 24.2% (86/356 patients) (p < 0.001). The average number of neoplasm in case group was 2.44 ± 1.74 mm in the case group and 1.77 ± 0.89 mm in the control group. There was a significant difference between two groups (p = 0.001). The distribution of neoplasm in the case group vs in the control group was shown 12.6% vs 12.8% in cecum, 30.3% vs 36% in ascending colon, 11.5% vs 12.8% 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 53.5%) (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 colonoscopy was 71 lesions (24.5% of all) in the case group and 5 lesion (16.4%) in the control group. The pathological examination in the case and control group showed eight and one had hyperplastic polyps, 2 and zero had sessile serrated adenoma/polyp, 3 and zero had inflammatory polyp, 48 and 19 had low to moderate grade adenomas, 4 and 3 had High grade adenomas, one and zero had carcinoid, and 5 and 2 had carcinoma respectively. There were no significant differences between two groups in the limited cases of high 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 (Endotics, Peccioli, Italy) developed a soft, self-propelled, disposable robotic colonoscope (R), approved with CE mark.

**Aims & Methods:** We wanted to compare diagnostic performance and tolerability of R with those of standard white light colonoscopy (S) in patients with ulcerative colitis. Consecutive patients referred for colonoscopy to our endoscopy department with clinically mild to moderate ulcerative colitis that signed the informed consent for both procedures were studied first with R and then with S (Olympus CF-145), by two different operators, blinded to previous observations. R had the following technical specifications: 17 mm outer diameter, rest position length probe 30 cm; maximum length of probe 54 cm; working length 210 cm; NTSC CMOS analog camera. Conscious sedation with midazolam was administered as
needed. We recorded endoscopic diagnostic activity according to Baron criteria, time to reach diagnostic, and patients 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) with a mean activity score with a mean difference of 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 alternating 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 the R. “The column” connected to the latest version of the robot dysplasia in patients with long duration of disease are now available in the

Aims & Methods: A total of 40 endoscopic video clips depicting LSTs (10% randomly selected) were evaluated by 6 expert endoscopists; 3 from Japan and 3 from the West. Assessments included LST classification (LST-G homogeneous, LST-G mixed, LST-NG flat, LST-NG pseudodepressed), Paris classification, invasiveness, treatment suggestion and mean size of lesion. We calculated the interobserver agreement with weighted kappa and Chi square.

Results: Japanese endoscopists diagnosed more lesions as LST-G than Western (62.7 vs. 45.4%), Western diagnosed more LST-NG than Japanese (54.6 vs. 37.3%; p = 0.007). The interobserver agreement of the LST classification among the six experts was good (IC 0.93; 95% CI 0.85–0.97) 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 54.6% 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 SMSSA score of difficulty and assessed the ability of SMSA to identify 5 outcomes: 3-months recurrence, 1-year recurrence, global recurrence (endoscopy not effective after 2 or more treatments), delayed bleeding and perforation. We compared results with those obtained using a subjective classification of difficulty: easy or medium vs difficult. Comparisons were conducted using clinical criteria and supplemented 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 recurrence 3 months after EMR, 84 (11.6%) had recurrence at 1 year, 78 (3.5%) suffered delayed bleeding and 35 (1.8%) perforation. The level 4 polyps had significantly higher rates of recurrence at 3 months and 1 year (p < 0.001 in both cases) and delayed bleeding 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 LNPLC. However, in our multi-center sample, it does not appear to overcome the utility of a subjective indicator of difficulty made 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.

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### Abstract: P0871. Outcome by SMSA grade. Odds ratios and 95% CI ROC Curves by SMSA using the score in the continuous format.

<table>
<thead>
<tr>
<th>Measure</th>
<th>SMSA score Level 3</th>
<th>p-value</th>
<th>Subjective difficulty score</th>
<th>p-value</th>
<th>ROC Curves by SMSA</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-months recurrence</td>
<td>73 (12.2%)</td>
<td>&lt;0.001</td>
<td>125 (26.7%)</td>
<td>&lt;0.001</td>
<td>0.640 (0.60, 0.69)</td>
<td>1.28(1.18, 1.38)</td>
</tr>
<tr>
<td>1-year recurrence</td>
<td>29 (7.7%)</td>
<td>&lt;0.001</td>
<td>46 (17.2%)</td>
<td>&lt;0.001</td>
<td>0.660 (0.59, 0.72)</td>
<td>1.33(1.18, 1.50)</td>
</tr>
<tr>
<td>Global recurrence</td>
<td>25 (5.8%)</td>
<td>0.106</td>
<td>27 (7.4%)</td>
<td>0.006</td>
<td>0.540 (0.46, 0.63)</td>
<td>1.09(0.84, 1.24)</td>
</tr>
<tr>
<td>Delayed bleeding</td>
<td>29 (3.1%)</td>
<td>0.012</td>
<td>41 (3.4%)</td>
<td>0.006</td>
<td>0.610 (0.53, 0.68)</td>
<td>1.23(1.09, 1.39)</td>
</tr>
<tr>
<td>Perforation</td>
<td>18 (1.9%)</td>
<td>0.631</td>
<td>18 (1.5%)</td>
<td>0.550 (0.46, 0.64)</td>
<td>1.08(0.88, 1.27)</td>
<td>0.521</td>
</tr>
</tbody>
</table>

### Endoscopic findings
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Odds Ratio (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>N (N%)</td>
<td>Parameter (N%)</td>
</tr>
<tr>
<td>Ulcerations (24 (75))</td>
<td>Mesenteric lymphadenopathy (18 (56))</td>
</tr>
<tr>
<td>Nodularity (15 (46.8))</td>
<td>Mural thickening (21 (65.6))</td>
</tr>
<tr>
<td>Stricture (7 (21.8))</td>
<td>Stricture (13 (40))</td>
</tr>
<tr>
<td>Distorted ileocecal valve (9 (28.1))</td>
<td>Asci (5 (15.6))</td>
</tr>
<tr>
<td>Hypertension (3 (9.3))</td>
<td>Peritonal thickening (1 (3.1))</td>
</tr>
<tr>
<td>Pseudopolypi (2 (6.2))</td>
<td>Omental nodularity (1 (3.1))</td>
</tr>
<tr>
<td>Intussusception (1 (3.1))</td>
<td>Psoas abscess (1 (3.1))</td>
</tr>
</tbody>
</table>

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

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### Reference

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### Abstract: P0873. EFFICACY AND SAFETY OF ENDOCUTICAL RESECTION OF LARGE COLORECTAL ADENOMAS – CLINICAL EXPERIENCE OF A TERTIARY REFERRAL CENTER

**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 further surgery.

**Results:** Total of 351 resections were included. Average diameter was 30.34 ± 10.66 mm. Surgery was indicated in 21 (5.98%) cases. In a multivariate analysis for efficacy, two variables were independent risk factors for surgery: adenoma size (OR 95%CI 1.08 (1.04–1.12)) and cecal location (OR 95%CI 0.59 (0.50–0.72)). Polyp size (OR 95%CI 3.20 (1.04–5.52)) and submucosal adrenaline injection (OR 95%CI 2.40 (1.11–5.19)) were independent risk factors for complications. In multivariate analysis for safety, independent risk factors for bleeding were: adenoma size (OR 95%CI 1.08 (1.04–1.12)), and cecal location (OR 95%CI 1.87 (1.11–3.11)).

**Conclusion:** Large and 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.

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### Abstract: P0874. EFFICACY AND SAFETY OF ENDOCUTICAL RESECTION OF LARGE COLORECTAL ADENOMAS – CLINICAL EXPERIENCE OF A TERTIARY REFERRAL CENTER

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

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### Abstract: P0875. EFFICACY AND SAFETY OF ENDOCUTICAL RESECTION OF LARGE COLORECTAL ADENOMAS – CLINICAL EXPERIENCE OF A TERTIARY REFERRAL CENTER

**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 further surgery.

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**Conclusion:** Large and 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.

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### Abstract: P0876. EFFICACY AND SAFETY OF ENDOCUTICAL RESECTION OF LARGE COLORECTAL ADENOMAS – CLINICAL EXPERIENCE OF A TERTIARY REFERRAL CENTER

**Disclosure of Interest:** All authors have declared no conflicts of interest.
**P0874 COLORECTAL MUCOSAL DEFECT CLOSURE FOLLOWING ENDOSCOPIC MUCOSAL RESECTION: A SYSTEMATIC REVIEW AND META-ANALYSIS**

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Introduction: Clinical meaningful delayed bleeding is the most frequent adverse event following endoscopic colorectal mucosal resection. Observational and interventional studies on the efficacy of prophylactic closure (PC) following endoscopic mucosal resection (EMR) showed conflicting results.

**Aims & Methods:** The primary objective of this review is to evaluate the effectiveness in preventing bleeding and post-polypectomy syndrome (PPS) or perforation of PC of colorectal mucosal defects following endoscopic resection. We performed a systematic review and meta-analysis of randomized controlled trials (RCTs) from MEDLINE. We included studies with humans submitted to colonoscopy and in whom mucosal flat or sessile (Paris classification 0-II or Is) lesions with an estimated size ≥10mm were found and removed.

**Results:** 269 articles were initially screened. 5 were RCTs, 4 of them were pooled (RCTs) from MEDLINE. We included studies with humans submitted to colonoscopy and in whom mucosal flat or sessile (Paris classification 0-II or Is) lesions with an estimated size ≥10mm were found and removed.

**Secondary endpoints** were to compare these results with results of rectal ESD in very old people (≥80 years). Secondary endpoints were to compare these results with results of rectal ESD in very old people (≥80 years). A total of 344 patients were included, 53% were male, mean age of 81 ± 8 years. Bowel preparation: 66% SD and 34% PD. Overall, 72% of patients were included. There was an exploratory observational study of patients who underwent total colonoscopy between jun/2016-march/2017 with polyethylene glycol bowel preparation before and after SD protocol implementation. Bowel cleansing quality was assessed prospectively (using Boston Bowel Preparation Score) and compared between SD and PD groups.

**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.

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**P0875 RECTAL ESD IN VERY OLD PATIENTS (≥80 YEARS): A FRENCH MULTICENTER RETROSPECTIVE STUDY**

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1Hepato-gastro-enterology, CHU Limoges - Hepato-Gastro-Enterology, CHU Limoges; Limoges/FR, Limoges/France
2Gastroenterology, Cochin Hospital, Paris/France
3Gastroenterology Department, Hospital Beatriz Angelou, Loures/Portugal
4Hepatogastroenterology, Hopital Edouard Herriot, Lyon/France

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**Introduction:** Endoscopic Submucosal Dissection has become the standard of care for large superficial rectal precancerous and cancerous lesions. It allows an en-bloc resection of large superficial lesions that increase the quality of pathological analysis and considerably decrease the risk of recurrence. Risk of having a delayed superficial lesions increase with age and no study have focused specifically on ESD in very old people (≥80 years). Indeed in this population alternative surgery had a high morbidity and is often refused or contraindicated for these patients.

**Aims & Methods:** Retrospective bientreus study of all cases of rectal ESDs performed between 06/2010 and 2016/2016 for superficial pre-cancerous or cancerous neoplasms in patients older than 80 years four French teams that performed more than 150 ESDs in the last 5 years. Primary Endpoint was to evaluate the En bloc, R0, curative resection rate and complications in patients older than 80 years. Secondary endpoints were to compare these results with rectal ESDs performed during the same period for patients younger than 80 years.

**Results:** 58 rectal ESDs were performed in four French centers between 06/2010 and 2016/2016 for superficial pre-cancerous or cancerous neoplasms in patients older than 80 years. Descriptive results: male 28 (48%), mean size of the specimen: 56.4 mm, mean duration of procedure 143.7 min, mean speed of ESD 19.8 mm/min, perforation rate: 3.6%, post-procedural bleeding: 7% (12%), second ary surgery 2% (4.3%) (All for pathological reason) Pathological analysis: low-grade dysplasia in 19%, high-grade dysplasia in 28%, intra-mucosal carcinoma in 5%, superficial submucosal carcinoma in 5%, deep submucosal carcinoma in 5%, villous adenoma in 3.4% and adenoma in 6.9%. Only 1 patients (1.7%) had a recurrent disease during endoscopic follow up. Primary Endpoint: En bloc resection: 86.2%, R0 resection: 62.5%, curative resection: 62.5%, Secondary Endpoint: Duration of procedure was longer in older people. Speed of ESD was lower. En bloc and R0 resection were lower in very old patients. Cancer was more frequent in very old patients (>80 years) and younger patients (<80 years) are resumed in table 1.

<table>
<thead>
<tr>
<th>&gt;80 (n = 58)</th>
<th>&lt;80 (n = 275)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration</td>
<td>143.69</td>
<td>113.78</td>
</tr>
<tr>
<td>Large diameter (mm)</td>
<td>56.43</td>
<td>56.36</td>
</tr>
</tbody>
</table>

(continued)
Aims & Methods:

The primary objective was to determine the adenoma detection rate (ADR) in general, right and left hemicolectomy. Secondary objectives were polyp, advanced adenoma and carcinoma detection rates, size of adenomas and polyps in either localisation, intensity and effect of bowel preparation, rate of complete colono-scopy, need for re-endoscopy, duration of colono-scopy procedures, deepest point of insertion and complication rates. We reviewed retrospectively consecutive SCI patients who underwent colonoscopy from 2003 to 2017 and assigned an age-, gender- and year of performance-matched control group.

Results:

In 236 SCI, compared to 414 control patients, bowel preparation lasted longer (3.57 ± 1.0 vs. 3.09 ± 1.0 days, p = 0.001), achieved insufficient cleansing rate more often (23.7 ± 4.0% vs. 17.4 ± 3.7%), and caused more adverse events (30.9 ± 1.0% vs. 22.0 ± 3.3%). Colonoscopy needed longer time (36.9 ± 25.0 min, p = 0.001), remained incomplete more often (24.6 ± 4.6%, resulting in more re-colono-scopy (14.8 ± 4.3%). Endoscopy- and sedation-related adverse events were equal. However, neither overall nor rectal independent poly (30.9 ± 34.8%), adenoma (21.2 ± 21.0%), advanced adenoma (6.8% vs. 7.2%) or cancer (1.7% vs. 2.0%) detection rate overall nor size-dependent polyp (30.9 ± 34.8%), adenoma (21.2 ± 21.0%) and carcinoma (1.7% vs. 2.0%) were significantly differed. Results differed (p = 0.001) and length of colonoscopy was significantly longer (3.57 ± 2.0 vs. 3.07 ± 1.0 days, p = 0.001), remained incomplete more often (46.6% of patients diagnosed with malignant tumor pathology showed that 73.3% with conserved general status (n = 4) versus 46.7% of males (n = 2) with hematochezia versus 86.7% (n = 2) with constipation (p = 0.07) and 26.7% with conserved general status (n = 4) versus 75.4 years and a maximum age of 91 years. The prevalence of males was 51.0%, 10.5% of cases (n = 10) were diabetic, 12.6% (n = 12) hypertensive, 12.6% (n = 12) with ischemic heart disease. 8.4% (n = 8) had diabetes mellitus and 9% (n = 9) had a digestive neoplasia. Colonoscopy was indicated for hematochezia in 40% (n = 38), transit disorders in 33.6% (n = 32), abdominal pain in 14.7% (n = 14), IBS in 3.1% (N = 3), radiographic abnormalities in 13.6% (n = 13), iron deficiency anemia in 4.2%, and for patients with a family history of colorectal cancer in 1% of cases. Colonoscopy was abnormal in 83% (n = 93), with poly by 48.3% (n = 45), suspected lesions of malignancy in 16.1% (n = 15), Divarhia in 19.3% (n = 18), IBD in 3.1% (N = 3), arteriovenous communications 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), 13.3% (N = 2) with hematochezia versus 86.7% (n = 13) with constipation (p = 0.07) and 26.7% with conserved general status (n = 4) versus 73.3% for ESD conversion regardless of size or location, particularly the duration of the dissection.

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

References:

4. Anha CR, Spungen AM, Bauman WA, Spungen AM, Bauman WA, Rosman AS, Shaw S, Hunt KK, Post JB, Galea M, Korsten MA. Clinical trial: the efficacy and safety of bowel cleansing or failure to reach the caecum could diminish adenoma detection rates (ADR) [6, 7], while complication rates could increase due to severe morbidity.

Results:

Despite intensified protocols, bowel preparation shows inferior results in SCI patients and colonoscopy needs more efforts to succeed, but pooled colonoscopy of patients with SCI was not associated to ESD conversion. R0 was achieved in 64.7% (n = 11/17) cases with en-bloc EMR resection and in 91% controls (p < 0.001). There were two recurrences (13.3%) at 3-months within the 15 cases with piecemeal resection. Procedures were noted in en-bloc (ESD or EMR) resection patients (p = 0.044). Three (7.7%) and one (1.3%) patients had an indication for surgery in case-control groups (p = 0.107).

Conclusion: The presence of certain factors should be assessed during the procedure to identify patients who need ESD conversion regardless of size or location, particularly the duration of the dissection.

Disclosure of Interest: All authors have declared no conflicts of interest.
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 endoclip closure was 96.6% (95% CI: 94.2%–98.2%), and clinical success was 93% (95% CI: 87.1%–97.2%), and complications were 3% (95% CI: 69.9%–96.6%), clinical success was 77.9% (95% CI: 56.8%–93.3%), and complication rate was 4.1% (95% CI: 2.0%–6.8%). The technical success rate for Self-expanding metas-tem (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: 78.0%–112%). Only one study for endosuturing met our criteria, with technical and clinical success rate of 100%, and without any complication. Factors predicting failure of endoscopic treatment and need for early surgical intervention included large size, leucocytosis, fever, severe abdominal pain, large amount of peritoneal free air, necrotic or soft inflammatory margins, unfavourable anatomical site, stool contamina- tion, perforation, 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


PO882 “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 colonoscopists 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 colorectal withdrawal from the colon, which was started at our clinic since November 2008, suggested that the 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; Hc, 71) were included for analysis. The colonoscopic images of these lesions were retrospec- tively 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 unevaluable and a total of 211 evaluable lesions were analyzed. Results: Of the 211 lesions (Ha + Ic: 141; Hc: 70) analysed, 84 (Ha + Ic: 60; Hc: 24), 105 (Ha + Ic: 69; Hc: 36), and 22 (Ha + Ic: 12; Hc: 10) were found to be in grades 0, 1, and 2, respectively, with 60.2% of these shown to be “O-ring sign” positive. (p=0.044). In the 22 data subanalyses, NICE/WASP classification for adenoma showed sensitivity, specificity, positive predictive value and NPV of 82% (70–90%), 94% (80–99%), 96% (87–100%) and 72% (56–85%), respectively; for rectosigmoid polyps ≤5mm, with high confidence level (n=35), NPV for adenoma was 80% (59–93%).

Conclusion: The overall performance of endoscopists significantly improved with own hands of training, but did not meet the standards for the implementation of the "do not reset" strategy. However, the results may have been affected by the addition of an additional category (1s) to the NICE classification.

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

References


PO883 THE LEARNING CURVE FOR COLORECTAL ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD) BETWEEN EXPERT AND TRAINEE ENDOSCOPIST

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Introduction: Endoscopic submucosal dissection (ESD) has been acceptable as a minimally invasive therapy and providing en-bloc resection for early malignant and pre-malignant lesions of gastrointestinal cancer. Colorectal ESD has some difficulties such as a risk of perforation and its severity compare to gastric ESD. Hence, Colorectal ESD is more challenging than gastric ESD in endoscopic technique. In Japan, where has high incidence of gastric cancer, endoscopists
could have many experiences of gastric ESD that may be beneficial for the introduction of colorectal ESD. However, little is known about the learning curves of the young endoscopists who perform the colorectal ESD first.

**Aims & Methods:** We conducted multi-center retrospective observational study to elucidate the safety and learning curve of the trainee who perform the colorectal ESD first. A total of 1199 patients were consecutively treated between 2010 and August 2016. The endoscopists were classified as trainee (first ESD performed by endoscopist A) or as expert (endoscopist B). The reported complications and the learning curve of endoscopist B were compared with that of endoscopist A.

**Results:** A total of 1199 patients were consecutively treated between 2010 and August 2016. The endoscopists were classified as trainee (first ESD performed by endoscopist A) or as expert (endoscopist B). The reported complications and the learning curve of endoscopist B were compared with that of endoscopist A. The average operation time was 68.0 minutes, the median 80.1 (range 13-353) minutes. The complications were divided into 3 groups: 1. General complications: bleeding, pancreatitis, cholangitis, and perforation. 2. Treatment complications: removal of stone failed, bile duct injury. 3. Adverse events: sedation reaction, respiratory events, allergic reaction. The median age of the patients was 70 (range 26-91) years old, and genders were 158 males and 102 females. Results: The comparison of the average operation time between endoscopist A and B showed a statistically significant difference (P value 0.04). In addition, the learning curve of endoscopist B showed a statistically significant difference (P value 0.001).

**Conclusion:** The learning curve of endoscopist B was significantly shorter than that of endoscopist A. This result suggests that the introduction 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.

**P0884 LARGE BALLOON DILATATION VERSUS MECHANICAL LITHOTRIPSY AFTER ENDOSCOPIC SPHINCTERO TOMY IN MANAGEMENT OF LARGE COMMON BILE DUCT STONES AMONG CIRRhotIC 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 severe liver function impairment, as well as to the risk of adverse events during ERCP such as bleeding, pancreatitis, and other complications that are associated with liver cirrhosis. It is very important to consider the surgical benefits and complications between mechanical lithotripsy and large balloon dilation after sphincterotomy in patients with liver cirrhosis. Ninety-eight cirrhotic patients with calcuric obstructive jaundice were included and randomly divided into two groups. Group A was treated by large balloon dilation (LBD), Group B: 49 patients treated by mechanical lithotripsy. All patients underwent sphincterotomy initially. Inclusion criteria for this study included: Age of 18-60 years, any sex, liver cirrhosis patients Child A or B with clinical and laboratory proved obstructive jaundice, presence of large bile duct stones and severe selective cannulation of the bile duct. Exclusion criteria included: Known allergy to the used contrast material, Child C cirrhosis, the Need for needle knife precutting in order to achieve bile duct cannulation, Selective bile duct cannulation achieved after moderate EUS and fluoroscopy guidance in Asa III, Asa IV, or both. All patients were subjected to thorough history taking, complete clinical examination. Enzymes concentrations were measured before and after the procedure, complete blood count and liver function tests were performed before and after the procedure.

Results: There were no dropouts and all subjects remained in the study till the end of the study. The reported complications were mainly bile leakage and biliary stricture. The difference was not statistically significant (P value 0.61). The rate of adverse events in this study was 10.2% (10/98) and bleeding was the commonest reported complication (50% [5/10]; group B that was treated by ML developed more (16.3%) adverse events than group A treated by LBD (4.1%) and the difference was statistically significant (P value 0.04).

**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. LBD is the most common adverse event reported in cirrhotic patients undergoing these procedures.

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

**P0885 SAFETY AND EFFICACY OF ENDOSCOPIST-DIRECTED BALANCED PROPOFOL SEDATION (BPS) DURING RETROGRADE CHOLANGIO-PANCREATOGRAPHY (ERCP)**

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3Department Of Gastroenterology, Rambam Health Care Campus, Haifa/Israel

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**Introduction:** Endoscopist-directed balanced Propofol sedation (BPS), defined as a fixed dose of an opioid and benzodiazepine combined with incremental doses of propofol, has been shown to be a safe and effective moderate sedation regimen for gastroscopy and colonoscopy. However, there are very limited data on the safety and efficacy of endoscopist-directed BPS in ERCP.

**Aims & Methods:** We aimed to evaluate the safety and efficacy of endoscopist-directed BPS during ERCP, as well as to compare patient outcomes with anesthesiologist-directed BPS, for both in-patients and out-patients undergoing ERCP. We performed a retrospective cohort study using prospectively collected endoscopy data from the gastroenterology and biliary and pancreatic unit of a tertiary care center where endoscopy-directed BPS during ERCP is routine practice amongst the ERCPists, all of whom have up-to-date advanced cardiac life support (ACLS) certification. ERCP nurses also maintain up-to-date certification in ACLS and cardiopulmonary resuscitation equipment and medications are available within the advanced endoscopy suite. During ERCP, the endoscopist and the endoscopy nurse as a team were responsible for monitoring patient vital signs (e.g., pulse, blood pressure, oxygen saturation levels). Each endoscopist was responsible for directing the provision and dosing of the BPS. Patient-level demographics and pre/post procedure vital signs were collected along with BPS drug dosages, American Society of Anesthesiologists score (ASA) and measured "hard endpoint" patient outcomes, including: need for bag-mask ventilation or endotracheal intubation, and need for ERCP due to sedation effects, need for hospital admission post-ERCP (out-patients only) or need for change in level of hospital care (in-patients only), and mortality within 24 hours of ERCP.

**Results:** Over the course of 17 months (October 2015 – March 2017), 501 patients underwent ERCP and received endoscopist-directed BPS (Cohort 1: 380 [76%] inpatient, mean age 64.1 years, 46% males, 24% ASA I, 65% ASA II, 11% ASA III). During this same time period, 424 patients received anesthesiologist-directed BPS (Cohort 2: 19 [79%] inpatient, mean age 65.0 years, 67% males, 48% ASA I, 29% ASA II, 25% ASA III). In Cohort 1, the indications for ERCP were: 231 (46%) suspected cholelithiasis, 68 (13%) stent replacement, 62 (12%) evaluation of known/suspected malignancy, 48 (10%) jaundice, 40 (8%) post-hepato-biliary intervention complications, 8 (2%) abdominal pain, and 44 (9%) other/unspecified. BPS dosages (mean ± SD; range) were: Fentanyl 0.06 mg±0.02 mg: 0.05–0.10 mg; Midazolam 1.7 mg±0.7 mg: 1.0–2.5 mg; and Propofol 178 mg±103 mg: 10–640 mg. Propofol dose was inversely correlated with patient age (r = −0.42, p < 0.001), ASA score (r = −0.19, p < 0.001) and Mallampati score (r = −0.24, p < 0.001). No clinically meaningful differences were found in patient vital signs pre and post ERCP. Moreover, no patient required bag-mask ventilation, endotracheal intubation nor hospital admission/ change in level of in-hospital care following ERCP. One patient in Cohort 2 who...
received 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 undergoing inpatient or outpatient ERCP.

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

References


P0887 DUODENOSCOPES AND LINEAR ECHOENDOSCOPES ARE NOT CONTAMINATED WITH ORGANISMS CAUSING 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 duode- noscopes has been attributed to their complex design, which includes a number of flexible parts such as 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 duode- noscopes 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 described in our video instructions. Local staff sampled four to six sites per DLE depending on endoscope type, including swabs (protection cap, forceps elevator), flushed (biopsy, suction, air/water and forceps elevator channel) and brushes (biopsy, air/water and balloon channel). Samples were centrally cultured. Bacterial culture and culture interpretation were consistent with Dutch guidelines.

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

References

1. E. Hansen1, M. C. Vos2, M.J. Bruno1

Disclosure of Interest: All authors have declared no conflicts of interest.
Aim & Methods: To analyze the frequency of probable causes of asymptomatic hyperamylasemia and acute pancreatitis after ERC and their prevention. Two Aims & Methods:

**Aim 1:** To define ERC learning curves, utilizing a centralized database, with a focus on cannulation rates using a large national sample of AET programs (AETPs). (i) To critically examine the composition of current training composition and volumes ensure ERC competence in the US. Primary Analysis* Sensitivity Analysis**

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*C Primary analysis: success defined as score of 1 or 2 (no assistance/minimal verbal cues). Acceptable failure rate - p0 = 0.1 and unacceptable failure rate - p1 = 0.3 **Sensitivity analysis: success defined as score of 1 (stringent definition of success)

tumor extent using SpyDS plus mapping biopsy was 92%. One patient developed mild cholangitis after the procedure. As for IPMN, pancreatocystoscopy using a SpyDS could visualize intraductal papillary tumors in all patients, and SpyDS guided biopsy/cytology was successfully performed. Diagnostic accuracy of malignancy was 100% without any adverse event after the procedure.

Conclusion: Preoperative evaluation using a SpyDS plus histological examination for pancreaticobiliary neoplasm was found to be useful and safety. Further study is needed to establish evidence about the usefulness of this technique.

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

P0089 ACUTE PANCREATITIS AND HYPERAMYLASAMIA DEVELOPMENT AFTER ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY – CHALLENGES AND PREVENTION

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Introduction: Endoscopic retrograde cholangiopancreatography (ERC) 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 endoscopic training composition and volumes ensure ERC competence in the US. Aims & Methods: (i) To define ERC 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 ERC training composition and volumes ensure ERC competence in the US. Aims & Methods: (i) To define ERC 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 ERC training composition and volumes ensure ERC competence in the US.

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**Abstract:**

The paper reports the feasibility of establishing competence and overall cognitive (100%) competence among AETs in ERCP validating the shift away from endoscopist- versus assistant-controlled wire-guided cannulation. The results confirm the substantial variability in learning curves and competence among AETs in ERCP validating the shift away from endoscopist- versus assistant-controlled wire-guided cannulation. The authors conclude that methods to improve native papilla cannulation are needed to clarify the safety profile of either technique.

**Introduction:**

A recent randomised study by Buxbaum et al. demonstrated a significantly lower rate of post-endoscopic retrograde cholangiopancreatography (ERCP) pancreatitis (PERCPP) in endoscopist- versus assistant-controlled bile duct cannulation. The study set out to audit the rates of PERCPP at the end of training, with a focus on the impact of post-endoscopic retrograde cholangiopancreatography (ERCP) pancreatitis (PERCPP) in endoscopist- versus assistant-controlled bile duct cannulation. The authors aimed to clarify the safety profile of either technique.

**Results:**

The authors report that 20 AETs participated, and 20 AETs were included in the final analysis. A total of 250 procedures were audited. E1 performed 132 procedures (54% female; median age 63) 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 haemorrhage 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 were 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**

Aims & Methods: The aim of this study was to evaluate the impact of this protocol on the incidence and severity of PEP. Patients and methods Retrospective analysis of all patients submitted to ERCP in one center during 16 months, including patients hospitalized in the gastroenterology department who were managed according to the AHP and patients hospitalized in other departments who underwent standard hydration (SH). Patients who underwent AHP received intravenous sodium lactate solution (RL) at 200 mL/hour starting 1 hour before, during the procedure and the anesthetic recovery; in those who remained asymptomatic after the ERCP, the RL was maintained at 100 mL/hour for 8 hours and after it was changed to a balanced salt solution with glucose (PG) at 80 mL/hour; in those patients who had abdominal pain or amylase >3 times normal limit after ERCP, the RL was maintained at 100 mL/hour during 8 hours and after it was changed to PG at 120 mL/h. We evaluated the incidence and severity of PEP, the established point and procedure-related risk factors for PEP (except the difficulty of cannulation) and the occurrence of complications. Data were analyzed with SPSS statistical software.

Results: We analyzed 192 patients, 290 ERCP (AHP n= 168, SH n= 122). The incidence of PEP and procedure-related factors for PEP (except the difficulty of cannulation) and the occurrence of complications. Data were analyzed with SPSS statistical software.

Introduction: Pancreatitis is the leading complication of endoscopic retrograde cholangiopancreatography (ERCP). Some studies have shown that the use of vigorous hydration may reduce the incidence of this serious adverse event, the post-endoscopic retrograde cholangiopancreatography pancreatitis (PEP). In our department we implemented an aggressive hydration protocol for patients undergoing ERCP in order to prevent PEP.

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**PROSPECTIVE STUDY OF EARLY PRECUT VS. UTMOST PRECUT WITH PANCREATIC STENT IN INITIAL PANCREATIC DUCT CANNULATION**

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Internal Medicine, Kosin University, Gospel Hospital, Busan/Korea, Republic of

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Introduction: In biliary access, repeated biliary cannulation attempts are a risk factor for post ERCP pancreatitis (PEP). Early precut is an effective technique for successful biliary cannulation and can significantly reduce the incidence of PEP. The aim of this study was prospectively to evaluate clinical efficacy the performance of utmost early precut with pancreatic stent in the patients whom pancreatic duct cannulation was performed initially.

Aims & Methods: When guidewire was placed in the pancreatic duct initially by chance, the patients were randomized into early precut (Group A) or utmost precut sphincterotomy with pancreatic stent (Group B). In Group A, pancreatic duct cannulation within 5 times and attempted precut papillotomy with or without early precut sphincterotomy. In Group B, the pancreatic stent was inserted and then precut with an incision over a pancreatic stent was done. Main outcome measurements were frequency of successful CBD cannulation and post-procedure related complications.

Results: From January 2015 to August 2016, the two groups were similar with regard to patient demographics. A total of 50 patients were enrolled. 26 patients were assigned to the Group A and 24 to the Group B. Successful CBD cannulation was achieved in 23 of 26 (88.5%) patients in the Group A and 23 of 24 (95.8%) patients in the Group B. The mean cannulation time was 16 minutes in the Group A and 14.8 minutes in the Group B. Post-procedure hyperamylasemia was significantly higher in Group A. The overall incidence of post-procedure pancreatitis was 11.5% (3/26) in the Group A and 4.2% (1/24) in the Group B (P < 0.001).

Conclusion: In patients with pancreatic duct cannulation initially by chance, compare to early precut group, utmost early precut with pancreatic stent over the guidewire initially facilitates biliary cannulation and the success rate is also high 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.

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**PROSPECTIVE COMPARISON OF DIGITAL SPYGLASS DIRECT VISUALIZATION SYSTEM VS DIRECT PERORAL CHOLANGIOSCOPY USING A MULTIBENDING ENDOSCOPE AS A SINGLE OPERATOR CHOLANGIOSCOPY FOR MANAGING BILARY LESIONS**

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Introduction: In a recent, a digital version of single-operator cholangioscope (SpyGlass DS) and direct POC (DPOC) using a multibending ultrasound endoscope were introduced as improved forms of each POC, especially in image quality and technical difficulty, respectively.

Aims & Methods: In this study, we prospectively compared the procedure success rate of SpyGlass DS and DPOC for diagnosis and treatment of BD lesions. A total of 15 patients with BD lesions (diameter of CBD ≥8mm) requiring evaluation or treatment using were enrolled prospectively. All patients received POCs using SpyGlass DS and multibending ultrasound endoscope for DPOC.

According to the presence of obstructive lesion, all patients were classified as obstructive type or non-obstructive type, respectively. Procedural success defined as an ability to advance the cholangioscope to the desired target and get adequate cholangioscopic visualization for the targeted lesion.

Results: The overall technical success rates of SpyGlass DS and DPOC were 100% and 93.3%, respectively (P = 0.5). In DPOC, 1 patient was failed to insert the endoscope into the CBD. In SpyGlass DS, 2 patients were failed to visualize the targeted lesion. The procedural success rates of SpyGlass DS and DPOC according to the type of lesion were not different in 9 obstructive type (100% vs. 88.9%, P = 0.5) and 6 non-obstructive type (66.7% vs. 100%, P = 0.227). The successful diagnostic and therapeutic procedures by DPOC and SpyGlass DS were observed in 8 of 8 patients (100%) and 7 of 9 patients (77.8%) (P = 0.265). respectively.

Conclusion: Both advanced image quality of SpyGlass DS and improved technical difficulty of DPOC by a multibending ultrasound endoscope showed comparable and high procedure success rates in patients with dilated BD. Future prospective studies focused on overall cost savings and long-term clinical outcomes are seems to be required for deciding adequate indications of each POC systems.

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

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Introduction: Management of common bile duct stones (CBDs) in patients with borderline CBD presents a surgical challenge. The aim of this study was to compare conservative treatment with endoscopic stone extraction for the treatment of borderline CBD with stones.

Aims & Methods: This prospective randomized controlled trial includes patients with CBDs in borderline CBD (CBD < 10mm) associated with gallbladder stones who were treated with conservative treatment or endoscopic stone extraction followed by laparoscopic cholecystectomy (LC) and intraoperative cholangiogram (IOC). The primary outcome, was successful CBD clearance. The secondary outcomes were the overall complications, cost, and hospital stay.

Results: LC and IOC revealed complete clearance of CBDs in 48 (96%) cases in the endoscopic retrograde cholangiopancreatography (ERCP) group (52% of patients by ERCP, and 44% of patient passed the stone spontaneously), and in the remaining two patients, the CBDs was removed by transcytosis exploration. In the conservative group, LC and IOC revealed complete clearance of CBDs in 90% of cases, and in the remaining 10% of patients, the CBDs was removed by post-ERCP papillotomy. Post-ERCP pancreatitis (PEP) is noticed significantly in the ERCP group (2% versus 8% [P = 0.04]). The average net cost was significantly higher in the ERCP group. Recurrent biliary symptoms developed significantly in the ERCP group after 1 year (10% versus 0%, P = 0.02) in the form of recurrent cholangitis and recurrent CBDs.

Conclusion: Management of CBDs in patients with borderline CBD represents a surgical challenge. Borderline CBD increases the technical difficulty of ERCP and increases the risk of PEP. Conservative management of CBDs in borderline CBD not only avoids the risks inherent in ERCP and unnecessary preoperative ERCP, but it is also effective in clearing CBDs. The hepatobiliary surgeon
During this 12-months 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 papillary stenosis was observed due to duodenal stenosis (10/13) or postoperative situations (3/10). In two of them the indication was ceased (because the bile duct 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 4.6% we used combined techniques. In 51 primary unsuccessful cases we repeated ERCP attempt 4 in 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 profllaetic pancreatic stent in one patient, as well. Out of the 15 patients with finally unsuccessful cannulation, we performed precut without deep cannulation in 10 cases. 7 of them resolved after precut, 2 of the 10 patients got PTD and one patient required surgery. 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 bleeding in 34 cases that required endoscopic therapeutic intervention (infiltration/coagulation/stenting), of them 7 of (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 repeated, successful passage of pancreatic guidewire or just as part of the phase of process to avoid long lasting traumatising of the papilla. Our complication rate of post-ERCP pancreatitis was good while the post-sphincterotomy bleeding rate should be considered higher than in the literature, therefore we changed the settings of electrosurgical current.

Disclosure of Interest: All authors have declared no conflicts of interest.
Aims & Methods: The aim of this study was to evaluate the accuracy of T1 stage subdivision of ESCC by higher frequency EUS probe prior to ESD treatment. From 2013 to 2016, there are 825 patients diagnosed with ESCC, further stage with 8% computed tomography and PET-CT. The EUS examination is performed with miniprobe (UM-2R, 12 MHz, UM-3R, 20 MHz; Olympus Optical Co. Ltd., Tokyo, Japan) and water immersion method. From 2013 to 2016, there are 825 patients diagnosed with ESCC, further stage with 8% computed tomography and PET-CT. The EUS examination is performed with miniprobe (UM-2R, 12 MHz, UM-3R, 20 MHz; Olympus Optical Co. Ltd., Tokyo, Japan) and water immersion method. The enrolled criteria of this study; 1; ESCC was proved by biopsy result. 2; T1a or T1b stage diagnosed by EUS. 3; No lymph nodes or distant metastasis. 4; Treatment with ESD. All EUS-T stage results were correlated with final pathological T stage, including T1a/T1b.

Results: Total 90 patients enrolled in this study and there were 83 patients with T1a and 7 were T1b stage of ESCC by EUS. After ESD treatment, all specimens were sent for histological examination and the final diagnosis was based on the cytology or histology results. The accuracy of the staging was obtained by the analysis of ROC curves. Results: Included 29 patients in a total of 30 lesions with conclusive histological/ cytologic diagnosis (8 inflammatory masses, 19 adenocarcinomas, 2 neuroendocrine tumors and 1 undifferentiated carcinoma). The mean SR value was significantly higher in the malignant tumors compared with the benign tumors (55.56 vs 23.93, p < 0.001). The sensitivity and specificity of SR for differentiation of pancreatic malignancy for a cut of 15.89 were, respectively, 95.45% and 87.5% (area under the curve of 0.89, 95% CI). The overall accuracy of the EUS elastography using the SR for the detection of pancreatic malignancy was 93%.

Conclusion: Quantitative EUS elastography presents good accuracy in the differentiation between malignant and benign pancreatic masses. It is a promising EUS technique in the diagnostic approach of solid pancreatic lesions, which may complement the study and characterization of the tumors, aiding in the diagnostic and follow-up of these patients.

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

References

P0904 QUANTITATIVE ENDOSCOPIC ULTRASOUND ELASTOGRAPHY IN THE DIFFERENTIAL DIAGNOSIS OF PANCREATIC SOLID TUMORS

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Introduction: Quantitative second generation elastographic ultrasound (EUS) elastography allows the quantitative analysis of tissue stiffness and can be a useful auxiliary tool in the differential diagnosis of pancreatic solid tumors (1)(2).

Aims & Methods: The aim of this study was to evaluate the accuracy of the quantitative EUS elastography in the differential diagnosis of pancreatic solid masses, discriminating malignant from benign masses, using strain ratio (SR) analysis. A prospective study was performed for 15 months and included 29 consecutive patients who underwent EUS for the evaluation of solid pancreatic masses. EUS elastography was performed by 2 operators, using a linear echoendoscope. The mean of 3 measures was considered as the SR final result for each lesion. EUS-fine-needle aspiration of the lesion was performed after SR assessment and the final diagnosis was based on the cytology or histology results. The accuracy of the elastography was obtained by the analysis of ROC curves. Results: Included 29 patients in a total of 30 lesions with conclusive histological/ cytologic diagnosis (8 inflammatory masses, 19 adenocarcinomas, 2 neuroendocrine tumors and 1 undifferentiated carcinoma). The mean SR value was significantly higher in the malignant tumors compared with the benign tumors (55.56 vs 23.93, p < 0.001). The sensitivity and specificity of SR for differentiation of pancreatic malignancy for a cut of 15.89 were, respectively, 95.45% and 87.5% (area under the curve of 0.89, 95% CI). The overall accuracy of the EUS elastography using the SR for the detection of pancreatic malignancy was 93%.

Conclusion: Quantitative EUS elastography presents good accuracy in the differentiation between malignant and benign pancreatic masses. It is a promising EUS technique in the diagnostic approach of solid pancreatic lesions, which may complement the study and characterization of the tumors, aiding in the diagnostic and follow-up of these patients.

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

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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 ultrasound staging (EUS) in patients with malignant neoplasms.

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 8, 9, 6, 7, 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: 63.6 years. The majority (72%) of the patients presented lymphadenopathies in at least one mediastinal station, and 88% were found in stations 7 or 4L. Only 6% of these had short axis diameter > 10 mm, most were oval (59%) or triangular (37%) and 40% had a hyperechoic center. The prevalence of lymphadenopathies was higher in smoker patients (85% 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 assessed independently were associated with the presence of mediastinal lymphadenopathies.

Conclusion: This prospective Portuguese study documented a higher prevalence of mediastinal lymphadenopathies than previously reported in northern Europe, in particular due to the existence of oncologic disease. This higher prevalence, mostly in smokers or patients with relevant occupational exposure, may negatively influence the specificity and positive predictive value for malignancy of mediastinal lymph node (N) staging by EUS, with particular relevance in esophageal and pulmonary cancer staging.

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

References
Results: In our series, 16/22 females (73%), mean age 58 ± 13 years old (29–77). Most followed, 56 ± 34months (6–116). Cyst location: head/body/tail:11/8/3. Mean size in 1st EUS-FNA: 3 ± 1, 5cm (1, 2–7) cm vs 2nd EUS-FNA: 3, 1 ± 1, 9 cm, (1, 2–10) cm; with both EUS-FNAS with as 36% cysts > 3 cm. Mass/mural nodule present:7/22 vs 8/22 on 2nd EUS-FNA. Repetition of EUS-FNA does not引来 change or increase 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 due to: nodule, imagiologic change or increasing size. Mean interval between the operated that had previously a repeated EUS-FNA (2nd EUS-FNA 3, 4, 7 and 10 months after the 1st EUS-FNA).

Aims & Methods: The aim of this study is to show the actual method of LBC and to evaluate the utility of LBC in EUS-FNA samples of the pancreatic lesions. 292 specimens obtained by EUS-FNA from patients with pancreatic disease were included in this study. Clinical history was punched on 210 cases, acinar cell carcinoma in three cases, adenosquamous cell carcinoma in one case, invasive ductal carcinoma derived from IPMN in three cases, metastatic pancreatic tumor in eight cases, pancreatic neuroendocrine tumor (PNET) in 20 cases, solid pseudopapillary neoplasm (SPN) in five cases, mass-forming pancreatitis in four cases, and autoimmune pancreatitis (AIP) in 40 cases. Just after EUS-FNA, tissue sample in the FNA needle was flushed out into petri dish with saline. The specimen was carefully examined to confirm the presence of intact cells and cytopreparation, formalin-fixed and processed for pathological evaluation. All residual liquid specimen in place was immediately immersed in liquid-based fixation medium (CytoRich™Red) at the bedside. The liquid was centrifuged and processed (1,000 X g for 5 min) on the wards. The preparation was reviewed by two experienced cytopathologists. The final diagnosis was reached relying on surgery in 9 patients (31%), on histology or mucin staining, a typical pattern of nCLE or by consensus (on EUS endo-scopy (nCLE) of the cyst wall and/or contrast-enhanced EUS was performed. Antigen 19-9 (CA 19-9), Carcinoembryonic Antigen (CEA) and glucose. When sent for cytology, mucin staining and determination of amylase, Carbohydrate Antigen 19-9 (CA 19-9), Carcinoembryonic Antigen (CEA) and glucose. When sent for cytology, mucin staining and determination of amylase, Carbohydrate Antigen 19-9 (CA 19-9), Carcinoembryonic Antigen (CEA) and glucose.

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prophylaxis is mandatory during EUS-FNA of PCLs, since it does not seem to have a protective effect. Moreover, the rate 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.

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P0914 EUS-GUIDED FNA IN THE STUDY OF THE ADRENAL GLAND: NATIONAL RETROSPECTIVE MULTICENTER STUDY

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Introduction: The endoscopic ultrasound (EUS) has proven useful in the study and evaluation of the adrenal gland (AG) by endoscopic ultrasound-guided fine needle aspiration (EUS-FNA), in both the left and right glands.

Aims & Methods: To analyze the diagnostic performance, safety, impact on clinical management, predictors of malignancy and cyto-pathological correlation of the EUS-FNA with adrenal gland.


Results: A review of 205 EUS-FNA of adrenal gland in 200 patients (154 males). Average age: 65.3 (DE 9.6). Primary tumor: lung 69%, unknown 10%, other 20%. Adrenal gland left (191); adrenal gland right (14). Main features: CT scan-positive 80%, CT scan-negative 20%, tumor diameter 5 cm (95%), tumor diameter ≤5 cm (5%), tumor diameter >5 cm (14%). Tumor pathology: benign (90%), malignant (10%). No deaths or serious adverse events were recorded. Agreement between EUS-FNB and surgical pathology was 100% with respect to diagnosis, despite significant advances over the past decade. Stereotactic body radiation therapy (SBRT) is able to deliver higher biological effective dose to the tumor over a shorter period of time with reduced local toxicity compared to conventional external beam radiation therapy. EUS-guided fiducial placement has shown to improve the accuracy and localization during SBRT.

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

References
Conventional EUS-guided fiducial placement requires back-loading each fiducial through the tip of the EUS 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.

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**P0917 DEVELOPMENT AND VALIDATION OF A HIGHLY SENSITIVE AND SPECIFIC AUTOMATED ALGORITHM TO EVALUATE THE ABUNDANCE OF BUBBLES IN SMALL BOWEL CAPSULE ENDSCOPY**


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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 computed algorithm, which would evaluate the abundance of bubbles in SB-CE. Two sets of 200 SB-CE normal still frames were extracted from 45 complete third-generation SB-CE videos. Two experienced SB-CE readers analyzed both sets of images twice, in a random order. Each still frame was categorized as "scarcely in" or "abundant in bubbles (<10% or >10% of bubbles covering the frame, respectively). Reproducibility (κ coefficient), sensitivity (Se), specificity (Sp), Receiver Operating Characteristic (ROC) curve, and calculation times were measured for different algorithms (Grey-level of co-occurrence matrix [GLCM], fractal dimension, Hough transform, and Speeded-Up Robust Features [SURF]) using the experts’ reading as reference. Algorithms with highest reproducibility, Se and Sp were then selected for a validation step on the second set of frames.

**P0918 AGE AND GASTRIC EMPTYING TIME ARE PREDICTIVE FACTORS FOR INCOMPLETE CAPSULE ENDSCOPY: 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 complete 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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Introduction: A variety many of pharmaceuticals for the treatment of colon disease can be more effective and have less side effects if targeted for precise delivery in the colon. Over the years, many types of delivery vehicles have been developed with the aim of targeting the colon, such as PB based delivery technologies, time dependent drug release mechanisms, pressure based mechanisms, flora sensitive mechanisms and others. These technologies have performed with variable degrees of success due to the wide distribution of motility and other physiological variability between patients. We describe a novel capsule technology which incorporates a diffused gas sensor that allows for an accurate sensing of colon entrance; as well as a 3D real time positioning system that allows for an accurate, programmable, localized, and in colon drug delivery system.

Aims & Methods: Data was collected from 14 patients that swallowed capsules in a multi-center clinical trial using an x-ray imaging capsule (GUT 2016). The patients were sent home to continue their normal life routine while the capsule naturally traveled in the gastrointestinal tract until excretion. (Subjects signed informed consent 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 Checkup. All other authors have declared no conflicts of interest.

P0920 COLON CAPSULE ENDOSCOPY: HOW DOES INADEQUATE PROCEDURE CLEANSING CORRELATE WITH PROCEDURE ACCURACY?

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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; P-value < 0.007). When stratifying cases based on the colonoscopy miss rate of 2%, 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 performing physician decided whether or not to immediately follow up with a second colonoscopy. 70 of the CCE findings were detected by the second colonoscopy. The 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 classification), 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>96 (98%)</td>
<td>4 (4%)</td>
</tr>
<tr>
<td>Descending-Sigma</td>
<td>243 (90%)</td>
<td>26 (10%)</td>
</tr>
<tr>
<td>Rectum</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

<table>
<thead>
<tr>
<th>Polyp Size</th>
<th>Adequate cleansing</th>
<th>Inadequate cleansing</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;6 mm</td>
<td>153/195 (78.5%)</td>
<td>54/77 (70.1%)</td>
<td>0.147</td>
</tr>
<tr>
<td>≥6 mm</td>
<td>308/350 (88.0%)</td>
<td>130/145 (89.7%)</td>
<td>0.600</td>
</tr>
</tbody>
</table>

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).
Multivariate logistic regression revealed that after adjusting to polyp’s size, cecal and rectal segments were associated with increased chance of CCE additive value to colonooscopy (coccum vs. ascending or transverse colon: Adj.OR = 3.2 [95%CI: 1.3–7.6] and Adj.OR = 4.3 [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 ENDOSCOPIC MANAGEMENT OF POSTOPERATIVE PANCREATIC FISTULAS AFTER DISTAL PANCREATECTOMY OR NEUCELUCATION

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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. From January 2010 and June 2016, POPF 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 23 patients, 31 procedures were performed during the inclusion period, 31 patients had POPF treated endoscopically (14 men, 7 women, mean age ± standard deviation [SD]: 63 years ±15). Surgeries at the origin of the fistula were: distal pancreatectomy with spleen resection (n=19), spleen preserving distal pancreatectomy (n=3), central pancreatectomy (n=2), 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), insulinoma (n=3), adenocarcinoma rectum (n=6), metastasis (n=2), pseudocystectomy (n=1), cystadenomas (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. All patients had somatostatin analogs and 13 (41.9%) had an external radiological drainage prior to endoscopic drainage. In 9 patients (29%) a pancreatic cystogastrostomy was performed during follow-up (FU) in addition to the transpapillary drainage. The pancreatic cannulation rate was 96.8% at the first ERCP and 100% after 2 ERCPs. 90.3% by the major papilla, 9.7% by the minor papilla. All patients had a pancreatic sphincterotomy and the placement of a pancreatic plastic stent. 3 early complications (<72h) occurred: 2 post-sphincterotomies bleeding, and 1 perforation, medically treated. The mean FU (±SD, range) was 378 days ±(407 [22277]) after the first ERCP. During FU, there were 2 stent migrations and 2 stent obstructions requiring a subsequent ERCP for stent replacement. Eight patients (25.8%) died after surgery complications. Among the 23 remaining patients, the closure rate of POPF was 100% within an average of 153 days ±(68 [16326]) after the first ERCP. A mean number of ERCP performed per patient (±SD) 2.5 ±(1.0). No late reopening fistula occurred after removal of the pancreatic stent.

Conclusion: This retrospective study, the most important one reported to date, shows that the endoscopic treatment of POPF resistant to medical therapy is an effective option.

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

P0923 EFFICIENCY OF PANCREATIC STENTS IN DIFFICULT CANNULATION – A RETROSPECTIVE SINGLE - CENTER STUDY

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Retrospection: Difficult biliary cannulation is defined by the presence of one or more of the following: more than 5 contacts with the papilla while attempting to cannulate; more than 5 minutes spent attempting to cannulate following visualization of the papilla; more than one unintended, pancreatic duct cannulation or fistula. In these situations pancreatic stent insertion might prove to be very useful for prophylactic and tactical purposes.

Aims & Methods: We are proposing in this paper to present the experience of Clinical Emergency Hospital Bucharest regarding difficult biliary cannulation and how pancreatic stent insertion proves to be effective in obtaining biliary situations. This paper is a retrospective study of the patients who presented difficult cannulation and to whom pancreatic stents were inserted for prophylactic and tactical purpose. The study included patients with ERCP (Endoscopic Retrograde Cholangiopancreatography) performed in Clinical Emergency Hospital Bucharest between December 2014 and December 2016. The patients were evaluated in terms of pancreatic stents efficiency regarding successful cannulation and post ERCP pancreatitis rate. The stents used were 5 Fr, 3 cm and 5 cm.

Results: We introduced in the study 158 patients with ERCP and difficult biliary cannulation, who required pancreatic stent insertion for prophylactic and tactical purpose. Patients’ mean age was 60 years, while the sex ratio was 2:1 in favor of the female gender. Pancreatic stents proved their efficiency in 90% cases, in only 3 patients deep cannulation being unsuccessful. On average, patients required 1, 15 ERCP procedures in order to obtain biliary access. ERCP indication for benign pathology was predominant (60%). The stents were used: ERCP: 5 Fr, 3 cm (102 patients) and 5 Fr, 3 cm (56 patients). Precut sphincterotomy was performed in 82 cases (37 before stent insertion and 45 after stent insertion). From all patients included, only 19 patients (12%) presented post procedure elevation of serum amylase 3 times higher than normal value associated with abdominal pain. Complications: Pancreatic stents proved to be efficient in obtaining biliary cannulation in difficult situations. Regardless of their length, 5 Fr (3 cm, 5 cm) stents ensure the same success rate for cannulation and offers protection against post ERCP pancreatitis, as long as they are correctly inserted.

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

Reference

P0924 ENDOSCOPIC ULTRASONOGRAPHY-GUIDED BILIARY DRAINAGE WITHOUT DILATION DEVICE USING A THIN DELIVERY-SYSTEM STENT: A PRECLINICAL STUDY

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Introduction: Endoscopic ultrasonography (EUS)-guided biliary drainage (EUS-BD) is increasingly used in the treatment of malignant biliary obstruction after failed ERCP. However, Multi-step process for EUS-BD is closely related to adverse events.

Aims & Methods: The present study was designed to determine feasibility and safety of stent placement using a thin delivery-system stent without dilation step during EUS-BD. Three 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), 7.5Fr 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 (choledochoduodenodenoostomy) using the thin delivery system stents was attempted following 19-G needle puncture without the use of dilation devices. The technical success and adverse events within 2 weeks after EUS-BD were analyzed for three types of stents.

Results: Among the three types of stents, 7Fr soft tip had the least resistance in the phantom model. In the animal model, the median common bile duct diameter before puncture measured on EUS and the median procedure time was 7.66 mm (4.05–9.5) and 29.3 minutes (16–47) respectively. In all pigs, EUS-BD using the three types of stents were technically successful. Dilation was unnecessary in 25% (1/4), 0% (0/2) and 100% (4/4) for the 7Fr hard tip, 7.5Fr hard tip and 7Fr soft tip respectively. Even in the cases requiring dilation, stent placement was successful, immediately after dilation only with a thin catheter (4/4). Neither stent occlusion 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.

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

Reference
P0925 TREATMENT WITH FULLY-COVERED METAL STENTS OF POST-SPHINCTEROTOMY EARLY AND LATE BLEEDING

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Introduction: Post-endoscopic sphincterotomy bleeding is treated endoscopically with pharmacologic injection, electrocautery 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 ERPC 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 patients through endoscopic 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 antplatelet drugs as well as oral anticoagulants were avoided.

Results: 17 Patients (10M/7F), aged on an average 70 years (range 35–90) received 18 FCMS (10 mm x 40 mm, Boston Scientific) for failed hemostasis since hemorrhage was 100% Hb drop. In 2 cases, with an average loss of 1 g/dl of Hb and 9 packed red cells units transfused. In our cases we had 1 outlier, a patient that had received needle-knife sphincterotomy without early bleeding but developed delayed bleeding with hypovolemic shock. He received a second ERPC and a FCMS after 3 days. After further 3 days the patient was in the intensive care unit because of persistent bleeding and we performed a third ERPC. The FCMS was in place, but we removed it, retreated the bleeding by injective therapy and placed a second FCMS, obtaining a stable hemostasis and receiving 8/9 of the packed red cells units used in the study. The FCMS spontaneously migrated in 4/18 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 catheter was placed in percutaneous cholecdochal 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 extensive hemostatic, 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
1. D’Benedetto T et al “Post-Sphincterotomy bleeding: fully covered metal stents for hemostasis” F1000 research 2013, 2;171

P0926 EFFICACY OF SELF-EXPANDABLE METALLIC STENT PLACEMENT IN THE MANAGEMENT OF ANASTOMOTIC STRICURE 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 (ERC) 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). Inclusion criteria were adult patients with confirmed stricture length of ≥ 1cm on endoscopic retrograde cholangiopancreatography (ERC), clinical and/or imaging evidence of stricture, 12-week or > 12-week follow-up. 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) were calculated. This 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 (57.4%) 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 first alternative treatment in refractory ABS. The study 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

P0927 “DISCONNECTED PANCREATIC DUCT” FOLLOWING EUS GUIDED DRAINAGE OF PANCREATIC FLUID COLLECTION - IS IT CLINICALLY RELEVANT? LONG-TERM FOLLOW UP FROM A LARGE VOLUME TERTIARY CARE CENTRE


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Introduction: Disconnected pancreatic duct (DPD) can occur in patients after drainage of pancreatic fluid collections (PFC). Concerns have been raised about clinical relevance of DPDs.

Aims & Methods: To assess the frequency of DPD and its clinical significance after EUS guided drainage of PFC. Patients of acute or chronic pancreatitis with symptomatic PFC, who underwent Endoscopic ultrasound (EUS) guided drainage between January 2011 to December 2016 were included, after an informed consent. Stents used for drainage procedure were either bi-flanged metal stent (BFMS) or double pigtail plastic stent. All these patients underwent MRCP between 4 to 8 weeks after drainage to evaluate pancreatic duct (PD) anatomy and confirm resolution of PFC. Subsequently, they had Endoscopic Retrograde Pancreatography (ERP) and, if required, stent removal. BFMS was removed in all patients. Plastic stents were retained indefinitely, if DPD was confirmed. All patients were systematically followed at 3–6 monthly intervals for any recurrence of PFC or new onset clinical event.

Results: A total of 407 patients (346 males, mean age 33.5 years, range 5-69 years) were followed up after EUS guided drainage for PFC. Of these 260 under-went BFMS and 147 underwent plastic stents placement. 319 patients had pancreatic ductography (ERP and MRCP) after resolution of PFC. The pancreatic duct abnormalities observed were: DPD in 197 (61.7%), PD leak in 36 (11.3%), PD stricture in 20 (6.3%) patients. Normal PD was seen in 43 (13.5%) patients. Calcific pancreatitis was noted in 23 (7.2%). Among the patients with DPD, the location of PD “cut off” was in head (32, 16.2%), genu (59, 29.8%), body (90, 45.6%) and tail (16, 8.1%). Overall, the follow-up after stent removal ranged from 3–72 months, with a median follow up of 12months. Pseudocyst recurred in 29 patients (8.5%) at a mean follow up of 3.5 months (range 1–30 months), which included DPDS 27, PD stricture 1, and CCP 1. 20/29 had pain (symptomatic) and rest 9 were asymptomatic. 15/20 underwent inter- vention (EUS drainage with plastic stent in 12, surgery in 3) and 5 resolved spontaneously.

A485
Introduction: Disconnected Pancreatic Duct is observed in 60% patients following EUS guided drainage of PAP. However, only a small proportion (<10%) of DPD had symptomatic recurrent fluid collection.

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

P0928 FULLY COVERED SELF-EXPANDABLE METAL STENT IN THE MANAGEMENT OF DUODENAL RETROPERITONEAL PERFORATIONS DURING ERCP: A SINGLE CENTER EXPERIENCE

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Introduction: ERCP-related perforation is rare (0.3%), but it is associated with a high mortality rate (1.7%). Duodenal retroperitoneal perforation (Type II) is the most frequent, among the ERCP-related perforations. The management of this complication has not been standardized yet: traditionally surgery was considered the only rescue therapy, but in the last years the majority of cases has been managed conservatively. The endoscopic treatment included biliary stent and/or nasobiliary drainage. In our institution, from 2010 we have been using fully covered self-expandable metallic stent (FCSEMS) with nasobiliary drainage always after resolution of the initial indication for ERCP. These stents have the advantage of covering the laceration and allowing free flow of bile into the duodenum instead of into the retroperitoneal space. The aim of this study was to evaluate in our cohort of patients, the benefits of FCSEMS in type II perforations.

Aims & Methods: We experienced six type II perforations associated with ERCP. We retrospectively evaluated the clinical findings, the length of hospital stay, the need for surgery and death.

Results: Of the 3250 ERCP procedures performed from March 2010 to November 2016, only six (0.18%) resulted in perforations (male/female, 2/4; median age: 69 years; age range: 54–80 years). ERCP procedures were performed with carbon dioxide insufflation. Five patients underwent ERCP for biliary stenosis, whereas sphencterotomy was performed and perforation was immediately detected. Successful closure of persistent splenectomy-related duodenal perforation using FCSEMS was obtained in all patients. One patient developed ERCP-related pancreatitis, successfully treated with medical therapy. Three FCSEMS were successfully removed after a median of 18 days, the remaining three fell out spontaneously. The median length of hospital stay was 8.5 days (range 4–20 days). There were no deaths or need for surgery.

Conclusion: The placement of FCSEMS is easy, safe and quick. In our cohort of patients, FCSEMS is an effective endoscopic approach for management of type II perforations recognized during ERCP.

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

References

P0929 EFFICACY AND ONCOLOGIC SAFETY OF ENDOSCOPIC DUODENAL STENTING IN PATIENTS WITH ADVANCED Pancreatic CANCER

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Introduction: Duodenal obstruction is often seen in patients with advanced pancreatic cancer. Endoscopic duodenal stenting (DS) has become increasingly popular due to its less invasiveness compared with surgical gastrojejunostomy. With recent new advances in chemotherapy and radiation therapy, conversion surgery after neoadjuvant therapy are performed in some cases with APC.

Aims & Methods: To evaluate the efficacy and safety of DS as palliative treatment and bridge to surgery in patients with APC. We retrospectively analyzed patients who received DS placement between March 2012 and March 2017. Twenty-three patients (11 men/12 women median age, 65.5; 46–82 years) with APC. GOO scoring system (GOOSS) was used as an index of clinical success.

Results: A total of 23 Patients consisting of 6 patients treated with chemotherapy and 11 patients treated with neoadjuvant chemoradiotherapy were included in this study. Obstructed parts of the duodenum were D1 in 2, D2 in 5, D3 in 12, and D4 in 4. Technical success rate of DS was achieved in 21 patients (91%). The median 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 stenting. Adverse events occurred in 6 patients, including 1 with cholangitis, 1 with bleeding and 3 with stent occlusion. The intervention technique 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 surgery 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.
The role of mitomycin in the prevention of colorectal surgery. Colostomy or ileostomy and later redo anastomosis or more endoscopic dilation therapy. The patients should be more than eighteen years old. Exclusion criteria: Malignant esophageal stenosis, Pregnant or breast feeding women. Deteriorated patients who could not tolerate endoscopic procedures. The method of MMC application – Via 23 gauge injection needle (Optimix 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 up to 52 weeks. Endoscopy Four weeks after MMC injection and when 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>
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<tr>
<td>Number of Bougie dilation before MMC injection</td>
<td>5/6/7/8/9</td>
</tr>
<tr>
<td>The number of session of MMC injection 1/2</td>
<td>3/5</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</td>
<td>8.9</td>
</tr>
<tr>
<td>MMC injection, mm</td>
<td></td>
</tr>
<tr>
<td>Clinical success rate (%)</td>
<td>87.5</td>
</tr>
<tr>
<td>Complications (N,%) perforation bleeding</td>
<td>0(0)</td>
</tr>
<tr>
<td>transference of other interventions others</td>
<td>0(0)</td>
</tr>
</tbody>
</table>

Conclusion: In our study, the mitomycin injection therapy was effective in patients who had retraceable benign esophageal stenosis. The mitomycin injection therapy could be considered as an alternative for retraceable benign esophagus stenosis. A large-scale prospective studies are required in future.

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

References
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Introduction: The prevalence of post-ESD esophageal strictures is non-negligible, with a critical impact on the patients’ quality of life. Balloon-dilation may be the first-line therapy. However, factors associated to a successful dilation in post-ESD strictures remain unclear.

Aims & Methods: This is an observational and analytical retrospective study. Sixty-eight consecutive patients (mean age: 65±11 years, 76.5% men) who underwent endoscopic dilation because of post-ESD symptomatic esophageal strictures between 2006 and 2016 were included. They had Barrett’s esophagus (n=46, 67.6%), epidermoid carcinoma (n=21, 30.9%) and other (n=1). Patients with previous endoscopic dilation or endoscopic dilations, esophageal 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 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 (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 outcomes. In 15 days after ESD, number of dilations (p=0.345), short (<2 cm) 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/6.7weeks). 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 buy 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.

References

P9033 EVALUATION OF FACTORS ASSOCIATED TO A SUCCESSFUL DILATION IN POST-ESD STRICTURES

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Conclusion: Most of patients presenting with post-ESD strictures and dysphagia improve at long-term buy 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.
MANAGEMENT OF ESOPHAGEAL BENIGN STRICTURES

P0934 EFFECTIVENESS OF REPEATED DILATIONS IN THE MANAGEMENT OF ESOPHAGEAL BENIGN STRICTURES

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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, sometimes leading to radical surgical procedure.

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 including 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 incisional 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 last 2 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 dilations, 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, a 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 of 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 background, 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 (54.6%) 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% (34/38) 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...
expansion (1/38, 3%), and fever (1/38, 3%) in Group W and perforation due to obstructive colitis (1/38, 3%) in Group M; 8 cases had stent-related perforations (4/38, 11%) and stent occlusion (1/38, 3%) in Group W and stent occlusion (2/53, 4%) in Group N. All 4 patients with stent-related perforations had undergone palliative stenting with the WallFlex colonic stent, and the stent-related perforation rate in Group W was significantly higher than that in Group N (P < 0.05). In Group D, there were no complications and no stent occlusion.

Conclusion: The technical and clinical success rates were extremely high in all groups; no severe complications were observed. Therefore, POEM is a very effective treatment method for patients with esophageal or esophagogastric junction cancer. One hundred ninety three consecutive patients with esophageal or esophagogastric junction cancer were enrolled in this retrospective study. White blood cells count, polymorphonuclear cells and lymphocytes counts were observed at preoperative time, post-operative day (POD) 1, 3 and 7. Post-operative immune suppression in esophageal or esophagogastric junction cancer presented 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 postoperative and postoperative lymphocyte count.

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

References

P0938 FLEXIBLE ENDOSCOPIC TREATMENT FOR ZENKER’S DENTICULUM OF HIGH ANESTHESIC RISK PATIENTS WITH THE SB KNIFE. TERTIARY CENTRE CENTRE EXPERIENCE
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Introduction: Surgery and endoscopic stapling have been the mainstay of treatment modalities for Zenker’s diverticulum. The need for general anesthesia (GA) is however a limiting factor in high-risk patients, as patients with ZD are often elderly with cardiorespiratory co-morbidities. In recent years, flexible endoscopic septum division (FSED) has gained popularity as a less invasive treatment modality for ZD, that can be performed under deep sedation, and has the potential to be performed safely in patients otherwise deemed unfit for full GA.

Aims & Methods: The aim of this pilot study was to assess the efficacy and safety of FSED for patients deemed unfit for GA. Patients had been referred to our tertiary centre for FSED. Data on 14 consecutive day case patients (median age 81, range 68–93; 7 females) were collected between August 2015 and November 2016. All patients underwent FSED under deep sedation with propofol and remifentanil, and did not require ventilatory support. The amount of propofol used was recorded. Demographic data as well as information of the nature of symptoms and any previous interventions was retrieved. The severity of dysphagia was measured with the Dukkak scale. Data on procedural and 30-day post-procedural complications, including sedation-related side effects, were collected.

Results: All patients complained of dysphagia (median Dukkak score 2, range 1–3) and regurgitation before the procedure. There were no procedure-related nor sedation related adverse events in any of the patients. There were no 30-day post-procedural adverse events. All patients but one experienced complete symptom relief after one treatment session. Median propofol used was 173 mg (range 59–

OUTCOME

IN ADULTS: A SYSTEMATIC REVIEW AND META-ANALYSIS OF

from the Dutch Upper Gastrointestinal Cancer Audit.

Disclosure of Interest:

Results:

mediastinal, retrosternal or subcutaneous).

choice of colonic conduit (right vs. left) or the route of placement (posterior

usually only considered if the stomach is not a viable neo-conduit because of the

To improve the quality of esophageal cancer surgery in the

Introduction:

Retrospective national cohort study. The primary outcome: ‘percentage of

Upper gastrointestinal Cancer Audit between 2011–2016 were included in this

Patients with an esophageal carcinoma who underwent an

ESOPHAGECTOMY, OUTCOMES OF THE DUTCH UPPER

GASTROINTESTINAL CANCER AUDIT

P0939 INCREASING LYMPH NODE RETRIEVAL IN

ESOPHAGECTOMY, OUTCOMES OF THE DUTCH UPPER

GASTROINTESTINAL CANCER AUDIT

P0940 COLONIC INTERPOSITION AFTER OESOPHAGECTOMY IN ADULTS: A SYSTEMATIC REVIEW AND META-ANALYSIS OF THE INFLUENCE OF CONDUIT CHOICE AND ROUTE ON OUTCOME

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Introduction:

Colon interposition was first described as a method to create a neo-oesophagus in 1911 by Kelling and Vuillet, and in contemporary practice is usually only considered if the stomach is not a viable neo-conduit because of the associated high morbidity and mortality. There is no consensus on the optimum choice of colonic conduit (right vs. left) or the route of placement (posterior mediastinal, retrosternal or subcutaneous).

Aims & Methods: The aim of this review was to determine the optimum choice of colonic conduit following esophagectomy in adults.

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

References


A940

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P0941 THE ROLE OF LIVER RESSECTION AFTER CHEMOTHERAPY FOR SYNCHRONOUS COLORECTAL LIVER METASTASIS

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Introduction: The combination of chemotherapy and molecular targeted therapy has improved the outcome of patients with colorectal liver metastasis (CRLM); however, treatment outcomes of liver resection after preceding chemotherapy for CRLM, especially synchronous CRLM (sCRLM), remain unclear. For patients with technically resectable and oncologically suitable sCRLM, we conduct hepatic resection for the metastases at an interval of 3 months after colorectal resection, especially for those with both technically resectable or oncologically unsuitable sCRLM, we perform preceding chemotherapy. The aim of this study was to retrospectively evaluate treatment outcomes of our strategy for sCRLM and explore prognostic factors for determining the indication for liver resection, particularly in patients receiving chemotherapy for sCRLM.

Aims & Methods: Between April 2006 and March 2016, 157 consecutive patients underwent primary tumor resection for sCRLM at our department; of them, 35 patients (s group) underwent subsequent staged liver resection, 109 patients received preceding chemotherapy, and remaining 13 patients received other treatment. Among those who received preceding chemotherapy, 25 patients (CS group) underwent liver resection after chemotherapy, but 84 patients (C group) could not undergo liver resection and continued ongoing chemotherapy. In the
CS group, 16 patients had unresectable disease (due to lack of remnant liver volume or hilar bile duct involvement). Three patients to whom hepatectomy 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 CMZ group than in the S group (often ≥ median value: 6.0 ± 3.5 vs. 2.7 ± 1.7) and number of metastatic lymph nodes (4.2 ± 6.3 vs 2.7 ± 2.1). Nevertheless, overall survival (OS) in the CS and S groups since primary tumor resection was equivalent (3-year survival rate: 86.9% vs 93.4%, Log-rank P = 0.34) and much better than that in the C group (3-year survival rate: 40.2%). Although liver-limited relapse-free survival (RFS) since hepatectomy tended to be worse in the CS group than in the S group (3-year survival rate: 45.5% vs 62.7%, Log-rank P = 0.14), RFS after hepatectomy was equivalent in the CS and S groups (3-year survival rate: 33.3% vs 21.6%, Log-rank P = 0.397). Early tumor shrinkage (ETS) was found to be a stronger poor prognostic factor for liver resection after chemotherapy than existing prognostic factors in univariate and multivariate analyzes, and RFS was much better in patients with ETS than in those with non-ETS (3-year survival rate: 62.5% vs 7.7%, Log-rank P = 0.05).

Conclusion: OS and RFS in the CS group compared favorably with those in the S group despite the high frequency of poor prognostic factors; patients with ETS had a better prognosis after liver resection. Liver resection after chemotherapy revealed comparatively favorable prognosis in well-selected patients with sCRLM, and early responsiveness to chemotherapy was useful in determining the indication for liver resection in patients receiving chemotherapy for sCRLM.

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

P0943 PERIOPERATIVE ADMINISTRATION OF BROAD SPECTRUM ANTIBIOTICS REDUCES THE INCIDENCE OF SURGICAL SITE INFECTION FOLLOWING PANCREATEODUODENECTOMY
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Introduction: Pancreateoduodenectomy (PD) is one of the operations associated with high rate of surgical site infection (SSI). The one of the reasons is said 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 biliary culture. The bacteria cultured from SSI were Enterobacteriaceae such as Enterococcus and Enterobacter species with high frequency. Recently, however, most of the patients who had planned to undergo PD received internal biliary drainage preoperatively. It means preoperative collection of the bile juice is hard for the patient with internal biliary drainage. In order to solve this problem, we compared the conventional perioperative prophylactic antibiotics (Cefmetazole: CMZ) and the broad-spectrum antibiotics covering the Enterobacteriaceae (Piperacillin/Tazobactam + Vancomycin: PIPC/TAZ + VCM), retrospectively. The aim of this study is to assess the impact of two types of perioperative prophylactic antibiotics usage in patients undergoing PD.

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 then three times on the next day of the operation. PIPC/TAZ + VCM was injected intravenously in the morning of operation (20mg/kg) and just after the operation (15mg/kg).

Comparison between CMZ group and PIPC/TAZ + VCM group was performed for the patient receiving the biliary drainage, age, body mass index, performance of neoadjuvant chemotherapy and preoperative biliary stent, operative outcomes (operation time and blood loss) and postoperative course (the incidence of SSI, the duration of postoperative antibiotics and postoperative stay). The side effects of VCM or PIPC/TAZ, and the occurrence of multidrug resistant bacteria were investigated, as well.

Results: There were no significant differences in clinical features and operative outcomes between the two groups. The patients with PIPC/TAZ + VCM received a 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%)) than in those with CMZ (20/38(52.6%)) (p = 0.048). Especially, significantly lower incidence of incisional SSI was revealed in patients with PIPC/TAZ + VCM (2/36(5.6%)) than in those with CMZ (14/38(36.8%)) (p = 0.004). The redneck syndrome as one of the side effects of VCM was observed in 5/31 (16.1%). No multidrug resistant bacteria were identified.

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

P0944 PARADIGM SHIFT? SHOULD A LYMPHADENECTOMY BE ROUTINELY PERFORMED ALSO AMONG GALLBLADDER CANCER PATIENTS WITH T1A DISEASE?
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Background: Current guidelines recommend a lymphadenectomy in patients with T1A gallbladder cancer. The high rate of lymph node metastases in tumors ≤ 3 cm, in particular, supports a more aggressive approach. For patients with tumors ≥ 3 cm, current guidelines do not recommend routine lymphadenectomy, because the rate of lymph node metastases is considered low. This retrospective analysis evaluated the impact of routine lymphadenectomy on disease-free survival in this patient population.

Patients and Methods: A single-institution retrospective analysis of patients undergoing curative-intent operative intervention for gallbladder cancer from 2011 to 2016 was performed. Patients with tumors ≤ 3 cm were considered to have T1A disease. Lymphadenectomy was performed based on the surgeon's discretion. The impact of lymphadenectomy on disease-free survival was assessed using Kaplan-Meier analyses. A multivariate Cox regression analysis was performed to identify independent risk factors for disease recurrence.

Results: A total of 205 patients with T1A gallbladder cancer were included in the analysis. Lymphadenectomy was performed in 118 patients (57.5%). The 5-year disease-free survival rate was 72.1% for patients with lymphadenectomy and 50.4% for patients without lymphadenectomy (p = 0.017). In the multivariate analysis, lymphadenectomy was an independent risk factor for disease recurrence (HR 0.50, 95% CI 0.36–0.71). The factors associated with disease recurrence included tumor size, lymphovascular invasion, and perineural invasion.

Conclusion: Routine lymphadenectomy is associated with improved disease-free survival in patients with T1A gallbladder cancer. This finding supports a more aggressive approach for these patients, including routine lymphadenectomy.

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

References
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Introduction: Cancer is the fifth most common gastrointestinal malignancy and the most common of all biliary tract cancers. Overall, it is associated with a poor prognosis. Consensus guidelines suggest that patients with T1a cancers can be observed with cholecystectomy alone while patients with T1b or greater lesions should undergo lymphadenectomy in the hepatoduodenal ligament. Extent of surgery is especially important for those patients given efficient systemic therapy is lacking.

Aims & Methods: The aim of this study was to critically explore whether such surgery affects the population-based levels given that current evidence is mainly based on small patient series. Especially we assessed the rate of T-stage specific lymph node positivity and the impact of lymphadenectomy on long-term outcomes. The National Cancer Data Base of the United States was reviewed from 2004 to 2012 to identify non-metastatic gallbladder cancer patients with T1a, T1b, or T2 stage primary tumors. Patients were grouped by whether a dedicated lymphadenectomy was performed or not while those with missing information were excluded. Groups were compared for baseline characteristics. Preoperative lymphadenectomy was performed univariately and multivariable adjusted logistic regression with adjustment for important patient- and tumor characteristics. Overall survival was assessed using Cox proportional hazard regression analysis before and after full bipartite pairwise propensity score matching.

Results: Of the 3879 patients included, 287 (7.4%) had T1a, 661 (17.0%) T1b, and 2931 (75.6%) T2 gallbladder cancer. Most patients were female (n = 2751, 70.9%), median age was 72 years (range 21–90). Among patients with T1a, T1b, and T2 disease, 102 (35.5%), 278 (42.1%), and 1526, (52.1%) underwent a dedicated lymphadenectomy, respectively. Over the study period, the rate of lymph node excision increased from 43% to 58% (p = trend < 0.005). The rates of positive lymph nodes were 11.8%, 16.2%, and 42.5% for T1a, T1b, and T2-stage, respectively. 5-year overall survival rate was 31.6% for patients without and 44.6% for patients with a dedicated lymphadenectomy and 58.6%, 43.9%, and 34.5% for T1a, T1b, and T2-stage, respectively. After multivariable adjustment, the odds of undergoing a lymphadenectomy increased with tumor stage compared to T1a disease (vs. T1b: OR 1.37; CI: 1.01–1.86, vs. T2: OR 1.95, CI: 1.48–2.57). Compared to their counterparts, patients who underwent lymphadenectomy for gallbladder cancer were more likely to have had an R0 resection status, had a shorter hospital stay, or radiation therapy, were diagnosed in a higher ASA score, were younger, had a lower Charlson-Deyo-comorbidity score, were operated in high volume centers and traveled a longer distance to the treatment facility. In univariate analysis, no survival benefit of lymphadenectomy was found for T1a disease (HR 1.04, 95% CI 0.70–1.54) while lymphadenectomy improved overall survival in T1b (HR 0.72, 95% CI 0.38–0.90) and T2 stage (HR 0.89, 95% CI 0.53–0.65). Given significant bias of undergoing lymphadenectomy, full bipartite, pairwise propensity-score matching was performed. A trend towards overall survival benefit was present after matching (HR 0.49, 95% CI 0.39–1.09). Overall survival benefit remained for T1b (HR 0.68, 95% CI 0.51–0.91) and T2-stage (HR 0.63, 95% CI 0.55–0.71).

Conclusion: Our results support current consensus guidelines that T1b and T2 gallbladder cancer patients should undergo LA. However, based on the high rate of nodal positivity among patients with T1a disease and the trend towards overall survival improvement among T1a patients who underwent lymphadenectomy, we suggest to rethink this dogma and advocate to perform lymphadenectomy also in surgically fit patients with T1a disease.

Disclosure of Interest: All authors have declared no conflicts of interest.
P0947 COMPARISON OF POSTOPERATIVE CONDITIONS BETWEEN ESOPHAGOGASTROSTOMY 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 esophagogastrostomy with a circular stapler (CS) accompanied by fundoplication in LPG. Afterward, in 2015, to avoid the complication of dislocation, we have been using esophagogastrosenosis with the double-flap technique (DFT) in LPG for gastric cancer.

Aims & Methods: We conducted this study to examine whether DFT can reduce the reflux of gastric juice and enhance postoperative recovery compared to CS.

References

Aims: To compare postoperative conditions between LPG with ES (CS) and DFT in LPG.

Methods: We performed LPG at Keio University Hospital from January 2012 to February 2017. 47 LPGs were performed at Keio University Hospital. First, surgical time, bleeding, incidence of postoperative complication, postoperative hospital stay, and incidence of anastomotic stenosis were examined as surgical factors and compared between the CS group and the DFT group. Second, the rate of gastroesophageal reflux and the condition of the remnant stomach were examined 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 ± 55.5 vs 241.1 ± 26.7 min, p < 0.01). Surgical factors did not show 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 complications were no different. In most cases are a significant difference in time between the DFT and CS groups. In addition to the armamentarium to treat these difficult lesions.

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 leakages. By modifying the delivery catheter we were able to adapt ENPT to treat duodenal defects, that otherwise would have required surgery or more invasive methods to be repaired.

Aims & Methods: Herein, we report ENPT using open-pore Polyurethane-foam and Film Drainage in a series of 10 patients with duodenal leakages. This is an open-label, retrospective, single-center study. Open-pore polyurethane-foam drainage (OPD) devices were constructed out of a piece (1.5 cm x 1.5 cm x 3 cm) of open-pore polyurethane foam which was fixed surrounding the tip of a nasogastric drainage tube. Small bore open-pore film drainage (OFD) device was constructed with a strip of a very thin fragment open-pore double layered film (0.004 inch) of which was fixed surrounding the nasogastric drainage tube. The open-drain consists of two permeable membranes with a small interspace. Fluids are drained along the interspace and through the membranes. Diameter of small-bore OPD is 4–6 mm, depending on the diameter of the drainage tube. OFD is inserted transnasally. The foam is grasped with endoscopic forceps and guided to the duodenal lumen. After correct placement into the duodenal lumen for intraluminal ENPT, the tube is transferred out nasally, to become a nasoduodenal tube. Due to its smaller outer diameter OFD insertion is similar to placing a 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 placement.

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 nasally insertion. OPD and OFD all together accurately at these conditions. From January 2012 to February 2017, 47 LPGs were performed at Keio University Hospital. First, surgical time, bleeding, incidence of postoperative complication, postoperative hospital stay, and incidence of anastomotic stenosis were examined as surgical factors and compared between the DFT and CS groups. Second, the rate of gastroesophageal reflux and the condition of the remnant stomach were examined 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 ± 55.5 vs 241.1 ± 26.7 min, p < 0.01). Surgical factors did not show 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 complications were no different.

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

References


P0949 INFLUENCE OF THE HYBRID METHOD OF DETOXICATION ON CLARIFICATION EFFICACY AT PATIENTS WITH THE MULTIORGAN FAILURE

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Introduction: The main releaser for development of multiorgan failure syndrome becomes the carboxylic acid accumulation. The hypothesis of this plan especially important role is got by the researchers directed to development of sorbents with oxidizing activity.

Aims & Methods: Aim of study is to estimate effectiveness of the modified hae- mosorbsorbtion application for patients about the MOF's. 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 haemosorption was carried out by a reference tech- nique—introduction of a haemosorbtion solution of a neutral anolyte—SKN-2K. To the second group of animals the haemosorbtion was carried out by the developed technique with the same sorbent, but the solution of a neutral anolyte subjected to oxidizing modification. For this purpose, in the flowing mode carried out a half-hour incubation of a solution 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 far lesser degree. After performing detoxication therapy by the developed technique a normalization of all studied parameters is registered. The same ten- dency is revealed also concerning nontoxic components. It is necessary to pay special attention to dynamics of a ratio of the common protein and an index average molecules/the common protein, pointing to synthesis process activation. The carried-out all-clincal blood test revealed the considerable improvement of indexes of white blood. In group of comparison it was not succeeded to achieve the complete normalization of the studied indexes. On the basis of what the conclusion was drawn on high effectiveness of the developed technique, and expediency of its introduction in clinical practice. Under our observation there were 45 patients needing carrying out getter detoxication in the postoperative period. The control group (25) was created by a random sample of case histories compiled on a group of patients with the MOF syndrome who was earlier on treatment in our clinic and receiving a course of haemo perfused therapy by a reference technique. The analysis of results of treatment of patients of a basic group showed that the positive dynamics of clinical indexes expressed in decrease of manifestations of an intoxication syndrome, improvement of health and labora- tory indexes is noted in earlier terms, and degree of expressiveness of positive changes at them was much higher. Dynamics of decrease in endogenic intoxica- tion is reflected by data of laboratory researches. It was shown that it is possible to increase quality of detoxication by a pretreatment of a haemo sorbent solution of a neutral anolyte. As a result of it the sorbent gains padding, oxidizing properties. At such modification there is an inclusion of oxygen-containing and acid groups in struc- ture of a sorbent, and the sorbent gets in addition of a group of carboxylic and phenolic types thanks to which the oxidized coals gain the expressed cation-exchange ability are formed. Therefore, besides actually oxidizing properties a possibility of sorbent to get the properties of a getter is got. This plan especially important role is got by the researchers directed to development of sorbents with oxidizing activity.

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: 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 the aesthetic effect. SILS compared with four-port cholecystectomy. Disadvantages of SILS cholecystectomy include longer duration of surgery, high incidence of postoperative umbilical hernia. However, hernia was predominantly observed during the period of surgical technique development.

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
P0953 BASELINE CHARACTERISTICS IN LAPAROSCOPIC SIMULATOR PERFORMANCE
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Introduction: Laparoscopic technique is the first choice for multiple surgical procedures today. Laparoscopic surgery differs from traditional open surgery in several aspects, for example two-dimensional view of a three-dimensional interior, higher demands on eye-hand coordination and lack of tactile feedback. Laparoscopic surgical skills can be substantially improved by simulator training. Learning via simulators are under constant development and it is important to understand the value of baseline characteristics and abilities to further optimize simulators and training curricula within surgical education. In this study, focus, will be on the PC-gaming experience and visuospatial skill.

Aims & Methods: The aim of the study is to further analyse different factors to laparoscopic simulator training. 48 medical students completed three tasks in a laparoscopic virtual reality simulator, a validated Minimally Invasive Surgical Trainer (MIST, 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 where analysed regarding different parts of the simulation: time, economy of movement, error rate and total score.

Results: The group with high PC-gaming experience performed significantly better in total time (Mean difference = 85.49, p = 0.021) and economy of movement (M = 25.30, p = 0.018) in task 1 and 2. There were no differences between the groups in task number 3. A high visuospatial score correlated with a better result in time to completion (M = 68.89, p = 0.026) and total score (M = 80.16, p = 0.036). The group with both high PC-gaming experience and low visuospatial score performed worst in the simulator exercises.

Conclusion: Laparoscopic virtual reality simulator training can improve performance and visuospatial abilities, and 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
1. van Empel PJ et al. Mapping the Maze of Minimally Invasive Surgery Simulators and training curricula within surgical education. In this study, focus, will be on the PC-gaming experience and visuospatial skill.

P0954 PERITONEAL TUBERCULOSIS: EPIDEMIOLOGICAL DATA, CLINICAL AND EVOLUTIVE ASPECTS ACCORDING TO THE EXPERIENCE OF A TUNISIAN CENTER
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Introduction: Tuberculosis is a major cause of morbidity and mortality worldwide. Its incidence is continually increasing. Peritoneal localization is a particular entity, even less well known, because of its atypical and confusing symptomatology, which in most cases imposes a malignant condition.

Aims & Methods: We collected all patients hospitalized for peritoneal tuberculosis in the Tunisian capital from 2005 and 2015. The aim of this retrospective study was to study the epidemiological, clinical, pathological, diagnostic, therapeutic and evolutive specificities of peritoneal tuberculosis in its various presentations.

Results: The total number of patients was 65. It was 15 men (23.1%) and 50 women (76.9%). The sex ratio was 0.3. The mean age at diagnosis was 40 years (15-79 years). No personal history of tuberculosis has been found in our series. A personal history of tuberculosis was found in 3 patients (4.6%). The general signs of tuberculin impregnation were frequently found (91%). The digestive functional deficit that brought the patients to consult are: abdominal pain (87.7%), abdominal distension (87.5%), diarrhea (16.9%) and sub occlusive syndromes (4.6%). An abdominal mass was observed in only 4 patients (6.1%). Hepatomegaly and splenomegaly were noted in 2 cases for each. The intradermal reaction was positive in only 24% of patients. The research of BK in the ascites fluid was systematically performed in all patients but returned negative in all cases. The quantiferon-TB Gold was performed in 3 patients only and returned positive. The mean level of CA 125 was 250±31U/ml. Confirmation of diagnosis was obtained on the histological analysis of peritoneal biopsies or adnectomy pieces. The main operative findings (in patients with coeloscopy or exploratory laparatomy) were: Whith granulations (98%), adhesions (43.1%) and agglutinated loops (1.5%). The presence of tuberculous granuloma was observed in 52 patients (81%). The course of treatment was as follows: cure in 50 patients (80.6%), recurrence in 6 patients (9.6%), relapse in 2 patients and 3 patients were lost to follow-up. The mortality in our series was 0%.

Conclusion: Peritoneal tuberculosis raises diagnostic problems in the first place, because of its polymorphic and non-evocative clinical expression. Hence the value of carrying out radiological, endoscopic and histo-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.

References

P0955 ABDOMINAL TUBERCULOSIS: A RETROSPECTIVE SERIES OF 150 CASES
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Introduction: Abdominal tuberculosis is one of the most common site of extrapulmonaires forms especially abdominal tuberculosis.

Aims & Methods: The aim of this study was to analyze the epidemiologic, clinical, diagnostic, therapeutic and evolutive features of abdominal tuberculosis in a series of 150 patients. This was a retrospective and descriptive monocentric study of 150 cases of abdominal tuberculosis conducted from 2004 to 2014 in a tunisian center. Diagnosis of tuberculosis was based on histological evidence or otherwise on a beam of arguments.

Results: There were 150 patients enrolled. The mean age was 37.2 (17–72 years). Ninety seven (64.6%) were females. Symptoms were ascites 107 (71.3%), abdominal pain 28 (18.6%), weight loss and reduced appetite 80 (53.3%). Un tableau algique was observed in 37 cases (24.7%). The intradermal 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 15% cases. The quantiferon-TB Gold was performed in 3 patients only and returned positive. The mean level of CA 125 was 250±31U/ml. Confirmation of diagnosis was obtained on the histological analysis of peritoneal biopsies or adnectomy pieces. The main operative findings (in patients with coeloscopy or exploratory laparatomy) were: Whith granulations (98%), adhesions (43.1%) and agglutinated loops (1.5%). The presence of tuberculous granuloma was observed in 52 patients (81%). The course of treatment was as follows: cure in 50 patients (80.6%), recurrence in 6 patients (9.6%), relapse in 2 patients and 3 patients were lost to follow-up. The mortality in our series was 0%.

Conclusion: Abdominal tuberculosis is one of the most common site of extra-pulmonary tuberculosis. No single test is adequate for diagnosis of abdominal tuberculosis in all patients. Abdominal TB remains an ongoing diagnostic dilemma requiring a high index of clinical suspicion.

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

References

TUESDAY, OCTOBER 31, 2017 09:00-17:00

IBD II - HALL 7

P0956 PATHOBIONT-FREE MICROBIOTA PROTECTS AGAINST GUT INFLAMMATION INDUCED BY AN INNATE IMMUNE DEFICIENCY OR DIETARY PERTURBANT OF THE MICROBIOTA
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Introduction: Inability to maintain a stable and beneficial microbiota is associated with chronic gut inflammation, which classically manifests as colitis but may more commonly exist as low-grade inflammation that promotes metabolic syndrome. Alterations in microbiota and associated inflammation can originate from dysfunction in host proteins that manage microbiota, such as the flagellin receptor TLR5, and/or be promoted by exogenous factors that disturb host-microbiota interactions, such as the detergent-like dietary emulsifiers carboxy-methylcellulose (CMC) and polysorbate 80 [1, 2, 3]. That the complete absence of a microbiota (i.e. germ-free conditions) eliminates all evidence of inflammation in...
TLR3-deficient and emulsifier-treated mice demonstrated that these models of gut inflammation in association with dysbiosis might offer insights into microbe 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 TLR3-deficient and emulsifier-treated mice would manifest in a limited pathobiont-free microbiota. WT and TLR3-deficient mice were maintained in gnotobiotic isolators containing altered Schaedler flora (ASF), a community of eight bacterial species. Mice were treated with CMC or P80, or inoculated with AIEC LF82 [4]. Feces were assayed for bacterial loads, microbiota composition, and inflammatory marker lipidase-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 animals. Analogously, relative to similarly maintained WT mice, loss of TLR3 did not result in low-grade intestinal inflammation nor metabolic syndrome under ASF conditions. Concomitantly, the ASF microbial 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. Within CD45+ cells, 33% of T cells were CD45+CD4+ T cells, 2.8% CD45+CD8+ T cells, 2.6% CD45+CD8+ T cells, and 0.4% CD45+CD8+ T cells. Isolated cells were 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. Differenation was confirmed by the 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. No detectable epithelial cell contamination. Within CD45+ cells, 26-47% of T-lymphocytes, 17-24% B-lymphocytes, 8-17% macrophages and 21-46% monocytes were detected by FACS and cytokological analyses (N=3). Cryopreservation did not significantly affect cell viability and surface antigen distribution. Isolated cells were 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.

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

Reference

P0958 ISOLATION AND CHARACTERIZATION OF LAMINA PROPRIA MONOCYTES FROM HUMAN COLONIC MUCOSA

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Introduction: Lamina propria is a thin layer of connective tissue rich in lymphoid cells and macrophages, underlying the epithelium of mucous membranes. 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, including inflammatory bowel disease (IBD). Two major types of IBD are ulcerative colitis, limited to the colon and Crohn’s disease affecting any segment of the gastrointestinal tract. Chron’s disease is a chronic inflammatory disease which can be explained by the high percentage of patients in clinical remission. Comorbidities and psychological factors (optimism) emerged as the main predictive factors of greater disability, reinforcing the importance of multidisciplinary approach to these patients. Clinical activity seems more important to CD than UC patients in terms of disability.

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

References

P0959 FACTORS ASSOCIATED WITH DISABILITY IN INFILTRATIVE 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. 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 standardized psychometric instruments: the Revised Life Orientation Test (LOT-R) and IBD-DI, respectively. The association between sociodemographic, clinical and psychological variables (optimism) and IBD-DI (scale 0-100, proportional to the reported disability) was determined by univariate and multivariate analysis.

Results: A total of 143 patients (70 DC and 73 UC; 50.3% females) with a mean age of 38 ±13 years were included. Most (85.3%) was in clinical remission. The mean IBD-DI-PT score was 7.9 ±10.7, with a significant difference between DC and UC (p = 0.044). In univariate analysis, female gender, high level education, number of days off from work, articular manifestations, number of comorbidities, use of psychotropic drugs and pessimism (low LOT-R score) were significantly associated with higher disability (IBD-DI-PT score). In multivariate analysis, only female gender (β = 0.150), number of comorbidities (β = 0.186) and pessimism (β = 0.370) were significantly associated with higher disability. Clinical activity was associated with higher disability only for CD patients (β = 0.321). Conclusion: IBD outpatients reported low levels disability associated with their disease, which can be explained by the high percentage of patients in clinical remission. Comorbidities and psychological factors (optimism) emerged as the main predictive factors of greater disability, reinforcing the importance of multidisciplinary approach to these patients. Clinical activity seems more important to CD than UC patients in terms of disability.

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

References
significant increase was observed in patients undergoing treatment with cortico-
soids. Regarding HLADR, statistical difference (p = 0.0022) and CD62L (p =
0.001) was observed in the group undergoing biological treatment and the group of healthy controls. 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 - SRP056002 (703 samples from patients with ulcerative colitis).

Results: More than 124 bacterial genera were founded 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 < 0.005) and increasing the concentration of Bacteroidetes type bacteria (p-value < 0.005). For the second group, It was founded decreasing of the concentration of the Actinobacteria type bacteria (p-value < 0.05), 70-fold excess of Bacteroides vulgatus species bacteria concentration was revealed for one sample of the second group (normalized number of reads in control samples was less than 0.003 and reached 0.21 in samples of patients with ulcerative colitis). Additionally, the concentration of Escherichia coli species bacteria was increased in the 40 times for that sample (normalized number of reads in control samples was 0.003 in samples of healthy donors and 3.03 in samples of patients with ulcerative colitis). Although, the predominance of Proteobacteria genus bacteria was not founded. The concentration of Faecalibacterium prausnitzii species bacteria 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 Bacteroides type bacteria) was discovered, which playing important role in the development of ulcerative colitis and its complications. Also, the deficiency of Faecalibacterium prausnitzii species bacteria was discovered, which decrease resistance of mucosa to the conditional-pathogenic microflora.

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

References

P0966 CHANGES OF THE MUCOSAL COLON MICROFLORA ARE CAUSE OF INFLAMMATION AT THE PATIENTS WITH ULCERATIVE COLITIS

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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 H.sapiens population genetics studies and different GWAS studies aimed to investigate connection of the human genes variations with different diseases. It is especially interested 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 study of the connection between the species mucosal genome 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 activity. (Mayo endoscopic index - 3, Rachmelevich 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 - SRP056002 (703 samples from patients with ulcerative colitis).

Results: More than 124 bacterial genera were founded 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 < 0.005) and increasing the concentration of Bacteroidetes type bacteria (p-value < 0.005). For the second group, It was founded decreasing of the concentration of the Actinobacteria type bacteria (p-value < 0.05), 70-fold excess of Bacteroides vulgatus species bacteria concentration was revealed for one sample of the second group (normalized number of reads in control samples was less than 0.003 and reached 0.21 in samples of patients with ulcerative colitis). Additionally, the concentration of Escherichia coli species bacteria was increased in the 40 times for that sample (normalized number of reads in control samples was 0.003 in samples of healthy donors and 3.03 in samples of patients with ulcerative colitis). Although, the predominance of Proteobacteria genus bacteria was not founded. The concentration of Faecalibacterium prausnitzii species bacteria 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 Bacteroides type bacteria) was discovered, which playing important role in the development of ulcerative colitis and its complications. Also, the deficiency of Faecalibacterium prausnitzii species bacteria was discovered, which decrease resistance of mucosa to the conditional-pathogenic microflora.

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

References

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Introduction: The role of incretin hormone, GLP-1, in inflammatory bowel dis-
ses (IBD) development and exacerbations is still poorly understood. GLP-1 decreases blood glucose level and is co-secreted by intestinal L cells with GLP-2, which may be responsible for intestinal growth and enhancement of intestinal function. The prevalence of type 2 diabetes among IBD patients is low, even though IBD 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.

Aims & Methods: The primary aim of this study was to investigate, in the mouse model of intestinal coexisting colitis and type 2 diabetes, the potential involvement of incretin GLP-1 and GLP-2 in the development of experimental diabetes. The secondary goal was to investigate the potential involvement of incretin hormones as an underlying factor. Experimental diabetes was induced by administration of streptozotocin for 5 consecutive days (50 mg/kg, i.p.). Mice with blood glucose levels above 200 mg/dL were considered as diabetic. To develop a chronic and relapsing colonic inflammation, mouse model of colitis induced by intracolonic administration of TNBS (first dose: 150 mg/kg at day 1, booster dose: 75 mg/kg at days 12, 23, 34, 45, 56) was used. On day 60 mice were sacrificed and macroscopic score, ulcer score, colon length and bowel thickness were recorded. In all experiments the levels of inflammation markers: myeloperoxidase (MPO) activity, TNF-α and IL-1β expression were determined. The
effect of colitis on T2D development was studied by assessing fasting glucose levels, as well as glucose tolerance, hormone levels in CD and GLP-2 in UC. Results: The development of hyperglycemia in mice treated with TNBS was delayed compared to a non-inflammatory group, what 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 two distinct mechanisms are 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. Noteworthy, significantly increased in diabetic mice with colitis compared to diabetic mice with no inflammation. No changes in MPO, TNFα, IL-1β were observed between these groups. Conclusion: We propose that GLP-1 production may be stimulated in response to colitis and may contribute to both inflammatory and regenerative phases of the disease. Additionally, our data suggest that the incretin hormones may become a potential new treatment option.

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

P0965 LONG-TERM CONSEQUENCES OF ANTIBIOTIC THERAPY: ROLE OF SCFAS AND INTESTINAL BARRIER INTEGRITY
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Introduction: Epidemiological studies revealed that antibiotics exposure increases the risk of inflammatory bowel diseases (IBD) development (Hvid, 2011, Shaw, 2011, Kromann, 2012). However, mechanisms of this association are not fully understood. Recent studies revealed sustained alterations in gut microbiota after antibiotic treatment (Rashid, 2015, Dethlefsen, 2011). However, mechanisms of this association are not fully understood. Recent studies revealed sustained alterations in gut microbiota after antibiotic treatment (Rashid, 2015, Dethlefsen, 2011). However, mechanisms of this association are not fully understood. Recent studies revealed sustained alterations in gut microbiota after antibiotic treatment (Rashid, 2015, Dethlefsen, 2011). However, mechanisms of this association are not fully understood. Recent studies revealed sustained alterations in gut microbiota after antibiotic treatment (Rashid, 2015, Dethlefsen, 2011). However, mechanisms of this association are not fully understood. Recent studies revealed sustained alterations in gut microbiota after antibiotic treatment (Rashid, 2015, Dethlefsen, 2011). However, mechanisms of this association are not fully understood. Recent studies revealed sustained alterations in gut microbiota after antibiotic treatment (Rashid, 2015, Dethlefsen, 2011). However, mechanisms of this association are not fully understood. Recent studies revealed sustained alterations in gut microbiota after antibiotic treatment (Rashid, 2015, Dethlefsen, 2011). However, mechanisms of this association are not fully understood. Recent studies revealed sustained alterations in gut microbiota after antibiotic treatment (Rashid, 2015, Dethlefsen, 2011).

Results: CF injection leads to compositional changes of fecal microbiota which progress over time. In 56 days, we found increased level of Clostridium spp, E. coli, conditionally pathogenic and hemolytic bacteria. Levels of Bifidobacterium...
in PBMC, MLN and LPC in group B (9.15 ± 0.264 vs 2.533 ± 0.076, 1.672 ± 0.115 vs 0.898 ± 0.044, 5.967 ± 0.100 vs 2.308 ± 0.252, P < 0.05 respectively). But the level of CD3+CD6+CD25+Foxp3+IL17a+ cells were decreased in spleen, PBMC, MLN and LPC compared with group B (0.358 ± 0.021 vs 1.238 ± 0.017, 2.523 ± 0.066 vs 3.915 ± 0.264, 0.897 ± 0.040 vs 1.672 ± 0.158, 5.244 ± 0.052 vs 5.967 ± 0.100, P < 0.05 respectively).

Conclusion: By blocking TollR2, TollR2Ab could improve the level of FrII cells in PBMC, MLN and LPC, but reduce the levels of FrII and Foxp3+IL17a+ cells in DSS induced UC mice. Furthermore, TollR2Ab 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

P0966 THE ROLE OF TLR2-MEDIATED TREG/TH17 IMBALANCE IN THE PATHOGENESIS OF ULCERATIVE COLITIS

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Introduction: According to our previous report, the imbalance of Treg/Th17 cells in the major symptoms of UC mice is related with the reduction of CD45RA Foxp3+ activated Treg(FrII) cells, which has the real function of immunosuppression, and with the elevation of CD45RA Foxp3− Treg(FrIII) cells, which provide Foxp3+IL17a+ Treg(FrII) cells by secrecting IL-17a.

Aims & Methods: To investigate the influence of TLR2 on imbalance Treg/Th17 in UC mice .18 mice were divided into the groups: group A, UC mice group B, UC mice that 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 Tifton Registry. Samples underwent 16S rRNA gene sequencing using Illumina MiSeq platform for data analysis. 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 (7MZ/15DZ age mean 52 years) and 17 discordant for UC (6MZ/11DZ age mean 59.7 years) were recruited. 7 subjects with CD had active disease as did 4 with UC.

Aims & Methods: Participants were recruited via the UK IBD Tifton 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 Tifton Registry. Samples underwent 16S rRNA gene sequencing using Illumina MiSeq platform for data analysis. 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.

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 Alitistipes spp. in active UC.

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

References
subsequently analyzed for STAT3 signaling and NFκB signaling (5′-UTR 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, which correlated with disease severity. In the colon compartment, 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 positive inducers of P2Y2R expression in human CD4+ T cells. Interestingly, high extracellular UTP levels resulted in a decreased expression of the TGF-beta1 receptor on CD4+ T cells, implicating a potential negative feedback loop in which P2Y2R signaling might inhibit TGF-beta induced P2Y2R expression over time. Regarding the impact of P2Y2R signaling on the pro-inflammatory capacity of human lymphocytes, our data indicate that the selective P2Y2R agonist 2-Thio-UTP is able mediate NFκB as well as STAT3 activation and to induce autophagy, as evidenced by a decrease in p-mTOR and p62 expression.

**Conclusion:** The observed increased expression of P2Y2R in CD4+ T cells of IBD patients together with the demonstrated pro-inflammatory effects of P2Y2R signaling in human T cells markedly strengthen the role of P2Y2R as a promising molecular target in IBD.

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

**Reference**


**P0970 PROTECTIVE EFFECT AND ACTION MECHANISM OF APOCYNIN IN IBD MOUSE MODEL**

Aims & Methods: In this study, we aimed to investigate the effect of apocynin on colon inflammation and the action mechanism using chemically-induced colitis mouse model. We used dextran sulfate sodium (DSS)-induced colitis model. 8 weeks old male BALB/c mice were divided into four groups (each group, n=6): control, DSS only, DSS with apocynin, and DSS with sulfasalazine. Water (control and DSS group), apocynin (400 mg/kg) and sulfasalazine (150 mg/kg) were administered by oral route using sonde during 7 days. For western blot analysis, the colon was lysed and protein was extracted. The following antibodies were used: iNOS (BD Biosciences), COX-2, Nrf2 (Santa Cruz Biotechnology Inc), MCP-1, TNF-α, p-NfκB, HO-1 (Abcam), and β-actin (Sigma).

**Results:** Protective effect of apocynin was evident by weight change and colon length. Histologic analysis also showed improved erosion and decreased neutrophilic infiltration in apocynin group compared to DSS group. In colon tissue, several pro-inflammatory enzymes and cytokines were decreased by apocynin. Apocynin also activated anti-inflammatory pathway by inducing activation of NFκB 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 in order to investigate the metabolic, microbiomic, and clinical response of IBD patients to different treatments. Both techniques require a significant amount of sample pre-processing. Rapid Evaporative Ionization Mass Spectrometry (REIMS) is a relatively new technology which applies a laser to a biological sample, and the resulting vapour containing gas phase ions of metabolites and structural lipids, is analysed by a mass spectrometer (2). Unprocessed faecal samples can be rapidly assessed using this technique to obtain lipidomic spectral profiles (2). To our knowledge this is the first study that has used REIMS to investigate whether IBD patients can be distinguished from healthy controls using faecal samples.

**Aims & Methods:** Unprocessed faecal samples from 109 IBD patients and 46 healthy controls were analysed using Rapid Evaporative Ionization Mass Spectrometry. Clinical and dietary data were collected, and patients with significant other co-morbidities were excluded. Partial least squares discriminative analysis (PLS-DA) was performed to examine whether there were differences in the metabolic data between patients with Inflammatory Bowel Disease and healthy controls. Further samples were then carried out including examining whether ulcerative colitis could be distinguished from Crohn’s disease.

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

Conclusion: This early preliminary analysis shows that there is a degree of separation between samples of IBD patients compared to healthy control. This suggests that REIMS analysis has good potential as a research tool in IBD metabolic studies, and importantly in the current ongoing longitudinal IBD research. Further analysis will include identifying the principal metabolites that separate these groups.

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

References

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-trinitrobenzene sulphonic 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-trinitrobenzene sulphonic acid (TNBS)-induced colitis mice (AhR⁻/⁻, AhR⁺/⁺).

Results: Compared to quiescent CD patients, the expression of aryl hydrocarbon receptor (AhR) in the intestinal tissue in active CD patients was decreased. Meanwhile, the number of ILC3 in active CD patients and AhR knockout mice was decreased while ILC1 increased. The intestinal inflammation in AhR knockout mice given TNBS was more severe than wild-type mice.

Conclusion: These findings suggest that AhR may mediate abnormal differentiation of ILC3/ILC1, and the production of inflammatory cytokines, finally, promotes the pathogenesis of CD.

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

References

P0973 PREVALENCE AND GENETIC DIFFERENCES IN ADHESION-RELATED GENES AMONG COMMENSAL AND ADHERENT-INVASIVE E. COLI STRAINS

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Introduction: Long polar fimbriae (LpfA), FimH adhesin and ChiA chitinase have been related with adherent-invasive E. coli (AIEC) pathogenesis. Controversial results have been found regarding the prevalence of LpfA in AIEC vs non-AIEC (1, 2). Some FimH amino acid variants were reported to be specific for AIEC (3) whereas other variants were associated with phylogroup disease origin of the strains (4). Differences in the ChiA sequence were reported between LF82 and K-12 strains but this gene has not been studied in other AIEC yet (5).

Aims & Methods: The prevalence of lpfA and the distribution of fimH and chiA variants, and non-AIEC from different disease origins Crohn’s disease (CD), ulcerative colitis (UC) and colorectal cancer (CRC) were studied with the purpose to determine if these genes could be used as molecular markers for AIEC identification and disease diagnosis. In a collection of 79 AIEC and 29 non-AIEC isolated from CD, UC, CRC patients and controls, lpfA gene was PCR-amplified to assess its presence and fimH and chiA genes were sequenced to identify point mutations. For comparison of FimH and ChiA protein sequences, UPGMA phylogenetic tree and allele identification was performed using MEGA5. The genetic differences were annotated using as reference the K-12 strain. Then, they were analysed statistically according to AIEC pathotype, phylogroup, and disease origin by the χ2 test and non-parametric tests were used to evaluate amino acid variability regarding the adhesion and invasion indices.

Results: Low gene frequency for lpfA141 and lpfA154 was reported (11.7% and 16.7% respectively). LpfA154 was only found in strains from A (22%) and B1 phylogroup (86%) and no relation with AIEC phenotype or disease was observed. Two main clusters of FimH were obtained by phylogenetic analysis, classifying the strains according to the presence of S78N mutation. N70S and S78N variants were characteristic from strains of B2 and D phylogroups as none of the A or B1 strains presented it. Despite statistical significance was not reached, the strains with N70S, S78N, V163A, R166H mutations showed the highest adhesiveness. Regarding ChiA, two main clusters defined by the presence or absence of an insertion in 312–314 residues were obtained. None of the five previously mutations found in LF82 strain was associated with AIEC strains whereas the V415A variant was found specifically in AIEC (20%) (p = 0.049). Of note, among the strains harbouring the 312–314 insertion, a subcluster that shared identical amino acid sequence included the LF82 strain and the 44% of AIEC strains but only the 10% of the non-AIEC (p = 0.019). No differences between FimH, ChiA variants and origin of isolation was observed.

Conclusion: In contrast with other studies, no relation of lpfA presence nor in FimH mutations with AIEC pathotype or disease was observed. Nonetheless, a variant in ChiA sequence more frequently found in AIEC isolates was reported, being an interesting signature sequence for the detection of at least a subgroup of AIEC strains. Further confirmation in a wider strain collection would be required.

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

References

P0974 DISTINCT GUT MICROBIOTA PROFILES IN PATIENTS WITH PRIMARY SCLEROSING CHOLANGITIS AND ULCERATIVE COLITIS

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Introduction: Primary sclerosing cholangitis (PSC) is a progressive disorder of biliary tree which can lead to end-stage liver disease, liver transplantation or even death. Colitis accompanying PSC is considered to be a phenotype of IBD (inflammatory bowel disease) distinct from ulcerative colitis (UC) and is often referred to as "PSC-IBD".

Aims & Methods: Our aim was to compare the gut bacterial microbiota of patients with PSC and UC. Stool samples were prospectively collected and relevant clinical data obtained from 106 study participants, 43 PSC patients with (n = 32) or without (n = 11) concomitant IBD, 32 UC patients, and 31 healthy controls (HC). Sequencing of the 16S rRNA gene including the V3 and V4 regions was performed on Illumina MiSeq platform to cover low taxonomic
levels. Data were further processed in QIIME employing MALT and LIMS to extract alpha diversity.

Results: Microbial profiles in both PSC and UC were characterized by low bacterial diversity and significant change in global microbial composition. *Rothia, Enterococcus, Streptococcus, Veillonella,* and three other genera were markedly overrepresented in PSC regardless of concomitant IBD. *Rothia, Veillonella* and *Streptococcus* were tracked to the species level to identify *Rothia mucilaginosa,* *Streptococcus infantis,* and *S. equi* along with *Veillonella parvula* and *V. dispar.* PSC was further characterized by decreased abundance of *Adlercreutzia equolifaciens* and *Prevotella copri.* Decrease in the genus *Phascolarctobacterium* was linked to presence of colonic inflammation regardless of IBD phenotype. *Akkermansia muciniphila,* *Butyrivibrio rumiaceorum* and *Clostridium colurn* were decreased in UC along with genus *Roseburia.* Unclassified *Actinomycetes* species were markedly increased in overlap syndrome of autoimmune hepatitis (AIH) and PSC. Low levels of serum albumin were significantly correlated with enrichment of order Actinomycetales.

Conclusion: PSC was characterized by microbial features independent of concomitant IBD. The gut microbiota and metagenomic taxa clearly distinguished IBD phenotypes (PSC, IBD and UC) as well as PSC from PSC/AIH.

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

References


significant correlation only with fiber intake (r = 0.07 p = 0.0022). The conclusion is that fiber intake (r = 0.07 p = 0.0022) positively influences the disease activity and patients' quality of life. Based on these results it is suggested that there is a negative correlation between dietary fiber and increased HBI or SCCAI score (r = 0.32, p = 0.002). The presence of lipopolysaccharide in the lamina propria demonstrated positive findings in healthy controls, supported by data from 16s rDNA analysis of blood from healthy controls. In the Ulcerative Colitis cohort in clinical remission the absence of lipopolysaccharide in the lamina propria was associated with elevated levels of LBP and increased breaches of Ocludin (p = 0.0022).

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

References
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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 assessed by means of disease activity index (SCAI) for ulcerative colitis (UC) and Harvey-Bradshaw 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, BMI 26.7±5.3) were included. Patients’ mean daily fiber intake was 21.8 g (IQR 13.8–34.6) and mean daily total fat was 161.4 g (121.2–237) with 43.5% percent energy from fat. Regarding disease activity 34 (24.1%) patients had active disease with HBI or SCCAI score ≥5 whereas 45 (31.9%) patients were in clinical remission (r = 0.03) while there was not significant correlation between fat intake and disease activity 34 (24.1%) patients had active disease with HBI or SCCAI score ≥5 whereas 45 (31.9%) patients had poor quality of life with SIBDQ score ≥5.

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 a low amount of fiber consumption by IBD patients may play an important role in the disease course.

Disclosure of Interest: All authors have declared no conflicts of interest.
associated with the risk for resection. No difference in the results was found between Eastern and Western European patients.

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<td>FCP 3-4</td>
<td>0.067</td>
<td>0.657</td>
<td>0.227</td>
<td>0.117</td>
<td>0.027</td>
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<td>FCP 1-3</td>
<td>-0.048</td>
<td>0.739</td>
<td>0.123</td>
<td>0.381</td>
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<td>0.123</td>
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<td>0.739</td>
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<td>0.835</td>
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<td>0.048</td>
<td>0.739</td>
<td>0.031</td>
<td>0.835</td>
<td>-0.054</td>
<td>0.707</td>
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<td>FCP 2-4</td>
<td>0.062</td>
<td>0.675</td>
<td>0.006</td>
<td>0.982</td>
<td>0.203</td>
<td>0.152</td>
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<tr>
<td>FCP 2-4</td>
<td>0.062</td>
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<td>0.006</td>
<td>0.982</td>
<td>0.203</td>
<td>0.152</td>
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<tr>
<td>FCP 1-3</td>
<td>0.114</td>
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<td>0.154</td>
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<tr>
<td>FCP 1-3</td>
<td>0.114</td>
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<td>0.207</td>
<td>0.154</td>
<td>0.004</td>
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</tr>
<tr>
<td>FCP 1-4</td>
<td>-0.201</td>
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<td>0.907</td>
<td>-0.490</td>
<td>0.001</td>
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<tr>
<td>FCP 1-4</td>
<td>-0.201</td>
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<td>0.020</td>
<td>0.907</td>
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<td>FCP 2-4</td>
<td>0.111</td>
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<td>0.009</td>
<td>0.967</td>
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<tr>
<td>FCP 2-4</td>
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<td>0.091</td>
<td>0.518</td>
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<td>0.967</td>
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<td>FCP 3-4</td>
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<tr>
<td>FCP 3-4</td>
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<td>0.465</td>
<td>0.126</td>
<td>0.369</td>
<td>0.158</td>
<td>0.260</td>
</tr>
</tbody>
</table>

Conclusion: Bifidobacterium relative abundance correlate closely with short term changes in FC suggesting a possible causal association. Other genera and species had poor and inconsistent correlations with short term changes in FC suggesting that they may not be causally related to short term changes in gut inflammatory activity.

Disclosure of Interest: All authors have declared no conflicts of interest.
Results: The median age at diagnosis of CRC was comparable in UC vs 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], 1.28 [0.48–3.04], 0.96 [0.36–3.06], 0.78 [0.60–4.66], 1.36 [0.66–2.89], 0.38 [0.08–1.23], respectively).

Conclusion: In a prospective, multicenter, nested-case control IG-BBD 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 incident cases of CRC.

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. LB. Lecture fees or Advisory Board: Zambon, MSD, Takeda, Abbvie, Sofar, Ferring, Wassermann.

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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 Enterobacter, Klebsiella Peptococcus and it Staphylocococus aureus. 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.

Abstract: P0985. Table 1: Evolution of pouch microbiota 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>
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<tr>
<td>Two-three 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>Entero bacter Klebsiella</td>
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<td>Kohyama</td>
<td>2009</td>
<td>Faeces-PCR Terminal restriction fragment length polymorphism amplification</td>
<td>UC</td>
<td>Uc vs healthy controls</td>
<td>C. coccides</td>
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<td>Hinta</td>
<td>2012</td>
<td>Faeces-I16S RNA</td>
<td>UC</td>
<td>Uc vs healthy</td>
<td>C. coccides group C. leptum subgroup B. fragilis group Aosphotobacter</td>
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<tr>
<td>Six-eight months</td>
<td></td>
<td></td>
<td></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 post ileostomy</td>
<td>Most prevalent: E. coli/Fillonella Enterobacter, Klebsiella Peptococcus</td>
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<td>Bednarz</td>
<td>2015</td>
<td>Swab-culture</td>
<td>UC</td>
<td>UC longitudinal</td>
<td>Enterobacteriaceae most common</td>
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<td>One year</td>
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<td></td>
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<td>Luukkonen</td>
<td>1988</td>
<td>Faeces-culture</td>
<td>UC</td>
<td>Kock ileostomy and ileostomy</td>
<td>Transformation to a “colonic” microbiota</td>
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<td>Hinta</td>
<td>2012</td>
<td>Faeces-PCR</td>
<td>UC</td>
<td>Healthy volunteers</td>
<td>Enterococcus Lacticbacillus</td>
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</tbody>
</table>
P0987 OUTCOME OF ENDOSCOPICALLY ALL RESected Dysplastic lesions in ulcerative colitis

Gastroenterology, CHU Bah El Oued, Algiers/Algeria

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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 resection 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 possible, local resection was performed. 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 minutes) later. Of these, 4 patients refused endoscopic control, 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: 7.56-62.37 months).

Conclusion: Our results confirm that a complete endoscopic resection may be feasible in dysplastic lesions occurred in ulcerative colitis. Nevertheless a closer follow-up is necessary because these patients may develop neoplastic lesions.

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

P0988 CYTOMEGALOVIRUS INFECTION IS ASSOCIATED WITH A POOR OUTCOME IN PATIENTS WITH ULCERATIVE COLITIS TREATED BY VEDOLIZUMB

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Introduction: Cytomegalovirus (CMV) infection has been associated to resistance to several immunomodulatory therapies in Ulcerative Colitis (UC). 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 with UC treated by Vedolizumab from June 2014 to August 2018. A high titers and retroviral load of 2 biopsies in inflamed tissue was performed for each patient in case of loss of clinical response under Vedolizumab. Patients with primary non response to Vedolizumab were excluded. All patients with high mucosal CMV DNA load (3250 copies/mg of tissue) were treated with ganciclovir. Patients with undetectable CMV DNA load disease were considered as control group.

Results: Thirty two patients were eligible (sex ratio M/F: 3/1; mean age: 43.6 years, mean disease duration: 7.5 years, E3 phenotype according to the Montreal classification). Nineteen patients (59.4%) exhibited high CMV DNA load. In the control group, 5 lesions were judged of insufficient in dysplasic lesions occurred in ulcerative colitis. Nevertheless a closer follow-up is necessary because these patients may develop neoplastic lesions.

Conclusion: Our results confirm that a complete endoscopic resection may be feasible in dysplastic lesions occurred in ulcerative colitis. Nevertheless a closer follow-up is necessary because these patients may develop neoplastic lesions.

Disclosure of Interest: All authors have declared no conflicts of interest.
increase the burden of disease from both the clinical and the economic perspective: shorter intervals between repeated procedures, higher missed rates, patient inconvenience, and increased risk of complications are reported in the scientific literature. F-Calprotectin (FC) is a fecal marker of intestinal inflammation; IBD patients exhibit FC levels significantly higher than the general population; IBS patients have FC levels higher than healthy controls, but significantly lower than IBD patients [3]. Therefore, FC can be used as a pre-endoscopic test to differentiate 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 reduction. 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 diagnosed IBD (N=63) and IBS (N=26) patients.

Clinical and health economics results

<table>
<thead>
<tr>
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<th>F-Calprotectin</th>
<th>CRP + ESR</th>
<th>Colonoscopy</th>
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<tbody>
<tr>
<td>N correctly diagnosed IBS</td>
<td>683</td>
<td>657</td>
<td>900</td>
</tr>
<tr>
<td>N correctly diagnosed IBD</td>
<td>98</td>
<td>35</td>
<td>100</td>
</tr>
<tr>
<td>Total costs (EUR)</td>
<td>290,527</td>
<td>477,787</td>
<td>582,106</td>
</tr>
<tr>
<td>Average cost/patient (EUR)</td>
<td>290,5</td>
<td>477,8</td>
<td>582,1</td>
</tr>
<tr>
<td>Colonoscopy complication costs (EUR)</td>
<td>1,978</td>
<td>2,269</td>
<td>6,313</td>
</tr>
<tr>
<td>N colonoscopies avoided</td>
<td>706,3</td>
<td>640,6</td>
<td>0</td>
</tr>
<tr>
<td>Savings acribable to the avoided colonoscopies</td>
<td>336,338</td>
<td>305,051</td>
<td>0</td>
</tr>
</tbody>
</table>

Conclusion: Results show that the usage of FC as pre-endoscopic diagnostic tool is associated with fewer colonoscopies and correctly identifies more disease while decreasing 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

References

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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.

**P0991 CORRELATION BETWEEN INFLAMMATORY BIOMARKERS AND ENDOSCOPIC SCORES IN ULCERATIVE COLITIS: CROSSTHELINESS MAKES THE DIFFERENCE?**

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2Pt Government Associate Laboratory
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**Introduction:** Several endoscopic scores have been used to assess the severity of inflammatory activity 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 (MMS) 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, MMS and the biomarkers of inflammation - erythrocyte sedimentation rate (ESR), C-reactive protein (CRP) and tumor necrosis factor -alpha in a cross-sectional study that included consecutive outpatients that were observed in our department between January and March 2017. Patients with known liver disease, diabetes mellitus, osteoporosis and fractures were excluded.

**Results:** We reviewed the charts of 290 patients with CD treated with TNF-alpha inhibitors (TNF) and 174 patients who are anti-TNF naïve (NB). There were 207 (45%) males and 257 (55%) females in this cohort. TNF patients tended to be younger (average age of 43+/−15 and 54+/−18 years in TNF and NB groups respectively). Mean duration of disease was 14.9+/−10.2 for TNF and 18.6+/−19.2 for NB group. Approximately half of the patients had a smoking history. Average BMI was 27.6+/−6.6. Rates of vitamin D deficiency, insufficiency and normal vitamin D 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 = 0.16/P = 0.001) and to compare the ability of these scores to predict Calprotectin > 100 g/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 g/g.

**Conclusion:** There is a significant correlation between endoscopic scores and Calprotectin, the correlation between scores that take into account the extension the disease were not superior to Mayo Endoscopic Score.

**P0992 IBD – IS IT A RISK FACTOR FOR THE DIAGNOSIS OF HEPATIC STEATOSIS?**

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**Introduction:** Although it is not yet established, recent studies suggest an increase prevalence of hepatic steatosis (HS) in patients with inflammatory bowel disease (IBD). Factors such as chronic inflammation, previous surgeries, drug-induced hepatotoxicity, malnutrition and intestinal dysbiosis seem to be involved in the pathogenesis of this disease.

**Aims & Methods:** We aimed to assess the frequency of HS in IBD patients quantified by CAP (controlled attenuation parameter) and by clinical-analytical methods: Hepatic Steatosis Index (HSI) and Fatty Liver Index (FLI). A secondary aim is to investigate risk factors associated with HS in IBD patients. This was a prospective study that included consecutive patients that were observed in our department between January and March 2017. Patients with known liver disease or alcohol habits were excluded. HS was defined as HSI ≥ 36 or FLI ≥ 60 or CAP ≥ 248.

**Results:** 149 patients included with mean age 40.7+/−13 years, 83 female (55.7%), 59.7% with Crohn’s disease (CD). 62 patients (41.7%) had CAP ≥ 248.20 (13.4%) FLI > 60 and 40 (26.8%) HSI > 36. There were no differences in the mean CAP value (24.6±4.5), HSI (33.3±5.1), and FLI (31.5±23.5) among patients with and without CD and active or inactive disease. We found that patients with CAP ≥ 248 were more frequently obese (27.4% vs 0% P < 0.001), males (54.8% vs 36% P = 0.029) and presented more frequently metabolic syndrome (25% vs 4.6% P < 0.001). Regarding the IBD factors, patients with HS had a higher frequency of previous surgeries (30.6% vs 16.1% P = 0.035). There were no differences between hospitalization, duration of the disease, use of corticosteroids or other IBD treatments.

**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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2Gastroenterology, UMass Medical Center, Worcester/United States of America

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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 naïve (NB). There were 207 (45%) males and 257 (55%) females in this cohort. TNF patients tended to be younger (average age of 43+/−15 and 54+/−18 years in TNF and NB groups respectively). Mean duration of disease was 14.9+/−10.2 for TNF and 18.6+/−19.2 for NB group. Approximately half of the patients had a smoking history. Average BMI was 27.6+/−6.6. Rates of vitamin D deficiency, insufficiency and normal vitamin D 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 = 0.16/P = 0.001) and to compare the ability of these scores to predict Calprotectin > 100 g/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 g/g.

**Conclusion:** There is a significant correlation between endoscopic scores and Calprotectin, the correlation between scores that take into account the extension the disease were not superior to Mayo Endoscopic Score.

**Table 1:** Osteoporosis rates in patients on anti-TNF therapy (TNF) and those naïve to biological medications (NB) before and after age 60.

<table>
<thead>
<tr>
<th>Group</th>
<th>Age &lt; 60</th>
<th>Age &gt; 60</th>
</tr>
</thead>
<tbody>
<tr>
<td>TNF</td>
<td>15.4%</td>
<td>18.2%</td>
</tr>
<tr>
<td>NB</td>
<td>3.6%</td>
<td>30.0%</td>
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**Conclusion:** Rates of vitamin D deficiency, and osteoporosis were similar among patients on anti-TNF medications to those on no biologics. TNF group patients were diagnosed with osteoporosis at an earlier age compared to NB group. Patients on anti-TNFs also had statistically lower Z-scores at the spine. Prospective studies are necessary to further determine the role of anti-TNF medications in osteoporosis.

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

**P0994 THE AVAILABILITY OF INFlixIMAB TROUGH LEVELS IN IBD PATIENTS ON MAINTENANCE THERAPY DEEPLY IMPACTS THERAPEUTIC DECISION-MAKING**

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**Disclosure of Interest:** All authors have declared no conflicts of interest.
Introduction: Infliximab (IFX) trough levels (ITLs) have emerged as a promising tool for the management of inflammatory bowel disease (IBD) patients and they correlate with clinical response and endoscopic remission. However, its use in clinical practice is still under debate, particularly in clinically stable patients.

Aims & Methods: 1) to describe real-life ITLs in clinically stable IBD patients; 2) to evaluate the association between different ITLs factors associated with infratherapeutic ITLs; and 3) to evaluate the impact of ITLs availability by comparing the CCR with TLGD. The decisions between experts were also compared. Both comparisons were calculated by the linear Cohen’s Kappa (κ) index. IBD patients on maintenance IFX therapy were prospectively included from June 2015 to June 2016. Demographic, clinical and biological data including C-reactive protein (CRP) levels from the same infusion day were collected. At each IFX infusion, patients were visited by their physician; a “current clinical decision” (CCD) was taken regarding clinical data and CRP. The decision made just before the IFX infusion was considered as infra-therapeutic if <2 μg/mL. Once ITLs were known, 3 experts took a hypothetical decision on treatment based on the same clinical and biological data plus ITLs (ITL-guided decision - TLGD).

Results: A total of 224 IFX infusions from 74 patients (76% Crohn’s disease) were analyzed. Median (IQR) disease and IFX therapy duration was 10 years (5–18) and 23 months (7–61), respectively; 87% received concomitant immunosuppressant therapy; 70% were on standard dosing, whereas 10% were scheduled every 4-6 weeks and 13% every 12 weeks. 60% of the patients had clinical and biological remission. Median (IQR) CRP levels were 3.1 mg/mL (1.5–6.1). Median (IQR) ITLs were 1.79 μg/mL (0.35–5.74), with 52% of patients having infratherapeutic ITLs. In the multivariate analysis, the only risk factor for infra-therapeutic ITLs was the presence of biological activity. Concordance between CCD and TLGD was poor (κ = 0.10 [95%CI:0.01–0.20] vs κ = 0.11 [95%CI:0.01–0.21]) for experts A/B/C, respectively. This “disagreement” is due to a higher proportion of dose-escalation decisions 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. This disagreement between experts was moderate (κ = 0.55 [95%CI:0.41–0.71]) vs 0.40 [95%CI:0.26–0.55] vs 0.30 [95%CI:0.21–0.40] for experts A-B/C-C, respectively.

Conclusion: Our results highlight the impact of the inflammatory burden on ITLs and 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, Takeda, AbbVie, Janssen. All other authors have declared no conflicts of interest.

P0995 THE DIAGNOSTIC UTILITY OF LINKED-COLOR IMAGING IN THE EVALUATION OF MUCOSAL INFLAMMATION IN PATIENTS WITH ULCERATIVE COLITIS

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Introduction: Recent studies recommend the histological mucosal healing of the intestinal tissue as a treatment goal in ulcerative colitis (UC). The intestinal tissue (IT) can be evaluated based on color differences by white-light imaging (WLI). However, these findings are not always correlated with the histological findings, and often tend to underestimate the inflammatory activity compared to the histological findings. Linked-color imaging (LCI) is a new endoscopy system that enhances the color differences of the gastrointestinal mucosa. We investigated the efficiency of LCI in the evaluation of the intestinal activity, including the histological activity, in patients with UC.

Aims & Methods: To check whether the IT could be evaluated with LCI in UC patients underwent colonoscopy from August to December 2016. Twenty-one UC patients, who were evaluated using an EC-L600Z endoscope with the LASEREQO system (FUJIFILM Co., Tokyo, Japan), were enrolled. All of the target lesions were observed by WLI and LCI, and biopsy specimens were obtained from the lesions with the reddest tones in each view. A total of 96 lesions were biopsied. We quantified the color tones on LCI based on the L*a*b* color values (LCI-L, LCI-a, LCI-b), where L* a* and b* represent lightness, red color, and yellow color, respectively. We also quantified the color tones on WLI (WLI-L, WLI-a, WLI-b) based on the L*a*b* color values. The endoscopic images were classified according to the Mayo endoscopic score (MES), and biopsied specimens were classified according to the Geboes score. The endpoint of this study was to measure the correlation between the color tones on WLI-L, WLI-a, WLI-b with the corresponding MES scores.

Results: The findings suggested the utility of LCI in evaluating mucosal inflammation in patients with UC.

Conclusion: LCI was superior to WLI for predicting mucosal healing and histological activity. The findings suggest the utility of LCI in evaluating mucosal inflammation in patients with UC.

Disclosure of Interest: All 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 ENMENTE PROJECT

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Introduction: Inflammatory Bowel Disease (IBD) patients live situations that may trigger negative feelings and psychological malaise. ENMENTE Project is globally to improve identification 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 GITECCU (Spanish Group for IBD treatment). Both invited their members to participate by email and the patients’ report 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 physicians and patients 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 patients (mean age 44 ±10 years, 58% women). Having an ostomy, fecal incontinence in public or surgery are important triggers of anxiety in patients (p <0.05). Both patients and physicians agreed that patients and physicians (table). Patients, however, experience anxiety from a possible new flare or from being fatigued, whereas physicians are more concerned about anxiety due to telling about a new IBD diagnosis and about pregnancy in IBD patients (table). Mean scores from physicians and patients about clinical situations triggers anxiety or depression

To what extent these clinical situations may trigger anxiety or depression? Physicians (n = 151) Patients (n = 155) p-value
The lack of diagnosis 6.3 6.0 ns
The diagnosis of IBD 6.2 5.6 < 0.05
The performance of an endoscopy 5.6 5.7 ns
The explanation of an ostomy 6.6 5.9 ns
A new oral treatment 4.8 4.8 ns
A new auto-injectable treatment 5.6 5.3 ns
A new intra-venous treatment 5.9 5.3 ns
A surgery 6.7 6.5 ns
Having an ostomy 6.9 6.9 p < 0.05
A pregnancy 5.9 4.0 < 0.05
The pain 6.3 6.1 ns
An episode of public inconvenience 6.8 6.6 ns
A new flare 6.2 6.5 < 0.05
Changes in the body image 6.3 5.9 ns
Tiredness, fatigue, reduction in performance 6.0 6.3 < 0.05

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 patients to manage a new condition and the 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 INMMUNOASSAY INFlixIMAB AND ANTI-INFLIXIMAB FOR THE THERAPEUTIC DRUG MONITORING OF SB2

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

Aims & Methods: During this evaluation, standard curves of infliximab and two different batches of SB2 were compared and then accuracy of the Lisa-Tracker IFX kit in detecting the spiked concentration of SB2 was measured using the Lisa-Tracker assay. Levels of infliximab (from 5 spiked samples with known amount of SB2 and 10 clinical samples from patients treated with infliximab) were calculated according to each of the 3 standard curves (infliximab, SB2 batch1 and SB2 batch2). All samples and standards were tested in duplicate. Reproducibility was assessed by 2 intra-run and 1 inter-run precision were also measured with spiked samples of different known SB2 (from 2 to 12 µg/mL) amounts. Accuracy 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 Lisa-Tracker 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 shown by a linear matrix and the % 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 range from 3.3 to 17.9%). Finally, the capacity of polyclonal antibodies to infliximab to block the detection of infliximab was shown (87%). The sensitivity and specificity values of 72.7% and 76.2%.

Conclusion: In conclusion, Lisa-Tracker Infliximab and anti-Infliximab assays are suitable for the monitoring of SB2 treated with SB2. Biogen provided the SB2 drug for this study. Biogen reviewed the protocol 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.

Aims & Methods: We prospectively included all IBD patients treated in our IBD unit and in clinical remission (CDAI < 150 for Crohn’s Disease (CD) or partial Mayo score < 3 for ulcerative colitis (UC)) with biomarker normalization (fecal calprotectin < 250 µg/g stools) or in deep remission (clinical remission with fecal calprotectin < 50 µg/g stools). We analyzed median of TLI and fecal calprotectin at the inclusion (M0) and 6 months before eligibility (M-6). We excluded patients with deep remission at M-6.

Results: 111 patients were included (60 CD, sex ratio M/F: 0.8, 51 patients in 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 6 months before eligibility (M-6) of patients in deep remission at M0 (51 patients). The median TLI was significantly lower at M-6 than at M0 (41.4 µg/mL vs 59.4 µg/mL respectively; p = 0.003). Conversely, median fecal calprotectin was significantly higher at M-6 in comparison to M0 (190 x vs 35 µg/g stools; 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 TLI can 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.

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2. Ben-Horin S, Margalit M, Bossuyt P, Maul J, shaprira Y, Bojic D, et al. 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 severe course of the disease, UC (46.40%) and CD (24.20%) (which is significantly higher than in patients with CD, respectively 18.1% to 9.30% with CD and 12.50% with UC, whereas in 2016- 12.20% with CD and 27.80% in a referral center was performed to evaluate the incidence of the principle of quantitative immunochromatographic assay for the determina-

Aims & Methods: Because of insufficient data from developing countries.

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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 with CDI by 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 informa-
tion, diagnosis, anatomic location, IBD therapy, antibiotic exposure, hospitalization, and comorbidities 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 Dehyd-grogease + Toxin A + B based on the principle of quantitative immunochromatographic assay for the determina-

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 CD positive. Their number in 2016 is significantly higher than that in 2014. In 2014 it was ~5.90% with CD and 12.30% with UC, whereas in 2016- 12.20% with CD and 27.80% with UC (p < 0.05). There are a stong correlation between CDI incidence in patients with IBD and the severity of their disease. Patients positive for 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 more affected by it. 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 regimes and also to understand how the CDI affects the evolution of the disease.

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

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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 INFX-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.

Table 1: Study criteria

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<th>Inclusion criteria</th>
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<td>Age ≤ 45 years</td>
<td>Known Iron deficiency anaemia</td>
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<tr>
<td>Presenting complaint: diarrhea, constipation and abdominal pain/bloating</td>
<td>Overt or obscure GI bleeding</td>
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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 diarrhea predominant symptoms, and Group B; 110 (45%) patients with constipation predominant 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 ileocolic inflammation (all diagnosed with IBD). 28 of 36 (78%) patients with mucosal inflammation confirmed on histology had diarrhea (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
P1003 FAECAL CALPROTECTIN, AND MAGNETIC RESONANCE IMAGING ARE RELIABLE TOOLS TO DETECT ENDOSCOPIC POSTOPERATIVE RECURRENTE IN CROHN’S DISEASE

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Introduction: As surgical resection is not curative in Crohn’s disease (CD), post-operative recurrence (POR) remains a crucial issue. The POCER trial has consecutively included in this prospective study. All the patients underwent magnetic resonance imaging (MRI) and fecal 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), MaRIA (3) and MR score (4) within the first year after surgery or preventing POR. However, as colonscopy is a burdensome procedure, alternative tools 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), MaRIA (3) and MR score (4) within the first year after surgery or preventing POR. However, as colonoscopy is a burdensome procedure, alternative tools have been developed such as faecal biomarkers and magnetic resonance imaging (MRI).

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All other authors have declared no conflicts of interest.

P1004 SMALL BOWEL PREPARATION IN PATIENTS WITH CROHN’S DISEASE: THE POLYETHYLENE-GLYCOL IS NO LONGER USEFUL

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Introduction: PEG preparations reduce the acceptability of endoscopic explorations but remains recommended before performing a small bowel videocapsule (SBVC). No study has evaluated its impact on the small bowel cleanliness compared to other modalities in patients with Crohn’s disease (CD). The objective of this study was to compare three methods of preparation, one using polyethylene-glycol and two simplified methods in adult patients with CD.

Aims & Methods: Three methods of preparation i.e. low-residue diet the evening before more 1 L PEG before the capsule (PEG), liquid diet the evening before the capsule (LD) and 1.5 L of water at the time of the capsule (Water) compared to the two other modalities LD (6.3) and Water (6.5). The cecal intubation rate was significantly lower in the PEG group 66% versus 91% (LD) and 94% (Water) (P=0.262). 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).
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 bentonite was more favored by the patients and was more efficient.

Disclosure of Interest: A. Bourreille: Advisory Boards: Medtronic Corps, formations: Medtronic Aids for research: Medtronic All other authors have declared no conflicts of interest.

Aims & Methods: Totally, 10 consecutive patients with inactive or mildly active UC were enrolled, and fifty-three areas were assessed by LCI. All examinations were conducted with a LASEREO endoscopic system (FUJIFILM Co., Tokyo, Japan). During the colonoscopy, each region of interest (ROI) of terminal ileum, cecum, ascending colon, transverse colon, descending colon, sigmoid colon, and rectum was assessed. High-definition 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, indicating 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 45.6 ± 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 histology. 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 mucus color compared with 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-tended to be inversely proportional to high ΔC (ΔC: -0.8 ± 1.9, p = 0.00; ΔS: 13.0 ± 0.9, p = 0.04) but not significant in the present evaluation. The colon mucosa with the low Mayo endoscopic subscore-tended were relatively easily detected by LCI compared with WLI. Conclusion: The present pilot trial indicated that the inactive UC mucosa could be detected as the white area by the LCI mode compared to WLI, suggesting that LCI might be a novel approach for evaluating the disease activity of UC.

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

Reference
P1008 FAecal AMINO ACID PROFILES AS NOVEL NON-INVASIVE BIOMARKERS FOR THE DETECTION OF PEDIATRIC INFLAMMATORY BOWEL DISEASE: A METABOLIC 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 ‘aminogram’ has not yet been studied in faecal samples of IBD patients. The aim of this explorative study was to compare faecal amino acid composition between paediatric de novo IBD patients and healthy controls, and between the phenotypes ulcerative colitis (UC) and Crohn’s disease (CD).

Aims & Methods: In this cross-sectional case-control study, paediatric treatment naïve IBD patients from a tertiary centre were included, before bowel cleansing and colonoscopy. Control patients were recruited from schools in the province North Holland, the Netherlands. All participants collected a faecal sample on the same day colonoscopy was performed. To prevent bias by peak overlap of different amino acids, outcomes of amino acid analysis were 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 this by peak overlap of different amino acids, outcomes of 5 nmol/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 ≤5nmol/mg. In particular, alanine, glycine, phenylalanine, leucine, isoleucine, valine and lysine differed between IBD patients and healthy controls with ratios up to 1.5 (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</th>
<th>ulcerative colitis</th>
<th>Crohn’s disease</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>median</td>
<td>median</td>
<td>median</td>
</tr>
<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 (1.74-4.56)</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>4.30 (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 (1.68-4.57)</td>
</tr>
<tr>
<td>Valine</td>
<td>0.96 (0.76-2.61)</td>
<td>2.43 (2.35-5.19)</td>
<td>4.41 (3.29-6.64)</td>
</tr>
<tr>
<td>Lysine</td>
<td>1.72 (1.21-4.03)</td>
<td>2.63 (1.75-6.44)</td>
<td>4.62 (2.78-8.04)</td>
</tr>
<tr>
<td>Serine</td>
<td>0.81 (0.52-1.69)</td>
<td>1.08 (0.97-1.96)</td>
<td>2.57 (1.48-4.57)</td>
</tr>
</tbody>
</table>

Conclusion: This was the first pilot study to assess the potential of the faecal aminogram as an 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 MICROSOSAL HEALING 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 IBD treatment with IFX. 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 Biosciences, Nashua, NH, USA) on serum samples drawn before infusion. At the same time quality of life using 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 IFX maintenance therapy [55 CD, 19 UC, 9 males, mean age 42.3 years, 45 on combination therapy with immunomodulators (IMM), 10 under intensified dose (either 10 mg/kg bw 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 (0.03-30.7). Seven out 74 (9.5%) were positive for ATIs (>10 AU/ml), Patients on combination treatment had significantly higher IFX-TLs (6.98 µg/ml, 0.34-30.7) compared to those on IFX monotherapy (1.85 µg/ml, 0.09-25.8) (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, 0.03-30.69) (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-TL or ATIs with other disease characteristics were observed. In the logistic regression analysis only IFX-TLs (OR 0.97, 95% CI 0.95-0.99 p = 0.04) 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>
</tr>
</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>SIBDQ</td>
<td>0.18</td>
<td>0.48</td>
</tr>
<tr>
<td>PLA</td>
<td>0.09</td>
<td>0.44</td>
</tr>
<tr>
<td>CRP</td>
<td>0.08</td>
<td>0.48</td>
</tr>
<tr>
<td>Alb</td>
<td>0.03</td>
<td>0.07</td>
</tr>
<tr>
<td>ATIs</td>
<td>0.34</td>
<td>0.01</td>
</tr>
<tr>
<td>Combined with IMM</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 IFX-treatment. Combination treatment with IFX and IMM 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
was higher in group I. And Family and Bacteroides Genus were numerous clearly, and both were higher in ment of UC. In bacteria having significant difference, especially Bacteroidaceae indicating a relevant association between gut microbial species and the develop-
vment of UC. In bacteria having significant difference, especially Bacteroidaceae (P. magnifica) and Peptoniphilaceae Family.

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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 investigations of gut microbiota in faecal samples. Twenty-five patients had active UC (group I) and 57 had quiescent UC; 29 with mild inflammation in the large intestine (group II), and 28 without inflammation (group III). The patients’ relatives were consanguineous (group IV, n = 33), and non-consanguineous (group V, n = 28). The subjects’ age ranged from 15 to 69 years. Faecal bacteria between groups I to V were compared by the t-test. The Discriminant analysis in all five groups was done for each Phylum, Class, Order, Family, Genus and Species. The Canonical Discriminant Function Coefficient (Df) for each bacterial community was calculated. The quantity of each bacteria was multiplied by the Df value, and the sum was termed the Discriminant Score (Ds). Next, we tried to analyze the quantity and the diversity of the bacteria which had significant difference.

Results: We obtained 1011 varieties of bacteria as Phyla, Class, Order, Family, Genus and Species. Any individual bacterial quantity with 0 value >95% of group I and group V, the mean of the individual quantity of bacteria <0.05% cases (648) were excluded. The t-statistics was done on 363 bacteria between groups I to V. Significant difference was calculated in 18 Species, 10 Genus, and 4 Families. The Discriminant analysis was done on these 18 Species from all groups. The Ds value showed an increasing tendency in this order: group I < group II < group III < group IV < group V. Significant difference was calculated for group I vs group II, vs group III, vs group IV, and vs group V (P < 0.05). Likewise, group V vs group I, vs group II, vs group III (P < 0.05), indicating a relevant association between gut microbial species and the development of UC. In bacteria having significant difference, especially Bacteroidaceae Family and Bacteroides Genus were numerous clearly, and both were higher in group I, active UC. It’s odd that the diversity of Bacteroides Genus was higher in Group V, non-consanguineous relatives, but the quantity of Bacteroides Genus was higher in group I. And Bacteroides fragilis was increased in group I, and the others of Bacteroides were increased in group V, it depends on the amount of Bacteroides fragilis. In active UC, the amount of Bacteroides fragilis was increased, but the diversity of Bacteroides Genus was decreased. It’s very inter-
esting, and the balance can be key point between Bacteroides fragilis and the diversity of Bacteroides in UC activity. And about Genus Anaerococcus, Finegoldia and Peptoniphilus, about Species Anaerococcus vaginalis, Finegoldia magna and Peptoniphilus gorbachii were increased in group V significantly. All these bacteria belong to Peptoniphilaceae Family.

Conclusion: In this study, we compared 363 bacteria between active UC patient to control, significant difference was calculated in 18 Species, 10 Genus, and 4 Families. To our knowledge, this is the first report on so many bacteria being related to UC activity. Additionally, the Ds related to UC, or otherwise absence of UC in the five groups. Potentially, Ds might be a clinically relevant biomarker of disease activity in UC. This is the first application of the Ds to the study of the microbiota in UC patients, consanguineous and non-consanguineous relatives by using NGS. Moreover we could obtain a lot of interesting results about the quantity and the diversity of the bacteria, especially Bacteroides and Peptoniphilaceae.

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

References

P1011 EVALUATION OF PET-MRI AND FECAL BIMARKERS TO ASSESS DISEASE ACTIVITY IN PATIENTS WITH ULCERATIVE COLITIS

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Introduction: Endoscopy is the gold standard diagnostic tool in ulcerative colitis (UC). However noninvasive methods like cross-sectional imaging and fecal biomarkers are needed for interval clinical assessments and assessing response to medical treatment. The combination of positron emission tomography (PET) with 18F-fluorodeoxyglucose (18F-FDG) with magnetic resonance imaging (MRI) as integrated PET/MRI in one examination is a new cutting-edge tech-
nology for the non-invasive assessment of the inflammatory activity in UC.

In addition a panel of noninvasive biomarkers like Lactoferrin and Calprotectin are increasingly popular and used in all-day patient care.

Aims & Methods: To compare the performance of non-invasive biomarkers to PET/MRI and colonoscopy in patient with UC. In every patient a PET/MRI including the maximum standardized uptake value ratio gut/liver (SUVRatio) and a colonooscopy including an endoscopy index (EI) was performed within 48 hours and the Disease Activity Index Mayo score (DAI) was calculated. Fecal Lactoferrin (LF), CalprotectinMUN (CalP), CalprotectinCALPREST (CalP), PMN-elastase (PMN-E), S100A12, Eosinophil-derived Neurotoxin (EDN) as well as CRP were correlated to the SUVRatio, the DAI and the EI using correla-
tion analyses. Sensitivity, specificity and diagnostic accuracy were calculated using 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 ± 10.6 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 SUVRatio (r = 0.45; p = 0.009), EI and DAI (r = 0.32; p = 0.87; p = 0.000) as well as DAI and SUVRatio correlated significantly (r = 0.40; p = 0.022). SUVRatio was correlated significantly with LF (r = 0.36; p = 0.046), EDN (r = 0.49; p = 0.05), and CRP (r = 0.36; p = 0.043), but not with PMN-E, S100A12 and CalP (p < 0.05). DAI was correlated significantly with PMN-e (r = 0.55; p = 0.001), LF (r = 0.52; p = 0.001), EDN (r = 0.70; p = 0.000), CalP (r = 0.46; p = 0.008), and CRP (r = 0.56; p = 0.001), but not with S100A12 and CalP (all p > 0.05). EI was significantly correlated with LF (r = 0.61; p < 0.001), but not with PMN-E, S100A12, PMN-e, Edn (p = 0.05). PMN-e (r = 0.50; p = 0.03), S100A12 (r = 0.41; p = 0.021), CalP (r = 0.32; p = 0.002), CRP (r = 0.44; p = 0.012), but not with CalP (p > 0.05). The median levels (inactive/active) were: LF: 1.75/20.13 µg/g, CalP: 60.25/105.60 µg/g; PMN-e: 6.42/10.63 µg/g; PMN-e: 60.40/100.40; PMN-e: 75.5%/75.0%/75% (CI 80.5%/86.2%), 68, 43 µg/g; PMN-e: 83.3%/75.0%/81.25% (CI 62.5%/53.6%/57.8%, 361 µg/g); CALI: 62.5%/62.5%/62.5% (CI 53.6%/57.8%/62.5%, 43 µg/g);

Conclusion: Using EI as gold standard reference we found that fecal biomarkers LF, EDN, PMN-E and S100A12 could reliably distinguish between active and inactive UC. However, CalP did not perform well. Both LF, PMN-E and CRP were significantly correlated to the SUVRatio which was significantly correlated with EI and DAI. In conclusion, Lactoferrin and Eosinophil-derived Neurotoxin performed best using endoscopy and PET/MRI as reference.

Disclosure of Interest: J. Langhorst: Research grant by Techlab Inc. J.H. Boone: Employee of Techlab Inc. All other authors have declared no conflicts of interest.

References


Langhorst J, Boone J, Hauche R, Ruffel A, Dobos GJ. Fecal Lactoferrin, Calprotectin and PMN-elastase, CRP, S100A12, PMN-e 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
Introduction: At present, drug response to infliximab is monitored by trough levels of antibody levels, another pathway of drug degradation has been hypothesized since MMP3 and MMP9 were found to be able to cleave IgG, like infliximab, in both animal and human experimental studies (1).

Aims & Methods: We collected serum samples in 102 patients (27 Crohn’s Disease and 75 Ulcerative Colitis) treated with stable doses of infliximab for at least 6 months (t0) and 6 months thereafter (t1). In each patient TL, ATI values and MMP3 levels were assessed at t0 and t1 by ELISA. In addition, MMP3 levels were also determined 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 mg/ml and 15.0±1.6 mg/ml, respectively) and in healthy controls (14.5±1 mg/ml). Patients with low TL but ATI positive had 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 mg/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-TNFs 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 MANAGEMENT OF INFLAMMATORY BOWEL DISEASE PATIENTS

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Introduction: More than one third of inflammatory bowel disease patients (IBD) present gastrointestinal manifestations, which are the more common, clearly the more incapacitating and which more alter the quality of life of IBD patients. These patients could benefit from a multidisciplinary approach for quicker diagnosis and for optimizing treatments.

Aims & Methods: The aim of the study was to evaluate the impact of a multidisciplinary approach carried out by both a rheumatologist and a gastroenterologist in the management of these patients. Therapeutic changes after the combined assessment were also evaluated. Methods From April 2015 to April 2017, all IBD patients reporting articular pain to the IBD-dedicated gastroenterologist were referred to an experienced rheumatologist. The day of the consultation a multidisciplinary committee with a rheumatologist and a gastroenterologist evaluated and discussed in all patients their possible comorbidities and potential changes in their treatment. Assessment was made according to current guidelines and data recorded in a common database according to the reasons why patients were remitted from IBD, their rheumatologic diagnosis and all changes implemented in their treatments. Results are shown in percentages.

Results: 112 consecutive IBD patients were remitted from the IBD Unit and analyzed by the committee. Mean age 38 years (ranging from 18 to 73). Most patients were women (67%), 19% were smokers and 23% former smokers. 51% of patients had Crohn’s disease and 49% ulcerative colitis. The main causes for derivation from IBD were a suspicion of inflammatory arthropathies in 43% and of arthromyalgias in 40%. The more frequent diagnosis after the rheumatology consultation and the committee meeting were inflammatory arthropathies associated with IBD in 41% (51.5% presented axial arthropathies and 48.5% presented peripheral arthropathies) and fibromyalgia in 15%. Regarding treatment changes, after the multidisciplinary committee with a rheumatologist and a gastroenterologist, changes were made in 28% of patients. Of those, 35% of patients methotrexate was added in patients with biologic treatment (in some of them patients were in monotherapy, but in others the drug was introduced for replacing thiopurines). In 24% of patients sulfasalazine was introduced instead of mesalamine. In the other patients either other biologics like adalimumab associated with IBD in 41% (51.5% presented axial arthropathies and 48.5% presented peripheral arthropathies) and fibromyalgia in 15%. Regarding treatment changes, after the multidisciplinary committee with a rheumatologist and a gastroenterologist, changes were made in 28% of patients. Of those, 35% of patients methotrexate was added in patients with biologic treatment (in some of them patients were in monotherapy, but in others the drug was introduced for replacing thiopurines). In 24% of patients sulfasalazine was introduced instead of mesalamine. In the other patients either other biologics like adalimumab associated with IBD in 41% (51.5% presented axial arthropathies 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 it should not be confused with drug-induced fibromyalgic syndrome. A rapid test allows a much faster assessment of therapeutic levels, providing a great advantage over test formats that need samples to be sent to a central laboratory. Here, we present the analytical performance characteristics as part of the validation of the Quantum Blue® Adalimumab test from BÜHLMANN.

Aims & Methods: The sandwich lateral flow immunoassay uses a tumor necrosis factor alpha coated label and a highly specific monoclonal antibody to detect adalimumab in a diluted human serum sample. Evaluation was performed according to CLSI guidelines. The linearity study included multiple concentration levels covering and exceeding the expected measuring interval, obtained by blending two sample pools, low and high. The within laboratory precision was performed with five (5) samples within the measuring range (20 days - two runs per day in two replicates). Method comparison was performed with a commercial available ELISA (RIDASCREEN® ADM Monitoring, Art. No. G9094, R. Biopharm, Darmstadt, Germany) and is based on 106 serum samples. For recovery analysis six clinical samples over the measuring interval of the test were spiked with 6 pg/ml adalimumab in negative serum and compared with the expected values. The high dose hook effect was evaluated with spiked pooled human serum in two runs, the second run with an additional dilution of the samples into the measuring interval of the test.

Results: The BÜHLMANN Quantum Blue® Adalimumab test exhibits a linear range from 0.93 to 34.61 mcg/ml. The recovery of clinical samples ranged from 80% to 89%. No high dose hook effect was observed up to 1002 pg/ml of adalimumab. The applied additional dilution into the measuring interval yielded a linear relationship. The mean total within-laboratory precision of the device was 23.9% (20.7 to 28.9%) with a repeatability of 21.2% (16.4 to 27.8%). The method comparison revealed a slope of 1.18 and a regression coefficient (r) of 0.92 (Passing-Bablok) suggesting that the new Quantum Blue® Adalimumab test showed an excellent correlation compared to the ELISA method.

Conclusion: The BÜHLMANN Quantum Blue® Adalimumab lateral flow test enables the quantitative determination of adalimumab trough level in serum with time to result of only 15 minutes. The developed test allows to measure adalimumab over a wide range, well beyond the therapeutic window. Hence, it represents a valuable tool for the clinician to assess the adalimumab trough level.
of a value of Crohn’s Disease Endoscopic Index of Severity below 8, so far we included complete clinical and endoscopic evaluation 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 = 0.002) 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 0.9–9.9 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, sensitivity 100%, specificity 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 = 0.002) in patients with MH (4, range 3–8) than in patients without (11, range 4–17).

Conclusion: In our cohort of CD patients, we observed a clear association between ADA therapy, clinical development, and disease activity. In this particular population, achievement of 6.43 mcg/mL has been identified as the best cut-off to obtain endoscopic remission or at least a minimal residual endoscopic activity. Moreover, we observed that CD patients on ADA therapy who achieved MH had a lower disease activity. In conclusion, 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

P1016 ULTRASOUNDIC RESPONSE TO ANTI-TNF IS ASSOCIATED WITH BETTER OUTCOMES IN CROHN’S DISEASE
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Introduction: Crohn’s disease (CD) management targets mucosal healing on ileocolonic surveillance as a treatment goal.

Aims & Methods: We hypothesized that ultrasonographic response to anti-TNFs is associated with better long-term outcomes. Patients with CD treated with anti-TNFs who had serial small intestine contrast ultrasonography (SICUS) between January 2011 and April 2017 were identified. Disease site (based on bowel wall thickness), extent of lesions, and presence of complications (stenosis, prestenotic dilatation, abscess, or fistulas) were evaluated using SICUS. Inclusion required pre-therapy SICUS with follow-up SICUS after 12 months, or 2 SICUS ≥12 months apart while on maintenance therapy. At second SICUS, complete or improved responders had no new lesions, and partial responders had new lesions, and partial responders had other scenarios. CD-related outcomes of corticosteroid need, hospitalization, and surgery were assessed at one year from the second SICUS.

Results: Seventy-nine CD patients treated with anti-TNFs (37% with Infliximab, 63% with Adalimumab) were identified. Patients with CD treated with anti-TNFs who had serial small intestine contrast ultrasonography (SICUS) between January 2011 and April 2017 were identified. Disease site (based on bowel wall thickness), extent of lesions, and presence of complications (stenosis, prestenotic dilatation, abscess, or fistulas) were evaluated using SICUS. Inclusion required pre-therapy SICUS with follow-up SICUS after 12 months, or 2 SICUS ≥12 months apart while on maintenance therapy. At second SICUS, complete or improved responders had no new lesions, and partial responders had new lesions, and partial responders had other scenarios. CD-related outcomes of corticosteroid need, hospitalization, and surgery were assessed at one year from the second SICUS.

Results: Seventy-nine CD patients treated with anti-TNFs (37% with Infliximab, 63% with Adalimumab) were identified. Patients with CD treated with anti-TNFs who had serial small intestine contrast ultrasonography (SICUS) between January 2011 and April 2017 were identified. Disease site (based on bowel wall thickness), extent of lesions, and presence of complications (stenosis, prestenotic dilatation, abscess, or fistulas) were evaluated using SICUS. Inclusion required pre-therapy SICUS with follow-up SICUS after 12 months, or 2 SICUS ≥12 months apart while on maintenance therapy. At second SICUS, complete or improved responders had no new lesions, and partial responders had new lesions, and partial responders had other scenarios. CD-related outcomes of corticosteroid need, hospitalization, and surgery were assessed at one year from the second SICUS.

Conclusion: Ultrasonographic response to anti-TNFs demonstrated a trend for better long-term outcomes. Patients with CD treated with anti-TNFs who had serial small intestine contrast ultrasonography (SICUS) between January 2011 and April 2017 were identified. Disease site (based on bowel wall thickness), extent of lesions, and presence of complications (stenosis, prestenotic dilatation, abscess, or fistulas) were evaluated using SICUS. Inclusion required pre-therapy SICUS with follow-up SICUS after 12 months, or 2 SICUS ≥12 months apart while on maintenance therapy. At second SICUS, complete or improved responders had no new lesions, and partial responders had new lesions, and partial responders had other scenarios. CD-related outcomes of corticosteroid need, hospitalization, and surgery were assessed at one year from the second SICUS.

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

References

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Conclusion: The proposed ultrasonic and elastographic signs of stricturizing CD facilitate preoperative detection and differential diagnosis 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 IN 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 introduced for the evaluation of the impact of many other chronic diseases. Thus, specific tools have been used to assess the impact of disease and its treatment options on relevant endpoints such as health-related quality of life (HRQL), measured by the IBD-Questionnaire (IBD-Q). Recently, the IBD-Disability Index (IBD-DI) has been developed to evaluate the entire spectrum of limitations in functioning in patients with IBD. This index is inspired to the International Classification of Functioning, Disability and Health (ICF). The aim of the present study was to assess the relationship between the IBD-DI, clinical characteristics, and HRQL in a cohort of Sicilian patients with ulcerative colitis (UC) and Crohn’s disease (CD) followed up in a referral center.

Aims & Methods: IBD-Q 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-Bradshaw Index for CD. The mean differences of DI score in relation to disease characteristic (gender, disease duration, disease extension, extraintestinal manifestations) and to disease activity (gender, disease duration, disease extension) were evaluated by linear regression analysis. Disease activity was assessed by partial Mayo score for UC and by Harvey-Bradshaw Index for CD. The mean differences of DI score in relation to disease characteristic (gender, disease duration, disease extension, extraintestinal manifestations) and to disease activity (gender, disease duration, disease extension) were evaluated by linear regression analysis. Disease activity was assessed by partial Mayo score for UC and by Harvey-Bradshaw Index for CD.

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 were conventional therapy (5-aminosalicylic acid, oral steroids) in 72 patients (59% males, median age 49 years) were enrolled; 22% were smokers. 94% had mild disease, 17 (6%) were conventional therapy (5-aminosalicylic acid, oral steroids) in 72 patients

Conclusion: Our preliminary results show that the IBD-DI is significantly related to disease activity, as well as to gender and disease duration. Disease activity was assessed by partial Mayo score for UC and by Harvey-Bradshaw Index for CD.

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 immune cells and lymphocytes. It is released in plasma, maintaining its proteolytic activity and inactivating cytokines, chemokines and neuropeptides.

Aims & Methods: We aimed to investigate the diagnostic and prognostic value of DPP-4 in patients with inflammatory bowel disease (IBD). A total of 203 adult patients (n = 149 IBD patients; n = 42 healthy controls; n = 12 immune controls - systemic lupus erythematosus 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 by the Harvey-Bradshaw Index (HBI) for Crohn’s disease (CD), the partial Mayo Score (pMS) for Ulcerative colitis (UC) and the Systemic Lupus Erythematosus Disease Activity Index for SLE. A multi-biomarker model was used deriving logistic regression to evaluate predictors of disease activity and Cox regression to evaluate predictors of treatment escalation (disease outcome).

Conclusion: Treatment escalation was defined as the need for escalation to immunomodulatory/ biologic therapies or intestinal resection surgery, as a consequence of a disease flare.

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

Reference

P1021 ROLE OF PET-CT TO ASSIST DISEASE ACTIVITY IN ULCERATIVE COLITIS AND ITS CORRELATION WITH CLINICAL CRITERIA, ENDOSCOPY, BIOCHEMICAL MARKERS AND CRITERIA, ENDOSCOPY AND FECAL BIOMARKERS

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Introduction: Disease activity in ulcerative colitis (UC) is best assessed clinically by Mayo score and endoscopy. Positron emission tomography -computed tomography (PET-CT) is a non-invasive imaging technique to assess disease activity, extent, treatment response in UC, specifically in pediatric population, sick patients and those unwilling for endoscopy.

Background: It is well established that the endoscopic activity of ulcerative colitis is correlated with inflammation, fibrosis, and extraintestinal manifestations. PET-CT is a non-invasive imaging technique that use the PET modality to assess the distribution and density of radioisotope labeled glucose tracers injected intravenously. The primary aim of the study was to compare clinical and endoscopic activity assessments with PET-CT activity measurements in UC and to examine the correlation between PET-CT measurements and inflammation, fibrosis, and extraintestinal manifestations.

Materials and Methods: Fifty-one UC patients (26 males; median age 40 years) were recruited to the study. All 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.

References

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 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 by the Harvey-Bradshaw Index (HBI) for Crohn’s disease (CD), the partial Mayo Score (pMS) for Ulcerative colitis (UC) and the Systemic Lupus Erythematosus Disease Activity Index for SLE. A multi-biomarker model was used deriving logistic regression to evaluate predictors of disease activity and Cox regression to evaluate predictors of treatment escalation (disease outcome).

Conclusion: Treatment escalation was defined as the need for escalation to immunomodulatory/ biologic therapies or intestinal resection surgery, as a consequence of a disease flare.

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

Reference

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 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 by the Harvey-Bradshaw Index (HBI) for Crohn’s disease (CD), the partial Mayo Score (pMS) for Ulcerative colitis (UC) and the Systemic Lupus Erythematosus Disease Activity Index for SLE. A multi-biomarker model was used deriving logistic regression to evaluate predictors of disease activity and Cox regression to evaluate predictors of treatment escalation (disease outcome).

Conclusion: Treatment escalation was defined as the need for escalation to immunomodulatory/ biologic therapies or intestinal resection surgery, as a consequence of a disease flare.

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

Reference
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 (k = 0.465, p < 0.001), endoscopic sub-score (k = 0.526, p < 0.001), histological score (k = 0.496, p < 0.001), and fecal calprotectin levels (k = 0.279, p = 0.031). Extent evaluation by PET-CT and colonoscopy also showed a significant correlation (k = 0.582, p < 0.001) with each other. We found that CRP at a cut-off level of 12 mg/L had a sensitivity of 70.59% and specificity of 92.3%, and fecal calprotectin at a cut-off level of 21.0 mg/g had a sensitivity of 82.35% and specificity of 88.46% to predict remission. Besides, PET-CT identified sacroilitis in 1, mesenteric lymphadenopathy in 5, mesenteric stranding in 4, and adenocarcinoma in 1 patient.

Conclusion: PET-CT is a reliable non-invasive tool for assessing disease activity in UC with good correlation with the Mayo score, endoscopic score, histology and fecal calprotectin. It is an accurate measure to determine disease extent, and a good predictor of remission. Thus, with a better patient compliance, it holds promise in replacing colonoscopy where it is refused or difficult to perform.

Table: Biomarkers and rectal PET activity of patients

<table>
<thead>
<tr>
<th>Variables</th>
<th>Remission (n=26)</th>
<th>Moderate activity (n=24)</th>
<th>Severe activity (n=10)</th>
<th>Total (n=60)</th>
<th>P* value between groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESR (mm) (mean ± SD)</td>
<td>23.3 ± 18.7</td>
<td>35.1 ± 22.3</td>
<td>48.9 ± 9.7</td>
<td>42.3 ± 21.0</td>
<td>0.002</td>
</tr>
<tr>
<td>CRP (mg/L) (mean ± SE)</td>
<td>5.6 ± 1.2</td>
<td>25.3 ± 4.3</td>
<td>93.3 ± 24.3</td>
<td>28.1 ± 5.7</td>
<td>0.000</td>
</tr>
<tr>
<td>Fecal calprotectin (µg/g) (mean ± SE)</td>
<td>72.27 ± 13.65</td>
<td>276.29 ± 30.43</td>
<td>4226.6 ± 64.95</td>
<td>212.93 ± 243.20</td>
<td>0.000</td>
</tr>
<tr>
<td>Rectal PET-CT activity (SUVmax) (Mean ± SD)</td>
<td>6.04 ± 5.50</td>
<td>10.79 ± 3.88</td>
<td>12.70 ± 10.50</td>
<td>9.05 ± 6.56</td>
<td>0.004</td>
</tr>
</tbody>
</table>

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 with patients seen 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).

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>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steroid courses</td>
<td>0.47</td>
<td>0.51</td>
<td>1</td>
</tr>
<tr>
<td>Unplanned hospital admissions</td>
<td>0.19</td>
<td>0.21</td>
<td>1</td>
</tr>
<tr>
<td>IBD telephone helpline consultations</td>
<td>0.24</td>
<td>0.58</td>
<td>0.001</td>
</tr>
<tr>
<td>Clinic appointments</td>
<td>3.71</td>
<td>2.84</td>
<td>0.08</td>
</tr>
<tr>
<td>Blood tests (excluding essential monitoring blood tests)</td>
<td>5.81</td>
<td>3.68</td>
<td>0.14</td>
</tr>
<tr>
<td>Endoscopies</td>
<td>0.33</td>
<td>0.26</td>
<td>0.77</td>
</tr>
<tr>
<td>Radiological imaging</td>
<td>0.24</td>
<td>0.16</td>
<td>0.5</td>
</tr>
<tr>
<td>Therapy escalation</td>
<td>1.4</td>
<td>1.15</td>
<td>0.62</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.

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P1024 EMERGING ROLE OF IL-33/ST2 LEVELS IN PREDICTING CLINICAL RESPONSE TO ANTI-TNF THERAPY IN ULCERATIVE COLITIS

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Introduction: Tumor necrosis factor (TNF) inhibitors (anti-TNF) are considered to be the mainstay of medical management in moderate-severe Ulcerative Colitis (UC). The role of IL-33 and its receptor, ST2, in intestinal inflammation is incompletely understood, with both pro-inflammatory and regulatory properties described. Recent evidence has shown that anti-TNF is able to modulate the role of IL-33 in inflammatory conditions.

Aims & Methods: The aim of our study was to explore the potential role of the IL-33/ST2 axis in the mucosal healing process mediated by anti-TNF therapy in UC. Endoscopic Mayo score was calculated before the first anti-TNF infusion (T0) and after 6 weeks (T2). 24 UC patients (Mayo score at T0>2) were enrolled. Anti-TNF antibodies were measured by capture ELISA before each infusion and anti-Infliximab antibodies (ATI) by a bridging ELISA. Serum samples were collected and ELISA performed to assess IL-33/ST2 protein levels. Intestinal biopsies were also taken from the rectum and IHC was done to evaluate mucosal IL-33/ST2 expression and localization.

Results: IL-33 protein levels were significantly increased in responders vs. non-responders, both at T0 and T2. Among responders, IL-33 protein was slightly reduced at T2 vs. T0, while unchanged in non-responders. Interestingly, significantly higher levels of ST2 were found in responders vs. non-responders at T0, with no differences between groups were found at T2. Among responders, ST2 levels were dramatically reduced at T2 vs. T0. No significant differences were found in non-responders at both time points. Healthy controls showed significantly lower levels of both IL-33 and ST2 compared to the UC patients. IHC confirmed these observations. In particular, IL-33 and ST2 staining was more intense within the inflamed and ulcerated mucosa of responders compared to non-responders at T0. After 6 weeks, ST2 staining was even more evident in responders, notably localized to the healed mucosa and in close proximity to areas of re-epithelialization. Little to no staining for both IL-33 and ST2 was found in healthy controls at both time points. ELISA measurements. The investigator defined remission based on clinical (Harvey-Bradshaw score), biological and endoscopic or imaging technics; partial or no remission was defined when any one of these three criteria was not fulfilled.

Conclusion: Our results suggest a possible role for IL-33/ST2 in predicting gut mucosal wound healing in patients with moderate-to-severe UC treated with anti-TNF therapy. Further studies are underway to determine mechanisms of action that support these findings.

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

References:

P1025 INFLIXIMAB TROUGH LEVELS IN THE INDUCTION PHASE ARE ASSOCIATED WITH PROLONGED REMISSION IN CROHNS DISEASE PATIENTS

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2) Pathology, Case Western Reserve University, Cleveland/United States of America

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Introduction: Higher infliximab (IFX) serum concentrations have been associated with higher rates of clinical remission in inflammatory bowel disease patients1,2. However, the correlation between IFX trough levels (TL) during the induction phase in a medium or long-term remission in Crohn’s disease (CD) patients is less clear3. Aims & Methods: We aimed to analyse whether the IFX-TL were able to predict medium (22 weeks) and long-term (54 weeks) remission in CD patients. Consecutive CD patients receiving IFX (5 mg/kg at weeks 0, 2, 6 and every eight weeks at least until 22 weeks) were included retrospectively. IFX-TL were measured by capture ELISA and anti-Infliximab antibodies (ATI) by a bridging ELISA before each infusion. Clinical response and biological parameters were also measured. The investigator defined remission based on clinical (Harvey-Bradshaw score), biological and endoscopic or imaging technics; partial or no response, as well as intensification decided by investigators were considered as non-remission patients. U-Mann Whitney test was used to assess association between IFX-TL and remission. ROC curves were included to obtain cut-points for clinical use.

Results: 32 CD patients were screened, but finally 29 analysed, because 3 patients had IFX discontinued at week 14. Baseline characteristics included: 16 female: 55.2%, 55.2% (n=16) smokers, 30.6% (n=9) ex-smoker, 70% (n=21) ileal or ileo-ileal involvement, 44.8% inflammatory behavior, with 6.9% previous abdominal surgery and 86.2% on concomitant immunosuppressant, 34.5% non-naive to biological ther- apy. Over week 22, 44.3% patients were in remission; on week 54, 40% were in remission.

Week 6 1) Median (IQR) IFX-TL(g/mL) 22 24.6 (18.4–41.3) 12.7 (5.2–22.2)
Week 11 2) Median (IQR) Ifx-TL(g/mL) 22 24.6 (18.4–41.3) 12.7 (5.2–22.2)
Week 14 3) Median (IQR) Ifx-TL(g/mL) 22 24.6 (18.4–41.3) 12.7 (5.2–22.2)
Week 22 4) Median (IQR) Ifx-TL(g/mL) 22 24.6 (18.4–41.3) 12.7 (5.2–22.2)
Week 30 5) Median (IQR) Ifx-TL(g/mL) 22 24.6 (18.4–41.3) 12.7 (5.2–22.2)
Week 54 6) Median (IQR) Ifx-TL(g/mL) 22 24.6 (18.4–41.3) 12.7 (5.2–22.2)

On week 6, IFX-TL > 24 g/mL was associated with remission at week 22 (ROC 0.83; S: 61.5%, Sp: 81.3%) and at week 54 (ROC 0.79; S: 60%, E: 80%). On week 14, IFX-TL > 11 g/mL was associated with remission at week 22 (ROC 0.80; S: 41.7%, Sp: 93.8%) and at week 54 (ROC 0.70; S: 44.4%, Sp: 86.7%). Conclusion: IFX-TL during the induction period are associated with remission at least 12 months. Optimal TL ranges associated to remission can be calculated to guide clinical decisions. can be calculated to guide clinical decisions.

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

References:
active in 5 (12%) in remission in 35 (88%) pts. Endoscopic activity: CD: Complete tissue was incomplete in 2/40 pts. In the 24 pts with no previous surgery, SES-CD was: 0 (n = 4), 1 (n = 4), 3 (n = 5), 4 (n = 6), 6 (n = 2); 8 (n = 9); 3 (n = 2); 10 (n = 1); 11 (n = 1); 12 (n = 1); 13 (n = 1); 20 (n = 1); 19 (n = 1) pts (median 4 [0–
19]; activity: 20/24 [80%], remission: 4/24 [20%]). In the 16 pts with previous surgery the Rutgeerts’ score was: 0 (n = 3); 1 (n = 1), 2 (n = 6); 3 (n = 2) 4 (n = 4); recurrence: 2/16 [75%]). Histologic activity: CD: The GhAS was 0 (n = 3); 1 (n = 1); 2 (n = 3); 4 (n = 6); 2 (n = 2); 7 (n = 1); 9 (n = 1) in pts without previous surgery, and 0 (n = 3); (n = 9); 3 (n = 1); 10 (n = 1) in pts with previous surgery. In CD, the histological score showed a slightly significant correlation with SES-CD (r = 0.41; p = 0.046) and no correlation with the Rutgeerts’ score (r = 0.31; p = 0.247).

Conclusion: In a prospective study, a significant correlation was observed between clinic, 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 bodies. Reports of disclosures are not related to the study: L. Biancone Lecture fees: MSD, Takeda, Abbvie, Zambon. A. Armuzzi Lecture fees: Abbvie, All other authors have declared no conflicts of interest.

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6. K. Y. Chun 1, J. Yang2
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Introduction: Assays to measure TNF inhibitors and anti-drug antibodies (ADAb) in patient serum are being utilized to manage failure to respond and monitor clinical response to TNF inhibitors. Adalimumab (ADA) and Infliximab (IFX) are commonly used_IbD regimens. To calculate the corresponding anti-drug antibody levels, analysis of patient samples is required. The relationship between serum IFX and ADA concentrations and corresponding antibody levels were determined from 57,961 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 and Ulcerative Colitis and high Ab levels were managed very differently (increase drug/converter 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.

Reference

Table 1: Anti-Infliximab Antibody Distribution and Corresponding Mean Free Drug Levels

<table>
<thead>
<tr>
<th>Antibody</th>
<th>Concentration (ug/mL)</th>
<th>Mean Drug</th>
<th>% with</th>
<th>Undetectable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free 0.4 ug/mL</td>
<td>100784</td>
<td>802</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>100–200</td>
<td>76785</td>
<td>9.5</td>
<td>11%</td>
<td></td>
</tr>
<tr>
<td>201–300</td>
<td>2684</td>
<td>8.6</td>
<td>19%</td>
<td></td>
</tr>
<tr>
<td>301–500</td>
<td>1427</td>
<td>5.2</td>
<td>38%</td>
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<tr>
<td>501–700</td>
<td>789</td>
<td>3.7</td>
<td>53%</td>
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Table 2: Anti-Adalimumab Antibody Distribution and Corresponding Mean Free Drug Levels

<table>
<thead>
<tr>
<th>Antibody</th>
<th>Concentration (ug/mL)</th>
<th>Mean Drug</th>
<th>% with</th>
<th>Undetectable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free 0.4 ug/mL</td>
<td>&lt;0.4 ug/mL</td>
<td>3.0</td>
<td>63%</td>
<td></td>
</tr>
<tr>
<td>1000–2000</td>
<td>1246</td>
<td>1.0</td>
<td>79%</td>
<td></td>
</tr>
<tr>
<td>2001–4000</td>
<td>575</td>
<td>&lt;0.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4001–3.5 million</td>
<td>572</td>
<td>&lt;0.4</td>
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</table>

Table 1: Continued

<table>
<thead>
<tr>
<th>Antibody</th>
<th>Concentration (ug/mL)</th>
<th>Mean Drug</th>
<th>% with</th>
<th>Undetectable</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000–2000</td>
<td>1246</td>
<td>1.0</td>
<td>79%</td>
<td></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 and Ulcerative Colitis and high Ab levels were managed very differently (increase drug/converter 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.

Reference
which IM therapy is used concomitantly with VDZ and potential impact on outcomes in real-world clinical practice.

**Disclosure of Interest:** M. Rahy Callado: Mireia Rahy Callado is a full-time employee of Evidera. R. Carroll: Robert Carroll is a full-time employee of Evidera. R. Curtis: Employee of Takeda Development Centre Ltd. M.J. Khalid: Employee of Takeda Development Centre Ltd. H. Patel: I am currently an employee of Immensity Consulting Inc., which received funding from Takeda Development Centre Ltd.

### P1029 MOLECULAR SURROGATES OF HISTOLOGIC ACTIVITY IN CROHN’S DISEASE

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**Introduction:** Biomarkers of inflammatory bowel disease activity have been researched for decades but objections of markers of disease severity that support clinical decision-making are still needed. Well-established markers include serum C-reactive protein and fecal calprotectin, but their use as a standalone surrogate for disease activity has been controversial. We hypothesize that novel objective markers of tissue inflammation are best identified at the site of disease with a tissue-level assessment of disease activity.

**Aims & Methods:** Biopsy samples were obtained from participants in the UNITI trials of ustekinumab in moderate-to-severe Crohn’s disease. The UNITI induction trials included two cohorts, patients who failed ≥1 TNF antagonists (UNITI-1) or patients who failed conventional therapies (UNITI-2). Pairs of adjacent biopsies were taken from the rectum, splenic flexure, and ileum. One biopsy from each pair was assessed by Global Histology Disease Activity Score (GHAS) while the other was submitted to microarray analysis. Partial least squares regression and random forest were used to identify biomarkers associated with histological severity in the UNITI-1 cohort. Robustness of the resulting models was assessed using cross-validation within the training set and multiple external validation sets (defined within the UNITI-1 and UNITI-2 cohorts).

**Results:** In UNITI-1, a single multivariate model comprising 16 genes was identified that predicted histological activities in rectum or splenic flexure biopsies. This model was characterized by R²=0.78 for the training set, and R²=0.59, 0.54, and 0.32 on external validation sets also from UNITI-1. A separate 14-gene model capturing histological activity in ileal biopsies was characterized by R²=0.5 for the training set and R²=0.45 in the external validation set. In general, both models contained genes related to tissue degradation, barrier function, and immune regulation, including CXCL11 (I-TAC). 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.


### 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

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3Janssen Pharmaceutica, Beerse/Belgium
4Janssen Global Services, Horsham/United States of America/PA

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**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 tractivity. This treatment sequence analysis builds on previous work proposing a solution to challenges inherent to CD data to compare one year efficacy of biologics in CD patients having failed anti-TNF therapy. Analyses accounted for delayed responders (induction non-responders attaining response after additional doses) to generate more comprehensive estimates of biologics’ relative efficacies.

**Aims & Methods:** A systematic literature review identified randomized controlled trials in CD patients having failed anti-TNF therapy for induction and maintenance of ustekinumab (UST), adalimumab (ADA), or vedolizumab (VDZ). Clinical response (CDAI-100 point reduction) and remission (CDAI ≤150) were assessed. The probability of achieving response after induction was multiplied by the conditional 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

**Abstract:** P1028. Table 1: Characteristics and outcomes among patients newly started on vedolizumab stratified by IBT 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></td>
<td>With history of IM use (N = 85)</td>
<td>Without history of IM use (N = 94)</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</td>
<td>6.0 (3.9)</td>
<td>4.2 (3.4)</td>
</tr>
<tr>
<td>diagnosis to VDZ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>initiation, years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-index exposure to</td>
<td>78.2%</td>
<td>55.2%</td>
</tr>
<tr>
<td>anti-TNF therapy, %</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IBD-related measures</td>
<td></td>
<td></td>
</tr>
<tr>
<td>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</td>
<td></td>
<td></td>
</tr>
<tr>
<td>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.

### P1028 MOLECULAR SURROGATES OF HISTOLOGIC ACTIVITY IN CROHN’S DISEASE

**Contact:** Laura.Mesana@amaris.com

**Reference**

odds ratios (OR), credible intervals (CrI), and posterior distribution probabilities for superiority of UST.

Results: Accounting for delayed responders, the absolute proportions of patients having maintained response and being in remission at one year were 30% of patients receiving UST every 8 weeks, 19% of those receiving VDZ every 4 weeks, and 33% of patients receiving ADA every other week or weekly. Based on a one-year treatment sequence analysis, probabilities for UST to be better than VDZ for achieving and maintaining response and remission were 99%(OR[CrI]:1.941[0.73,4.89]) and 98%(OR[CrI]:1.32[0.100,2.36]), respectively. UST had higher likelihoods of remission than ADA given weekly (95%, OR[CrI]:1.36[0.72,2.58]) or every other week (85%, OR[CrI]:1.40[0.74,2.68]).

Conclusion: This approach deals with methodological issues inherent to CD trial data. In CD patients having failed anti-TNF therapy, ustekinumab had higher 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.

Disclosure of Interest: L. Mesana: Consultant to Janssen Scientific Affairs, LLC M. Pacou: Consultant to Janssen Scientific Affairs, LLC
D. Naessens: Janssen Scientific Affairs, LLC employee S. Sloan: Janssen Scientific Affairs, LLC employee A. Gauthier: Consultant for Janssen Scientific Affairs, LLC

Reference

P1031 INDIRECT TREATMENT COMPARISON OF USTEKINUMAB VERSUS OTHER BIOLOGICS IN MODERATE-TO-SEVERE CROHN’S DISEASE PATIENTS HAVING FAILED CONVENTIONAL THERAPY – A 1-YEAR TREATMENT SEQUENCE ANALYSIS INCLUDING DELAYED RESPONDERS
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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 approach deals with 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.

Disclosure of Interest: L. Mesana: Consultant to Janssen Scientific Affairs, LLC M. Pacou: Consultant to Janssen Scientific Affairs, LLC
D. Naessens: Janssen Scientific Affairs, LLC employee S. Sloan: Janssen Scientific Affairs, LLC employee A. Gauthier: Consultant for Janssen Scientific Affairs, LLC

Reference

P1032 EFFICACY AND TOLERABILITY OF INITIATING, OR SWITCHING TO, INFLIXIMAB BIOSIMILAR CT-P13 IN INFLAMMATORY BOWEL DISEASE (IBD): A LARGE SINGLE-CENTRE EXPERIENCE

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Introduction: Anti-TNF therapies have revolutionised the management of IBD. Recently, the infliximab (IFX) biosimilar (CT-P13) received market authorisation for IBD allowing cost benefits with switches to CT-P13 with annual savings of £1million in savings.

Methods: A single-centre retrospective cohort study involving 854 patients (70kg patient receiving 5mg/kg w/e weekly). We present experience of switching patients from the original IFX to CT-P13 for new and existing patients.

Aims & Methods: Recorded baseline characteristics included indication, age, sex, disease duration, treatment duration, concomitant immunomodulators, baseline CRP and Hb/Mayo scores. Response to IFX induction was assessed retrospectively using symptoms and CRP. Treatment response and remission rates, primary and secondary loss of response rates, and adverse events in patients who initiated IFX in the 12 months pre-Feb 2016 were compared with those who initiated CT-P13 in the 12 months post-Feb 2016. Sustained response was compared for existing IFX patients who switched to CT-P13 in Feb 2016 against those who continued with the original IFX. Drug and antibody levels were measured before switch and at 3, 6, and 12 months post.

Results: 53 patients commenced IFX in the 12 months pre-Feb 2016 (26 Crohn’s Disease (CD), 13 fistulating CD, 13 Ulcerative Colitis (UC), 1 IBD-Undclassified (IBD-U)) compared with 69 patients who commenced CT-P13 in the subsequent 12 months (2CD, 9 fistulating CD, 35UC, 38BD-U). Baseline characteristics did not differ, with a greater proportion of UC patients in the CT-P13 cohort (51% v 24.5% (p = 0.003)). This group had a higher mean CRP (20.2 v 10.6 (p = 0.008)) although a lower median Mayo score (5 v 11 (p = 0.007)). There was no difference in response (12(23%) v 15 (21.74%) (p = 0.905)), remission (14(26%) v 29(42%) (p = 0.074)), primary non-response (8(15%) v 4.5% (p = 0.087)), secondary loss of response (12(23%) v 15(21.74%) (p = 0.905)), or adverse events (6(11%) v 6(7%) (p = 0.629)) in those who initiated original IFX compared with CT-P13 post-Feb 2016. Six patients from the original IFX group had a higher mean CRP (20.2 v 10.6 (p = 0.008)). Loss of response or discontinuation of therapy at 12 months post-switch was significantly lower in those with therapeutic drug levels and no significant antibodies compared with patients with loss of therapeutic drug levels and no signifcant antibodies (18/20% v 7(100%) (p < 0.0001) and 67/6% v 86% (p = 0.0001) respectively).

Conclusion: There was no significant difference in response and remission rates, primary and secondary loss of response, or adverse events between originator IFX and CT-P13 during the first 12 months after switching. The presence of low undetectable drug levels and significant antibodies pre-switch was associated with loss of response and discontinuation of treatment. Switching to CT-P13 in 191 patients in our unit lead to >£1million in savings.

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
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Introduction: Helicobacter pylori (H. pylori) infection is associated with a variety of gastrointestinal conditions including Inflammatory Bowel Disease (IBD).

Methods: This is a single-centre, prospective, randomized, double-blind, placebo-controlled trial comparing the efficacy and safety of a standard regimen of omeprazole, amoxicillin and clarithromycin plus metronidazole vs. omeprazole and amoxicillin in adult patients with IBD undergoing medical treatment of their IBD. The primary endpoint was the proportion of patients with successful eradication at 8 weeks. The secondary endpoints were changes in symptom scores and quality of life measures. The primary analysis was based on all patients who had a complete 8 week follow-up and were evaluable for response. The study included patients with Crohn's disease (CD), Ulcerative colitis (UC), and IBD-unclassified.

Results: A total of 30 patients were enrolled in the study, of whom 28 completed the study protocol and 26 were evaluable for efficacy analysis. The overall success rate for the eradication group (23/28) was significantly higher compared to the placebo group (4/26) (p = 0.002). There were no significant differences in symptom scores and quality of life measures between the two groups.

Conclusion: This study demonstrates the efficacy and safety of a triple-drug regimen for H. pylori eradication in patients with IBD undergoing medical treatment of their IBD. The study also suggests that this regimen may have potential for use in other gastrointestinal conditions associated with H. pylori infection.
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Introduction: Low prevalence of Helicobacter pylori (HP) infection has been reported in Crohn's disease (CD). HP infection was estimated at 5% 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 with the same gender, age at diagnosis, sex, disease activity, 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 observation (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% (17/106) 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 5.395% 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 eradication but may improve disease activity, suggesting that careful observation is necessary after eradication, especially for patients with active disease.

Disclosure of Interest: S. Shinzaki: 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 Kayaku. H. Tanaka: Received lecture fees from Mitsubishi Tanabe Pharma, AbbVie, EA Pharma, and Eisai. A. Yamasaki: 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.
INFLIXIMAB DOSE BANDING SHORTENS LENGTH OF STAY OF INFLAMMATORY BOWEL DISEASE PATIENTS

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Introduction: According to infliximab (IFX) license in inflammatory bowel diseases (IBD), infusion doses are based on patient weight. In daily practice, treatment is prepared by pharmacist after clinical patient assessment, leading to an increased duration of hospital stay and consequently costs. A pharmacokinetic study (1) has shown that a weight-based dose (WBD) strategy does not reduce interindividual variability of IFX trough levels when compared to fixed doses. According to these findings, our hospital implemented dose banding (DB) of IFX infusions, defined by doses rounded up or down according to one of eight 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) in the IFX DB group as compared to those treated by 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/or wasted infusions and the saved or wasted price associated (reimbursement price of one 100 mg IFX vial: 382.28 €).

Results: Among the 373 IBD patients treated by IFX during the study period, 116 (31%) patients (51M/65F; median age: 41 years) were included in the study (75 in the DB group and 41 in the WBD group) corresponding to 128 infusions (84 in DB and 44 in WBD groups). Mean length of hospitalisation stay were 238 ± 21 min in the DB group and 308 ± 32 min in the DB group, respectively (p < 0.001). DB was associated with a mean reduction of length of stay by 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 = 0.0001). During the study, none of the 44 (0%) infusion in the WBD group was cancelled while 3/84 (3.5%) were cancelled in the DB group (p=0.55). Two out of these three infusions could be reattributed to other patients, saving 2801€.

Conclusion: When used routinely in IBD, IFX DB is associated with a shortened length of 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.

References

RAPIDITY OF ONSET OF RESPONSE TO ADALIMUMAB (ADA) IN LUMINAL CROHN’S DISEASE (CD), DATA FROM RAPIDA TRIAL

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12Hospital General Universitario de Valencia, Valencia/Spain
13Hospital Universitario de Navarra, S.L.U., Madrid/Spain
14Hospital Clinico Universidad de Santiago, Santiago de Compostela, Santiago de Compostela/Spain

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) ≥3) 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 international, prospective, open label, single arm and multicenter clinical trial. Patients received standardized ADA treatment (160 mg – 80 mg – 40 mg eow).

The HBI was evaluated to determine the response at day 4 and week 1; and clinical remission at weeks 2, 4, 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 2, 4, 12. The modified intention to treat (mITT) population was the primary population for efficacy analysis and consisted of all 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 4.0 days (95% confidence interval (CI): 1.0, 4.0) and the median time to remission was 7.0 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. Garcia-Lopez: Dr. Santiago Garcia 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 and Takeda. M. Martin-Arranz: Dra. Martin Arranz has served as consultant for AbbVie, MSD, Ferring and has received speaker fees from AbbVie, MSD, Ferring, Chiesi, Tillots.

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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.
**Results:**

No ADRs of hypophosphatemia were reported. In patients dosed with 1000 mg iron isomaltoside, Hb increase was statistically significantly higher in patients dosed with >1000 mg iron isomaltoside, respectively (p = 0.5). Similar frequencies were observed in the IBD subgroup (14.3% vs. 12.1%, p = 0.8). 0.5% of the patients experienced a serious ADR (2 events in 2 patients; grand mal convolution and syncope). ADRs with a patient frequency >1% are shown in the table below:

<table>
<thead>
<tr>
<th>ADR</th>
<th>Patients (%)</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flushing</td>
<td>3.0</td>
<td>0</td>
</tr>
<tr>
<td>Constipation</td>
<td>0</td>
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<tr>
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<tr>
<td>Urticaria</td>
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<td>0.6</td>
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</table>

No ADRs of hypophosphatemia were reported. In patients dosed with <1000 mg iron isomaltoside, Hb increase was 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 doses of iron isomaltoside in patients with gastrointestinal diseases.

**Disclosure of Interest:** R. Derman: Richard Derman has been a consultant for AbbVie, Hospira, Kern Pharma, Takeda, Pfizer, Ferring, FaesPharma, Shire Pharmaceuticals, Dr. Falk Pharma, Chiesi, GebroPharma, Osaka Pharmaceutical, and ViforPharma. All other authors have declared no conflicts of interest.
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 treatment was <12 months, or if the duration of therapy was ≥12 months to consider withdrawal of IFX or to assess disease activity - with withdrawal of IFX in inactive disease or a switch to an alternative biologic for active disease. Trough levels for IFX and ATI were measured using direct solid phase immunoassay (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 analyse survival curves for our model used to analyse the impact of the different treatment decision on the rate of relapse.

Results: 47/223 patients had undetectable IFX drug levels with positive ATI. Follow-up data was available in 45 patients. 17 patients were assessed as having active disease (2 primary, 15 secondary loss of response). Of the 28 in remission (at time of most recent TDM, median Harvey Bradshaw Index (HBI) 3.5; median Simple Clinical Colitis Activity Index (SCCAI) 2.5), 79% had a HBI/SCCAI ≤5 but all were deemed to be in remission at time of review. 6/28 patients had received prior anti-tumour necrosis factor-α antagonists and 14/28 were receiving concomitant immunosuppression (thiopurines; 12 methotrexate 2). Of these patients in remission, 7 continued on IFX (1 dose escalated), 13 had IFX withdrawn and 8 were switched to an alternative biologic (adalimumab 4; vedolizumab 3; ustekinumab 1). In those who were switched to a different biological therapy 3/8 flared (38%), compared to 1/7 in those who continued on IFX (14%) and 4/13 in those who were withdrawn from IFX (31%); median follow up duration of 7.5 months (range 2–10 months). There was no significant difference in the survival curves regarding rate of relapse based on the different management decisions taken (p = 0.81, Figure 1). Patients withdrawn from IFX were not at an increased risk of relapse compared to those who continued on treatment (hazard ratio 1.62, p = 0.59) nor those who were switched to an alternative biologic (hazard ratio 1.42, p = 0.65). Figure 1. Kaplan Meier of the rate of relapse during follow-up of patients in clinical response with undetectable IFX levels with positive ATI who were continued on IFX (n = 7), switched to an alternative biologic (n = 8) and withdrawn from IFX (n = 13) (p = 0.81).

Conclusion: Our data suggests that withdrawal of IFX in selected patients with undetectable IFX levels and positive ATI is not associated with an increased risk of flare. Although not statistically significant, the rate of relapses in those who continued on infliximab was lower compared to those who were switched or withdrawn from therapy, however further follow-up analysis only those TDMs ≥2 recommended in this group.

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

References

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 comparison between ABP 710 and infliximab 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. Subjects were randomised to receive a 5 mg/kg intravenous (IV) infusion of ABP 710 or infliximab sourced from the EU and the US. Blood was drawn prior to start of infusion. The primary outcome was demonstration of PK similarity of ABP 710 with infliximab EU and with infliximab US. ABP 710 and infliximab US were based on area under the serum concentration-time curve from time 0 to infinity (AUC0–inf) as the primary endpoint. The criteria to achieve PK equivalence were for geometric mean (GM) ratio and its 90% confidence interval to be within the range of 0.80 to 1.25. Secondary endpoints included maximum observed serum concentration (Cmax) and 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 AUC0–inf and Cmax were as follows: ABP 710, 33559 ± 12370 μg/mL and 123 ± 12 μg/mL; infliximab EU, 33706 ± 12189 μg/mL and 121 ± 12 μg/mL; infliximab US, 37523 ± 21345 μg/mL and 127 ± 12 μg/mL. The ratios of adjusted LS GM (90% CI) for AUC0–inf and Cmax between ABP 710 and infliximab EU were 0.996 (0.9042, 1.0963) 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 AUC0–inf and Cmax between infliximab US and infliximab EU were 1.113 (1.0115, 1.2252) and 1.05 (0.9906, 1.1388). 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 serious adverse events, 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: 86.0%); the majority was mild or moderate. The most frequently reported TEAEs were somnolence, headache, nasopharyngitis, upper respiratory tract infection, nausea, and lethargy. All subjects tested negative for antidrug antibodies (ADAs) prior to dosing. At the end of the study, 20/29 subjects in ABP 710, 27% of 29 subjects in infliximab EU, and 32% on infliximab US were positive for binding ADAs; 13% on ABP 710, 19% in 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 sourced from the EU and the US, as well as between infliximab EU and infliximab US following a single 5 mg/kg IV infusion in healthy subjects. The safety and immunogenicity profiles were comparable among treatment groups.

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. Kaliyaperumal: I am a full time employee and stockholder of Amgen Inc. E. Krishnan: I am a full time employee and stockholder of Amgen Inc.

P1042 EPIDEMIOLOGY AND BURDEN OF COMPLEX PERIANAL FISTULAS IN PATIENTS WITH CROHN DISEASE - A SYSTEMATIC LITERATURE REVIEW

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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
forward; congress abstracts were searched from 2011 forward. CPFs were defined as fistulas with intersphincteric, transphincteric, suprasphincteric, extraspincteric, or horseshoe tracts. Results: 353 records were reviewed by 2 independent researchers, and 63 relevant articles and abstracts were selected for inclusion (including 3 epidemiology and 3 burden; the rest were treatment guidelines/patterns or treatment outcome studies). The estimated cumulative incidence of CPF in CD, based mostly on studies conducted in referral centers, ranges from 12%–14% (2 studies). CPF can result in significant morbidity and greatly diminished quality of life; up to 59% of patients (1 study) are at risk of fecal incontinence. Treatment options include a combination of medical and surgical interventions. However, across all options identified, a high proportion of patients experience treatment failure (lack of or inadequate response) and relapse (Table). Only 4 identified studies were conducted specifically in patients refractory to anti-tumor necrosis factor (TNF) agents—a population with high unmet needs (one study of fistuliprost injections of infliximab, and three studies of surgical interventions). Available data suggest that anti-TNF-α dose escalation or switching between different anti-TNF-α agents is of limited value (2 studies). Table – Rates of treatment failure and relapse or reoccurrence among patients with complex perianal fistula Crohn’s Disease. Conclusion: CPFs in CD pose substantial clinical burden. There is a high unmet need for effective treatment options for CPF in CD patients, especially those refractory to anti-TNF-α agents, as evidenced by high treatment failure and relapse rates.

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

P1043 VITAMIN D IS RELATED TO THE EFFECTS OF ANTI-TNF TREATMENT IN CROHN’S DISEASE PATIENTS


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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 has many effects, including immunomodulation. However, the role of Vitamin D (VD) in severe CD patients using Anti-TNF is still unclear. Aims & Methods: To evaluate the results of the VD replacement at different doses; check possible immunomodulatory action of vitamin D in CD patients with Anti-TNF. We conducted a double-blind, randomized, prospective study. 42 patients were selected with history of moderate to severe CD in use of anti-TNF, of both sexes, between 18 to 60 years, with dosage of 25-hydroxyvitamin D < 75 nmol/L (30 ng/ml) who signed the informed consent. We 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), fcalc alcaperton (FC) and were divided into three groups: 1 Group (G1): 10 patients receiving 2,000 U/V D, VO/week for 8 weeks. 2 Group (G2): 10 patients receiving 10,000 U/V D, VO/week for 8 weeks. 3 Group (G3): 10 patients receiving 100,000 U/V D, VO/week for 8 weeks. At the end of 8 weeks the patients answered IBDOQ 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: IBDOQ 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 (G1: SD × mean = SD): G1: -19.5 ± 5.1 × 24.6 ± 6.7 p = 0.07; G2 - (19.1 ± 4.1 x 26.5 ± 5.8) p = 0.04; G3 -19.5 ± 6.4 × 46 ± 4.6 ± 12.7) p < 0.0001. CRP dosage were reduced, although not statistically significant, at G2 and G3 (5.8 ± 4 × 3 ± 9.2 ± 8.3) p = 0.18 (5.2 ± 7.3 × 2.4 ± 3.6) p = 0.2; and increased in G1 (8.1 ± 10, x 3 ± 14, 3 ± 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. 52 follow up showed that recurrent disease activity were predominat in patients with VD < 30 (p = 0.004) and statistically significant 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.

P1045 CLINICAL EFFECTIVENESS OF GOLIMUMAB IN CROHN’S DISEASE – AN OBSERVATIONAL STUDY BASED ON THE SWEDISH NATIONAL QUALITY REGISTRY FOR INFLAMMATORY BOWEL DISEASE

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Introduction: Golimumab is approved for the treatment of moderate to severe ulcerative colitis, but not Crohn’s disease (CD). Therefore, its potential efficacy in CD remains largely unknown. Off-label use of drugs is not prohibited in Sweden, and golimumab may have been used for CD treatment.

Results: The study cohort consisted of 95 patients with a median age of 37 (IQR 27-48) years, of whom 40% were men. The majority of the patients (90.5%) had previously experienced treatment failure for at least one anti-TNF agent. At the start of golimumab, 41% were on a concomitant immunomodulator and 16% on corticosteroids. After a median follow-up time of 21 (IQR 10-36) months, 60 (63%) patients had stopped treatment with golimumab. Reasons for discontinuation were inadequate response; n = 45 (75%), intolerance; n = 11 (18%) and other reasons; n = 4 (7%). Estimated drug continuation rates were 75% at 12 weeks and 42% at 52 weeks. Concomitant treatment with corticosteroids at baseline seemed to be associated with a higher risk of discontinuation of golimumab (unadjusted HR: 1.97; 95% CI: 1.04-3.73; p = 0.04), although the association did not remain significant after adjusting for potential confounding factors (adjusted HR: 1.76; 95% CI: 0.84-3.67; p = 0.13).

Aims & Methods: We aimed to describe the CD population that is treated with golimumab in Sweden and to assess the long-term effectiveness, defined as drug continuation rate, as well as identify predictors of drug discontinuation. Patients with CD who received at least one injection of golimumab were identified through the Swedish national quality registry for inflammatory bowel disease (SWIBREG). Duration of golimumab-treatment was illustrated by Kaplan-Meier curves. 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.

Abstract: P1042

Treatment Relapse/recurrence

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*44 studies reported treatment outcomes for CPF in CD patients. Most studies identified were small and/or non-comparative, and study methodologies, populations, endpoint definitions, and duration of follow-up varied. For studies with mixed populations, only results for patients with CD and CPF were considered. *Defined as lack of or inadequate response to therapy (i.e. lack of complete response). *Defined as standard of care used at each centre excluding anti-TNFs and surgery in 2 studies and as standard medical care at each centre including anti-TNF and surgery in 2 studies.
**P1046 EARLY IMPROVEMENT IN QUALITY OF LIFE IN PATIENTS WITH LUMINAL CROHN’S DISEASE TREATED WITH ADALIMUMAB: DATA FROM RAPIDA TRIAL**

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**Introduction:** Two pharmacological treatments were available 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 adalimumab. All consecutive adult CD and UC patients who started infliximab (IFX) or adalimumab (ADA) were included. 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 Vagi-Nordic Score for UC (MTWSI) for UC) during the study period.

**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 and had a follow-up period of 12 months thereafter; QoL was assessed through the Short-Inflammatory Bowel Disease Questionnaire (S-IBDQ). Twenty-two patients treated with IFX and ADA, respectively, QoL was significantly higher in CD than UC at baseline (median S-IBDQ 49 vs 59; 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-IBDQ 49 vs 59; p < 0.001), both in IFX and ADA groups (IFX: p = 0.001, ADA: p = 0.02). In UC patients, anti-TNFα therapy improved disease activity (median MTWSI 7 vs 4, p = 0.03), haemoglobin levels (median 11.6 vs 13.2 g/dL, p = 0.006), fecal calprotectin (median 1600 vs 108 µg/g; p = 0.004), but not CRP (median 5 vs 2.9 mg/L, p = 0.08). QoL improved at 12 months (median S-IBDQ 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.

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**P1047 EVALUATION OF QUALITY OF LIFE IN IBD PATIENTS TREATED WITH ANTI-TNFα 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) (IFX: p = 0.001, ADA: p = 0.02) were included. 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 Vagi-Nordic Score for UC (MTWSI) for UC) during the study period.

**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 and had a follow-up period of 12 months thereafter; QoL was assessed through the Short-Inflammatory Bowel Disease Questionnaire (S-IBDQ). Twenty-two patients treated with IFX and ADA, respectively, QoL was significantly higher in CD than UC at baseline (median S-IBDQ 49 vs 59; 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-IBDQ 49 vs 59; p < 0.001), both in IFX and ADA groups (IFX: p = 0.001, ADA: p = 0.02). In UC patients, anti-TNFα therapy improved disease activity (median MTWSI 7 vs 4, p = 0.03), haemoglobin levels (median 11.6 vs 13.2 g/dL, p = 0.006), fecal calprotectin (median 1600 vs 108 µg/g; p = 0.004), but not CRP (median 5 vs 2.9 mg/L, p = 0.08). QoL improved at 12 months (median S-IBDQ 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.

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**P1048 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 action for these drugs, bioavailability may differ from one patient to another and delays in treatment may result in ineffective drug delivery. In this study the endoscopic and histological findings at the time of endoscopy were correlated with the amount of free infliximab found in the uninflamed tissue at post-surgery.

**Methods:** 26 IBD patients undergoing colectomy for IBD were included in the study. All patients had previously been treated with infliximab prior to surgery. The amount of free infliximab was measured by a newly established enzyme-linked immunosorbent assay. The endoscopic and histological findings were correlated with the amount of free infliximab.

**Results:** The endoscopic and histological findings were correlated with the amount of free infliximab. A significant correlation was found between the amount of free infliximab and the endoscopic and histological findings. The results showed that the endoscopic and histological findings were more severe in patients with a lower amount of free infliximab. The correlation was also found to be significant in the subgroup of patients with Crohn’s disease.

**Conclusion:** The results of this study suggest that the endoscopic and histological findings at the time of endoscopy can be used to predict the amount of free infliximab found in the uninflamed tissue at post-surgery. This may have implications for the treatment of IBD patients using anti-TNFα agents.
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 inflamed and non-inflamed tissue, and TNF-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 inflamed tissue, 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 assessing changes during the course of mucosal healing may allow their use as surrogate markers for this effect.

**Disclosure of Interest:** B. Unger: Bella Unger has received consultancy fees from Abbvie and Janssen.

S. M. van-Hoorn: H.S has received consultancies 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. Chow: YC declare Abbvie grant support, lecture and advisory fees, Janssen lectures and advisory fees, Takeda grant support lecture and advisory fees, Medtronic advisory fees.

All other authors have declared no conflicts of interest.

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**P1050 LONG-TERM OUTCOMES OF MAINTENANCE ANTIBIOTIC THERAPY IN CHRONIC ANTIBIOTIC-DEPENDENT POUCHITIS**

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**Introduction:** Restorative proctocolectomy (RPC) is considered the treatment of choice in patients with ulcerative colitis (UC) who have failed medical therapy and in some patients with familial adenomatous polyposis (FAP). After RPC, about 38–45% of UC patients develop acute pouchitis at 45% of years, for which the mainstream treatment is empirical antibiotics. 10–15% of these patients subsequently develop chronic antibiotic-dependent pouchitis (CAPD), and maintain chronic antibiotic-dependent pouchitis (CDP).

**Background:** The aim of this study was to analyze the presence of free versus TNF-bound infliximab in the intestinal tissue. Crotosodium difficile and tendon rupture are recognized significant complications associated with long-term ciprofloxacin. We aim to evaluate the effectiveness and safety of long-term antibiotic use in patients with chronic pouchitis.

**Aim:** The aim of this study was to analyze the presence of free versus TNF-bound infliximab in the intestinal tissue.

**Methods:** Twenty-four biopsies from 13 patients were included. Patients with baseline disease activity [defined by a patient-reported outcome (PRO2) of at least 8 points] were included for further analysis. Clinical remission was defined as an average daily stool frequency of ≤ 2.8 and an average abdominal pain score ≤ 1.

**Results:** During follow-up, we observed 32 patients develop ATI (19 patients developed antibodies within 6 months of starting IFX treatment, 5 between 6–12 months treatment and 8 after 12 months). At any given time, patients with positive ATI are 3.4 times as likely (p = 0.002) to develop undetectable levels than ATI-negative patients. Transient ATI formation was seen in only 5/162 patients. Figure 1. Graph showing effect of concomitant immunosuppression on time to become antibody to infliximab positive.

**Conclusion:** Although IS therapy protects against ATI formation, the risk of antibody development continues throughout treatment. If concomitant IS is aimed at reducing ATI formation, then this also needs to be continued for the duration of IFX therapy.

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

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**P1052 A DRUG-RESISTANT ASSAY CAN BETTER DIRECT THE NEED FOR ADA LUMB DOSE-ESCALATION AFTER INDUCTION THERAPY IN ANTI-TNF NAIVE PATIENTS WITH CROHN’S DISEASE**


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**Introduction:** Antidrug antibodies (ADA) may develop in up to 35% of patients with Crohn’s disease (CD) receiving adalimumab (ADM). Although ADA titers to ADM are predominantly neutralizing, standard drug-sensitive assays do not allow ADA measurement in patients with detectable trough levels (TL) and drug-tolerant assays are suboptimal in case of high TL.

**Aims & Methods:** We aimed to identify ADA using a drug-resistant assay, instead of a drug-tolerant assay, and to correlate their presence with clinical outcomes. Therefore, we identified 152 patients with CD who had received ADM as first biological therapy. After retrospective chart assessment, 116 patients with baseline disease activity [defined by a patient-reported outcome (PRO2) of at least 8 points] were included for further analysis. Clinical remission was defined as an average daily stool frequency ≤ 2.8 and an average abdominal pain score ≤ 1. Serum samples were available in 70/116 at week 12 after ADM initiation. ADA presence was determined via both a monoclonal drug-sensitive assay in case of undetectable TL and an in-house developed drug-resistant assay regardless of TL [1].

**Results:** The drug-resistant assay identified presence of ADA in 14 of the 70 (20.0%) patients at week 12, whereas a drug-sensitive assay could detect ADA
in just one of these 14 patients (1.4%) (p < 0.001). Median (IQR) TL were significantly higher in the ADA negative group compared to the ADA positive group [9.21 (7.00–12.99) vs. 3.45 (1.72–5.44) µg/mL, p < 0.001]. A significant correlation between TL and ADA levels could be found (Spearman’s ρ = 0.562, p < 0.001). Although the presence of these ADA was not significantly associated with clinical remission at week 12, a clear tendency towards a positive correlation was observed (ρ = 0.136). During median (IQR) follow-up of 1.46 (0.32–3.48) years, 43 out of 116 patients (37.1%) needed ADM dose-escalation. Importantly, escalation-free-survival significantly differed between ADA positive and ADA negative patients. Univariate analysis could not identify any more factors (weight, BMI, gender, disease behaviour, disease location, CRP, serum albumin, PRO2, concomitant therapy, smoking) associated with ADA presence.

Conclusion: A drug-resistant assay can identify ADA to ADM before all drug has become undetectable. As these ADA at week 12 were significantly associated with need for dose-escalation and can appear before TL drops below the threshold of 4 µg/mL, they may be better to identify those patients who could benefit from dose-escalation. Moreover, the differences in TL between patients at week 12 can finally be explained by the presence of ADA measured with a drug-resistant assay.

Disclosure of Interest: B. Verstockt: Bram Verstockt received lecture fee from Ferring Pharmaceuticals.

G. Van Asche: Financial support from Abbott, Ferring, Janssen, MSD and Abbott, PDL BioPharma, UCb Pharma, Sanofi-Aventis, Abbott, Abbvie, Ferring, Novartis, Biogen Idec, Janssen Biologics, NovoNordisk, Zealand Pharma A/S, Takeda, Shire, Novartis and JMS.

S. Vermeire: Financial support from MSD, Abbvie and UCb Pharma; lecture fees from Abbott, Abbvie, MSD, Ferring Pharmaceuticals and UCb Pharma; consultancy fees from Pfizer, Ferring Pharmaceuticals, Shire Pharmaceuticals Group, MSD, and AstZenecea Pharmaceuticals.

A. Gils: Speaker for MSD, Janssen Biologics, Abbvie, Pfizer, and Takeda. Consultant for UCb and Takeda. License of (anti)-jilfiximab, (anti-jadali- mumab, and vedolizumab ELISA to apDIA and infliximab, adalimumab lateral flow to R-Biopharm AG.

M. Ferrante: Financial support from Takeda; lecture fees from Ferring, Boehringer-Ingelheim, Chiesi, MSD, Tillojits, Janssen Biologics, AbbvieTakeda, Mitsubishi Tanabe, Zeria; consultancy fees from Abbvie, Boehringer Ingelheim, Ferring, MSD, and Janssen Biologics.

All other authors have declared no conflicts of interest.

References
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Introduction: golimumb (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 body weight. The primary outcomes were clinical response rate and incidence of adverse events (AEs).

P1053 ADHESION 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 where 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. SMR is a national database containing information on current medication of all Danish residents. SMR include information on where, 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), have 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. It 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 that 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 or CD in remission for at least six months and treated with a fixed dose of mesalazine, azathioprine, or Mercaptopurine 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 in 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: 40–59/60+; Years, adherence 48/71.6% (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 6 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

P1054 CLINICAL EFFICACY AND SAFETY OF GOLIMUMAB IN BIOLOGIC NAÏVE AND EXPERIENCED PATIENTS WITH ACTIVE ULCEARATIVE COLITIS NON-RESPONDER OR INTOLERANT TO CONVENTIONAL THERAPIES

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Introduction: golimumb (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 body weight. The primary outcomes were clinical response rate and incidence of adverse events (AEs).

PATIENT CHARACTERISTICS

<table>
<thead>
<tr>
<th>Total</th>
<th>Biologic Experi-</th>
<th>Biologic Naïve (BN)</th>
<th>(p value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of patients (n, %)</td>
<td>59 (100)</td>
<td>27 (46)</td>
<td>32 (54)</td>
</tr>
<tr>
<td>Body mass index (BMI)</td>
<td>28 (47)</td>
<td>13 (48)</td>
<td>15 (47)</td>
</tr>
<tr>
<td>Charlson Comorbidity index (n, %)</td>
<td>36 (65)</td>
<td>26 (90)</td>
<td>30 (94)</td>
</tr>
<tr>
<td>Charlson Global index (n, %)</td>
<td>55 (77)</td>
<td>18 (67)</td>
<td>27 (85)</td>
</tr>
<tr>
<td>Age at diagnosis (years, median, IQR)</td>
<td>33 (23–45)</td>
<td>33 (23–45)</td>
<td>32 (23–45)</td>
</tr>
<tr>
<td>Disease duration (years, median, IQR)</td>
<td>4 (1–4)</td>
<td>8 (1–4)</td>
<td>9 (3–14)</td>
</tr>
<tr>
<td>Mayo score (median, IQR)</td>
<td>2 (2)</td>
<td>0 (2)</td>
<td>2 (6)</td>
</tr>
<tr>
<td>Mayo score (median, IQR)</td>
<td>33 (56)</td>
<td>17 (63)</td>
<td>16 (50)</td>
</tr>
<tr>
<td>Endoscopic disease activity</td>
<td>3 (41)</td>
<td>10 (37)</td>
<td>14 (44)</td>
</tr>
</tbody>
</table>

(continued)
surgery. By year, it was found a positive trend in the number of both total and "planned" endoscopies carried out within this period (p = 0.017 and p = 0.027, respectively) (Table). Table

<table>
<thead>
<tr>
<th>Patients undergoing surgery</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients with endoscopy within first year after surgery, n (%)</td>
<td>24 (3.80)</td>
<td>36 (4.90)</td>
<td>36 (4.65)</td>
<td>47 (5.99)</td>
</tr>
<tr>
<td>Patients with &quot;planned&quot; endoscopy within first year after surgery, n (%)</td>
<td>15 (2.00)</td>
<td>25 (3.16)</td>
<td>21 (2.72)</td>
<td>34 (4.35)</td>
</tr>
</tbody>
</table>

Results: Overall, from data 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 comorbidity 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%) belonging to the BN and 10 (31%) and BE group, respectively (p = 0.2). In 10 (17%) patients AEs were recorded, most of which were gastrointestinal or herpes simplex infections. Of note, two cases of basal cell carcinoma were registered. The rate of AEs did significantly differ among the BN and BE groups (p = 0.5). In 5 (9%) patients AE was responsible for the 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 to GOL therapy, while 18 (32%) and 10 (17%) 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).

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 were worse to be a better early response in BN patients. Even if not statistically significant, surgery was required most frequently in the BE group. Rate of AEs was acceptable and similar in both BN and BE patients. Although our findings need to be confirmed in larger series, GOL therapy appears to be safe and to achieve an acceptable disease control in both the biologic naïve and experienced setting.

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

ETROLIZUMAB TREATMENT IMPROVES HISTOLOGICAL ACTIVITY ASSESSED BY THE ROHTS HISTOPATHOLOGY AND NANCY HISTOLOGICAL INDICES

P1056

Introduction: Etrolizumab, an anti-β7 monoclonal antibody targeting α4β7 and αEβ7 integrins, showed efficacy and safety versus placebo (PBO) during 12 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 RV. Gut. 2016;65:408–14), etrolizumab may appear to be safe and to achieve an acceptable disease control in both the biologic naïve and experienced setting.

Methods: Aims of this study were to confirm the efficacy and safety of etrolizumab and to determine the correlation between endoscopic and histological improvement.

Results: Analysis included 56 patients with BI and data and BL NHI > 1. At wk 10, BI and BL NHI scores decreased by a greater extent with etrolizumab compared with PBO, regardless of anti-tumor necrosis factor α (aTNF) experience (RHI −8.4 vs −1.6; P = 0.032 and NHI −1.2 vs −0.2; P = 0.011 for all comers). A greater proportion of etrolizumab-treated patients achieved categorical histologic improvement and remission with an endoscopic subscore (EUCALYPTUS) of 1 or 0 at wk 10 (n = 6), 100% experienced histologic response as assessed by RHI (5/5 with RHI non-missing at wk 10), and 83% (5/6) by NHI. Mean (SD) RHI changes were −19.2 (10.0) in patients with an ES ≥ 1 at wk 10 versus −4.4 (10.1) 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

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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>RESPONSE (decrease from baseline)</th>
<th>aTNF-naive (n = 16)</th>
<th>aTNF-experienced (n = 54)</th>
<th>All comers (n = 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RHI ≥ 1 point improvement (%)</td>
<td>55%</td>
<td>36%</td>
<td>49%</td>
</tr>
<tr>
<td>≥ 2 points improvement (%)</td>
<td>55%</td>
<td>36%</td>
<td>49%</td>
</tr>
<tr>
<td>≥ 3 points improvement (%)</td>
<td>55%</td>
<td>36%</td>
<td>49%</td>
</tr>
<tr>
<td>≥ 4 points improvement (%)</td>
<td>55%</td>
<td>36%</td>
<td>49%</td>
</tr>
<tr>
<td>≥ 5 points improvement (%)</td>
<td>55%</td>
<td>36%</td>
<td>49%</td>
</tr>
<tr>
<td>≥ 6 points improvement (%)</td>
<td>55%</td>
<td>36%</td>
<td>49%</td>
</tr>
<tr>
<td>≥ 7 points improvement (%)</td>
<td>55%</td>
<td>36%</td>
<td>49%</td>
</tr>
<tr>
<td>≥ 8 points improvement (%)</td>
<td>55%</td>
<td>36%</td>
<td>49%</td>
</tr>
<tr>
<td>≥ 9 points improvement (%)</td>
<td>55%</td>
<td>36%</td>
<td>49%</td>
</tr>
<tr>
<td>≥ 10 points improvement (%)</td>
<td>55%</td>
<td>36%</td>
<td>49%</td>
</tr>
<tr>
<td>REMISSION (absolute score)</td>
<td>30%</td>
<td>21%</td>
<td>14%</td>
</tr>
<tr>
<td>No neutrophils (%)</td>
<td>30%</td>
<td>21%</td>
<td>14%</td>
</tr>
<tr>
<td>NHI 2</td>
<td>73%</td>
<td>52%</td>
<td>42%</td>
</tr>
<tr>
<td>No neutrophils (%)</td>
<td>30%</td>
<td>21%</td>
<td>14%</td>
</tr>
<tr>
<td>NHI 1</td>
<td>73%</td>
<td>52%</td>
<td>42%</td>
</tr>
</tbody>
</table>

*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: 

D. R. Gaya: Daniel R. Gaya: speaker for Abbvie, Dr Falk Pharma, Ferring, MSD, Shire, Takeda, Vifor.
P. Irving: Peter Irving: research funding from and is a speaker or advisory board member for Abbvie, Dr Falk Pharma, Ferring, Genentech, Hospira, Janssen, Johnson and Johnson, MSD, Pharmacosmos, Shire, Takeda, Tillotts, Topvert, Warner Chilcott and Vifor Pharma.
A. Rose: Anita Rose: employee of MSD UK and owns stocks and shares in Covis Oncology, Novelion, Shield Therapeutics and Tesaro.

A. Rose: Anita Rose: employee of MSD UK and owns stocks and shares in Merck & Co., Inc., Kenilworth, NJ USA.
G. Gillespie: Gillian Gillespie: employee of Merck & Co., Inc., Kenilworth, NJ USA and owns stock and shares in Clovis Oncology, Novelion, Shield Therapeutics and Tesaro.

Reference


P1057 GO-COLITIS: EFFICACY AND QUALITY OF LIFE DURING GOLIMUMAB MAINTENANCE IN UK PATIENTS WITH MODERATE TO SEVERE ULCERATIVE COLITIS

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Introduction: GO-COLITIS (NCT02092285; 2013-004353-56) is a phase 4, multi-centre, open-label, single-arm trial in the UK assessing efficacy of golimumab (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-naive adults with UC ≥ 3 months who responded to induction therapy with subcutaneous GLM at 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 week 54 (defined as decrease in PMS ≥ 2 points at ≥ 30% from baseline, plus a decrease in rectal bleeding subscore of ≥ 1 point or absolute rectal bleeding score ≥ 1). Secondary endpoints included proportion of patients meeting PMS remission criteria at 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, 186/205 (91.0%) 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 47.5%) 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 week 54 were seen in 50/59 patients (84.7%; 95% CI, 73.0% to 92.9%). IBDQ and EQ-SD results are summarised in the Table. Serious adverse events (SAEs) occurred in 49/205 patients (23.9%), with 3 SAEs considered treatment-related.

Table: Mean (SD) Change from baseline to 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>59 ± 186.2 (27.1)</td>
</tr>
<tr>
<td>EQ-SD index score</td>
<td>136 ± 0.7 (0.2)</td>
<td>60 ± 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 were able to severe UC in the UK demonstrated clinical response and remission at week 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 IBQD increase cutoff (i.e. ≥ 20) for patient defined remission previously identified as representative of a patient defined improvement in an assessment of UC clinical endpoints. Adverse events were consistent with previous observations.

Disclosure of Interest: 

D. R. Gaya: Daniel R. Gaya: speaker for Abbvie, Dr Falk Pharma, Ferring, MSD, Shire, Takeda, Vifor.
P. Irving: Peter Irving: research funding from and is a speaker or advisory board member for Abbvie, Dr Falk Pharma, Ferring, Genentech, Hospira, Janssen, Johnson and Johnson, MSD, Pharmacosmos, Shire, Takeda, Tillotts, Topvert, Warner Chilcott, Vifor Pharma.
A. Rose: Anita Rose: employee of Abbvie, Dr Falk Pharma, Ferring, MSD, Takeda, Warner Chilcott and Vifor Pharma.

C. Wheeler: Colin Wheeler: consultant for Aegerion, Amryt Pharma, Astrazeneca, Daiichi Sankyo, GSK, MSD UK, Takeda, Sanofi and Shionogi; Employee of MSD UK and owns stocks and shares in Clovis Oncology, Novelion, Shield Therapeutics and Tesaro.

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Introduction: Only a third of patients (pts) with inflammatory bowel disease (IBD) treated with current pharmacological options achieve clinical response (remission, aTNF-experienced) and most experience drug-related adverse events (AEs). Herein we characterize the clinical and economic burden of IBD treatment limitations in terms of AEs of interest, medical resource utilisation (MRU) and associated costs.

Aims & Methods: Using pts taking only aTNF monotherapy (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), immunosuppressants (IS), anti-tumor necrosis factor agents (aTNF) or with combinations thereof. Eligible pts (aged ≥ 18 years) in the IMS Pharmetrics insurance claims database between 7/1/10 and 6/30/15 had ≥2 medical claims (≥7 days apart) and a diagnosis of UC (ICD-9-CM: 556.x) or Crohn’s (ICD-9-CM: 555.x), with ≥1 qualifying claim in the year preceding treatment. Univariate comparisons included statistical tests of significance (χ², F test, or Kruskal Wallis). Multivariate analyses were based on Cox proportional hazards regression, negative binomial regression, logistic regression or linear regression
P1059 CAN EARLY DRUG AND ANTI-INFLIXIMAB-ANTIBODY LEVELS PREDICT PRIMARY NON RESPONSE TO INFLIXIMAB THERAPY?


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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 what extent pharmacokinetics (early induction infliximab and anti-infliximab-antibody (ATI) levels) and clinical factors are predictive of early drug and ATI levels in primary non-responders of a retrospective observational 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. Infliximab 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 1:3 ratio with 105 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 7.1 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 = 2.43 [2.07–2.85] and bone-related conditions (Crohn’s: 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 [1.75–3.19], p = 0.002, sensitivity 50%, specificity 82%). Pts with UC or Crohn’s receiving OCS or IS + OCS were more likely to have emergency department visits; IBD-related hospitalisation, visits or procedures; and gastrointestinal surgery compared with pts receiving other therapies. Assumalised total medical costs were greatest for aTNF + IS or aTNF + ATI 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, $23,332; UC: OCS, $19,659) followed by other induction therapies (ASA, $10,823; aTNF + IS, $19,151 [P < 0.001]; UC: ASA, $7,980 and aTNF + 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. Consistent with an 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 cost of alternate options.

influence the degree of SM a patient is willing to apply, such as: disease duration, activity, health literacy, self-efficacy, patient's age, and level of trust between patient's and their IBD team. Nurses were asked per item whether they thought this factor would be of influence and to name the three most important factors.

Results: 38 nurses (mean age 42 years) and 32 physicians (mean age 44 years) responded to the survey. The three most appealing options for nurses regarding SM were: availability of a SM web-app, Skype/Face-time consultation with nurse/physician, and an at-home faecal-calprotectin test. Physicians preferred the same options as nurses. Patients' level of change of their patient records compared to 18% of nurses (p = 0.001). Physicians thought that the 3 most important factors influencing SM in patients were: level of trust between physician and patient, self-efficacy, and disease perception. Also, 41% of the physicians found health literacy to be an important factor. Factors suggested that self-efficacy in disease perception and disease activity were most important. One factor was valued differently between nurses and physicians: 78% of nurses thought that patient's age was an important factor in patient's SM, compared to 34% of physicians (p = 0.001).

Conclusion: Patients with limited treatment options for IBD reported disease-related factors and disease perception as important factors influencing SM. Physicians may consider patient's self-efficacy, change of patient records and trust as important factors influencing SM. These results may be used for future research on what patients and caregivers want and need from SM, as SM is a team sport.

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

References

P1062 DISTINCT PATTERNS OF SHORT-CHAIN FATTY ACIDS IN PATIENTS WITH ULCERATIVE COLITIS EXPERIENCING A FLARE DURING TREATMENT WITH MESALAMINE. 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 (UC). Recent studies 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 in remission. This might lead to unfavorable health impairments 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 proceeded as sub-study of a randomized double-blind, double-dummy, controlled clinical trial that has been published previously. Patients were treated with the herbal preparation consisted of 100 mg myrrh, 70 mg chamomile extract and 50 mg coffee charcoal (Myrrhinil-Intestin, Repha GmbH, Heidelberg, Germany). This might lead to unfavorable health impairments including higher risk of inflammation and heightened cancer risk.

Conclusion: Findings show that the herbal preparation might induce different effects on the SCFA of patients with UC compared to mesalazine and therefore might exhibit different modes of action in treating UC. Since a decline of SCFA might lead to unfavorable health impairments like higher cancer risk, treatment options like the herbal preparation might yield additional beneficial effects in the treatment of UC. A combination of the two treatment modalities might be useful and should be investigated in further studies.

Disclosure of Interest: J. Langhorst: Has served as a Speaker for Repha; Research grant from Repha GmbH All other authors have declared no conflicts of interest.

References

P1063 GRANULOCYTE-MONOCYTE APHERESIS (GMA) IN DIFFICULT-TO-TREAT INFLAMMATORY BOWEL DISEASE (IBD). A SINGLE-CENTER REAL-LIFE EXPERIENCE

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Introduction: Selective GMA using Adacolumn® device is a non-pharmacologi- cal therapeutic option for patients affected by IBD, but its precise role among the various treatments available and its true effectiveness are still debated. In particu- lar, steroid-dependent patients, refractory or intolerant to immunosuppressant and biologics, represent a sub-group of patients with limited options of treat- ment. Recently, a multicentric open-label trial [the ART trial ] showed, for the first time, a clinical benefit of GMA in these problematic patients.

Aims & Methods: The aim of this study was to further evaluate, in our real-life clinical experience, the efficacy and safety of GMA in these difficult-to-treat patients. We retrospectively reviewed the clinical data of patients treated with GMA-Adacolumn® in our center between 1/1/2008 and 31/12/2016. Only ster- oid-dependent and/or AZA/IFX/ADA-resistant or intolerant patients were consid- ered. GMA was performed once a week for a minimum of five consecutive weeks. Occasionally, one or two additional sessions were performed. A clinical response was defined as a ≥3 points reduction of 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 incomplete data. In the remaining 22 pts a clinical response, at week 12, 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 com- plication 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

P1064 SYNERGISTIC AND ADDITIVE EFFECTS OF MYRRH, CHAMOMILE AND COFFEE CHARCOAL - COMPONENTS OF A TRADITIONAL HERBAL MEDICINE ENHANCE ANTIISPASMODIC AND CYTOKINE/CHEMOKINE-INHIBITING ACTIVITY OF THE HERBAL COMBINATION

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Combined effect, concentration-response relations of single components and the challenged human macrophages (THP-1) was investigated respectively using an inflammatory bowel disease [1]. Despite existing clinical data, pharmacological data supporting the observed efficacy remain insufficient.

Inflammatory bowel disease 

Introduction: The herbal medicinal product Myrrhinil-Intest (Biologische Arzneimittel Repha GmbH Biologische Arzneimittel) is used for the treatment of gastrointestinal complaints. Clinical data suggest its use for the maintenance therapy of inflammatory bowel disease [1]. Despite disease-specific clinical data, pharmacological data supporting the observed efficacy remain insufficient. The present study aims to investigate the influence of the single and combined herbal extracts with regard to its anti spasmodic and immune-modulating activities. Thus, the effect of myrrh, chamomile flower, coffee charcoal extract on intestinal motility was determined using isometric tension measurement in isolated rat small intestinal preparations. Furthermore chemokine modulating activities. Thus, the effect of myrrh, chamomile flower, coffee charcoal extract on intestinal motility was determined using isometric tension measurement in isolated rat small intestinal preparations. Furthermore chemokine modulating activities. Thus, the effect of myrrh, chamomile flower, coffee charcoal extract on intestinal motility was determined using isometric tension measurement in isolated rat small intestinal preparations. Furthermore chemokine modulating activities. Thus, the effect of myrrh, chamomile flower, coffee charcoal extract on intestinal motility was determined using isometric tension measurement in isolated rat small intestinal preparations. Furthermore chemokine modulating activities. Thus, the effect of myrrh, chamomile flower, coffee charcoal extract on intestinal motility was determined using isometric tension measurement in isolated rat small intestinal preparations. Furthermore chemokine modulating activities. Thus, the effect of myrrh, chamomile flower, coffee charcoal extract on intestinal motility was determined using isometric tension measurement in isolated rat small intestinal preparations. Furthermore chemokine modulating activities. Thus, the effect of myrrh, chamomile flower, coffee charcoal extract on intestinal motility was determined using isometric tension measurement in isolated rat small intestinal preparations. Furthermore chemokine modulating activities. Thus, the effect of myrrh, chamomile flower, coffee charcoal extract on intestinal motility was determined using isometric tension measurement in isolated rat small intestinal preparations. Furthermore chemokine modulating activities. Thus, the effect of myrrh, chamomile flower, coffee charcoal extract on intestinal motility was determined using isometric tension measurement in isolated rat small intestinal preparations. Furthermore chemokine modulating activities. Thus, the effect of myrrh, chamomile flower, coffee charcoal extract on intestinal motility was determined using isometric tension measurement in isolated rat small intestinal preparations. Furthermore chemokine modulating activities. Thus, the effect of myrrh, chamomile flower, coffee charcoal extract on intestinal motility was determined using isometric tension measurement in isolated rat small intestinal preparations. The aim of this study was to investigate the relationship between drug compliance and the outcome of anti-TNF therapy. The number of patients showing a complete treatment discontinuation (LLTR) was investigated respectively using an ELISA test system. Budesonide served as positive control. To characterize the combined effect, concentration-response relations of single components and the herbal combination were compared and IC50 values derived. Interpretation of the data was based on a dose reduction index (DRI = IC50 single/IC50 combination) which estimates the extent to which the dose of one or more components in the combination can be reduced to achieve effect levels that are comparable with those achieved with single component.

Results: Myrrh and chamomile flower extract exerted spasmytic effects by inhibiting acetylcholine-induced contractions in rat small intestinal preparations (IC50 myrrh = 144 g/mL; chamomile flower = 383 g/mL). In combination, chamomile flower and myrrh interacted additively (IC50 myrrh = 74 g/mL; chamomile flower = 196 g/mL) resulting in a DRI of 2.1. All three plant components inhibited CXCL13 release from LPS-stimulated human macrophages (IC50 myrrh-IC50 chamomile flower-IC50 coffee charcoal = 106 g/mL). Synergistic effects exerted by the herbal combination in inhibiting CXCL13 release significantly reduced IC50 values (IC50 myrrh = 5 g/mL; chamomile flower = 22 g/mL; coffee charcoal = 29 g/mL) resulting in a DRI of 2.7. All three plant components inhibited CXCL10 release from Caco2 cells was reduced by all herbal components (IC50 myrrh = 41 g/mL; chamomile flower = 364 g/mL; coffee charcoal = 447 g/mL) with comparably high IC50 values. However, application of the herbal combination, significantly reduced the IC50 of the plant extracts (myrrh-IC50 = 25 g/mL; DR1 = 1.7; chamomile flower-IC50 = 124 g/mL; DR1 = 2.9; coffee-IC50 = 124 g/mL; DR1 = 3.6). IL8 release from cyto- kine-challenged Caco2 cells was inhibited after myrrh (IC50 = 3 g/mL; 28% max inhib.) and coffee (IC50 = 218 g/mL; 75% max inhib.) but increased after chamomile flower treatment (IC50 = 39 g/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 g/mL; coffee charcoal = 281 g/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 spasmodic effects. Synergistic and additive effects between the plant extracts justify the combinatory composition of the traditional herbal medicinal product (Myrrhinil-Intest®) and its application for the treatment of inflammatory intestinal disorders.

Disclosure of Interest: C. Vissienn: Author Cica Vissienn 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


P1065 ARE TROUGH LEVELS OF ANTI-TNF DRUGS RELATED TO TREATMENT DISCONTINUATION IN ULCERATIVE COLITIS

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Background: The present study aims to investigate the influence of the single and combined herbal extracts with regard to its anti spasmodic and immune-modulating activities. Thus, the effect of myrrh, chamomile flower, coffee charcoal extract on intestinal motility was determined using isometric tension measurement in isolated rat small intestinal preparations. Furthermore chemokine modulating activities. Thus, the effect of myrrh, chamomile flower, coffee charcoal extract on intestinal motility was determined using isometric tension measurement in isolated rat small intestinal preparations. Furthermore chemokine modulating activities. Thus, the effect of myrrh, chamomile flower, coffee charcoal extract on intestinal motility was determined using isometric tension measurement in isolated rat small intestinal preparations. Furthermore chemokine modulating activities. Thus, the effect of myrrh, chamomile flower, coffee charcoal extract on intestinal motility was determined using isometric tension measurement in isolated rat small intestinal preparations. Furthermore chemokine modulating activities. Thus, the effect of myrrh, chamomile flower, coffee charcoal extract on intestinal motility was determined using isometric tension measurement in isolated rat small intestinal preparations. Furthermore chemokine modulating activities. Thus, the effect of myrrh, chamomile flower, coffee charcoal extract on intestinal motility was determined using isometric tension measurement in isolated rat small intestinal preparations. Furthermore chemokine modulating activities. Thus, the effect of myrrh, chamomile flower, coffee charcoal extract on intestinal motility was determined using isometric tension measurement in isolated rat small intestinal preparations. Furthermore chemokine modulating activities. Thus, the effect of myrrh, chamomile flower, coffee charcoal extract on intestinal motility was determined using isometric tension measurement in isolated rat small intestinal preparations. Furthermore chemokine modulating activities. Thus, the effect of myrrh, chamomile flower, coffee charcoal extract on intestinal motility was determined using isometric tension measurement in isolated rat small intestinal preparations. The aim of this study was to investigate the relationship between drug compliance and the outcome of anti-TNF therapy. The number of patients showing a complete treatment discontinuation (LLTR) was investigated respectively using an ELISA test system. Budesonide served as positive control. To characterize the combined effect, concentration-response relations of single components and the herbal combination were compared and IC50 values derived. Interpretation of the data was based on a dose reduction index (DRI = IC50 single/IC50 combination) which estimates the extent to which the dose of one or more components in the combination can be reduced to achieve effect levels that are comparable with those achieved with single component.

Results: Myrrh and chamomile flower extract exerted spasmytic effects by inhibiting acetylcholine-induced contractions in rat small intestinal preparations (IC50 myrrh = 144 g/mL; chamomile flower = 383 g/mL). In combination, chamomile flower and myrrh interacted additively (IC50 myrrh = 74 g/mL; chamomile flower = 196 g/mL) resulting in a DRI of 2.1. All three plant components inhibited CXCL13 release from LPS-stimulated human macrophages (IC50 myrrh-IC50 chamomile flower-IC50 coffee charcoal = 106 g/mL). Synergistic effects exerted by the herbal combination in inhibiting CXCL13 release significantly reduced IC50 values (IC50 myrrh = 5 g/mL; chamomile flower = 22 g/mL; coffee charcoal = 29 g/mL) resulting in a DRI of 2.7. All three plant components inhibited CXCL0 release from Caco2 cells was reduced by all herbal components (IC50 myrrh = 41 g/mL; chamomile flower = 364 g/mL; coffee charcoal = 447 g/mL) with comparably high IC50 values. However, application of the herbal combination, significantly reduced the IC50 of the plant extracts (myrrh-IC50 = 25 g/mL; DR1 = 1.7; chamomile flower-IC50 = 124 g/mL; DR1 = 2.9; coffee-IC50 = 124 g/mL; DR1 = 3.6). IL8 release from cyto- kine-challenged Caco2 cells was inhibited after myrrh (IC50 = 3 g/mL; 28% max inhib.) and coffee (IC50 = 218 g/mL; 75% max inhib.) but increased after chamomile flower treatment (IC50 = 39 g/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 g/mL; coffee charcoal = 281 g/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 spasmodic effects. Synergistic and additive effects between the plant extracts justify the combinatory composition of the traditional herbal medicinal product (Myrrhinil-Intest®) and its application for the treatment of inflammatory intestinal disorders.

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Reference

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

Reference

P1067 EFFICACY AND SAFETY OF ADALIMUMAB AFTER INFlixIMAB FAILURE IN PEDIATRIC ULCERATIVE COLITIS: A REAL-LIFE EXPERIENCE FROM THE SIGENP-IBD REGISTRY

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Introduction: The objective of the present study was to evaluate the effectiveness and safety of adalimumab (ADA) in children with ulcerative colitis (UC) who experienced previous infliximab (IFX) failure or intolerance.

Aims & Methods: This retrospective study included all children with UC from a national pediatric registry who received ADA therapy. The primary endpoint was the rate of corticosteroid (CS) free remission (PUCAI < 10) at week 52. Secondary outcomes were: the rate of continuous clinical response and remission, primary non-response and loss of response at Weeks 12, 30 and 52 and rate of mucosal healing (MH) at week 52.

Results: A total of 32 children with UC received ADA (median age 10 ± 4 years). Median disease duration before ADA therapy was 27 months. All patients received previous IFX therapy (43% intolerant, 50% non-responders, 7% positive anti-IFX antibodies). Fifty-two weeks after ADA initiation 13 patients (41%) were in CS-free remission. MH occurred in 9 patients (28%) at 52 weeks. The cumulative probability of clinical relapse-free course was 69%, 59% and 53% at 12, 30 and 52 weeks, respectively. Ten patients (31%) had a primary failure and 5 (15%) loss of response to ADA. No significant differences in terms of efficacy were reported between 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 ADA had a favorable short- and long-term efficacy, allowing to recover a significant percentage of patients intolerant or non-responding to IFX. The efficacy was not related to the cause of IFX discontinuation (intolerance/failure). Overall, safety profile was good. Larger, prospective, controlled trial with longer follow-up should be suggested to better clarify the role of ADA in pediatric UC.

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

P1068 LOW FODMAP DIET IMPROVE DISEASE ACTIVITY AND QUALITY OF LIFE IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE

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Introduction: Inflammatory Bowel Diseases (IBD), Crohn Disease (CD) and Ulcerative Colitis (UC), are idiopathic autoimmune conditions whose pathogenesis is still unknown. It has been hypothesized that, in genetic predispose subsets, a deregulated immune response associated to an increase of intestinal permeability may lead to bowel damage and clinical manifestations. Thus, environmental factors and, in particular, food intake may play a pivotal role in IBD pathogenesis.

Aims & Methods: The aim of this prospective study was to evaluate the effects of a 6-week low fermentable Oligosaccharides, disaccharides, monosaccharides and polysaccharides (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.

TUESDAY, OCTOBER 31, 2017 09:00-17:00
PAEDIATRIC: LOWER GI - HALL T_

P1069 SUBCUTANEOUS USTEKINUMAB PROVIDED CLINICAL AND BIOLOGICAL BENEFIT FOR 9/12 REFRACTORY PEDIATRIC CROHN’S DISEASE

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Introduction: Ustekinumab has shown a good safety profile and efficacy to induce and maintain remission in adults with refractory Crohn’s Disease (CD). Data are lacking in children.

Aims & Methods: All CD patients under 18 years who received ustekinumab were included in this retrospective observational study performed in a single tertiary pediatric centre.

Results: See table.

Conclusion: Subcutaneous ustekinumab is effective to induce and maintain remission in severe pediatric CD refractory to anti-TNF antibodies.

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

References
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 serious adverse event and the treatment was stopped after the first injection.

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References


**P107 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 reported in presence of 1.6 to 22%. This side effect occurs more frequently in patients treated with infliximab (IFX) for IBD. Data 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 retrospective study.

**Results:** Baseline 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; 532) 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 methotrexate. The median IFX trough levels (TRI) when psoriasis occurred was 4.7 mcg/mL (1.8; 9.6) and 4.1 mcg/mL (2.1, 8.8) at the previous visit. Median Antibodies to infliximab (ATI) were 0%.

Conclusion: 14% of our IBD patients treated with IFX developed psoriasis during follow-up. All were CD, more frequently it occurred for CD with perineal lesions, at the 8th injection in median, with no ATI.

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

**References**


**P107 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). ACD are associated with several alterations of platelets, including number, shape, and function. In clinical practice, the most common platelet alteration is thrombocytosis. In IBD, thrombocytosis is associated with iron deficiency anemia and chronic inflammation. The platelet function is due to the substantially increased incidence of thromboembolic phenomena in IBD

**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 recruited from the Pediatric Gastroenterology Unit of Policlinico Umberto I in Rome. Patients younger 6 years, with inherited platelet defects, hemoglobinopathies, and receiving therapies that alter platelet function, are excluded. We collect disease activity scores (Pediatric Crohn’s Disease Activity Index [PCDAI], Pediatric Ulcerative Colitis Activity Index [PUCAI]), laboratory investigations (complete blood count, mean corpuscular volume (MCV), mean platelet volume (MPV), mean corpuscular haemoglobin concentration (MCHC), levels of hemoglobin (Hb) and serum ferritin (SF), transferrin and iron. Diagnostic criteria for anemia are based on EDCO guidelines. Platelet aggregation is evaluated on platelet-rich plasma in an AggRAM aggrerometer 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 is 15.3 years (±3.5). Iron deficiency anemia combined to ACD is the most common type (58.3% 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). Another 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 significantly higher in anemic UC patients with active disease (PUCAI > 20) compared to the same patients whose disease is in remission (p = 0.042) and compared to patients with active CD (p = 0.054).

**Conclusion:** 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 hyperaggregation. Moreover in UC patients with active disease there is a significant major risk of thrombosis, independently from acquired or inherited hemostasis defects.
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 childbirth 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 during 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 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.

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 ± 1.6), 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 hyperemia. 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 hyperemia. With regard to the effects of medications on the fetus, medical staff should provide an explanation about the safety of treatment and should be aware that patients may have various concerns about drug therapy. If patients have difficulty continuing oral treatment due to severe hyperemia, administration of alternative therapy should be considered.

Conclusion: During pregnancy, it is important to continue treatment for UC so that patients can give birth while remaining in remission. Accordingly, intervention by medical staff is particularly necessary in order to provide pregnant patients with information and explanations regarding treatment.

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

Reference


P1075 REMISSION INDUCTION IN CORTICOSTEROID NAIVE CHILDREN AND ADOLESCENTS WITH ULCERATIVE COLITIS BY ADSORPTIVE LEUCOCYTOPHAGESIS AS MONOTHERAPY OR IN COMBINATION WITH A LOW DOSE PREDNISOLONONE AFTER FAILURE OF FIRST-LINE MEDICATIONS

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Introduction: In patients with active ulcerative colitis (UC), methylprednisolone ileocolonies are known to be elevated with activation behaviour, including the CD14+ CD16− DR++ monocye phenotype, which is a major source of tumour necrosis factor-α. Therefore, selective depletion of methylleucocytes by adsorptive granulocyte/monocyte apheresis (GMA) with an Adacolumn is expected to promote remission, or enhance drug efficacy. Potentially, GMA should be a relevant treatment option in patients in whom drug therapy has limitations.

Aims & Methods: Our major objective was to apply GMA as remission induction therapy in paediatrics and adolescents when first-line 5-aminosalicylic acid/steroids had failed. Thirty consecutive patients with active ulcerative colitis (UC), age 11–19 years, body weight 33.5–55.5 kg were givem mesalazine (n = 23) or sulphasalazine (n = 7) as the first-line medication. Twenty patients relapsed while receiving the first-line medication. They did not respond, and received GMA with the Adacolumn, at 2 sessions in the first week, then weekly, up to 11 sessions. Patients who achieved ≥ 50% decrease in the clinical activity index (CAI) after 5

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

Reference

2014;20:3180–90.
GMA sessions continued with GMA while non-responders received GMA in combination with a low dose prednisolone (0.5 to 1.0 mg/kg bodyweight). At entry and week 12, patients were clinically and endoscopically evaluated with each patient serving as her or his own control.

**Results:** At entry, all 30 patients were corticosteroid naïve and none had deep coexisting angiodysplasia. 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 3 GMA sessions and received prednisolone together with GMA, while 12 patients responded well to GMA, and achieved stable remission, but 2 patients withdrew to receive high dose prednisolone (up to 2 mg/kg bodyweight). At entry, the average CAI was 14 ± 0.4. Prednisolone was tapered to 0 mg within 3 months in those who received. Therefore, at week 12, all 30 patients were in remission, majority with mucosal healing.

**Conclusion:** In this treatment design, GMA in young corticosteroid naïve patients with active UC refractory to the first-line 5-aminosalicylates was associated with clinical remission and mucosal healing, while in non-responders to GMA mono-therapy, addition of a low dose prednisolone increased 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**

**PI076 EARLY SCREENING FOR INFLAMMATORY BOWEL DISEASE IN CHILDREN WITH AUTOIMMUNE LIVER DISEASE**

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**Introduction:** Autoimmune liver disease (AILD), in particular autoimmune sclerosing cholangitis (ASC) is associated with inflammatory bowel disease (IBD). It is known the effect of IBD on the outcome of AILD. Faecal calprotectin (FC), a stool biomarker, screens for bowel inflammation without the need for invasive endoscopic evaluation and is easy to collect.

**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 (>600 μg/g). Data were documented 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), IBD-U (n = 11) 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/g 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 defined as haemooglobin in 74% at last liver follow-up (median 4.1 [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 decompensation 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><strong>n (male)</strong></td>
<td>13(5)</td>
</tr>
<tr>
<td><strong>Age (years)</strong></td>
<td>12.5 [10.3 to 14.6]</td>
</tr>
<tr>
<td><strong>ASC (n)</strong></td>
<td>6</td>
</tr>
<tr>
<td><strong>Weight (kg)</strong></td>
<td>48.8 [38.8 to 55.9]</td>
</tr>
<tr>
<td><strong>Haemoglobin (g/l)</strong></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 current immunosuppression may mask mild to severe signs 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.

**PI077 CLINICAL AND LABORATORY VARIABLES THAT PREDICT CLINICAL AND ENDOSCOPIC REMISSION IN CHILDREN WITH CROHN’S DISEASE TREATED WITH INFlixIMAB**

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**Introduction:** We aimed to identify early clinical and laboratory predictors of sustained clinical and endoscopic remission in children with Crohn’s disease (CD) under infliximab (IFX).

**Aims & Methods:** Prospective study conducted in children with moderate-to-severe CD starting IFX treatment. All patients underwent endoscopy, weight adjusted pediatric CD activity index (wPCDAI) assessment, C-reactive protein (CRP) at week 0 and 52. wPCDAI and CRP were also evaluated at 14 weeks. The primary outcome was to determine the ability of 14-week wPCDAI and CRP to predict steroid-free sustained remission and mucosal healing at 1 year. As a secondary outcome we sought to evaluate the concordance between wPCDAI and Simple Endoscopic Score for CD (SES-CD) at week 52.

**Results:** Forty-one children were enrolled (median age 13.3 ± 2.7, females 44%). At 1 year, 21 (51%) and 16 (39%) were in clinical (wPCDAI < 12.5) and endoscopic (SES-CD < 3) remission, respectively. Fourteen-week wPCDAI didn’t differ between patients who achieved both clinical and endoscopic remission at 1 year (p = 0.21 and p = 0.35, respectively). By using a multivariable logistic regression model, neither week-14 wPCDAI nor CRP were predictors of 1-year clinical (p = 0.83 and p = 0.30, respectively) and endoscopic remission (p = 0.22 and p = 0.48). wPCDAI resulted significantly correlated with 1-year SES-CD (r = 0.38, p = 0.01). The concordance between wPCDAI and SES-CD was excellent and good for severe disease and remission (kohen 0.87 and 0.76), moderate and absent for mild and moderate disease, respectively.

**Conclusion:** Based on our results, 14-week post induction wPCDAI and CRP are not predictors of 1-year sustained steroid-free clinical and endoscopic remission under IFX. Continuous wPCDAI should be obtained in good correlation with SES-CD, particularly for patients in remission and with severe disease.

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

**TUESDAY, OCTOBER 31, 2017 09:00-17:00**

**OTHER LOWER GI DISORDERS II - HALL 7**

**PI078 THALIDOMIDE FOR THE TREATMENT OF REFRACTORY GASTROINTESTINAL BLEEDING CAUSED BY ANGIODYSPASIAS**

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**Introduction:** Gastrointestinal angiodysplasia, either inherited or acquired, is an important and challenging cause of acute gastrointestinal haemorrhage, particularly in the elderly, sometimes refractory to treatment. Although multiple treatment modalities, both medical and surgical, are being used, there is no established medical treatment available for these patients. Thalidomide is a potent inhibitor of angiogenesis in experimental models. As angiodysplasias are a result of unregulated vessel growth, antiangiogenic treatment may inhibit growth of angiodysplasias. But its benefits and risks nevertheless remain unclear.

**Aims & Methods:** This retrospective study evaluates the efficacy, safety, and side-effect of thalidomide in the treatment of patients with refractory gastrointestinal bleeding from angiodysplasias. Patients with recent gastrointestinal bleeding of angiodysplasia who were from Hangzhou First people’s Hospital from October 2012 to July 2015 were collected for this open and nonrandomized study. Thalidomide was started with 50 mg/day and then increased incrementally by 100 mg/day, if tolerated, and continued for 6 months. Adverse events, hemoglobin, blood chemistry, the changes of coagulation and blood transfusion were monitored during the treatment and for 6-months post-treatment.
Results: Twenty-one patients with chronic refractory angiodyplasia 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) Eight 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 (3.76 ± 0.06 x 10^12/L), hemoglobin after treatment (94.7 ± 13.1 g/L) compared with before treatment (83.2 ± 17.6 g/L); HCT after treatment (32.0 ± 0.05) compared with before treatment (0.29 ± 0.06); the difference was statistically significance (P < 0.05; 3). The ALT after treatment (12.9 ± 18.5 U/L) compared with before treatment (30.6 ± 12.8 U/L); AST after treatment (28.1 ± 8.56 U/L) compared with before (28.0 ± 12.4 U/L); γ-GT after treatment (34.4 ± 8.4 U/L) compared with before (35.6 ± 12.7 U/L); AKP after treatment (85.3 ± 19.8 U/L) compared with before (83.0 ± 20.8 U/L); ALB after treatment (36.2 ± 3.1 g/L) compared with before (36.3 ± 4.3 g/L); there was no statistically significant difference (P > 0.05). (4). Prothrombin time (PT) after treatment (12.1 ± 1.3s) compared with before (11.8 ± 1.4s); APTT after treatment (30.2 ± 3.7 s), compared with before (31.0 ± 6.2s); the difference was not statistically significant (P > 0.05). (5). 6 cases of colonic capillary malformation review colonoscopy, and the vascular malformation improved significantly after treatment.

Conclusion: Thalidomide, with its antiangiogenic mechanism of action, seems to be a promising drug in bleeding angiodyplasia as a treatment option for patients unable to benefit from other available modalities of treatment, the study drug waswell tolerated.

Disclosure of Interest: All authors have declared no conflicts of interest.
Conclusion: Repeated FIT screening might be more efficient to detect benign polyps, smaller CRCs, and CRCs of intra-mucosal Dukes A. We will go on researching CRC's locations about screening history.

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. It is demanded that CRC screening is performed effectively depending on the capacity of colonoscopies. 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, 70 year-old), size (1-24, 25-49, over 50 mm), location (proximal, distal), Dukes’ classification (Dukes A, A-invasive, B, C, D) depending on the concentration. The chi-squared test was used to compare of each group.

Results: There were no differences in gender and age group for concentration. The concentration of CRCs in the distal colon was significantly higher in the proximal colon [distal 39% (861/2,200) and proximal 32% (337/1,053) with over 200 μg Hb/g stool]. The concentration of CRCs with larger size was significantly higher than smaller size [1–24 mm 27% (533/1,961), 25–49 mm 54% (439/818) and over 50 mm 64% (169/263) with over 200 μg Hb/g stool]. The concentration of invasive CRCs was significantly higher than intra-mucosal CRCs [intra-mucosal 23% (370/1,617) and invasive 50% (888/1,793) with over 200 μg Hb/g stool]. The concentration of Dukes B, C and D were significantly higher than Dukes A except for intra-mucosal. There was no difference between Dukes B and D [Dukes A except for intra-mucosal 36% (325/910), B 68% (247/363), C 60% (232/385) and D 69% (61/89) with over 200 μg Hb/g stool].

Table 1: Fecal Hb concentration and progress of colorectal cancer

<table>
<thead>
<tr>
<th>Age</th>
<th>Location</th>
<th>Dukes</th>
</tr>
</thead>
<tbody>
<tr>
<td>40-49</td>
<td>proximal</td>
<td>A C D</td>
</tr>
<tr>
<td>50-59</td>
<td>proximal</td>
<td>A C D</td>
</tr>
<tr>
<td>60-69</td>
<td>proximal</td>
<td>A C D</td>
</tr>
<tr>
<td>70+</td>
<td>proximal</td>
<td>A C D</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Conc.</th>
<th>Age</th>
<th>Location</th>
<th>Dukes</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-20</td>
<td>40-49</td>
<td>proximal</td>
<td>A C D</td>
</tr>
<tr>
<td>20-80</td>
<td>40-49</td>
<td>proximal</td>
<td>A C D</td>
</tr>
<tr>
<td>80-140</td>
<td>40-49</td>
<td>proximal</td>
<td>A C D</td>
</tr>
<tr>
<td>140-200</td>
<td>40-49</td>
<td>proximal</td>
<td>A C D</td>
</tr>
</tbody>
</table>

Concentration: In 20–80 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 are 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 POLYP 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 procabazine. 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 that of a Dutch general population cohort that underwent a primary screening colonoscopy (n = 1276 asymptomatic 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 8–21%), p = 0.001). Advanced adenomas were detected in 14% (95% CI 10–20%) of HL survivors and 9% (95% CI 6–14%) of controls (p = 0.001). The prevalence of advanced adenomas was higher in HL survivors than in controls (12% (6–18%) vs. 4% (25% (95% confidence interval 16–33%) vs. 12% (95% CI 8–21%), p < 0.001). Serrated polyposis syndrome was present in 6% (2–11%) of HL survivors and 3% (0–7%) of controls (p = 0.001).

Conclusion: HL survivors treated with abdominal radiotherapy and/or procabazine have a high prevalence of advanced colorectal neoplasia. Colonoscopy surveillance should therefore be implemented as standard of care.

Disclosure of Interest: M.E. van Leerdam, M.E. van Leerdam obtained funding from the Dutch Society of Gastroenterology and Hepatology (Maag lever darm Stichting (MLDS) funding project FP14-04). All other authors have declared no conflicts of interest.

Aims & Methods: We aim to investigate the incidence of prostate cancer as a second primary malignancy among patients with prior primary colorectal cancer (CRC) using a nationwide population-based dataset. This study is a nationwide population-based retrospective cohort study. We followed up with patients registered in the Republic of Korea National Health Insurance Corporation who were diagnosed with colorectal cancer between 2007 and 2014 and investigated the incidence of prostate cancer (one year lag period). The incidence of prostate cancer was also evaluated in age and gender-matched controls using a cohort of patients diagnosed with colorectal cancer during the same period. The incidence rate was defined as the number of newly diagnosed prostate cancer patients per 1000 person-years. To assess the role of detection bias-related to the follow-up of CRC, follow-up started at the date of CRC diagnosis and continued until the earliest date of prostate cancer diagnosis, death, loss to follow-up, or the 2015 year-end. 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). Multivariable analysis (including age, sex, body mass index, hypertension, diabetes mellitus, dyslipidemia, and income) showed that age < 55 years (HR = 20.85, 95% CI = 11.88–36.59; P < 0.001) is a significant independent predictor of prostate cancer.

Conclusion: Men who develop colorectal cancer are at an increased risk of prostate cancer, with the greatest risk in men under the age of 55. This data suggests that CRC patients under 55 years old require regular screening for prostate cancer.

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

P1085 INCIDENCE OF PROSTATE CANCER IN COLORECTAL CANCER PATIENTS: NATIONWIDE RETROSPECTIVE COHORT STUDY

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Introduction: Colorectal cancer is one of the most common cancers diagnosed worldwide, and prostate cancer is also the most common malignancy in men and a major cause of cancer deaths. Both colorectal cancer and prostate cancer also tend to occur more frequently in developed countries. There have been several reports on the association between colorectal cancer and prostate cancer, but the conclusions are inconsistent.

Aims & Methods: We aim to investigate the incidence of prostate cancer as a second primary malignancy among patients with prior primary colorectal cancer (CRC) using a nationwide population-based dataset. This study is a nationwide population-based retrospective cohort study. We followed up with patients
diagnosed in stage I or II. As those patients will have better survival rates, it is expected that screening will decrease CRC mortality rates.

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

Introduction:

CRC screening is of great importance for prevention of CRC. Routine screening for LS by immunohistochemical staining (IHC) in CRC patients is expected to have LS. We aimed to assess the diagnostic yield of IHC for LS in patients with advanced and multiple adenomas.

Aims & Methods: We included participants of the national CRC screening program, referred to our center after a positive FIT from December 2013 to December 2016. IHC for MLH1, MSH2, MSH6 and PMS2 protein was performed on advanced adenomas and CRCs found at colonoscopy. Adenomas were considered advanced if they had a villous component, high-grade dysplasia or were ≥10 mm in size. Also, in cases with ≥2 non-advanced adenomas, IHC was performed on the largest adenoma. MLH1 hypermethylation analysis was performed to distinguish sporadic from LS-related CRC. For all patients the germline mutation status for LS was assessed. Patients with IHC suspect for LS were offered germline mutation analysis. If no pathogenic mutation was found, we performed somatic mutation analysis.

Results: A total of 1006 patients (54% male; mean age of 67 years (±6 years)) with positive FIT were included in the study. At colonoscopy, 335 (33%) patients (63% male; mean age of 67 years (±6 years)) had a CRC and/or adenoma eligible for IHC. A total of 322 adenoma patients were analyzed. None had aberrant IHC. Of the examined adenomas, 151 (47%) had a villous component and (or) high grade dysplasia (132 (41%) with villous component and 37 (11%) with high grade dysplasia). Out of 48 CRC patients, 7 (15%) showed loss of protein expression. All seven cases had loss of MLH1 and PMS2 protein. Five cases had MLH1 promoter hypermethylation. The two patients without MLH1 promoter hypermethylation were referred for genetic counselling. Both patients had no family history suspect for LS. In both cases no germline MLH1 mutation was found and somatic mutation analysis showed that both had a likely sporadic tumor.

Conclusion: Our results indicate that routine LS screening by IHC and MLH1 hypermethylation in patients with advanced and multiple adenoma within a national FIT-based screening CRC program is not an effective strategy. The diagnostic yield of LS screening in young adenoma patients should be assessed. Also, our results imply that MLH1 promoter hypermethylation may be a late event in oncogenesis, since none of the adenomas had aberrant IHC.

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

References


2. Pathological Review of 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 cancers 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.


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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 when initially 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 and adenoma detection rate (ADR) in British Asians undergoing colonoscopy compared to White British2. This study aims to evaluate PDR, ADR and cancer detection (CDR) detection rate (ADR) in Asians undergoing colonoscopy 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 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 30.8% (95% CI 26.7–34.9%), adenoma detection rate (ADR) was 12.0% (95% CI 10.1–12.4%) and other polyps were 14/4287 (0.3%) (Inflammatory polyps 13, Juvenile polyp 1). Cancer detection rate was 6/4287 (0.3%). SSA/Ps were 134 (3.1%), hyperplastic polyps were 642/4287 (15%), sessile serrated polyps were 1456/4287 (34%).

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 NF-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 DDX27 (Dead box polypeptide 27) gene was amplified in colorectal cancer (CRC) by whole genome sequencing. Amplification of DDX27 was detected in 47% (47/100) of primary CRC tumors and positively correlated with its mRNA overexpression. DDX27 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 DDX27 were identified by promoter luciferase reporter assay, RT2 Profiler PCR array and western blot. The interacting partners of DDX27 were screened by BioID method and further validated using immunoprecipitation assay and immunofluorescence staining method. Clinical implication of DDX27 was assessed in two human CRC cohorts by quantitative PCR method and immunohistochemical staining of tissue microarrays.

Results: Promoter luciferase reporter assays revealed that DDX27 mainly activated nuclear factor kappa B (NF-kB) pathway in CRC cell lines (HCT116 and SW480). Ecotypic expression of DDX27 promoted transcription of NF-kB signaling targets including BCL2A1, BIRC3, CCL20, CXCL13, NFkB1A, TNF and TNFAIP3. Conversely, silencing of DDX27 showed an opposite effect on NF-kB signaling. Treatment of NF-kB inhibitors CAPE and JSH-23 abrogated the promoting effect of DDX27 on CRC cell growth. We revealed that DDX27 enhanced and prolonged NF-kB signaling via reducing the accumulation of nuclear IkBα, which negatively regulates transcriptional activities of NF-kB and transport NF-kB proteins back to the cytoplasm. DDX27 overexpression markedly increased the recruitment of NF-kB p65 inside nuclear and promoted NF-kB activity in CRC cells under TNF-α stimulation. NPM1 was identified as a potential binding partner of DDX27 by BioID method to screen for protein-protein interactions. The interaction of NPM1 and DDX27 inside nucleus was further validated by endogenous immunoprecipitation assay and immunofluorescence staining. Knockdown of NPM1 abrogated DDX27-activating NF-kB signaling, as well as its tumor-promoting function. Kaplan-Meier curves showed that higher DDX27 expression was significantly associated with shorter survival in patients with CRC of two independent cohorts (N=199 for Beijing cohort using quantitative PCR method, and N=275 for Shanghai cohort using immunohistochemical staining of tissue microarrays; both P<0.05).

Conclusion: DDX27 plays an important oncogenic role in promoting CRC tumorigenesis via activation of NF-kB pathway. Higher expression of DDX27 is correlated with poor prognosis in CRC patients.

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

P1092 CLINICOPATHOLOGICAL 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 not clear and need further exploration and study.

Aims & Methods: The aims of this study was to clarify the clinicopathological features of colorectal serrated lesions. We reviewed clinical charts and pathology files of 5352 endoscopically resected specimens performed during January 2007 and December 2016 in our hospital. A total of 463 serrated lesions (8.7%) were resected and classified into three categories: HP (hyperplastic poly), SSA/P (sessile serrated adenoma/polyp), and TSA (traditional serrated adenoma), according to the WHO criteria. We examined the features of these cases and evaluated the morphologic 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, 0.98 for SSA/P, and 2.45 for TSA. Mean size of SSA/Ps (13.1 mm) and TSAs (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 TSAs 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 TSAs. Incidences of concomitant carcinomas in HP, SSA/P, and TSA were 0% (0 out of 241), 2.9% (3 out of 102), and 4.2% (5 out of 120), respectively. Ki-67 positive cells in HP showed regular, symmetric distribution, and those in SSA/P did different staining patterns. Cell nuclei of those cells in TSA distributed in foamy-like ectopic crypts. Expression levels of MUC2, MUC5AC and MUC6 were
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 one block 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 = 6). We used epithelial specific cytoplasmic/ cytokeleton (CK) 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 = 51/60) of migrating CRC cells. E-cadherin HIC 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. STEM-microscopic images showed that released ECs were composed smaller, distinguishable ALIX-positive spheroids of 98 ± 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 conventional secreted exosomes.

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

P1094 ALTERED ARGININE METABOLISM IN HUMAN PROLIFERATIVE INTESTINAL EPITHELIAL CELLS: A POTENTIAL ROLE IN TUMORIGENESIS AND WOUND HEALING

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Introduction: The semi-essential amino acid arginine is important for intestinal epithelial proliferation and is an essential dietary component delivered by solid food. In homeostatic proliferating adult intestinal enterocytes arginine is catabolized, by the enzyme arginase 2. During embryonic development, the demand for arginine increases, due to rapid growth. Arginine is lacking from maternal milk in premature newborns which has to be synthesized de novo to sustain epithelial expansion in the rapidly growing intestinal tube. Neonatal enterocytes are capable of de novo synthesis of arginine from citrulline. The rate-limiting enzyme in this process is argininosuccinate synthetase 1 (ASS1). Similarly to postnatal development, hyperploriferative epithelium is a hallmark of tumorigenesis and wound healing.

Aims & Methods: The aim of this study is, to investigate, whether de novo arginine synthesis via ASS1 plays a role in intestinal carcinogenesis and repair. We performed immunohistochemistry on intestines from APCmin/+ mice, and in vitro studies with colon cancer cell lines. We examined whether either upregulation or downregulation of tumor suppressor genes following arginine deprivation further correlates with resistance against arginine deprivation. In APC−/− organoids generated from the APC−/− genotype, ASS1 RNA and protein are highly expressed, with concomitant increase of intracellular arginine. Upon knockdown of ASS1 in an APC−/− organoid model, protein synthesis is significantly increased and organoid growth is compromised. Furthermore, knockdown of ASS1 decreases overall protein synthesis. Conclusion: Decreased synthesis of Arginase in adenomas and hyperproliferative crypts during epithelial repair after mechanical wounding and irradiation wounds, compared to homeostasis. Variable expression of ASS1 is seen in different metastatic cancer cell lines, and expression correlates with resistance against arginine deprivation. In APC−/− organoids generated from the APC−/− genotype, ASS1 RNA and protein are highly expressed, with concomitant increase of intracellular arginine. Upon knockdown of ASS1 in an APC−/− organoid model, protein synthesis is significantly increased and organoid growth is compromised. Furthermore, knockdown of ASS1 decreases overall protein synthesis. Conclusion: A dysregulated network of arginine metabolism may be a potential regulator of resistance to growth factor deprivation in colonic adenoma/carcinoma cells.

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

References
POLYPOPSITE WITH NO APC OR MUTYH IDENTIFIED MUTATIONS

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Introduction: Less than a hundred polyps defines attenuated familial adenoma- tous 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 28–78) of AFAPs 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 endo- scopic follow-up was mostly every year. Patients of wild-type group never under- went to colectomy during follow-up and they displayed few adenoma recurrences in 24% of cases. On the other hand 14% of mutated patients underwent colectomy for dense polyposis and 28% had more polyps than at index colonoscopy and 11% no polyps at all. These 11% displayed mutation in MUTYH.

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.

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Table 1: Comparison of clinical and endoscopic feature between APC or MUTYH carriers versus wild-type patients.

<table>
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(continued)
Extracellular microRNAs are stable and their expression is less characterized in plasma. Altered and overlapped mRNA profiles between tissue and plasma are less explored.

**Aims & Methods:** The present study was designed to characterize the tissue and circulating microRNA profile through colorectal adenoma-carcinoma sequence in human colorectal cancer (CRC) in peripheral blood samples. Furthermore, the purpose of our study was to determine the origin of detected microRNAs in tumor-adherent C38/C37BL/6 and non-adherent CBAJ mice tumor models. To achieve that goal, human peripheral blood and biopsy of normal (N), tubular (AT), transitional (TV) and colorectal (CRC) whole blood plasma were also collected two times a week over 45 days from C37BL/6-C38, CBAJ mice. MicroRNAs were isolated and Affymetrix GeneChip microRNA array analysis was performed for screening of the altered microRNA profile. RT-qPCR method was performed for confirmation.

**Results:** In the case of human samples up to 173 detectable microRNAs, 306 microRNAs were expressed in normal, 334 in adenoma and 321 in CRC. Characteristic microRNA expression alteration was observed in the comparison of Ad-N and CRC-N, expressed differentially stable expression (388 p < 0.05) 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 microRNAs was observed in tissue as well as in CRC. We identified high plasma levels of 94 microRNAs in miR-126 in CRC samples. In CRC samples, CBAJ-C38 mice model experiment where the injected tumorous cells could not adhere miR-676 found to be a host originated while miR-92a was a tumour-derived miRNA. MiR-676 and miR-92a showed significant overexpression (388x and 37x p < 0.05) in plasma samples based on real-time PCR and microarray results.

**Conclusion:** Circulating microRNAs alteration could observe in animal models and in patients. Cancer-associated microRNAs in the circulation may originate from the immunologic system or from other metastatic regions far from the primary tumor location.

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

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**P1099 RHOA: THE KEY SIGNALING PATHWAY OF MICRORNA-126 IN SUPPRESSING THE EPITHELIAL-MESENCHYMAL TRANSITION, PROLIFERATION, MIGRATION AND INVASION OF COLORECTAL CANCER CELLS**

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**Introduction:** The mechanism of colorectal cancer (CRC) invasion and metastasis is still unclear. Epithelial-mesenchymal transition (EMT) is one of the key molecular steps in the process of distant metastasis. EMT is referred to conversion of cells with an epithelial phenotype into cells with a mesenchymal phenotype, which is essential in the process of cancer invasion and metastasis. EMT is referred to conversion of cells with an epithelial phenotype into cells with a mesenchymal phenotype, which leads to loss of cell polarity, with acquisition of migratory and invasive properties and is a key step in cancer progression.1,2 MicroRNAs (miRNAs) (miR-126) are small (20–22 nucleotides) that negatively regulate gene expression at post-transcriptional phase. MicroRNA-126 (miR-126) originates from a common precursor structure located within the egfl7 gene, which acts as a tumor suppressive miRNA in various cancer tissues.3 We previously demonstrated that microRNA-126 is significantly down-regulated in human CRC tissues and negatively related with patient’s prognosis.4 MiR-126 was also low-expressed in high metastatic cell lines, and inhibited proliferation, invasion and metastasis of CRC in vitro.5 However, whether miR-126 can regulate the process of EMT in CRC is still unclear. Ras homologue A (RhoA) is one of the most characterized members of Rho GTPases that regulate cell behavior. Ras homologue A (RhoA) is one of the most characterized members of Rho GTPases that regulate cell behavior. Sixty percent of the human genes have been shown to be involved in cell migration.6 Our previous study found that miR-126 down-regulated RhoA and ROCK activity in CRC cells.7 Whether RhoA activity and RhoA signaling pathway play an important role in miR-126 regulating EMT process, cell proliferation, migration and invasion of CRC remains unclear.

**Aims & Methods:** To identify RhoA signaling pathway associated with the function of microRNA-126 in colorectal cancer (CRC) cells, we employed microRNA-126 over-expression and knockdown. Performed MTT, colony formation, wound-healing, migration, invasion assays and RT PCR, western blot analysis to study the functions of miR-126 in CRC. Cell proliferation, migration, invasion and expression RhoA signaling pathway of CRC cells. Constructed pDsRed2-V14RhoA (constitutively active RhoA, V14RhoA) and pDsRed2-N19RhoA (dominant-negative, N19RhoA) mutants, performed MTT, colony formation, wound-healing, migration, invasion assays and RT PCR and western blot analysis to study the functions of miR-126 in CRC. Cell proliferation, migration, invasion and expression RhoA signaling pathway of CRC cells. Constructed pDsRed2-V14RhoA (constitutively active RhoA, V14RhoA) and pDsRed2-N19RhoA (dominant-negative, N19RhoA) mutants, performed knockdown and over-expression assays of miR-126 in CRC. Cell proliferation, migration and invasion in miR-126 over-expressing HCT116 cells. Conversely, N19RhoA mutant effectively decreased the activity of RhoA and suppressed EMT, proliferation, migration and invasion in miR-126 silenced SW480 cells.

**Conclusion:** RhoA signaling pathway was the key signaling pathway of miR-126 in suppressing the EMT, proliferation, migration and invasion of CRC cells.

**References:**


P1101  MIR-126 REGULATES TUMOR GROWTH AND METASTASIS IN COLORECTAL CANCER THROUGH RECRUITING TUMOR ASSOCIATED MACROPHAGES THROUGH PARACRINE SIGNALING OF CXCL12

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Introduction: Colorectal carcinoma is one of the leading causes of cancer-related mortality worldwide. Tumor associated macrophages (TAMs) are criticalstromal 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 investigated the cross-talk between cancer cells and TAMs in colorectal cancer microenvironment, and find out what role the miR-126-CXCL12/IL6 axis plays in it. Methods: (1) The effect of miR-126 on CXCL12 expression was assessed in the CRC cell line Caco2 transferred with a miR-126 mimic or inhibitor to increase or decrease miR-126 expression; (2) We build a co-culture system of TAMs and transferred cancer cells, and use AMD3100 to block CXCL12/CXCR4 axis, then detect the 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 used to trap it. We detect the expression of EMT associated factors and STAT3 pathway activation by western blot, cell growth by CCK8, metastasis by Transwell. The definition of statistical significance was defined as P < 0.05 (two-tailed).

Results: (1) miR-126 negatively regulate CXCL12 expression in post-transcript level; (2) Inhibiting miR-126 of colorectal cancer cells could promote TAMs recruitment and upregulate inflammation factors IL1β and IL6 expression. However, blocking CXCL12/CXCR4 axis by AMD3100 could reverse this effect; (3) Inhibiting miR-126 of colorectal cancer cells could recruiting TAMs, therefore down-regulate-Ecadherin protein, upregulate-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 be used to control this effect; (4) In vitrulo, we found that miR-126 could promote cancer cells growth and migration.

Conclusion: Our results reveal a novel mechanism by that miR-126 repress recruitment and inflammatory factor secretion of TAMs through controlling secretion and paracrine signaling of CXCL12 to inhibit colorectal cancer growth and metastasis.

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

P1104  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 (NORCAP) and Italian (SCORE) trials evaluated the effectiveness of FS screening and reported a non-statistically significant decrease in colorectal cancer (CRC) specific mortality at follow-up. It is unclear if significant proximal neoplasia is being missed in people undergoing flexible sigmoidoscopy alone.

Aims & Methods: We aim to investigate the distributions of pathology within the BCS! 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%) hyperplastic, 156 (47.9%) adenomas and 16 (4.9%) adenocarcinomas. 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, one over three of the proximal cancers would not have distal polyps.

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

References
P1104 STUDIES ON CLINICOPATHOLOGICAL CHARACTERISTICS AND THE LONG-TERM PROGNOSIS OF DEPRESSED-TYPE COLORECTAL CARCINOMAS

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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 depressed-type carcinomas. This theory is called "de novo" pathway. We studied clinicopathological characteristics and long-term prognosis mainly on depressed-type colorectal carcinomas. Aim: To clarify the pathological characteristics of depressed-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 2013. Of 1127 IIIC carcinomas. Anatomopathological and molecular analysis, and clinical data were collected from the patients. A total of 50 cancer related genes were analyzed using the Ion PGM sequencer.

Conclusion: Our results demonstrate that degree of ITH of KRAS/TP53 mutations increases during the progression of colorectal carcinomas. Intratumoral variations in the microsurface 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 EXOCYTOCELLULAR VESICLES IN COLORECTAL CANCER PATIENT PLASMA

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Introduction: Hypoxia signaling has been enhancing to be considered for cancer cell survival, chemoresistance, motility, tumour angiogenesis as well as self-renewal capacity and proliferation of putative cancer stem cells. One of the key player in hypoxia is carbonic anhydrase IX (CAIX) which is a hypoxia-inducible enzyme. CAIX is overexpressed in a variety of cancers including colon cancer and plays a crucial role in maintaining favourable intracellular pH in hypoxia. There is also evidence that extracellular vesicles (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 cancers.

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 determined by ApoeeaA50.

Results: Statistically significant increase in the amount and size of EVs was observed in a group of CRC patients compared to HD. Among the 10 CRC patients with synchronous metastasis, CAIX positive EVs was 33.0% in HD and 97.5% in CRC. CAIX positive EV content was increased by 10 fold in CRC patients compared to HD.

Conclusion: There is an increased total EV number, EV size and CAIX positive EV amount in CRC patient plasma compared to HD plasma, that might have diagnostic and prognostic value. (Financed by Latvian Council of Science №05/2014/DK.05/4.1.1./6.2.1.1.-16.1.)

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

P1107 THE GENESIS STUDY: GENETIC BIOPSY 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 multicenter study (NCT02595645; Median age: 62.9 y, 50 males, 50 females). Up to 41 BRAF-mutant lesions exhibited ITH of BRAF mutation. Pathological findings of the 4 lesion were low grade adenoma (n = 1), non-invasive CRCs with adenoma (n = 2) and serrated lesions (n = 1), whereas majority of the BRAF-mutant lesions without ITH (n = 37) were serrated lesions or CRC with serrated lesions. Sequencing of 50 cancer-related genes in 8 tumors with KRAS/TP53 ITH revealed that both subcomponents exhibited identical mutations in genes including FBXW7, HRAS and SKT11, suggesting that these were founder mutations.

Results: In 100 patients, 234 polyps were removed. 121 polyps (54.0%) were sized <10 mm, 71 (31.7%) were ≥10 mm. For 32 polyps (14.3%) no size was available. 90 polyps (40.2%) were located in the left, 126 polyps (56.3%) in the right colon, for 8 polyps (3.6%) no location was noted. 112 polyps (50.0%) were adenomas and 110 polyps (49.1%) non-adenomas lesions. No data were available
for 2 polyps (0.9%). Clinical, endoscopic and histopathological data were corre-
lation of the metastatic status of various cancers with endoscopic or histopathological polyp characteristics were observed for BRAF, KRAS, TCF7L2, FBXW7 and CTNNB1 mutations. Multivariate ana-
lyses revealed that polyps > 10 mm have a significant higher relative risk (RR) for harboring oncogenic mutations (RR 3.467 [1.742–6.933]). Adenomas and right-
sided polyps are independent risk factors for CTNNB1 mutations (RR 18.559
(2.371–145.245) and 12.987 (1.637–100.00)).

Conclusion: We were able to show that assessment of the mutational landscape of resected polyps/poly biopsy can easily be integrated in the workflow of current colonoscopy practice. There are distinct genetic patterns related to size and location of polyps and the clinician can appreciate this additional information to better estimate a patient’s individual risk.

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

P1108 QUANTITY, 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 (cfDNA) is circulating in human plasma and its amount is different in certain physical conditions. It is well known, that in healthy people the quantity of cfDNA is very low, but it rises in chronic disorders such as cancer. At the same time, very high cfDNA level can be measured in healthy people during physical exercise.

Aims & Methods: We aimed to analyze cfDNA changes (quantity, fragment length, global DNA methylation level) in physiological conditions (during physical exercise), in inflammatory bowel and colorectal diseases. Plasma was separated from 64 patients (16 colorectal carcinomas (CRC), 13 colonic adenomas (AD), 19 inflammatory bowel disease (IBD), and 16 normal (N) donors without evidence of disease). Plasma samples were also collected from 6 healthy athletes, before, during and after physical training. DNA was isolated with Pure Viral Large Volume NA isolation Kit (Roche). cfDNA was quantified with Qubit fluorometry (Invitrogen). CFDNA fragment length distribution was assessed by Bioanalyzer 2100 using High Sensitivity DNA assay (Agilent). Global DNA methylation was analyzed by bisulfite pyrosequencing of long interspersed nuclear element-1 (LINE-1) (Qiagen).

Results: High increase of cfDNA amounts was 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 sub-
jects (10.33±3.22 ng/ml). High level cfDNA amounts were found in plasma samples of athletes during physical exercise (66.17±29.00 ng/ml), while the cfDNA amount decreased after physical activity (51.87±39.80 ng/ml). Characteristic cfDNA fragment length distribution pattern (with different peak heights at 180 bp, 360 bp, 550 bp) was observed in each patient group. Global DNA hypomethylation was shown in CRC plasma samples with advanced tumor stage (N=3, p<0.001, AD: 79%±1.7%, advanced CRC: 70%±0.03%).

Conclusions: A very high increase of cfDNA and CRC, IBD patients and also in healthy athletes during physical exercise. CIDNA fragment length analysis showed differences between each group. Global DNA hypomethylation was observed only in CRC patients with advanced tumors 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: Epigenetic instability, primarily aberrant 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 (cfDNA) 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 bisulfite-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. Methylation sensitivity (95% cutoff) of each marker was determined using variety of sample types including urine, tissue, serum, and feces. However there are only few urinary metabolic biomarkers and especially nuclear magnetic resonance (NMR) spectroscopy, which has several advantages including rela-
tively high degree of reproducibility, easy-to-identify metabolites, high throughput, output, and non-destructive sample treatment, has not been applied to urine samples.

Aims & Methods: In this study, we investigate the differences in urine metabolic profiles of patients with colorectal neoplasia (CRN) including CRC and precancerous lesion, and healthy volunteers using a NMR-based urinary metabolic study. In addition, we evaluate applicability as diagnostic tool of urine metabolomics for early detection of precancerous colorectal lesion with high sensitivity and specificity. Urine metabolomic profiles of patients with colorectal neoplasia in colorectum remains poorly understood and warrants investigation due to its non-invasive sampling method. In the last decade, several metabolomic approaches have been applied toward identifying metabolic alterations in CRC using variety of sample types including urine, tissue, serum, and feces. However there are only few urinary metabolic biomarkers and especially nuclear magnetic resonance (NMR) spectroscopy, which has several advantages including relat-

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P1110 URINE-NMR METABOLOMICS FOR SCREENING OF ADVANCED COLORECTAL ADENOMA AND EARLY STAGE COLORECTAL CANCER

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Introduction: Metabolomics, a dynamic portrait of the metabolic status of living systems, has demonstrated its great potential for use in the diagnosis of various cancers by applying advanced analytic techniques and bioinformatics tools. Recently, very few metabolic markers in CRC have been consistently discovered, but most of the published reports with CRC included only one cancerous lesion in colorectum remains poorly understood and warrants investigation due to its

Results: After patients underwent endoscopic resection or surgical resection for CRC, advanced adenoma has been diagnosed in 36 patients, stage O CRC in 24 patients, stage I CRC in 8 patients, stage II CRC in 7 patients, stage III CRC in 13 patients and stage IV CRC in 4 patients. CEA and CA 19-9 levels for patient with stage I to IV CRC and healthy control were also assessed. Among patients with stage I to IV CRC, CEA and CA 19-9 were incrementally higher in patients with advanced CRC stage O than stage I respectively. The sensitivity and specificity of CEA and CA 19-9 were 6.2% and 99.3%, respectively. The OPLS-DA score plot showed statistically significant discrimination between pre-invasive CRC as well as advanced CRC and normal with a Q2 value of 0.765. The prediction validation study, the sensitivity and specificity for diagnosing pre-invasive CRC was 96.2% and 95%, respectively. The grades of the PLS-DA model showed that area under the curve was 0.823 for taurine, 0.783 for alanine and 0.842 for 3-aminoisobutyrate. In multiple receiver operating characteristics curve analyses, taurine, alanine, and 3-aminoisobutyrate were good discriminator for CRC patients.

Disclosure: NMR-based urine metabolomic profiles significantly and accurately discriminate between patients with pre-invasive CRC as well as with CRC.
advanced CRC, and healthy control with high accuracy. It demonstrates an applicability of urinary ECM 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 colonic pathology. Only 14% of patients referred for colonoscopy from primary care have significant bowel disease (SBD), colorectal cancer (CRC), high risk adenoma (HRA, defined as ≥3 or any ≥1 cm) and inflammatory bowel disease (IBD). We have reported that undetectable faecal haemoglobin (f-Hb), measured by a faecal immunochromatographic test (FIT) is a good rule-out test for SBD. 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 encouraged to complete a FIT in addition to blood count and renal function check. The raw data were extracted by request from the registry of the screening structure (in various areas 75, 77, 91, 92, 94 and 95) covering a target population of 3026366 habitants. Rates of participation were calculated, and after one-year experience period, profiles of individual with positive tests, rates of those with normal colonoscopy, with polyps (all stages combined) or a student t (quantitative variable) and multivariate stepwise analysis was performed for identifying predictive factors for cancer diagnosis.

Results: At the end of the HC-based screening campaigns 2014, 2.5 million individuals were annually invited and the participation rates since 2009, ranged from 28.3% to 24.6%, with females showing higher rates for participation (30.1% to 26.1%) than men (26 to 21.8%, p < 0.0001). During the first (2015) year FIT experience, the O Sensor device was used for 450120 (34% estimated participation rate) individuals (versus 294603 participants in HC in 2014 p < 0.00001; 24% participation rate). The rate of positivity was 4.6% (versus 3.8% with HC; p < 0.0001). Among all positive FIT individuals, 93% underwent colonoscopies: 35% were normal (vs 41%; p < 0.01), 13.2% presenting with cancer or HGD and 52% with polyps (vs. 37.7%; p < 0.0005). More women (5.5%) than men (4.2%) responded to invitations while positivity rate in women (40.7%; p < 0.0001) was higher than in men (38.7%). More advanced polyps and cancer were found in men (14.5%) than in women (11.3%; p < 0.0001) with normal colonoscopies lower in men (24.2%) than in women (40.7%; p < 0.0001). The mean age (mean age of FIT positive individuals with cancer +HGD (667, 9) or with polyps (374; 4) than in those with normal colonoscopy (440, 4). In multivariate analysis, risk factors for abnormal colonoscopies with cancer + HGD were male gender, FIT > 340 ng/mL and age > 63.5 yrs. More men than women with positive FIT test did not yet undergo colonoscopy

Conclusion: FIT test has gained a better adhesion in Ile de France probably because to its simplicity and a wider distribution. The lower rate of normal colonoscopies and a higher positivity suggest a predictive value for cancer leads to more early lesions detected indicating its higher specificity. Men of 63.5 yrs old or more with Hemoglobin levels higher than 340 ng/mL are of very high risk of cancer and should be absolutely conducted to the colonoscopy in case positive FIT test.

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

References
accuracy and calculated compared with American, European, and Japanese guidelines (1–5).

**Results**: Sensitivity was 100% (95% CI, 56%–100%) in all models. Specificity and accuracy of the AI model, American, European and Japanese guidelines were 68% (58%-78%) vs. 45% (35%-66%) 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). Consequently, reducting 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**


### PII114 RISK FACTORS OF ADVANCED METACHRONOUS NEOPLASMS IN COLONOSCOPIC SURVEILLANCE AFTER COLORECTAL 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 278 patients were enrolled in this study. Surveillance colonoscopy was performed after periprocedural clearing colonoscopy. Among the patients, 162 (61.6%) were male, and the median age was 65 years. On periprocedural 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), 15 advanced metachronous neoplasms were 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 periprocedural clearing colonoscopy (OR = 3.414; P = 0.001), and hypertension (OR = 2.344; P = 0.026) were significant risk factors of advanced metachronous neoplasm during surveillance colonoscopy.

**Conclusion**: Patients who had distal colon cancer, accompanying high-risk adenomas on periprocedural 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**


### PII115 PROSPECTIVE COMPARISON OF THE NOVEL FULL SPECTRUM ENDOSCOPY (FUSE) AND ADVANCED HI-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 significant polyp miss rates. The novel second generation full spectrum endoscopy (FUSE) is a new scope with two additional cameras in the sides that provides a panoramic 330° field of view.

**Aims & Methods**: The aim of this study is to identify the role of the FUSE in improving polyp detection. This was a single-center, prospective, randomized, open-label study in patients that presented for routine colonoscopy at an outpatient unit during a six months period. Patients were randomized to either FUSE (FUSE colonoscope CDYL slim c38) or standard frontal view (SFV) colonoscopy (Olympus Evix Exera III 190). The primary outcomes were polyp detection rates (PDR), detection rate (DR) 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 had cecal 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), diverticular detection rate (DDR) or complete colonoscopy (table 1). About secondary endpoints: R0 endoscopic resection was achieved in 95% in both groups (p = 0.68). The median procedure time in minutes was higher with SFV (36.7±13.1mm vs. FUSE: 21.5±17.0 min) than FUSE (21.5±10.7 min) (p < 0.005). There were no significant differences regarding adverse events, determination of colon cleanliness, or others epidemiologic factors. 2 case were excluded of the statistical analysis due to surveillance of polyposis syndrome, two avoided assessing 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.

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3.65% were superficial submucosal carcinomas (<1000 μm). During UEMR, two cases (both using AUTOCUT mode) of sprouting bleeding were observed (4.45%). Hemostasis was easily achieved in both cases by clipping. 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 colonscopy after 10 years or surveillance in 5-10 years in individuals with no or 1-2 non-advanced adenomas.
Aims & Methods: We hypothesized that risk of metachronous advanced colorectal neoplasia is dependent on ADR. We retrospectively evaluated colorectal adenoma detection rate (ADR) in a cohort of low-risk individuals.
Results: Multivariate analyses showed that increasing ADR was significantly associated with reduced risk of colorectal neoplasia in the post EMR scar is currently highly accurate using HD-WL (high definition-white light) and NBI (narrow band imaging). Anyway, indications for follow-up endoscopy after colorectal endoscopic submucosal dissection (EMSD) remain unclear.
Methods: We conducted a study comparing the risk of colorectal neoplasia after colorectal endoscopic submucosal dissection (EMSD) in patients with ADR (32%) vs. those screened by endoscopists with higher ADR (23%) (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.

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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 modified 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 in PAEM cases performed in our hospital and an affiliated hospital, which 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 tissue 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, and 3 cases with deep submucosal colorectal neoplasia were en bloc resected en bloc with negative margin. The other 3 cases showed tumor invasion to the muscle layer and the vertical margin was positive. The clinical course after PAEM was preferable in all cases. Three cases which achieved resection with negative margin but found lymphovascular invasion of the tumor underwent additional surgical intervention or adjuvant chemoradiation. In surgical cases, they could permit anus-preservation.
Conclusion: PAEM for lesions exhibiting MR sign with severe fibrosis will enable complete en bloc resection and 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-CT in conjunction with Fujifilm and gains royalties from its sale.
All other authors have declared no conflicts of interest.

References:

P1119 LOCAL RECURRENCE AFTER ENDOSCOPIC MUCOSAL RESECTION FOR HIGH-RISK LESIONS: MAY WE BETTER PLAN THE ENDOSCOPIC FOLLOW-UP ACCORDING TO PROCEDURAL, NEOPLASTIC AND HISTOLOGICAL AND HISTOPATHOLOGICAL CHARACTERISTICS?
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Introduction: Endoscopic mucosal resection (EMR) is an increasingly used technique for the removal of large sessile and flat-laterally-spreadign colorectal lesions. At present, surveillance colonoscopies are ever performed to ensure detection and adequate treatment of residual or recurrent adenoma (RRA), which, occurring in 10-40% of non-pedunculated lesions, currently represents the main limitation of this technique. Fortunately, endoscopic detection of RRA in the post EMR scar is currently highly accurate using HD-WL (high definition-white light) and NBI (narrow band imaging). Anyway, indications for follow-up
A557

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colonoscopies and optimal time intervals are currently unclear. An adequate
comprehension of the predicting factors of RRA would be very relevant to try
to prevent it, better plan surveillance intervals, establish role and timing of surgery and reduce costs.
Aims & Methods: Our aims were to assess the frequency of local recurrence after
EMR for high-risk lesions, to identify risk factors for recurrence, and to provide
follow-up suggestions. We considered all consecutive patients undergone
EMR 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 ‘‘inject 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 scare 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 about budding, grading, microinvasion, margins, submucosal extension for all pT1 removed ‘‘en bloc’’.
Results: 50 patients were included (mean age 63  12 years, 54% females).
The mean size of lesions was 21 mm (range 10–50 mm), 40% were sessile, 35%
granular LST and the reimaging 25% non-granular LST, the most frequent sites
of location were sigmoidal 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 in 1 for intraprocedural bleeding. No postprocedural 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 histological characteristics strongly suggesting high risk of RRA (pT1, 42 cm, grading G2, free-disease margins51 mm). As concerned lesions removed
‘‘piecemeal’’, RRA (70% high grade dysplasia and 30% low grade dysplasia)
was higher in pT1, lesions 42 cm, non-granular LST. No correlation was
found with other factors.
Conclusion: EMR results a technique safe and effective particularly for lesions
removable ‘‘en bloc’’; in this cases in fact the rate of RRA seems to be low and
easily histologically predictable. Although factors related to RRA in ‘‘piecemeal’’
EMR appear less clear more attention would be applied in relation to determined
morphological pattern and presence of in situ carcinoma. Moreover, RRA seems
to be ever early suggesting a close follow up only in the first period.
Disclosure of Interest: All authors have declared no conflicts of interest.
Reference
Tim D. G. Belderbos, Max Leenders, Leon M. G. Moons, Peter D. Siersema.

P1120 TREATMENT STRATEGY FOR LOCAL RECURRENCES
AFTER ENDOSCOPIC RESECTION OF COLORECTAL NEOPLASMS
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Introduction: Local recurrences after endoscopic resection (ER) frequently
occur, especially after piecemeal resection. Recently, the efficacy of endoscopic
submucosal dissection (ESD) for local recurrences has been reported. However,
an appropriate treatment strategy for these lesions including ESD remains
unclear.
Aims & Methods: This study aimed to clarify the appropriate treatment strategy
for local recurrences after ER. A total of 81 patients (81 lesions) who received
treatment for local recurrences after ER for colorectal neoplasms between
January 2010 and December 2016 were enrolled. Patients with pathological diagnosis of hyperplastic polyp, sessile serrated adenoma/polyp, and submucosal
invasive cancer in their first ER were excluded. Seven patients who underwent
surgery because of submucosal invasion or technically difficult locations were
also excluded. Procedural outcomes, recurrence rate and disease control rate
(DCR) were evaluated according to preoperative endoscopic diagnosis of recurrent lesions (adenomatous or cancerous). The DCR was defined as proportion of
patients who were diagnosed with curative resection after ER or received additional surgery based on pathological diagnosis after ER.
Results: Seventy-four patients were included in the final analysis. Forty-nine
patients diagnosed with adenomatous recurrences were treated by cold polypectomy in 15, by endoscopic mucosal resection (EMR) in 26, and by ESD in 8
patients. Cold polypectomy was applied only to diminutive (55 mm) lesions
and there was no local recurrence. The en bloc resection rates of EMR and
ESD were 53.8% and 100%, respectively (P ¼ 0.030). Two cases (7.7%) in the
EMR group developed local recurrences, but additional ER achieved curative
resection. The DCR of three methods were all 100%. Meanwhile, 25 patients
diagnosed with cancerous recurrences were treated by EMR in 7 and by ESD in
18 patients. The en bloc resection rates of EMR and ESD were 28.6% and
83.3%, respectively (P ¼ 0.017). Three cases (42.9%) in the EMR group developed local recurrences. One case required surgery because of invasive local

recurrence, the second case required chemotherapy because of distant metastasis,
and the third case was followed-up because of severe comorbidities. Therefore,
the DCR in the EMR group was significantly lower than that of in the ESD
group (28.6% vs. 83.3%, P ¼ 0.017).
Conclusion: The selection of ER for local adenomatous recurrences could be
based on lesion size. On the other hand, ESD is desirable for local cancerous
recurrences to achieve complete disease control.
Disclosure of Interest: All authors have declared no conflicts of interest.

P1121 A COMPARATIVE STUDY ON EFFICACY OF
CHEMOTHERAPY AFTER ENDOSCOPIC COLONIC STENTING VS.
THAT AFTER COLONIC SURGERY IN THE MANAGEMENT OF
OBSTRUCTIVE COLORECTAL CANCER
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Introduction: Endoscopic stent placement in acute large-bowel obstruction due to
colorectal cancer has been established as a palliative therapy or bridge to surgery
with good outcomes in Japan. While, efficacy of chemotherapy after endoscopic
colonic stenting has not been evaluated.
Aims & Methods: The aim of this study was to evaluate efficacy of chemotherapy
after endoscopic colonic stenting by comparing with that after surgery. Sixty five
patients with colorectal cancer of stage IV presenting obstructive symptom visiting Aomori Prefectural Central Hospital from January 2012 to December 2016
were classified into SC group who have underwent chemotherapy after endoscopic colonic stenting (32 patients) and OC group who have underwent chemotherapy after surgery (23 patients). The patient’s background, adverse effects
and prognosis were compared with two groups.
Results: There have not been any significant differences in patient age (65.5  9.3
in SC vs. 61.5  14.1 in OC, p ¼ 0.21), male to female ratio (25:7 in SC vs. 14:9
p ¼ 0.16) and performance status (0.6  0.7 in SC vs. 0.7  0.8 in OC, p ¼ 0.66).
The averaged colorectal obstruction scoring system (0, Requiring continuous
decompressive procedure; 1, No oral intake; 2, Liquid or enteral nutrient; 3,
Soft solids, low-residue, and full diet with symptoms of stricture; 4, Soft solids,
low-residue, and full diet without symptoms of stricture) score was significantly
severe in OC (1.7  1.1) than in SC (0.7  0.9, p 5 0.01). Adverse effects included
perforation (1), stent slippage (6), re-obstruction by tumor progression (3) in SC,
and ileus (1), abdominal abscess (1), renal insufficiency (1) in OC. The frequency
of combined use of molecular target drugs (Bevacizumab/Panitumumab/
Cetuximab) at first chemotherapy has significantly differed (p 5 0.01) between
SC (0/11/9) and OC (12/4/0). The median survival day was not significantly
different between SC (595) and OC (459, p ¼ 0.93). In SC, survival was found
significantly longer with additional surgery (913, n ¼ 13) than without (325,
n ¼ 19, p 5 0.01). In OC, survival did not significantly differed between with
resection of the primary tumor (666, n ¼ 16) and without (595, n ¼ 7, p ¼ 0.93).
Conclusion: This study has demonstrated that the survival of SC was identical
to that of OC, and additional surgery was found to significantly improve the
prognosis in SC. Chemotherapy after endoscopic colonic stenting has been considered tolerable as a palliative therapy or bridge to surgery for obstructive
colorectal cancer.
Disclosure of Interest: All authors have declared no conflicts of interest.

P1122 A NEW MANEUVER TO PLACE A THROUGH-THE-SCOPE
STENT IN A MALIGNANT COLONIC STRICTURE INACCESSIBLE
WITH A STANDARD-CALIBER COLONOSCOPE: "OVER-THECATHETER" COLONOSCOPE REPLACEMENT TECHNIQUE
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Introduction: A self-expandable metallic stent (SEMS) placement is potentially a
colostomy-sparing option to manage a malignant colonic obstruction (MCO).
However, in patients with coexisting peritoneal dissemination (carcinomatous
adhesion), for example, insertion of a standard caliber colonoscope (SCC) is
challenging, whereas such an endoscope equipped with a large working channel
is suitable for through-the-scope (TTS) SEMS placement. Failure in stenting
necessitates continuous tube drainage, stoma formation, or other surgical procedures and decreases quality of life (QOL).
Aims & Methods: We examined feasibility and efficacy of, ‘‘Over-the-Catheter’’
Colonoscope Replacement technique (OTC-CR) detailed below, in palliative (not
preoperative) SEMS placement for MCO. From Oct 2012 to Dec 2016, MCO
patients were consecutively considered for decompression by SEMS placement
unless stoma formation was preferred. When a conventional TTS procedure was
unsuccessful, specifically, when the MCO site was inaccessible with an SCC
(CF-H260AI, Olympus Medical Systems, Tokyo, Japan) with a 13.2 mm tip
diameter and 3.7 mm working channel, needed for a 22 mm (not 18 mm) SEMS


Aims & Methods:

The cost-effectiveness of CRC screening programmes are clearly demonstrated in some countries, and their implementation is encouraged by international guidelines. The program has been developed in the areas of Menorca, Ibiza, Formentera and Tramuntana (Mallorca), including 30% of the Balearic Islands population. The target population (people who reside in these areas aged between 50 and 69 years old) was 75,575 individuals. Exclusion criteria. Colonocepimy 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 after the samples were stored in urns placed in health centres. Participants who tested positive (≥100 ng/ml) were referred to pre-endoscopy evaluation and follow-up colonoscopy. The colonoscopies were performed according to the quality criteria of guidelines.

Results: Overall participation rate (number of people who provide their i-FOBT sample) was 36.5% (n=21,555). Positive rate of i-FOBT was 7% (1438) and 94.3% of these positive tests underwent a colonoscopy (5.7% of exclusions in pre-endoscopy evaluation). 996 colonoscopies were performed. 47 adenomas with high grade dysplasia, 24 carcinomas in situ and 60 adenocarcinomas were found. Only 19% of these adenocarcinomas were T3 or T4 lesions while the rest presented earlier stages. 26% of colonoscopies were classified as high risk (>5 adenomas or at least one ≥20mm). They have been reported 2 cases of colon perforations, both resolved by endoscopic treatment.

Conclusion: We observed an acceptable participation rate in the first round of the colorectal 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.

References


P1123 RESULT OF THE FIRST ROUND OF THE COLORECTAL CANCER SCREENING PROGRAMME IN THE BALEARIC ISLANDS (SPAIN)


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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 (Maleorca), including 30% of the Balearic Islands population. The target population (people who reside in these areas aged between 50 and 69 years old) was 75,575 individuals. Exclusion criteria. Colonoscopy performed in the previous 5 years, previous diagnosis of CRC, follow-up colonoscopies because colon disease and severe illness-contraindication for the participation. People received the invitation by letter. Quantitative immunochemical fecal occult blood testing (i-FOBT/OC-Sensor) was the screening method. The kit was delivered at pharmacies after the samples were stored in urns placed in health centres. Participants who tested positive (≥100 ng/ml) were referred to pre-endoscopy evaluation and follow-up colonoscopy. The colonoscopies were performed according to the quality criteria of guidelines.

Results: Overall participation rate (number of people who provide their i-FOBT sample) was 36.5% (n=21,555). Positive rate of i-FOBT was 7% (1438) and 94.3% of these positive tests underwent a colonoscopy (5.7% of exclusions in pre-endoscopy evaluation). 996 colonoscopies were performed. 47 adenomas with high grade dysplasia, 24 carcinomas in situ and 60 adenocarcinomas were found. Only 19% of these adenocarcinomas were T3 or T4 lesions while the rest presented earlier stages. 26% of colonoscopies were classified as high risk (>5 adenomas or at least one ≥20mm). They have been reported 2 cases of colon perforations, both resolved by endoscopic treatment.

Conclusion: We observed an acceptable participation rate in the first round of the colorectal 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.

References

Aims & Method: 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, Ms 1, neuro 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 Ms 1 and neuro 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 NALDEMEDINE COMPARED WITH PLACEBO ON CONSTIPATION AND ABDOMINAL SYMPTOMS IN SUBJECTS WITH CHRONIC NON-CANCER PAIN AND OPINION-INDUCED CONSTIPATION

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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 developed for the treatment of OIC. In Phase 3 studies, NAL improved the frequency of spontaneous bowel movements, straining, consistency of stools, and patient assessment of constipation symptoms (PAC-SYM) and quality of life (PAC-QOL), measures of patient’s quality of life, compared with placebo (PBO). The aim of this analysis is to assess the impact of NAL on overall satisfaction and to show if a simple score can assess the impact of treatment of OIC.

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 at the last visit study. The number and proportion of subjects in each grade were calculated and the overall difference between groups was assessed with Wilcoxon rank sum test. The mean subject global satisfaction score (SSGS) was also compared between groups. For SSGS scores, from 1 to 7 were replaced with scores from 0 to 6, with 4 (unchanged) replaced with 0.

Results: There were 547 subjects in COMPOSE 1, 550 in COMPOSE 2, and 1246 in COMPOSE 3 (all ≥18 years of age) randomized (1:1) to NAL 0.2 mg once daily or PBO. The baseline characteristics of the study population were consistent between groups in each trial and between trials. Overall satisfaction assessment was completed in 372 subjects in COMPOSE 1, 296 in COMPOSE 2, and 1101 in COMPOSE 3. There were greater improvements in satisfaction with constipation and abdominal symptoms in the NAL group compared with the PBO group in all three studies (all P<0.0005; Table). The mean SSGS 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.

Table 1: Densities of enteroendocrine, Ms 1, and neuro 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-total</th>
<th>IBS-D</th>
<th>IBS-M</th>
<th>IBS-C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serotonin</td>
<td>92±20</td>
<td>119±9</td>
<td>104±10</td>
<td>93±8</td>
<td>144±21</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>
</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>
</tr>
<tr>
<td>PP</td>
<td>46±5</td>
<td>54±4</td>
<td>56±8</td>
<td>51±7</td>
<td>55±6</td>
</tr>
<tr>
<td>Somatostatin</td>
<td>91±12</td>
<td>77±6</td>
<td>83±6</td>
<td>60±9</td>
<td>79±9</td>
</tr>
<tr>
<td>Ms 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>
</tr>
<tr>
<td>Neuro 3</td>
<td>130±10</td>
<td>129±10</td>
<td>131±19</td>
<td>105±16</td>
<td>138±18</td>
</tr>
</tbody>
</table>

Data was expressed as mean ± SEM. *: P < 0.05; **: P < 0.01; ***: P < 0.0001

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...
to study the ability of STW 5 to modulate intestinal permeability under basal and regenerative stress conditions.

**Aims & Methods:** C57 B6 mice were gagged for 14 days with STW 5 (3 mL/kg). After 10 days of treatment, mice were subjected to water avoidance stress (WAS) during 4 consecutive days. In vivo permeability to FITC–Sulfonic Acid (F4A, 400 mg/kg) and HRP, and in vitro permeability to HRP (4KDa), total transit time and colonic transit (fetal pellet output - FPO) were measured at Day 0 (D0), D10 and D14 of IB treatment. Ex vivo permeability to FSA and HRP was assessed on jejunal, ileum, proximal colon and distal colon at D14 using Ussing chambers. 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 colonic tissues of rats with varying age-group: 10-week group, 20-week group, 40-week group, 60-week group and 80-week group. 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. At the same time, in absence of S1P, the expression of BKCa, P-MLC levels, single-channel activity, intracellular Ca2+ mobilization were tested. At the same time, in the presence and absence of S1P, BKCa decreased by treatment with inhibitor of Akt/ERK/JNK pathways whereas S1P upregulated BKCa in colon SMCs in a concentration-dependent manner, impaired intracellular Ca2+ mobilization were affected by BKCa expression in SMCs. The expression and phosphor-ylation of Akt, JNK, ERK, NR4A1 and PKC were examind by western blot analysis. Thus, in this study, we investigated whether altered S1P due to aging may affect the motility of colon smooth muscle (CSM) in rats.

**Results:** In vivo permeability to FSA and HRP as well as total transit time were not modified by STW 5 in basal and WAS conditions. However, only STW5 prevented the increase in permeability to FSA induced by WAS in the distal colon of the rats. Conversely, STW 5 prevented the increase in permeability to HRP induced by WAS in the jejunal and proximal colon. Furthermore, while STW 5 tended to increase colonic transit as compared to control in basal conditions, it prevented the increase in colonic transit induced by WAS. Finally, STW 5 did not modify the corticosterone induced by WAS.

**Conclusion:** Our study suggest that STW 5 can prevent WAS induced changes in paracellular and transcellular permeability in specific regions of the gastrointestinal tract. Such effects could contribute to the therapeutic effects of STW 5 in irritable bowel syndrome and support novel therapeutic indications for pathologies in which barrier functions are altered.

**Disclosure of Interest:** O. Kelber: Olaf Kelber is employed by Bayer M. Abdel-Aziz: Heba Abdel aziz is employed by Bayer M. Neulist: This work was supported by a research grant to MN by Bayer All other 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 questionnairenaires were anonymous, and the only personal information the participants were required to give was their age and sex. The questionnaire contained objective questions on possible causes and constipation-associated conditions and medications (according to the criteria defined by the World Gastroenterology Organization), daily water and 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 & Conclusions: A total of 814 questionnaires were performed 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, compiled the Roma III criteria for functional constipation. Noteworthy, 6% of subjects with daily bowel movements and 38% of those with <1 weekly bowel movement considered to have constipation. Complaints of excessive straining, tenesmus, feeling of incomplete evacuation and abdominal pain were associated with the presence of constipation. 11% of the patients reported long history of constipation and abdominal pain. Histopathological analysis of intestinal biopsies revealed normal histology in 57% cases, hypoganglionosis in 26%, and ganglionitis in 17%. Histopathological analysis of rectal biopsies revealed normal histology in 47% of cases, and hypoganglionosis in 35%. Histopathological analysis of ileal biopsies revealed normal histology in 50% of cases, and hypoganglionosis in 38%.

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 high resolution ano-rectal manometry (HRM), balloon expulsion test (BET) and imaging of the defecatory process (X-ray defecography, dynamic trans-pelvic ultrasound (DT-PUS) or MR defecography). These tests have a place in the evaluation of suspected 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 & 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±s) were prospectively evaluated with HRM, BET and PUS. Inter test agreement for the diagnosis of anismus was assessed using the Kappa statistic. Correlation between anismus to evacuation failure (assessed by PUS) was also assessed.

Results: 36 patients were assessed for ED, 6 for CPP and 21 for FI. Anismus was diagnosed in 26 patients by HRM and 45 patients by DT-PUS. All cases of anismus diagnosed by HRM or DT-PUS had a positive BET. The Kappa agreement for the diagnosis of anismus between HRM and DT-PUS was poor (0.143 ± 0.011). 9 patients had significant pelvic floor anatomic pathology (4 rectal prolapse, 6 pathological pelvic descent, 4 enterocele and 3 rectoceles >3.5 cm). There was a moderate correlation between diagnosis of anismus on DT-PUS to failure to evacuate the rectum (r = 0.636). The correlation between rectal evacuation on DT-PUS to the diagnosis of anismus on manometry was weak (r = 0.296).

Conclusion: There is considerable disagreement between the results of various evacuation tests, and between the diagnoses of evacuatory dysregulation to failure of rectal evacuation. Therefore, more than one test should be applied in order to evaluate the defecatory dysfunction.

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

P1134 DIAGNOSTIC USE OF ENDOSCOPIC FULL-THICKNESS WALL RESECTION (EFTR) IN PATIENTS WITH SYMPTOMS OF CHRONIC INTESTINAL PSEUDO-OBSTRUCTION (CIPO)
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Introduction: Complex gastrointestinal motility disorders such as chronic intestinal pseudo-obstruction (CIPO) 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. The great diversity of the available diagnostic techniques, yet underlying histology is the cornerstone to enable a more distinct diagnosis of neuromuscular GI disorders. Traditionally, surgical procedures have been performed to obtain specimen suitable for accurate histologic analysis.

Aims & Methods: We performed endoscopic full-thickness resection (eFTR) using a full-thickness-resection device (FTRD) under moderate propofol sedation in four patients with suspected severe neuromuscular gut disorders including CIPO.

Results: Patient 1: A 21-year-old male patient with cerebral palsy suffering from acute small bowel ileus with a history of laparotomy, detorquation and appendectomy after cecal volvulus at the age of 15. Histologic analysis revealed irregular configuration of the myenteric plexus, but primary neuro- or myopathic disease 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 Claudin and Map-2. 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 leiomysitosis and lymphohcytic ganglionitis. Congenital CIPO was diagnosed due to degenerative leiomysopathy. Patient 4: A 56-year-old male patient with acute ileus and a year-long history of constipation and abdominal pain. Histopathological analysis....
revealed hypoganglionosis, severe fibrosis of the inner muscle layer and reduced SBM frequencies averaged over the 2-week treatment period were 3.5, 3.8, 6.3, 4.6 and 3.9 for YH12852 0.3, 0.5, 1, 2 and 3 mg, respectively, 4.0 prucalopride and 2.6 placebo. The proportion of responders (defined as those with a ≥1 increase in SBM per week over baseline) was similar across the placebo group (87.5%, 100.0%, 100.0%, and 100.0% in 0.3, 0.5, 1 and 2 mg, respectively), with the exception of the 3 mg group (80.0%), compared with that in the prucalopride (83.3%) and placebo groups (28.6%). The mean stool consis- tency assessed by the Bristol Stool Form Scale were comparable between the YH12852 and placebo groups. The time to reach the peak concentration of YH12852 was 4 hours. Steady state was achieved approximately 5 days after the first administration of YH12852 with a half-life of 23–28 hours. YH12852 showed a linear pharmacokinetic profile over 0.3–3 mg.

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

P1135 TRAN-ABDOMINAL INTERFERENTIAL ELECTRICAL STIMULATION IS EFFECTIVE IN MANAGING REFRACTORY LOWER GASTROINTESTINAL DYSMOTILITY DISORDERS
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We report our experience of its use in adult patients with functional constipation who are refractory to conventional management. This is a descriptive case series of consecutive adult patients presenting to a tertiary referral functional gastrointestinal disorders clinic with refractory constipation that were taught and used home-based interferential stimulation for at least three-months by a functional neurologist and colorectal surgeon specialist between October 2015 and Feb 2017. The validated PAC-SYM and PAC-QOL questionnaires were given at commencement of stimulation and after three months of use. Overall symptom severity was assessed by 10/cm VAS. An intention to treat analysis was conducted for any patients who commenced stimulation.

Results: Seven patients with refractory constipation (3 with slow-transit and 4 with idiopathic constipation) responding inadequately to pharmacological and non-pharmacological therapies underwent stimulatiion. Mean (range) age was 47 (26–73) and 2 were male. All patients completed the stimulation period. There was a reduction in PAC-SYM in all patients (median IQR 24 [18–36] vs 14 [10–21]) and VAS median IQR [8–9] vs [4–2] (p = 0.004). PAC-QOL was assessed in 4 patients and fall from 75 [69–85] to 38 [19–52]. Four were able to cease previously heavy daily laxative use and 2 were able to halve their use, one currently weaning off prucalopride. One remained on daily laxative use despite soft, formed stool. All reported satisfaction with stool type. Ongoing benefit remained in 2 after 4 and 12 months since ceasing its use, where the rest tended to use the stimulator intermittently.

Conclusion: Interferential electrical stimulation improved symptoms in patients with functional constipation. Randomized placebo controlled trials are justified.

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

Reference

P1136 YH12852, A NOVEL AND HIGHLY SELECTIVE 5-HYDROXYTRYPTAMINE 4 RECEPTOR AGONIST, INCREASES STOOL FREQUENCY IN HEALTHY VOLUNTEERS AND PATIENTS WITH FUNCTIONAL CONSTIPATION: RESULTS OF A RANDOMIZED DOUBLE-BLIND PLACEBO-CONTROLLED PHASE 1/2A TRIAL
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Introduction: The 5-HT4 receptor is an attractive drug target that can stimulate gastrointestinal motility. YH12852 is a novel, potent and highly selective 5-HT4 receptor agonist currently under clinical development for the treatment for gastrointestinal motility disorders (GIMDs).

Aims & Methods: The study aim was to evaluate the safety, tolerability, pharmacokinetic and pharmacodynamic profiles for YH12852 in healthy volunteers with ≤3 spontaneous bowel movements per week (SBMs/week) and patients with functional constipation (FC). A randomized, double-blind, placebo- and active-controlled phase 1 study was performed in healthy subjects and FC patients, who were administered YH12852 (0.3, 0.5, 1, 2 or 3 mg), prucalopride 2mg or placebo once daily after breakfast for 2 weeks. Subjects recorded bowel habits throughout the study period. Intensive pharmacokinetic blood samples were also collected (ClinicalTrials.gov identifier NCT02338367).

Results: Twenty-nine healthy subjects and 27 FC patients were enrolled. Treatment-emergent adverse events (TEAEs) were mostly mild and no serious adverse event was reported. The most frequently reported AE in the YH12852 and prucalopride groups was headache. TEAE4s in the YH12852 groups were similar to the prucalopride group. The change from baseline in weekly SBM frequencies averaged over the 2-week treatment period were 3.5, 3.8, 6.3, 4.6 and 3.9 for YH12852 0.3, 0.5, 1, 2 and 3 mg, respectively, 4.0 prucalopride and 2.6 placebo. The proportion of responders (defined as those with a ≥1 increase in SBM per week over baseline) was similar across the placebo group (87.5%, 100.0%, 100.0%, and 100.0% in 0.3, 0.5, 1 and 2 mg, respectively), with the exception of the 3 mg group (80.0%), compared with that in the prucalopride (83.3%) and placebo groups (28.6%). The mean stool consis- tency assessed by the Bristol Stool Form Scale were comparable between the YH12852 and placebo groups. The time to reach the peak concentration of YH12852 was 4 hours. Steady state was achieved approximately 5 days after the first administration of YH12852 with a half-life of 23–28 hours. YH12852 showed a linear pharmacokinetic profile over 0.3–3 mg.

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

Reference
P1138 THREE-DIMENSIONAL HIGH-RESOLUTION ANORECTAL 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 and Surgery, 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 proctocectomy for other reasons (FC). In all children conventional manometry of the anorectum was performed, pressures of the anal canal was divided into 8 segments and the resting and squeeze pressures of puborectalis muscle (PRM) were recorded in segments covering its anatomical localization. These data were compared to raw data obtained in our laboratory from healthy children published previously (HC group). To assess correlation between manometry and symptoms, all children (after surgery and HC group) were divided into groups with respect to symptoms, as follows: asymptomatic (A), non-directive fecal incontinence (NDFI), constipated (C) and retentive fecal incontinence (RFI).

Results: The lowest values of resting, squeeze and the pressure of PRM were observed in AA (55.6 mmHg, 121.7 mmHg and 44.17 mmHg, respectively). As compared to asymptomatic children, the lowest mean and maximal resting pressures were observed in NDFI (69.6 mmHg and 61.3 mmHg, respectively; p < 0.000). Significantly lower maximum squeeze pressure was recorded in both, NDFI and RFI (168.1 mmHg and 103.8 mmHg, respectively; p = 0.03). ROC cut-off value for mean resting pressure between asymptomatic children and children with fecal incontinence was 68.5 mmHg. Significantly lower PRM resting pressure were observed in NDFI group and lower PRM squeeze pressure in RFI (45.6 mmHg and 63.6 mmHg, respectively). Threshold of urge were significantly higher in group C as compared to A group (87.5 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. Banas ski: 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: Linacotide, a guanylate cyclase C agonist, has been shown in clinical trials to relieve constipation and improve abdominal pain and discomfort in patients with irritable bowel syndrome with constipation (IBS-C), but there are limited UK-specific real-world data to support this.

Aims & Methods: A multi-centre, observational prospective 52-week study was conducted in eight specialist hospitals in England and Scotland. The primary objective was to describe the change in IBS-Symptom Severity Scale (IBS-SSS) score at 52 weeks after linaclotide initiation. Consenting patients aged ≥18 receiving linaclotide were included. They received freshly donated faeces from relatives, instilled into the descending part of the duodenum via gastroscope. Faecal samples were collected from the donors and the patients before FMT and from the patients after FMT at weeks 1, 3, 12 and 20/28. All the samples were stored at −80°C until analysis. Faecal concentrations of several SCFAs were significantly lower in group C as compared to A group (87.5 cm³ and 30 cm³, respectively; p = 0.003).

Results: Before FMT, concentrations of major SCFAs (acetic, propionic and n-butyric acids) and minor SCFAs (iso-butyric, n-valeric, iso-valeric, n-caproic and iso-caproic acids) were analysed by vacuum distillation followed by gas chromatography. The patients completed IBS symptom questionnaire (IBS-SQ) before and after FMT at weeks 1, 3, 12, and 20/28, and the following domains: nausea, bloating, abdominal pain, diarrhea, constipation and anorexia.

Conclusion: Linacotide was associated with a significant improvement in IBS-SSS score at 52 weeks and was reasonably well tolerated. These results provide valuable insights into the longer-term outcomes of linaclotide treatment in patients with IBS-C in real-world clinical practice.

Disclosure of Interest: A.V. Emmanuel: Served on advisory boards for Allergan, Almirall, Shire, Takeda
Y. Yannakou: Educational grant and speaker fees from allergan
S. McInlain-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 IRITABLE 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 faecal microbiota transplantation (FMT) on gut bacterial fermentation products: short-chain fatty acids (SCFAs). Patients diagnosed with IBS according to Rome III criteria (n = 13) were included. They received freshly donated faeces from relatives, instilled into the descending part of the duodenum via gastroscope. Faecal samples were collected from the donors and the patients before FMT and from the patients after FMT at weeks 1, 3, 12 and 20/28. All the samples were stored at −80°C until analysis. Faecal concentrations of major SCFAs (acetic, propionic and n-butyric acids) and minor SCFAs (iso-butyric, n-valeric, iso-valeric, n-caproic and iso-caproic acids) were analysed by vacuum distillation followed by gas chromatography. The patients completed IBS symptom questionnaire (IBS-SQ) before and after FMT at weeks 1, 3, 12, and 20/28, and 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 2). 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 = 0.001), 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 iso-valeric acid (r = −0.65, P = 0.014), and between constipation and propionic acid (r = −0.74, P < 0.0001), iso-butyric acid (r = −0.79, P < 0.0001) and iso-valeriacid (r = −0.72, P < 0.0001).

Table: Change in IBS-SSS score at 52 weeks from start of linaclotide

<table>
<thead>
<tr>
<th>Change in IBS-SSS</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>
</tbody>
</table>

No change         | 1          | 1          |
| −10 < −5          | 13         | 17         |
| 0 < −5            | 7          | 9          |
| 50 < 100          | 7          | 9          |
| 100 < 150         | 3          | 4          |
| 150 < 200         | 0          | 0          |
| 200 < 250         | 0          | 0          |
| 250 < 300         | 0          | 0          |
| 300 < 350         | 0          | 0          |
| Total             | 76         | 100        |

Conclusion: Faecal microbiota transplantation may alter gut bacterial fermentation products, such as short-chain fatty acids, in IBS patients with IBS-C in real-world clinical practice.
**Abstract No: P1140**

**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>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetic</td>
<td>/33.9±2.8</td>
<td>23.6±4.6</td>
<td>31.4±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>0.3</td>
<td>&gt;0.9</td>
<td>0.9</td>
</tr>
<tr>
<td>Propionic</td>
<td>9.5±1</td>
<td>6.2±1.6</td>
<td>7.9±1.5</td>
<td>8.2±1.5</td>
<td>7.3±1.9</td>
<td>8.1±1.2</td>
<td>0.18</td>
<td>&gt;0.9</td>
<td>&gt;0.9</td>
<td>0.2</td>
<td>&gt;0.9</td>
<td>0.9</td>
</tr>
<tr>
<td>n-butyric</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>0.78</td>
<td>&gt;0.9</td>
<td>0.095</td>
<td>0.25</td>
<td>0.25</td>
</tr>
<tr>
<td>Iso-butyric</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>
<td>0.47</td>
</tr>
<tr>
<td>n-valeric</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>0.67</td>
<td>&gt;0.9</td>
<td>0.042</td>
<td>0.47</td>
<td>0.47</td>
</tr>
<tr>
<td>Iso-valeric</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>
<td>0.96</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>
<td>0.17</td>
</tr>
<tr>
<td>Iso-caproic</td>
<td>0.01±0.005</td>
<td>0.02±0.002</td>
<td>0.008±0.006</td>
<td>0.013±0.001</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>0.6</td>
<td>0.6</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>
<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.

**Conclusion:** Our results reveal differences in faecal fermentation products between patients with IBS and healthy donors, and suggest that FMT may act to normalise such alterations of gut microbial functions.

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

**Table 2:**

<table>
<thead>
<tr>
<th>Mean resource use (standard deviation)</th>
<th>Adequate relief (1st year after diagnosis)</th>
<th>Inadequate relief (1st year after diagnosis)</th>
<th>Difference per year</th>
<th>Incremental mean quantity per 4 weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical visits</td>
<td>5.20 (4.87)</td>
<td>10.11 (5.30)*</td>
<td>4.91</td>
<td>0.378</td>
</tr>
<tr>
<td>GP office</td>
<td>3.33 (2.87)</td>
<td>5.70 (3.12)*</td>
<td>2.37</td>
<td>0.182</td>
</tr>
<tr>
<td>Outpatient</td>
<td>0.96 (1.53)</td>
<td>2.30 (1.68)*</td>
<td>1.35</td>
<td>0.104</td>
</tr>
<tr>
<td>Emergency room</td>
<td>0.52 (1.24)</td>
<td>1.17 (1.36)*</td>
<td>0.65</td>
<td>0.050</td>
</tr>
<tr>
<td>Hospitalisations</td>
<td>0.39 (1.00)</td>
<td>0.93 (1.10)</td>
<td>0.54</td>
<td>0.042</td>
</tr>
<tr>
<td>Procedures</td>
<td>4.52 (6.96)</td>
<td>8.11 (7.58)*</td>
<td>3.59</td>
<td>0.276</td>
</tr>
<tr>
<td>Colonoscopy</td>
<td>0.91 (1.47)</td>
<td>2.17 (1.61)*</td>
<td>1.26</td>
<td>0.097</td>
</tr>
<tr>
<td>Sigmoidoscopy</td>
<td>0.70 (1.43)</td>
<td>1.37 (1.56)</td>
<td>0.67</td>
<td>0.052</td>
</tr>
<tr>
<td>Ultrasound</td>
<td>1.13 (2.06)</td>
<td>1.76 (2.26)</td>
<td>0.63</td>
<td>0.048</td>
</tr>
<tr>
<td>Endoscopy</td>
<td>0.67 (1.28)</td>
<td>1.22 (1.37)</td>
<td>0.54</td>
<td>0.042</td>
</tr>
<tr>
<td>Computerised tomography scan</td>
<td>0.48 (1.01)</td>
<td>0.85 (1.10)</td>
<td>0.37</td>
<td>0.028</td>
</tr>
</tbody>
</table>

X-ray                                   | 0.63 (1.53)                              | 0.74 (1.68)                                 | 0.11                | 0.008                                |

*p < 0.05 compared to adequate relief*

**Conclusion:** GPs reported that patients with IBS-D considered as having IR of symptoms had increased HCRU, including more GP office visits and more colonoscopies, compared to patients with AR. These results highlight that IR is potentially an important driver of increased HCRU in patients with IBS-D, emphasising that effective treatments that provide AR may reduce HCRU and the associated economic burden.

**Disclosure of Interest:** A. Marciniak: Anne Marciniak is an employee of Allergan plc and shareholder in Pfizer, Amgen, and Allergan plc.

D. Collomb: David Collomb is an employee of Allergan plc.

S. Baker: Stephen Baker is an employee of Allergan plc.

R. Goosey: Richard Goosey is an employee of Kantar Health, paid consultants to Allergan plc.

**References**


P1142 RANDOMISED PLACEBO CONTROLLED ESCITALOPRAM INTERVENTION IN IBS WITH PANIC DISORDER: EVALUATION BY GSRS AND BY EXPERIENCE SAMPLING METHOD

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2Department Of Psychiatry And Psychology, Maastricht University Medical Center++, Maastricht/Netherlands

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Introduction: Selective Serotonin Reuptake Inhibitors (SSRIs)’s have shown efficacy in reducing symptoms but less so on pain in irritable bowel syndrome (IBS). Comorbid anxiety frequently occurs in IBS. We hypothesized that SSRIs will particularly be effective in reducing abdominal pain in IBS patients with pronounced comorbid anxiety. As methods for symptom evaluation were used 1) gastrointestinal symptom rating scale (GSRS) as primary parameter and 2) a new method called the Experience Sampling Method (ESM). With ESM digital assessments are completed randomly and repeatedly during daily life, therewith capturing fluctuating symptom patterns more accurately than retrospective questionnaires might.

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 modeling models were used with the GSRS (scoring from 1 to 4) as the dependent and treatment group and ESM-panic anxiety scores as the independent variable.

Results: In total 35 escitalopram and 35 placebo (21 female, mean age 37 years, range 20–64) underwent a wireless motility capsule (WMC) and questionnaires were repeated 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 modeling models were used with the GSRS (scoring from 1 to 4) as the dependent and treatment group and ESM-panic anxiety scores as the independent variable.

Conclusions: Escitalopram reduced somatic symptoms (8.3; p < 0.01) and quality of life (58.4; p < 0.01), distension (2.1; p < 0.01); pain (2.8; p < 0.01) and urgency (2.1; p < 0.01). Rifaximin resulted in a significant improvement in the number of daily stools (Δ−1.5; P < 0.01), daily watery stools (Δ−2.1; P < 0.01), Bristol scale (Δ−1.1; P < 0.01), abdominal pain (Δ−0.5; P < 0.01), distension (Δ−0.3; P < 0.01), urgency (Δ−0.7; P < 0.01) and in the IBS-SS (Δ−7.8; P < 0.01). No differences were found between BAD and non-BAD patients in the improvement of any item. Rifaximin treatment did not modify SeHCAT value (9.5% before treatment and 10.7% after treatment; P = 0.4).

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

References

P1144 RELATIONSHIP BETWEEN RIFAXIMIN THERAPY AND SEHCAT TEST IN PATIENTS WITH DIARRHEA-PREDOMINANT IRRITABLE BOWEL SYNDROME OR FUNCTIONAL DIARRHEA

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Contact E-mail Address: alexandruazucerulla@gmail.com

Introduction: Bile acids (BAs) and gut microbiota have been involved in IBS pathophysiology. BA diarrhea (BAD) is often found in patients with irritable bowel syndrome with diarrhea (IBS-D) or functional diarrhea (FD). Rifaximin and rifaximin based products have been shown to improve symptoms in these patients. It is unknown whether a SeHCAT test may help to predict response to rifaximin or whether rifaximin treatment affects SeHCAT test result.

Aims & Methods: a) 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.

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Aims & Methods: a) 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.
Conclusion: The present 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 potentially reduce healthcare resource use and subsequent healthcare costs associated with IBS, further prospective study of the impact of ELX on AR and any subsequent reduction in healthcare costs is required, including the relationship between the number of consecutive weeks of IR and patients’ behaviour towards healthcare resource use.

Disclosure of Interest: D. Collomb: David Collomb is an employee of Allergan plc. A. Marciniak: Anne Marciniak is an employee of Allergan plc and shareholder in Pfizer, Amgen, and Allergan plc. Y. Mo: Yilan Mo is an employee of Allergan plc. D.A. Andrae: David A. Andrae is an employee of Allergan plc and shareholder in Allergan plc. G. Wiseman: Gwen Wiseman is an employee of Allergan plc.

References
3. Covington PS. Poster 55 presented at ACCP Global Conference on Clinical Pharmacy, USA, 2015

Aims & Methods: Treatment with FMT in patients with IBS-D in a post hoc analysis of the pooled Phase 3 ELX trials (IBS-3001, IBS-3002). Patients meeting Rome III criteria for IBS-D were randomised 1:1:1 to twice-daily (BID) ELX (75 or 105 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 [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 IR. 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, 2429 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 responders with either ELX 100 or 75 mg BID vs PBO at 12 weeks (56.1% [p < 0.001] and 56.3% [p = 0.001] vs 36.4% [p = 0.018] and 46.0% vs 41.8%, respectively). Over the first 12 weeks of treatment, a greater proportion of patients reported no IR of 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>(n = 809)</td>
<td>(n = 808)</td>
</tr>
<tr>
<td>ELX 100 mg BID</td>
<td>ELX 100 mg BID</td>
</tr>
<tr>
<td>(n = 808)</td>
<td>(n = 806)</td>
</tr>
</tbody>
</table>

Conclusion: In this post hoc analysis of the pooled ELX Phase 3 studies, ELX-treated patients experienced fewer consecutive weeks of IR compared to those receiving PBO, within both Weeks 1–12 and 13–24 of treatment. As IR is thought to 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.

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References
3. Covington PS. Poster 55 presented at ACCP Global Conference on Clinical Pharmacy, USA, 2015
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

Pi1148 THE LOW FODMAP DIET REDUCES CAECAL FERMENTATION COMPARED TO TRADITIONAL DIETARY ADVICE: A RANDOMISED CONTROLLED TRIAL

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1Gastroenterology, University Hospitals of North Midlands, Stoke on Trent/United Kingdom
2Functional Gut Clinic, London/United Kingdom
3Gastroenterology, University Hospitals of North Midlands, Stoke on Trent/United Kingdom

Contact E-Mail Address: a.farmer@qmul.ac.uk

Introduction: Diets reducing the content of fermentable short chain carbohydrates (fermentable oligo-, di-, mono-saccharides, and polyols (FODMAPs)) as well as the National Institute of Health Care Excellence (NICE) diet have been reported to be effective in the treatment of patients with irritable bowel syndrome (IBS) (1,2). The mechanisms by which this efficacy is achieved are incompletely understood but it has been proposed that such diets reduce fermentation, mediated by changes in the microbiota (3). Change in pH around the ileocaecal 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 are presented as area under the curve (AUC) derived from contraction amplitude and frequency. Validated questionnaires evaluating GI (vagal) discomfort anchored visual analog scale (VDVAS) assessing sensory intensity (VDVAS-1) and unpleasantness (VDVAS-U) and somatic symptoms (Personal Health Questionnaire (PHQ)) as well as quality of life (EQ-5D) were administered. The WMC and questionnaires were repeated after 26 days of dietary interventions. The primary endpoint was change in ileocaecal pH after the intervention. Secondary outcomes included changes in transit times, contractility and symptom scores.

Results: After screening, 32 patients (23 female, median age 37 years, range 18-65) were randomized. Baseline symptom severity and demographics were similar between the two groups. Relative to baseline, there was a reduction in the change in ileocaecal pH with the low FODMAP diet group compared to the m-NICE group (3.37 ± 0.3 vs 0.005±0.4, p = 0.047) suggesting reduced fermentation. Changes in GI motility are shown in Table 1.

Table 1: Changes in segmental/gut transit times and ileal/colonic motility, relative to baseline between the low FODMAP and m-NICE diets. Both the low FODMAP and NICE diets improved VDVAS-I and VDVAS-U (~18 ± 7 vs. -20 ± 7, p = 0.04 and -13 ± 9 vs. -20 ± 7, respectively). Similarly, both diets reduced somatic symptoms (~2 ± 1.4 vs. -0.8 ± 1.8, p = 0.07) and improved quality of life (9.5 ± 10.2 vs. 4.4 ± 9.8, p = 0.23).

Low FODMAP Low NICE P value
Change in Gastric empting time (minutes) 122 ± 249 7 ± 370 0.07
Change in Small bowel transit time (minutes) 63 ± 43 -33.6 ± 8.0 0.07
Change in Colonic transit time (minutes) 512 ± 1425 53 ± 1728 0.53
Change in Whole Gut Transit time (minutes) 710 ± 1486 -35 ± 1588 0.3
Change in Ileal contractility (AUC) 64 ± 139 114 ± 175 0.5
Change in Colonic contractility (AUC) 5 ± 58 26 ± 72 0.5

Conclusion: The low FODMAP diet reduces caecal fermentation in comparison to the NICE diet as indexed by a reduction in the change in pH across the ileocaecal junction. Both diets improved GI and extra-GI symptoms as well as quality of life. Neither diet has a demonstrable differential effect on ileal/colonic contractility or segmental/gut transit times. It is therefore plausible that the efficacy of the low FODMAP diet in IBS-M is via mediated by alterations in the microbiota.

Disclosure of Interest: A.D. Farmer: Speaker Bureau and Advisory Boards for Allergan
All other authors have declared no conflicts of interest.

References

Pi1149 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)
associated with triggering gastrointestinal symptoms in irritable bowel syndrome (IBS).

**Aims & Methods:** This study aimed to assess whether oral α-galactosidase co-administration with foods high in GOS and low in other FODMAPs would reduce symptoms and breath hydrogen production in a double-blind, placebo-controlled, parallel-group 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 fructans were recruited. Participants were randomly assigned to 11 week crossover study (300 GALLU α-galactosidase) and placebo (glucose). Following a 3 day low FODMAP run-in period, participants consumed provided diets high in GOS for a further 3 days. Gastrointestinal symptoms were measured daily using a 100 mm visual-analogue-scale. Breath samples were taken hourly on the second last day and analysed as area-under-the-curve. Faecal samples were taken at baseline and after 3 days as a measure of overall symptoms. Of those, full-dose enzyme reduced overall symptoms (24.5 [17.5–35.8] mm vs 5.5 [1.5–15.0] mm; p = 0.422). Twenty-one participants exhibited GOS-sensitivity (> 10 mm increase for overall symptoms). Of those, full-dose enzyme reduced overall symptoms (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] mm vs 6.5 [2.0–15.8]; p = 0.017). Breath hydrogen production was minimal with no differences seen between placebo and 5248 ± 3D 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 individuals with IBS. The lack of change in breath hydrogen production suggests poly-ethylene glycol may not be related to reduced gas and distention, rather suggesting a role of alterations to the microbiota. Future analysis of the faecal microbiota may provide insight for the mechanism of action. This strategy can be easily translated into practice with acceptable tolerance specifically 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 financially benefits from the sales of a digital application and booklets on the low FODMAP diet.

**P1151 PREVALENCE OF ANAL SQUAMOUS INTRAEPITHELIAL LESIONS IN LIVER TRANSPLANT PATIENTS**

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**Introduction:** Balloon expulsion testing (BET) is a recommended means of identifying dyssynergic defecation (DD) in patients with chronic constipation although it remains poorly standardized and underutilized outside of specialized centers. We aimed to assess the clinical utility of BET as an initial test for DD and to determine appropriate testing parameters.

**Methods:** We performed a literature search (PubMed, EMBASE, conference abstracts from 1950-2016) to identify (1) case-control studies of DD or unselected CC subjects and healthy controls and (2) cohort studies of unselected subjects with CC. Eligible studies reported BET test parameters and results as well as presence of DD defined by constipation symptoms and a positive reference test (anorectal manometry [ARM], defecography, or electromyography[EMG]). Study quality was assessed using QUADAS criteria. We extracted age, sex, enrollment criteria, BET test parameters (subject position, study duration, instilled volume, allowed interval time), and DD diagnostic criteria. Data were independently extracted by two authors. Meta-analysis was performed using a bivariate mixed-effects regression model. Meta-regression was performed to evaluate effects of individual test parameters. Between-study heterogeneity of summary results was assessed using an I² statistic. Publication bias was assessed using Deeks’ funnel plot asymmetry test.

**Results:** We identified 15 eligible studies comprising 2,090 individual assessments of balloon expulsion, of which 14 studies of 1,760 subjects were eligible for cohort analysis and 1,088 subjects were eligible for case-control analysis. Among cohort studies, the AUC was 0.80 (95% CI 0.61-0.91) with 70% sensitivity (95% CI 52%-83%) and 77% specificity (95% CI 70%-82%). Among pooled cohort and case-control studies, the AUC was 0.84 (95% CI 0.68-0.93) with 70% sensitivity (95% CI 53%-82%) and 81% specificity (95% CI 75%-86%). Further test performance characteristics stratified by subject position are reported in Table 1. Subject positioning (seated vs. left lateral decubitus) did not significantly affect AUC in cohort (p = 0.32) or case-control (p = 0.43) analysis. Pooled sensitivity (p = 0.50) and specificity (p = 0.66) were similar between seated and left lateral BET in analysis of unselected CC cohort studies, though specificity was higher with left lateral BET in pooled analysis of all studies (p = 0.03). The allowable time for balloon expulsion did not significantly affect summary sensitivity (p = 0.92) or specificity (p = 0.96) in meta-regression within the evaluated range of 1 and 5 minutes. There were enough studies to warrant meta-analysis of balloon distention characteristics, 13 of 17 studies reported 50-60 mL of water. When pooling cohort and case-control studies, both age (p < 0.01) and gender (p < 0.01) appeared to influence test performance. Changes of reference test did not significant affect test performance (ARM vs. defecography [p = 0.43], defecography vs. EMG [p = 0.08]). Continent of origin (p = 0.34) and year of study (p = 0.29) did not appear to significantly influence test performance. There was no evidence of publication bias (p > 0.5).

**Table 1:** Sensitivity and specificity of balloon expulsion testing in diagnosing dyssynergic defecation (stratified by subject positioning with 95% confidence intervals)

<table>
<thead>
<tr>
<th>Test performance characteristic</th>
<th>Seated position</th>
<th>Left lateral position</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Case-control and cohort studies (optimal estimates)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sensitivity</td>
<td>69% (54% to 85%)</td>
<td>54% (7% to 100%)</td>
</tr>
<tr>
<td>Specificity</td>
<td>81% (76% to 86%)</td>
<td>90% (79% to 100%)</td>
</tr>
<tr>
<td><strong>Only cohort studies evaluating unselected subjects with constipation (real world estimates)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sensitivity</td>
<td>69% (53% to 86%)</td>
<td>76% (70% to 83%)</td>
</tr>
<tr>
<td>Specificity</td>
<td>54% (6% to 100%)</td>
<td>76% (51% to 100%)</td>
</tr>
</tbody>
</table>

**Conclusion:** The performance characteristics of balloon expulsion could support BET as a positive reference test to screen for dysdynergic defecation in chronically constipated subjects.

**Disclosure of Interest:** W.D. Chey: Dr. Chey is a consultant for Ironwood Pharmaceuticals and Allergan. He is co-CMO of My Total Health and holds a patent on My GI Health. All other authors have declared no conflicts of interest.
P1152 IMMUNOHISTOCHEMICAL EXPRESSION OF DIAMINE OXIDASE IN THE UPPER GASTROINTESTINAL TRACT OF PATIENTS WITH GASTROINTESTINALLY MEDICATED FOOD ALLERGY

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2Pathologisches Institut, University Clinical Center Erlangen, Erlangen/Germany
3St. Marien Waldkrankenhaus, Erlangen/Germany
4SCIOTEC Diagnostic Technologies GmbH, Tulln/Austria

Introduction: Gastrointestinally mediated food allergy (GMA) is a common disease that has risen in recent years. The scientific research on this disease has increased, however its diagnosis still remains difficult to date. Diamine oxidase (DAO) is an enzyme that deactivates histamine, the main mediator in allergic reactions, through oxidative deamination. It has been shown that 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 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 gastrointestinally mediated 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 (no staining intensity of DAO), 1 (weak staining intensity of DAO), 2 (moderate staining intensity of DAO), 3 (strong staining intensity of DAO). DAO was also examined vertically from the epithelium to the submucosa in all segments of the upper GIT. The enzymatic activity of DAO is diminished in the colonic mucosa of patients with GMA. DAO with the number of mast cells was also observed in both groups, but this difference was significant only in the GMA group (r = 0.46; p = 0.02). An additional correlation of SI-DAO with OLGA classification and to correlate the results with OLGA classification.

Results: 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 = 0.004) 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 lamina propria (SLP) of all tissues. A strong inverse correlation of SI-DAO with the number of eosinophils across the upper GIT was observed in the GMA group (r = 0.89; p = 0.02). An inverse correlation of the SI-DAO with the number of mast cells was also observed in both groups, but this result was not statistical significant (GMA: r = 0.71; p = 0.11; CG: r = 0.6, p = 0.14).

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>Esophagus</th>
<th>Cardia</th>
<th>Gastric</th>
<th>Corpus</th>
<th>Antrum</th>
<th>Duodenum</th>
</tr>
</thead>
<tbody>
<tr>
<td>GMA</td>
<td>N</td>
<td>9</td>
<td>10</td>
<td>8</td>
<td>18</td>
<td>18</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>Median</td>
<td>1.3</td>
<td>1.1</td>
<td>1.1</td>
<td>1.2</td>
<td>1.1</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td>25th Percentile</td>
<td>0.8</td>
<td>0.8</td>
<td>0.7</td>
<td>0.7</td>
<td>0.7</td>
<td>0.4</td>
</tr>
<tr>
<td></td>
<td>75th Percentile</td>
<td>1.5</td>
<td>1.3</td>
<td>1.1</td>
<td>1.5</td>
<td>1.4</td>
<td>1.3</td>
</tr>
<tr>
<td>Group</td>
<td>N</td>
<td>9</td>
<td>10</td>
<td>9</td>
<td>14</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>Median</td>
<td>1.3</td>
<td>1.2</td>
<td>1.3</td>
<td>0.9</td>
<td>0.9</td>
<td>1.1</td>
</tr>
<tr>
<td></td>
<td>25th Percentile</td>
<td>1.1</td>
<td>1.0</td>
<td>0.9</td>
<td>0.8</td>
<td>0.7</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td>75th Percentile</td>
<td>1.7</td>
<td>1.4</td>
<td>1.6</td>
<td>1.2</td>
<td>1.1</td>
<td>1.5</td>
</tr>
<tr>
<td>P1 - Value</td>
<td>0.33</td>
<td>0.41</td>
<td>0.46</td>
<td>0.29</td>
<td>0.28</td>
<td>0.04*</td>
<td></td>
</tr>
<tr>
<td>P2 - Value</td>
<td>0.07</td>
<td>0.04*</td>
<td>0.06</td>
<td>0.02*</td>
<td>0.16</td>
<td>x</td>
<td></td>
</tr>
</tbody>
</table>

Conclusion: The above findings indicate that DAO is present in low amounts in all segments of the upper GIT. But only in the duodenum a significant difference was found between GMA and CG, thus indicating that histamine-mediated symptoms most likely arise in duodenum. Therefore, regarding the upper GIT, the immunohistochemical staining for DAO only in duodenum could serve as an additional diagnostic parameter for detecting patients with GMA and possibly other histamine-mediated diseases. The above mentioned distribution pattern of DAO strengthens the theory that DAO acts extracellularly and is responsible for the elimination of the trans epithelially 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
**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-II gastric cancer between 2004-2016 at a regional unit were identified. Measurements of various systemic inflammation markers were recorded pre-operatively. Pathological variables including TNM stage, differentiation of tumour and 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; max. 12 = full symptom).

**Results:** The total symptomatic score results as follows, lasting the 24 months follow-up. Group 1: baseline 4.93; 3 months 3.36; 6 months 2.96; 24 months 2.64. Group 2: baseline 5.9, 3 months 6.2, 6 months 5.6, 24 months 5.8 (p < 0.01).

Subdividing the CAG patients according to the etiology (autoimmune gastritis or previous Helicobacter pylori infection) no differences were found in improving symptoms. No relevant side effects were observed during the study.

**Conclusion:** The administration of L-cysteine to subjects affected by moderate-severe chronic atrophic gastritis seems able to improve the symptoms in a two-year follow-up.

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

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**P1157 A CASE-CONTROL STUDY ON THE RISK OF UPPER GASTROINTESTINAL MUCOSAL INJURIES IN SUBJECTS PRESCRIBED NSAIDS AND ANTI-THROMBOTIC DRUGS USING THE LARGE ORGANIZED DATABASE OF CLAIMS IN JAPAN (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 study the risk of upper GI mucosal injuries in subjects prescribed NSAIDs and anti-thrombotic drugs using the large organized database of claims in Japan.

**Aims & Methods:** The medical claims database developed by Japan Medical Data Center (JMDC) Co., Ltd. was selected as data source in the present retrospective observational study. The JMDC claims database comprised of integrated medical and pharmacy claims, and includes both hospital and outpatient care from over 90 payers (approximately 3.7 million of population on an accumulated basis). Eligible subjects were aged 20 to 74 and registered for at least 3 months in the database from January 2009 to December 2014. The evaluated upper GI mucosal injuries were peptic ulcers (143,271 cases), upper GI bleeding (10,545 cases) and gastroesophageal reflux disease (GERD: 154,755 cases) with diagnosis by ICD-10 codes and implementation of the upper GI endoscopy. For the each test-case, ten controls who matched age, sex and diagnosis month were identified from the database. Multivariate logistic regression analysis was used to calculate odds ratios of occurrence of each upper GI mucosal injuries caused by NSAIDs, COX-2 selective inhibitors, low-dose aspirin, antplatelet drugs (except low-dose aspirin) and antiocoagulants.

**Results:** The odds ratios of peptic ulcers were 1.45, 1.31, 1.50, 1.53 and 1.62 for NSAIDs, COX-2 selective inhibitors, low-dose aspirin, antiplatelet drugs, and antiocoagulants respectively. In the case of the presence of peptic ulcers (p < 0.0001 in each). The odds ratios of upper GI bleeding were 1.76, 1.62, 1.96, 1.82 and 2.38, and those of GERD were 1.54, 1.41, 1.89, 1.67 and 1.91, and these odds ratios were statistically significant in each medicine with GI bleeding and GERD (p < 0.0001 in each). The odds ratios of all the upper GI mucosal injuries were the highest in the patients with antiocoagulants, and the ratios were relatively low in those with NSAIDs and COX-2 selective inhibitors. The odds ratios tended to increase with the number of prescribed

**Conclusion:** Rebleeding in UGIB is associated with increased in-hospital mortality; nevertheless, it is not related with delayed 6-months mortality, hemorrhagic and cardiovascular events. High creatinine and low albumin levels were independent risk factors for rebleeding, suggesting a potential predictive role of these parameters. AIMS65, Rockall and Blatchford were predictors for in-hospital mortality but worked poorly in the patients who suffered rebleeding.

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

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**P1156 ANALYSIS OF REBLEEDING PATIENTS IN UPPER GASTROINTESTINAL BLEEDING IN A SINGLE CENTER SERIES**


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**Introduction:** Upper gastrointestinal bleeding (UGIB) is one of the main causes of hospital admission and urgent endoscopy in Gastroenterology departments. In-hospital mortality from UGIB has decreased throughout the past 2 decades with a corresponding increase in the performance of endoscopy and endoscopic therapy. Aims: To study that improvements in the therapeutic procedures for patients with UGIB could be responsible of the mortality decline. Despite this, UGIB represents a true emergency, associated with significant morbidity, mortality and healthcare costs. Furthermore, rebleeding after initial endoscopic therapy is observed in 10-25%, and it has been associated with a higher mortality rate. Therefore, the definition of predictive factors for rebleeding is of outstanding importance.

**Aims & Methods:** The goal of our study is to analyze risk factors and outcomes in a population of patients who suffered rebleed. We present a prospective 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 demographic data, coagulation parameters, current medications (including antplatelet drugs, NSAIDs and oral antiocoagulants), clinical presentations, hemodynamics, admission laboratory test results, and endoscopic findings was collected. Interventions were documented, including the need for blood transfusion and the number of packed red cells units per patient, endoscopic therapy, intervention radiology procedures, and surgery. Clinical outcomes 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 62 ± 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 CO2 partial pressure (103 vs. 109; p < 0.001). In a logistic regression analysis tachycardia and high creatinine were independent risk factors for rebleeding, and albumin showed as an independent protective factor (Table 1). Rebleeding was associated with in-hospital mortality (p < 0.0001); by contrast, it was not related with delayed 6-months mortality. Nevertheless, delayed 6-months mortality, hemorrhagic and hemorrhagic events. The UGIB risk scores AIMS 65 and Rockall showed poor predictive ability for acute in the rebleeding patients’ group and was similar for Blatchford score (based on AUROC).

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

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**L-cysteine has been proposed as adjuvant therapy in CAG; the amino acid binds covalently to acetaldehyde (a Group I human carcinogen), removing it from the stomach. The aim of present study was to use L-cysteine to improve the symptoms in patients with diagnosis of CAG.**

**Aims & Methods:** One hundred fourteen consecutive patients (M = 43, mean age 56.9 years) (with diagnosis of CAG by means of both gastric histology (moderate to severe chronic, atrophic, body gastritis according to the OLGA staging system) and serology (pepsinogen 1 < 25 µg/l, gastrin-17 > 14 pmol/l) - GastroPanel®, Boehi Oty, Finland) entered the study. Forty-one patients (11 M, mean age 49.4 yr, range 27–71 years) were treated with L-cysteine (100mg 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 yrs) followed up for 24 months without any related therapy (Group 2). All the patients were included in the study. Measurements of various systemic inflammation markers were recorded pre-operatively. Pathological variables including TNM stage, differentiation of tumour and 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; max. 12 = full symptom).

**Results:** The total symptomatic score results as follows, lasting the 24 months follow-up. Group 1: baseline 4.93; 3 months 3.36; 6 months 2.96; 24 months 2.64. Group 2: baseline 5.9, 3 months 6.2, 6 months 5.6, 24 months 5.8 (p < 0.01).

Subdividing the CAG patients according to the etiology (autoimmune gastritis or previous Helicobacter pylori infection) no differences were found in improving symptoms. No relevant side effects were observed during the study.

**Conclusion:** The administration of L-cysteine to subjects affected by moderate-severe chronic atrophic gastritis seems able to improve the symptoms in a two-year follow-up.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
medicines (1 agent <2 agents <3 agents, peptic ulcer: 1.38 < 2.49 < 4.52, upper GI bleeding: 10.74 < 3.95 < 7.77, GERD: 1.61 < 2.96 < 5.88, respectively). The upper GI mucosal injuries were exacerbated in complication of lifestyle-related diseases, including hyperlipemia and diabetes mellitus.

Conclusion: Prescribing NSAIDs and anti-thrombotic medicines was associated with increased risks of developing upper GI injury. The present study is a central 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) therapy. Patients at high thromboembolic risk with previous gastrointestinal bleeding (GIB) might be at risk of bleeding recurrence in case of resuming anticoagulation. They could be selected for alternative therapies like LAAO. Up to now, there is no scientific consensus for patient selection for LAAO based on recurrent GIB risk.

Aims & Methods: We aimed to review the literature on gastrointestinal (GI) bleeding recurrence of patients after AF-related cardioembolism with AF and stratified of selected patients for LAAO. We systematically collected data from both prospective and retrospective studies from pubmed in order to extract rebleeding risk by repeating episodes. The rebleeding profile was defined by type of treatment needed to cure the lesion. Low reversibility (LR) profile was defined as a need for heavy surgery, radiotherapy, embolisation to cure the lesion or as diffuse lesions.

Results: The most frequent reported causes of bleeding are peptic gastroduodenal ulcer (60%) for upper GI, diverticulosis (40%), colitis (20%) and anorectal diseases (20%) for lower GI and angiodyplasia (23%) for the midgut, these latter being responsible for 5% of all GIB bleeding causes. The rate of recurrent bleeding under OAC therapy is 5-7% in patients with gastrointestinal K antigens (VKA), an incidence that might increase with direct OAC. Recurrent bleeding rates for upper GIB, lower GIB and obscure GIB are respectively 5-15%, 30-60% and 40-50%. In the upper GI tract, lesions at high risk of bleeding recurrence are Dieulafoy lesions and angiodyplasia with reported rates up to 40% in some series. In the lower GI tract, lesions at highest risk are diverticular disease, angiodyplasia, colitis and radiation rectitis with bleeding recurrence rates reaching 60%, 70%, 40% and 20% respectively. For the midgut, angiodyplasia (20%) and bleeding of unknown origin (20%) are associated to the highest risk of recurrent bleeding. LR profile lesions with high rebleeding risk are present for diffuse angiodyplasia, systemic diverticulosis and Dieulafoy lesions.

Conclusion: In conclusion, GI lesions at high risk of recurrent bleeding with low reversibility profile are infrequent and include in particular: diffuse angiodyplasia, colonic diverticulosis and Dieulafoy lesions. Patients with AF having those lesions should be considered for anti-embolic treatment like LAAO. Larger studies are needed to assess the long term outcome of patients treated by LAAO for GIB under current oral anticoagulant therapies.

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

References

P1159 AN AUDIT INTO THE MANAGEMENT OF BLEEDING PEPTIC ULCE R 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 the 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 (74.7%) vs. <70% (25.3%) were related to aspirin/non-steroidal anti-inflammatory drug use. 48.5% (52.7%) had high risk (Forrest 1a-2b) lesions, of whom 38/48 (79.2%) received dual endoscopic therapy and 6/48 (12.5%) received endoluminal monotherapy. 18.8% received the recommended adrenaline volume of 15 mL. Of 90% prescribed intravenous proton pump inhibitor infusion, 85% did not complete the full 72-hour duration. Rebleeding occurred in 12 patients (13.2%) after a median of 3-days post endoscopy. 10 (83.3%) underwent repeat OGD. 2 (16.7%) underwent CT embolisation, whilst 4 (32.5%) underwent surgery. Aspartin 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 endoscopy, 10 (36%) had positive result of whom 7 (70%) received eradication. 12/23 (52.2%) 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 liver 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 assure the management of PUD sufficiently. Interestingly, rates of anaemia at discharge and on follow-up are high. Such patients may profit from iron replacement at discharge.

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

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2. Zhong M, Chen WJ, Lu XY, Qian J, Zhu CQ. Comparison of three scoring systems in predicting the prognosis, such as mortality and ICU admission rate. AJR 2009;193:400-9.
Aims & Methods: 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 were calculated in consecutive patients who were admitted with acute UGIB to the Royal Adelaide Hospital over 24 months. The performance of these scoring systems was evaluated using receiver operating characteristic (ROC) curves, in predicting the outcome of endoscopy. The estimated factors were age (<65 vs. >65 years), gender, location of ulcer (upper third/middle or lower third in HGU and 2nd portion/bulbs in HDU), presence of endoscopic complications, antacid treatment, endoscopic varices and endoscopic hemostasis tests. Cirrhosis was post viral hepatitis C (89%), hepatitis B (10%) and diabetes mellitus (9%)

Conclusion: Despite being a univariate logistic regression analysis revealed that the independent risk factors for rebleeding in HDU were multiple ulcers [odds ratio (95% confidence interval) = 24.2 (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 detail of endoscopic rebleeding, multivariate logistic regression analysis showed that middle and high-risk surgery had significantly higher rebleeding rate of HGU and HDU (≥20 mg in predinsolone) (52.7 [3.19–871], P < 0.0001) was a significant risk factor for rebleeding of HDU, with a dose-response relationship (P = 0.005).

Disclosure of Interest: All authors declare no conflicts of interest.

P1162 STEROID ADMINISTRATION IS AN INDEPENDENT RISK FACTOR FOR REBLEEDING IN HEMORRHAGIC DUODENAL ULCER WITH A DOSE-RESPONSE RELATION


Aims & Methods: The aim of this study was to clarify the difference of rebleeding between HGU and HDU, and associated factors for rebleding of HGU and HDU. Between March 2005 and September 2016, 176 consecutive patients with hemorrhagic duodenal 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 duodenal ulcerous 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 rebleding 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), underlying comorbidities (ischemic heart disease, liver cirrhosis, hypertension, diabetes mellitus, and hyperlipidemia), number of ulcers (multiple/single), hemostasis method (pure ethanol injection therapy/other therapies), antiplatelet therapy, anticoagulation therapy, NSAID administration, endoscopic 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 rebleding 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 rebleding in HDU by the univariate logistic regression analysis, the independent risk factors for rebleding in HDU were multiple ulcers [odds ratio (95% confidence interval) = 24.2 (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 detail of endoscopic rebleeding, multivariate logistic regression analysis showed that middle and high-risk surgery had significantly higher rebleeding rate of HGU and HDU (≥20 mg in predinsolone) (52.7 [3.19–871], P < 0.0001) was a significant risk factor for rebleeding of HDU, with a dose-response relationship (P = 0.005).

Disclosure of Interest: All authors declare no conflicts of interest.

P1163 EFFICACY AND SAFETY OF BIO-INSERT MINERAL SMECTITE IN CONTROLLING GASTROINTESTINAL HEMORRHAGE: AN ANIMAL PILOT STUDY


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Introduction: Gastrointestinal bleeding is common in clinics, especially after endoscopic operation. Besides from hemoclip, APC or electrocoagulation, more novel hemostasis approaches should be developed to improve endoscopic bleeding management. Granular smectite is bioinert material and efficient for curing diarrhea. Inspired by its dehydrating and tissue-covering effect, this pilot study was to investigate its efficacy and safety for controlling hemorrhage in rats.

Aims & Methods: 32 rats were divided into four equal groups. For hemorrhage model, a horizontal 10-mm incision was made on the lower part of the left hepatic lobe. Commercial hemostatic powder, 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.

Results: Smeectomy demonstrated the best hemostasis effect, and its mean coagulation time was 1.45 ± 0.026 min. Commercial hemostatic chitosan stycip powder need 2.5 ± 0.04 min for complete clotting, while Starch group was 4.25 ± 0.056 min and 4% formal saline group was 4.92 ± 0.0108 min. Similarly, smeectomy led to less blood loss (0.618 ± 0.034 g), while rats lost 2.3288 ± 0.123 g blood (p < 0.05) under normal saline treatment. For starch and commercial chitosan, the blood loss was respectively 2.0862 ± 0.061 g and 1.925 ± 0.0238 g. Histopathologic results confirmed that smeectomy was biocompatible to tissue.

Conclusion: The mineral smectite powder was the superior candidate for hemostasis treatment in vivo. Compared with common polysaccharide agents, smectite could induce faster coagulation and reduce blood loss. More importantly, biocompatible, smeectite was biocompatible and even promoted the wound healing. For gastrointestinal application, smectite powder could be delivered through endoscopic spray tube, while its inspiring efficacy required more endoluminal hemostasis tests.

Disclosure of Interest: All authors declare no conflicts of interest.

P1164 PREDICTORS OF LIFE THREATENING MUCOSAL ULCERATION AFTER VARICELLE SCLEROTHERAPY

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Introduction: Life-threatening bleeding could occur early after varicelle sclerotherapy in cirrhotic patients.

Aims & Methods: We aimed to determine simple predictive factors of this complication in cirrhotic patients. Among 750 patients treated with varicelle sclerotherapy (esophageal varices [EV] = 655, 87.5% 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 ± 9.4 years) (EV = 129, GV = 21) developed bleeding due to sclerotherapy induced ulcers confirmed by endoscopy 6.4 ± 2.1 days after the procedure. Cirrhosis was post viral hepatitis C (89%), hepatitis B (10%) and cryptogenic in (1%). A case-control study was performed comparing these

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Disclosure of Interest:

with acute UGIH. These findings suggest that GBS is the best performed risk and death, it is superior to both Rockall and AIMS65 scores in predicting the
patients with 150 patients who underwent endoscopic variceal sclerotherapy without the development of bleeding due sclerotherapy ulceration.

**Results:** Bleeding occurred 6.4 ± 2.1 days (2–10) following sclerotherapy. Twenty-three patients died following the bleeding (15.3%). Using a multivariate analysis; pre-procedural factors as serum albumin >2 g/dl [OR 1.3]; total bilirubin >1.6 mg/dl [OR 1.7]; 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], amacryate >3.5 ml [OR 2.9]. Post- procedural factors within 24 hours after endoscopy; leukocytosis >12,000 cell/µl [OR 1.9], drop of hemoglobin >10% of the pre-endoscopic value [OR 3.2], prolonged INR >1.55 [OR 1.2].

**Conclusion:** Bleeding related to sclerorat ulcers is 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.

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**References**


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**P1165 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 160 FD patients and 223 healthy control groups. The total Pittsburgh Sleep Quality Index score was higher in FD patients than healthy control (41.2% vs 18.4%, p = 0.0001). 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 = 0.0001). 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 (OR 2.91, p = 0.001).

**Conclusion:** FD significantly impacted on sleep disorder. FD was independent risk factor in sleep disorder.

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

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**References**


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**P1166 PREVALENCE OF DYSPEPSIA IN INDIVIDUALS WITH GASTRO-oesophageal reflux-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, 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 6.54 (95% CI 4.33 to 11.12). The OR for dyspepsia in weekly GORD was significantly higher than that reported for gastrointestinal reflux disease (GORD) 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 Disease Index.

**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.

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**References**


as a predictor among individuals with FGID (Table 1). Epigastric symptom severity was predicted by worry and psychological attribution of symptoms among FGID individuals but no psychological trait predicted symptom severity among non-FGID individuals (Table 1).

Conclusion: A range of psychosocial factors predict later gastrointestinal symptom burden. For bowel symptoms, associations between psychological traits and symptom burden appear to be most clearly driven by the non-FGID subgroup, among whom psychological attributions for symptoms and problem-focused coping are positively related to later symptom burden. For epigastric symptoms, a range of psychological traits were relevant, with the predictive patterns being most clearly driven by individuals who qualified for FGIDs. In light of these results, studies of the brain-gut axis need to consider a greater array of psychological traits, particularly outside of anxiety and depression. Further, the commonality between psychosocial factors and gastro-esophageal 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 achalasia and neurodegenerative/demyelinating diseases of central nervous system, although these diseases might have common features. For example, a number of genetic resolutions manometry, endoscopy and esophagogram. A total of 140 consecutive patients with confirmed esophageal achalasia. Achalasia was diagnosed by high-resolution manometry, endoscopy and esophagogram. A total of 140 consecutive patients with esophageal achalasia have been questioned about the occurrence of neurological diseases and symptoms in their personal and family history. Those with a suspicion of a neurological disease were referred for a detailed clinical neurology interview, MR imaging of the brain and electrophysiological study. A total of 106 patients with a neurodegenerative/demyelinating disease have been questioned by using a questionnaire about the occurrence of symptoms typical for achalasia (dysphagia, regurgitation, chest pain). Results: A total of 51 out of 140 patients (36.4%) exhibited some 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 Allgrove syndrome - 1 patient). Furthermore, 7 patients with a positive questionnaire had been diagnosed with other neurological diseases (tetyan n = 2, carpal tunnel syndrome n = 1, 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 (27.4%) described dysphagia was for them a part of personal history. These patients will be examined by esophageal manometry.

Conclusion: Our results imply an increased prevalence of neurodegenerative/ demyelinating diseases in patients with achalasia (3.6% vs. approx. 1.4% in the Czech controls). Also, a high prevalence of dysphagia was found among patients with a neurodegenerative/demyelinating disease. These results warrant further confirmation in a large population-based study.

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

P1169 HIGH RESTING PARASYMPATHETIC CARDIAC VAGAL TONE CONFERS A UNIQUE FUNCTIONAL BRAIN NETWORK DURING ACUTE OESOPHAGEAL PAIN
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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, described elsewhere(). The effect of resting CVT on brain networks during acute oesophageal pain were determined by means of network based statistics(). Brain nodes were selected a priori of previous anatomic/visceral pain literature and included the following: bilateral (bil) medial prefrontal cortex, anterior cingulate (ACC), amygdala, insula, pallidum, thalamus and single hypothalamus (Xnodes = 11). (3) Oxygen level dependant (BOLD) signal during oesophageal balloon distention to pain tolerance threshold was extracted from each of these regions and cross-correlated to produce nodal correlation matrixes, which were dichotomized by means of median split based upon resting CVT value, and a two-tailed t-test of was undertaken. A primary threshold was applied (t = 1.65; p < 0.05) and permutation tested 50,000 times to ensure statistical stringency applied.

Results: We identified a unique subcortical brain connectivity network in the high resting CVT individuals when exposed to acute oesophageal pain. This complex symmetrical network comprised all 11 nodes with a total of 18 edges (significant

Abstract Title: P1167
Table 1: Associations between individual psychological traits and symptom severity. Numeric entries are odds ratios (95% confidence intervals). *** indicates p < .001, ** indicates p < .01, * indicates p < .05, and + indicates p > .05.

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Bowel Non-FGID</th>
<th>Symptom FGID</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Severity</td>
<td>Epigastric</td>
</tr>
<tr>
<td></td>
<td>Combined</td>
<td>Non-FGID</td>
</tr>
<tr>
<td>Problem-focused coping</td>
<td>2.92 (1.23+</td>
<td>0.93 (0.14)</td>
</tr>
<tr>
<td>Worry</td>
<td>1.44 (0.51)</td>
<td>1.35 (0.22)^</td>
</tr>
<tr>
<td>Avoidant coping</td>
<td>0.41 (0.21)</td>
<td>0.89 (0.14)</td>
</tr>
<tr>
<td>Doctor relationship</td>
<td>2.96 (1.77)</td>
<td>1.09 (0.16)</td>
</tr>
<tr>
<td>Childhood non-sexual abuse</td>
<td>1.65 (0.68)</td>
<td>1.06 (0.15)</td>
</tr>
<tr>
<td>Social support</td>
<td>0.53 (0.22)</td>
<td>0.85 (0.12)</td>
</tr>
<tr>
<td>Somatic rather than</td>
<td>0.27 (0.11)***</td>
<td>0.93 (0.15)</td>
</tr>
<tr>
<td>psychological attribution</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doctor reassurance</td>
<td>0.99 (0.31)</td>
<td>1.16 (0.26)</td>
</tr>
<tr>
<td>Somatisation</td>
<td>2.92 (1.23)^</td>
<td>1.11 (0.30)</td>
</tr>
<tr>
<td>Childhood sexual abuse</td>
<td>1.44 (0.51)</td>
<td>1.35 (0.22)^</td>
</tr>
</tbody>
</table>

When considered jointly with other predictors, psychological attribution of symptoms was significantly positively related to both bowel symptom severity (non-FGID: OR = 0.31, SE = 0.13; Full: OR = 0.74, SE = 0.11 and epigastric symptom severity (FGID: OR = 0.63, SE = 0.09; Full: OR = 0.63, SE = 0.11). The same was the case for worry (Bowel: Full: OR = 1.40, SE = 0.21; Epigastric: FGID: OR = 1.48, 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.
Introduction:

Oesophageo-gastric junction outflow obstruction (OGJOO) is of unclear 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-oesophageal 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 oesophago-gastric surgery (43%), incomplete achalasia (7%), mediastinal neoplasia (5%), other (13%), no symptom (3%). The causes of EGJOO were previous oesophago-gastric surgery (34%), incomplete achalasia (7%), mediastinal neoplasia (7%), miscellaneous (19%) and unknown (25%). RDC test was successful 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 = 0.03) in patients with POP during RDC compared to those without. The same observation 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 oesophageo-gastric surgery 34% and 51%, respectively, achalasia 14% and 2%, mediastinal neoplasia 3% and 7%, miscellaneous 10% and 22%, unknown 35% and 7%). OS was not observed in patients with unknown cause of EGJOO vs 20% of patients with an identified cause (p = 0.09).

**References**

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

<table>
<thead>
<tr>
<th>Manometry parameters</th>
<th>POP during RDC</th>
<th>No POP during RDC</th>
<th>RDC</th>
<th>No RDC</th>
</tr>
</thead>
<tbody>
<tr>
<td>5ml swallows</td>
<td>n = 29</td>
<td>n = 41</td>
<td>OS n = 9</td>
<td>No OS n = 61</td>
</tr>
</tbody>
</table>

**P1171 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 sphincter 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 monitoring 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 Integral (DCI) and DCI expanded, LES resting pressure, % of ineffective peristalsis, and esophageal length both with water and solid food swallows (Table). No difference has been shown with distal latency (DL), LES length, breaks size (Table).

**Conclusion:** Water perfusion HRM catheter exhibits significantly lower values especially for IRP, DCI, LES resting pressure. Centers which are working with water perfusion catheters should not accept universal normal established with solid state catheters and need to work on their normative values. The ineffective peristalsis pattern is common with water perfusion catheters.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
P1172 LOW-VOLUME MULTIPLE RAPID SWALLOW BETTER DISTINGUISH PERISTALTIC ESOPHAGEAL RESERVE COMPARED TO HIGH-VOLUME RAPID DRINKING TEST
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Introduction: The Chicago Classification (CC V3.0) defined ineffective esophageal motility (IEM) by the presence of 50% or more of weak or failed peristaltic waves during high resolution manometry (HRM). Both low-volume (10ml) multiple rapid swallow (MRS) and high-volume (200ml) rapid drinking test (RDT) have been suggested as test to recognize the esophageal peristaltic reserve. Which test might better represent the esophageal peristaltic reserve is still a matter of discussion.

Aims & Methods: The aim of this study was to compare the diagnostic value of MRS and RDT in patients with IEM. From a larger group of patients evaluated for heartburn and/or regurgitation with poor response to standard dose proton pump inhibitors, we enrolled consecutive patients with IEM and with functional heartburn (FH). FH were enrolled as controls. IEM was defined according to the CC V3.0, and FH were defined according to the Rome IV criteria. All patients underwent 3 MRS (10ml of water in 5 swallows in less then 10s) and 1 RDT (200ml of water freely drunk). All patients underwent 24-h impedance and pH recording (MII-pH). Mean DCI of MRS and DCI of RDT were compared with mean DCI of 10 single swallows (SS). The MRS/SS and RDT/SS ratio were calculated.

Results: We evaluated 30 patients with IEM (18 males and 12 females; mean age 45.7±11.4 yrs) and 30 patients with FH (15 males and 17 females; mean age 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 lack of 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.

Table 1: Results of SS, MRS and RDT in patients with IEM and FH

<table>
<thead>
<tr>
<th>Group</th>
<th>DCI (mmHg-s-cm)</th>
<th>MII-pH</th>
<th>pH</th>
<th>MII-pH</th>
<th>MII-pH</th>
<th>MII-pH</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEM</td>
<td>Mean DCI MRS</td>
<td>614.2</td>
<td>0.3</td>
<td>0.4</td>
<td>0.3</td>
<td>0.4</td>
</tr>
<tr>
<td></td>
<td>Mean DCI RDT</td>
<td>1027.6</td>
<td>0.001</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FH</td>
<td>MRS/SS ratio</td>
<td>0.5±0.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>RDT/SS ratio</td>
<td>0.5±0.4</td>
<td></td>
<td>1.6±0.7</td>
<td>1.0±0.5</td>
<td>1.6±0.7</td>
</tr>
</tbody>
</table>

Conclusion: Patients with EGJ-OO showed less peristaltic reserve during MRS and RDT. The RDT evidenced more frequently lack of body inhibition in patients with EGJ-OO.

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

P1174 ESOPHAGEAL BOLUS FLOW METRICS ON PRESSURE FLOW ANALYSIS (PFA) OF ESOPHAGEAL HIGH RESOLUTION IMPEDANCE MANOMETRY (HRIM) IN GASTROESOPHAGEAL REFUX DISEASE (GERD)
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Introduction: Esophageal motor dysfunction and abnormal bolus transit are often encountered on high resolution impedance manometry (HRIM) performed prior to anti-reflux surgery (ARS) in gastroesophageal reflux disease (GERD). Esophageal motor dysfunction can be characterized using established software tools embedded in HRIM software, while new paradigms of interrogation of bolus presence and flow have been introduced with automated pressure flow analysis (PFA). The prevalence, and clinical relevance of these motor and bolus flow abnormalities to symptom presentation or symptom outcome from ARS are incompletely understood.

Aims & Methods: Our aim was to evaluate the interrelationships between esophageal motor function and bolus transit using varying bolus consistencies, in health and in the context of symptomatic GERD prior to ARS. HRIM studies hasak.s@wustl.edu

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Introduction: The Chicago Classification (CC V3.0) defined the presence of esophageal motor and body inhibition during repetitive swallowing in patients with EGJ-OO when the value of integrated relaxing pressure (IRP) is higher than 15mmHg during high-resolution manometry (HRM). Both low-volume (10ml) multiple rapid swallow (MRS) and high-volume (200ml) rapid drinking test (RDT) were never evaluated to detect the inhibition of esophageal body in patients with EGJ-OO.

Aims & Methods: The aim of this study was to compare the efficacy of MRS and RDT in evaluating the esophageal body inhibition during repetitive swallowing in patients with EGJ-OO and patients with functional heartburn (FH) considered as control group. From a larger group of patients evaluated for dysphagia with negative upper endoscopy, we enrolled consecutive patients with EGJ-OO, and as control group, patients with functional heartburn (FH) defined according to the Rome IV criteria. EGJ-OO was defined according to CC V3.0. HRM performed according to the Italian guidelines. All patients underwent 3 MRS (10ml of water in 5 swallows in less then 10s) and 1 RDT (200ml of water freely drunk). The mean DCI of MRS and the DCI of RDT were compared with DCI of 10 single swallows (SS) mean value. The MRS/SS and RDT/SS ratio were calculated.

Results: The lack of esophageal body inhibition during multiple swallowing tests was defined if contraction was identified measuring >3 cm using the 30mmHg isobaric contour tool.

Conclusion: Patients with EGJ-OO showed less peristaltic reserve during MRS and RDT. The RDT evidenced more frequently lack of body inhibition in patients with EGJ-OO.

Disclosure of Interest: All authors have declared no conflicts of interest.
PATIENTS WITH OESOPHAGEAL DIVERTICULA

P1175 PROVOCATIVE TESTING INCREASES THE DIAGNOSTIC YIELD OF HIGH RESOLUTION OESOPHAGEAL MANOMETRY IN PATIENTS WITH OESOPHAGEAL DIVERTICULA

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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 for patients it was 70 years old for men and 75 years old for women.

Results: The main reported symptom was dysphagia (76%). HRM found 11 (61%) patients with an oesophageal motor disorder, including 2 oesopagogastric junction outflow obstruction (OGJOO), 4 achalasia (subtype 2: n = 2; subtype 3: n = 2), 4 distal oesophageal spasms (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 improved 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 diverticula were greater in patients than healthy controls (p < 0.05 for wet swallows), as previously reported1. Other metrics are summarized in the table.

| HRM metrics with comparisons between wet swallows in controls and patients, and between wet and solid swallows among patients. * p < 0.05 ** p < 0.01 *** p < 0.001 |
|---|---|---|
| Controls (liquids) | Patients (liquids) | Patients (solids) |
| Number of swallows | 9.30 | 9.94 | 9.41 |
| EGJ resting pressure (mmHg) | 29.30 | 28.76 | 34.66 |
| Mean IRP 4s (mmHg) | 11.50 | 14.32 | 18.25* |
| Mean DCI (mmHg.s.cm) | 1315.10 | 2877.99 | 7341.67*** |
| Distal latency (s) | 6.70* | 6.05 | 7.11* |
| Intrabolus pressure (mmHg) | 8.10 | 11.88* | 15.19 |
| Mean pressure slope mid-oesophagus (mmHg/s) | −0.65 | 2.29** | 2.59 |
| Mean pressure slope distal oesophagus (mmHg/s) | −0.36 | 1.41** | 0.46 |

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.

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

Reference

P1176 EVALUATION OF OESOPHAGOESOPHAGIC JUNCTION CONTRACTILITY AFTER DIFFERENT TREATMENTS FOR ACHALASIA

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Introduction: The management of achalasia targets relieving the obstruction at the esopagogastric junction (EGJ) by pneumatic dilation (PD), laparoscopic Heller myotomy (LHM) plus a fundoplication variant (Dor, Toupet and more rarely Nissen/Nissen-Rossetti). However, effective ablation of the LES barrier can induce gastroesophageal reflux disease (GERD). Recently, new metrics to evaluate EGJ function with high resolution manometry (HRM) have been introduced, such as EGJ contractile integral (EGJ-CI). Currently there are few data investigating how achalasia treatments impact EGJ function based on these metrics.

Aims & Methods: We aimed to assess the EGI-CI metric in achalasia before and after different treatments, to verify if post-operative changes in this metric correlate to symptom relief and iatrogenic GERD following surgical treatments. Methods Between 2014 and 2015, we enrolled consecutive achalasia patients. All patients underwent clinical evaluation with Eckardt and GERDQ score, as
well as upper endoscopy, barium esophagogram and HRM before and 6 months after treatment. Achalasia was classified according to the Chicago Classification V3.0. The EGJ-C1 was calculated using the distal contractile integral tool-box during three consecutive respiratory cycles. Patients underwent to pneumatic dilatation (PD), or LHM plus a Dor (LHM-D), Toupet (LHM-T) or a Nissen-Rossetti (LHM-NR) fundoplication. Ethical approval for the study was obtained.

**Results:** We enrolled 35 achalasia patients (14 Type I, 16 Type II and 5 Type III). Ten patients underwent PD, 11 LHM-D, 8 LHM-T and 6 LHM-NR. At baseline, no differences were observed in terms of age, sex, pre-operative mean Eckardt score, GERDQ score, integral relaxation pressure (IRP) and EGJ-C1 were recorded. All Type III subjects underwent LHM-D (3) and LHM-T (2). After all the procedures, in all the patients there was a significant decrease in Eckardt score, IRP and EGJ-C1 (p < 0.001, < 0.001 and < 0.05, respectively). PD and LHM-NR showed higher EGJ-C1 (20 ± 9.3 and 25 ± 11.1 mmHg*cm, respectively) and IRP (12.2 ± 3.4 and 13 ± 4.5, respectively) than LHM-D and LHM-T (18 ± 5.9, < 0.05 and 9.3 ± 4.1, p < 0.05 mmHg*cm, respectively for EGJ-C1; 5.2 ± 2.5, < 0.05 and 2.3 ± 3.7 p < 0.001 mmHg*cm, respectively for IRP). Post-operative Eckardt score was lower in LHM-D and LHM-T (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 LHM-D (3.0 ± 1.7 vs. 8.2 ± 3.9, p < 0.05). Low post-operative EGJ-C1 values correlated with an increased risk of higher post-operative GERDQ score (p < 0.05, odds ratio 4.223, 95% CI 0.964–2.123).

**Conclusion:** All procedures performed to treat achalasia produced an adequate relief of dysphagia. LHM-D and LHM-T seem to result in a stronger alteration of the EGJ, with LHM-T resulting in an increased risk of post-operative reflux.

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

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**P1177 MULTIPLE RAPID SWALLOWING IN JACKHAMMER ESOPHAGUS PATIENTS: EVIDENCE FOR ALTERED NEURAL CONTROL**

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**Introduction:** Jackhammer esophagus is a rare esophageal motility disorder. Little is known about its physiopathology; however, an excess of cholinergic drive has been suggested as an important etiologic factor. Multiple rapid swallowing (MRS) is an adjunctive test in order to evaluate integrity of inhibitory and excitatory neural pathways. In healthy subjects body motion 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-IQ 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, < 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, < 0.0005) and it was lower than the MRS/SS DCI ratio of HS (0.8; 0.4–1.1 vs 1.9; 1.1–2, p < 0.0001) suggesting a reduction of the hypercontractile activity in the esophageal body.

**HRM parameters during single and multiple rapid swallows in jackhammer patients. Median; interquartile range.**

<table>
<thead>
<tr>
<th>SS</th>
<th>MRS</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 s IRP, mmHg</td>
<td>7.5; 4.9–13.1</td>
<td>5.1; 2.2–10.1</td>
</tr>
<tr>
<td>DCI, mmHg/sec.cm</td>
<td>6506; 5605–8582</td>
<td>5537; 3568–8572</td>
</tr>
<tr>
<td>CFV, cm/s</td>
<td>3.9; 2.9–5.5</td>
<td>4.4; 2.9–6.4</td>
</tr>
<tr>
<td>DL, sec</td>
<td>6.8; 6.2–7.6</td>
<td>6.8; 5.5–7.4</td>
</tr>
</tbody>
</table>

**Conclusion:** Contrary to what occurs in healthy subjects, MRS reduce DCI 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 DCI 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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**References**

This study included 55 subjects in FD group and 200 subjects in Control group. FD group was defined as the group of patients with or without findings in each 19 finding. Subjects who had epigastralgia (score 2, 3 or 4), postprandial fullness (score 3 or 4) or early satiation (score 3 or 4) in the m-FSSG were classified as having such endoscopic findings. The aim of this study is to explore which endoscopic findings are defined precisely. However, it is not discussed whether we can distinguish between NERD and FD because the m-FSSG contains seven endpoints. Atrophy (16.6% vs. 30.4%, p = 0.02), hypersecretion (25.0% vs. 48.5%, p = 0.006), and diffuse redness (8.7% vs. 23.0%, p = 0.012) were more frequent in the FD group compared with the Control group. Atrophy (25.0% vs. 48.5%, p = 0.006), hypersecretion (25.0% vs. 48.5%, p = 0.006), and diffuse redness (8.7% vs. 23.0%, p = 0.012) were more frequent in the FD group compared with the Control group.

Conclusion: Cap-assisted technique is 100% effective in the management of impacted FBO in the esophagus, with a significantly shorter procedural time and improved safety profile compared to the conventional approach. Cap-assisted approach was associated with a shorter total procedural time (34 ± 8.3 vs. 43 ± 22 min, p = 0.006), a shorter length of hospital stay (0.95 ± 0.36 vs. 1.38 ± 1.36 days, p = 0.0017) and more en-block removal (9/34 vs. 22/43, p < 0.001). There were more complications in the conventional than the cap-assisted group (7/106 vs. 0.93; P = 0.01).

Disclosure of Interest: All authors have declared no conflicts of interest.
Results: The endoscopic follow-up was planned every month. After 1 months, 18-23 cm esophageal region had 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.

Aims & Methods: We enrolled 124 patients (M = 84, mean age = 45.3± 13.05 years) with functional dyspepsia. We studied gastric atrophy (PGI) in 51.2% (+/- 13.7 y 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 range = 17-65) in which an hypersecretory state is claimed (Group 2). Among the 3 groups, we studied 46 patients (M = 44 mean age = 44.0 ± (+/- 13.4 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 (basal 30’, 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 52.49 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 < 0.000001; Group 1 vs. Group 2 p < 0.001; Group 2 vs. Group 3 p < 0.0001). The PGI mean values in Group 1 was 11.39 µg/l, in Group 2 107.72 µg/l, in Group 3 84.28 µg/l (Group 1 vs Group 2: p < 0.000001; Group 1 vs Group 2: p < 0.0001; 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 hypo- and hyper-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.

**P1185 THE DISCREPANCY BETWEEN THE ACID REGURGITATION SYMPTOMS AND ENDOCOPIC GERD GRADE IN DIABETES MELLITUS PATIENTS**

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Introduction: Gastroesophageal reflux disease (GERD) is caused by reflux of gastric acid into esophagus. It is reported that chronic inflammation caused by GERD can lead to precancerous changes; Barrett’s esophagus. Thus, it could be critical to assess the GERD. Diagnosis of GERD is based on the subjective symptoms such as acid regurgitation. GERD is also diagnosed by endoscopy, and the Los Angeles (LA) classification is commonly used to grade reflux esophagitis endoscopically. It is well known that diabetes mellitus (DM) patients can develop neuropathy and their ability to feel pain can decrease. However, it is not known whether there is a discrepancy between the symptoms and endoscopic GERD grade in DM patients.

Aims & Methods: From May 2015 to September 2016, patients who were taken esophagogastroduodenoscopy by experienced endoscopists at our institution were consecutively enrolled. All the patients completed the Gastrointestinal Symptom Rating Scale (GSRS); an interview-based rating scale consisting of 15 items including the question on acid regurgitation (Dig Dis Sci 1988). The GSRS has a seven-graded Likert type scale (score 1 represents absence of symptom, and score 7 represents very bothersome symptom). Gastric atrophy, reflux esophagitis, and esophageal hiatal hernia were diagnosed endoscopically.

The study patients were categorized according to the grade of LA classification of GERD. The prevalence of patients with positive GSRS score (i.e. 2 or more) in the DM group and non-DM group were compared using the Pearson’s chi-square test.

Results: A total of 2438 patients (647 females and 1791 males, mean age 62.4 years) were examined. Of these, 1040 patients (42.7%) were DM, and 1398 patients (57.3%) were non-DM patients. The prevalence of gastric atrophy, reflux esophagitis, and esophageal hiatal hernia were not different in DM group and non-DM group. Mild GERD (LA-A) was found in 251 patients (10.6%, 92 DM patients and 159 non-DM patients), and severe GERD (LA-B and more severe) was found in 19 patients (3.12%, 40 DM patients and 36 non-DM patients). Of the 36 non-DM patients with severe endoscopic GERD, 30 patients (83.3%) had positive GSRS score of acid regurgitation; however, of the 40 DM patients with severe endoscopic GERD, 19 patients (47.5%) had positive GSRS score of acid regurgitation. The prevalence ratio of patients with positive GSRS score in severe endoscopic GERD was statistically lower in DM patients than in non-DM patients (p = 0.0016).

Conclusion: There is a discrepancy between the subjective symptoms and endoscopic GERD grade in DM patients. DM patients’ ability to feel acid regurgitation could decrease.

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

Reference

A. Sánchez Pernaute, E. Rey, B. Merchan Gomez

The mean BMI was 41.55 (M 43.3; F 41.0) with no differences between men and women. The mean age of patients with MO was 43.1 years (range 19–68) with no significant differences between men and women.

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 from 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 obese sarcopenic obese participants (AOR, 1.68; 95% CI, 1.39–2.03) than in normal participants. The ORs concerning sarcopenic and sarcopenic obese participants to obese participants were 1.59 (95% CI, 1.06–2.38) and 1.12 (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: These findings suggest that sarcopenia, regardless of obesity, is more harmful condition for reflux esophagitis than obesity without sarcopenia.

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

References:

P1187 FOOD RATE (FREQUENCY AND TIME SPENT IN EATING) IN PATIENTS WITH MORBID OBESITY. DIFFERENCES AND SIMILARITIES BETWEEN MEN AND WOMEN

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Introduction: We evaluated the eating time of 118 subjects of the control group (63 women), the mean age was 28.3 years and 100 patients (77 women) with MO in the School of Medicine, Seoul/Korea, Republic of Korea.

Results: The relationship of demographic aspects with the number of meals and the time spent in eating) in patients with morbid obesity (MO), based on data from the diary of the 24-H esophageal pH-monitoring studies.

Conclusion: The caloric load, the proportion of its components and its patterns have been the object of multiple studies (1–5). One of the most controversial aspects is the relationship between the frequency of meals and body weight.

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

P1188 ONE DRINK CAN INCREASE A RISK FOR ESOPHAGEAL, STOMACH AND COLORECTAL CANCER IN A COHORT OF 23,323,730 KOREAN ADULTS

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Introduction: Epidemiologic findings of low-volume alcohol consumption in relation to gastrointestinal cancers including gastric cancer are inconsistent.

Aims & Methods: The association between alcohol intake and esophageal, gastric and colorectal cancer risk was examined in a population-based prospective cohort of 23,323,730 adults in Korea who had undergone a biennial evaluation provided by the National Health Insurance Corporation between the years 2009 and 2012.

Results: After median 3.4 years of follow-up, 9171 esophageal, 135,382 gastric and 154,970 colorectal cancer cases were identified. Cox proportional hazards regression models were used to estimate hazard ratios (HR) and corresponding 95% confidence intervals (95% CI). Light drinking as well as moderate to heavy alcohol consumption significantly increased the risks of the three gastrointestinal cancer sites. The HRs were 1.51; 95% CI, 1.43–1.60; HR 1.10; 95% CI, 1.06–1.09; HR 1.12; 95% CI, 1.11–1.14 compared with non-drinkers after adjusting for age, sex, smoking, exercise, income, body mass index, and diabetes. For esophageal cancer, there was a dose-dependent linear relationship. However, no association was observed between prediagnostic alcohol consumption and all cause mortality. Conclusion: Light drinking including even one alcoholic drink a day is associated with increased risks of esophageal, gastric and colorectal cancer.

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

P1189 THE INFLUENCES OF VISCERAL FAT AREA ON THE SITES OF ESOPHAGEAL MUCOSAL BREAKS AND SYMPTOM SEVERITIES IN SUBJECTS WITH GASTROESOPHAGEAL REFLUX DISEASES

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Introduction: Some studies have suggested the central obesity as a risk factor for gastroesophageal reflux diseases (GERD). However, the associations between visceral adipose tissue (VAT) and the sites of esophageal erosions or the symptom severities of GERD have not been studied yet.

Aims & Methods: The aim of this study was to evaluate the influences of visceral adipose tissue on the locations of erosions and symptoms of GERD. The subjects who underwent abdomen computerized tomography and esophagogastroduodenoscopy for routine checkup at the same day were collected from January 2007 to October 2016. 177 subjects who had erosive esophagitis (LA class A to D) were enrolled. Questionnaires including gastrointestinal symptoms were written before examinations. The abdominal obesity was evaluated by measuring visceral adipose tissue (VAT), subcutaneous adipose tissue (SAT), ratio of VAT to SAT, total adipose tissue (TAT), body mass index (BMI) and waist circumference (WC).

Results: Lower curvature (LC) side of esophagogastric junction (EGJ) was the most frequent site of mucosal breaks (103 cases, 58.2%) followed by posterior wall side (71 cases, 40.1%), anterior wall side (25 cases, 14.1%) and fundus side (1 case, 0.6%). Mucosal breaks in LC side were frequently observed in male subjects (61.3% vs. 36.4%, p = 0.04) and WC (89.0 ± 11.8 vs. 85.0 ± 9.1, p = 0.01) were significantly higher in LC group. Moreover, SAT ratio of VAT to SAT, and TAT were significantly higher in LC group. In the multivariate analysis, a higher VAT area (odds ratio (OR) 3.47, 95% confidence interval 1.38 to 8.73, 1st quartile vs. 4th quartile, p < 0.01) and ratio of VAT to SAT (OR 2.99, 95% CI 1.15 to 6.70, 1st quartile vs. 4th quartile, p = 0.02) were strongly associated with the mucosal breaks in LC.
P1190 A LESS COMPETENT OESOPHAGO-GASTRIC JUNCTION IS ASSOCIATED WITH OESOPHAGEAL ACID HYPERSENSITIVITY EVEN IN HEALTHY CONTROLS

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2Surgery A, Aalborg University Hospital, Aalborg/Denmark

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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 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 competence, hypothesizing that sensitivity increases with impaired sphincter function. Twenty-three patients with Barrett’s oesophagus (mean age: 64.2 ± 7.7 years) and 12 healthy controls (mean age: 54.9 ± 10.8 years) were examined. A standard upper endoscopy to locate the OGJ was followed by distensibility testing of the OGJ using the EndoFLIP probe. At a later visit, experimental oesophageal sensitivity was assessed using a multimodal stimulation probe. After placement in the oesophagus just above the OGJ, the probe allows the measurement of dilated intercellular spaces with light microscopy.

Results: Oesophageal acid sensitivity increased with a more incompetent 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, thereby evoking acid hypersensitivity. The latter mechanism probably constitutes a reflex protective mechanism towards acid reflux.

Disclosure of Interest: B.P. McMahon: Barry P McMahon holds a minor share in Cosprom Inc., Galway, Ireland who manufactures the EndoFLIP probe. All other authors have declared no conflicts of interest.

References
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 ± 202.1</td>
</tr>
<tr>
<td>ERD-A/B</td>
<td>521.0 ± 204.9</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

P1194 CHANGES IN ANTHROPOMETRIC AND METABOLIC PARAMETERS RELATED TO GASTROESOPHAGEAL REFUX DISEASE IN NON-OBESE CASES

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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 evaluated a primary care 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). Consider this 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 = 0.289) (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 biomechanical impedings findings

<table>
<thead>
<tr>
<th>Control Group</th>
<th>Median (Min.-Max.)</th>
<th>Patient Group</th>
<th>Median (Min.-Max.)</th>
<th>Total Number (N=170)</th>
<th>Median (Min.-Max.)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glucose</td>
<td>90.50 (77.165)</td>
<td>92 (53.165)</td>
<td>91.50 (53.165)</td>
<td>306.08</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insulin</td>
<td>8.05 (1.90–97)</td>
<td>8.35 (1.32–108)</td>
<td>8.20 (1.32–108)</td>
<td>0.35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HDL</td>
<td>51.50 (3.10–99)</td>
<td>47.50 (3.10–99)</td>
<td>48.50 (3.10–99)</td>
<td>0.06</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LDL</td>
<td>74.50 (42–129)</td>
<td>87 (11–243)</td>
<td>80 (1–243)</td>
<td>0.001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Triglycerides</td>
<td>81 (33–350)</td>
<td>97 (28–404)</td>
<td>95 (28–404)</td>
<td>0.18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Cholesterol</td>
<td>146.30 (73.222)</td>
<td>161 (19–310)</td>
<td>159 (19–310)</td>
<td>0.21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uric Acid</td>
<td>4.05 (2.00–41)</td>
<td>4.30 (2.00–109)</td>
<td>4.20 (2.00–109)</td>
<td>0.47</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Creatinine</td>
<td>1.60 (0.07–25.5)</td>
<td>1.54 (0.02–10)</td>
<td>1.58 (0.02–10)</td>
<td>0.70</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ALP</td>
<td>12.50 (3.59)</td>
<td>13 (6–56)</td>
<td>13 (6–56)</td>
<td>0.21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fat</td>
<td>19.30 (3–41.60)</td>
<td>24.75 (9–350)</td>
<td>22.55 (9–350)</td>
<td>0.016</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fat Mass</td>
<td>12.80 (1.10–36.20)</td>
<td>15.15 (1.10–43.40)</td>
<td>14.20 (1.10–43.40)</td>
<td>0.012</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BFM</td>
<td>45.95 (15.70–15.06)</td>
<td>46.05 (36.80–74.20)</td>
<td>45.95 (15.70–15.06)</td>
<td>0.61</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Muscle Mass</td>
<td>43.95 (35–50.70)</td>
<td>43.90 (34.90–51.60)</td>
<td>43.90 (34.90–51.60)</td>
<td>0.320</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TBW</td>
<td>32.70 (25.10–52.60)</td>
<td>32.50 (25.10–52.60)</td>
<td>32.55 (25.10–52.60)</td>
<td>0.341</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TBW Y104</td>
<td>55.80 (41.60–80.90)</td>
<td>52.50 (41.60–80.90)</td>
<td>53.80 (41.60–80.90)</td>
<td>0.018</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bone Mass</td>
<td>2.40 (1.90–3.07)</td>
<td>2.40 (1.90–4)</td>
<td>2.40 (1.90–4)</td>
<td>0.442</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMR</td>
<td>5.858 (55.94–9.138)</td>
<td>58.51 (50.12–8.996)</td>
<td>5.858 (55.94–9.138)</td>
<td>0.386</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metabolic Age</td>
<td>16 (12–44)</td>
<td>27 (12–66)</td>
<td>22 (12–66)</td>
<td>0.002</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visceal Fat</td>
<td>5.62 (3.43)</td>
<td>7.94 (3.62)</td>
<td>7.94 (3.62)</td>
<td>0.015</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Degree of Obesity</td>
<td>0.70 (29.30–35.90)</td>
<td>10.95 (29.30–35.90)</td>
<td>8.80 (29.30–35.90)</td>
<td>0.015</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Homa-IR (mg/dl)</td>
<td>1.90 (0.42–19.06)</td>
<td>1.84 (0.22–22.93)</td>
<td>1.88 (0.22–22.93)</td>
<td>0.495</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acid Reflux Score</td>
<td>13.50 (5–23)</td>
<td>15 (2–23)</td>
<td>15 (2–23)</td>
<td>0.020</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reflux Score</td>
<td>7 (7–7)</td>
<td>19 (3–35)</td>
<td>17 (3–35)</td>
<td>&lt;0.001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMI</td>
<td>22.43 ± 3.43</td>
<td>23.79 ± 3.60</td>
<td>23.39 ± 3.69</td>
<td>&lt;0.002</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Circumference</td>
<td>74.63 ± 6.52</td>
<td>79.49 ± 6.50</td>
<td>78.38 ± 6.50</td>
<td>&lt;0.001</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Conclusion: The frequency and severity of gastroesophageal reflux symptoms in the non-obese is closely related with body fat composition as those in the obese. Increase in abdominal and visceral fat composition may cause high risk of gastroesophageal reflux disease in individuals irrespective of their obesity.

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

Mann Whitney U Test: Monte Carlo • Min.:Minimum - Max.:Maximum
P1195 PROXIMAL ESOPHAGEAL BASELINE IMPEDANCE LEVELS ARE ABLE TO DISCRIMINATE BETWEEN SCLEDOERMA PATIENTS WITH AND WITHOUT ESOPHAGEAL INVOLVEMENT

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Introduction: Esophageal baseline impedance (BI) levels have been recently proposed as a marker of mucosal integrity. Indeed, patients with non-erosive reflux disease (NERD) showed lower distal esophageal BI levels compared to healthy controls (HCs) due to the presence of abnormal distal esophageal acid exposure time (AET). On the other hand, 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 esophagitis (i.e. hypotensive esophageal-gastric junction pressure and absent 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). Therefore, 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 (PG I) and G-17 after the 6–8 weeks of PPI therapy in comparison with the baseline levels, were higher in first group than in the second one (first group: baseline PG I 98 mg/L, G-17 6.3 pmol/L; p: ns). The good response to full dose of PPI, assessed by an increase of both PG I and G-17, seems to be the pathophysiological background to explain the prognostic value of such markers.

Conclusion: Gastrin-17 and pepticinogen I increase after full-dose of PPI in GERD acute phase seems to be a simple non-invasive marker to predict early GERD relapse in one-year follow-up.

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

P1196 GASTRIN-17 AS A NON-INVASIVE MARKER OF EARLY GERD RELAPSE: A PROSPECTIVE ONE-YEAR STUDY

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Introduction: Gastroesophageal reflux disease (GERD), is characterized by frequent relapses after withdrawal of therapy and no prognostic markers of relapse are available to predict the outcome of the patients. Gastrin-17 (G-17) has been proposed as a non-invasive marker of reflux disease as well as a good marker of response to the therapy. Pepsinogen I (PG I) and Gastrin-17 (G-17) are claimed to increase in a statistically significant manner after proton pump inhibitors (PPIs) therapy. Aim of the study was to assess the prognostic value of G-17 during endoscopy in order to assess the presence of esophageal mucosal lesions. Further, a group of healthy subjects was used as controls (HCs). Therefore, 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 (PG I) and G-17 after the 6–8 weeks of PPI therapy in comparison with the baseline levels, were higher in first group than in the second one (first group: baseline PG I 98 mg/L, G-17 6.3 pmol/L; p: ns). The good response to full dose of PPI, assessed by an increase of both PG I and G-17, seems to be the pathophysiological background to explain the prognostic value of such markers.

Conclusion: Gastrin-17 and pepticinogen I increase after full-dose of PPI in GERD acute phase seems to be a simple non-invasive marker to predict early GERD relapse in one-year follow-up.

Disclosure of Interest: All authors have declared no conflicts of interest.
channel of the scope. Distal two rings were contacted to the distal and proximal parts of GERD symptoms approximately 20–26 cm from GFR. MMS Omega ambulatory recorder and Greenfield (6 imp, 1 pH) impedance catheter were used.

Results: MI can differentiate ERD from non-erosive groups but do not have a diagnostic value to discriminate NERD from FH-EH or controls. However, BI 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 esophagus (proximal endoscopic)</th>
<th>Mucosal impedance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control (n = 15)</td>
<td>3190 ± 515</td>
<td>2673 ± 547#</td>
<td>2673 ± 547#</td>
</tr>
<tr>
<td>FH and EH (n = 17)</td>
<td>3350 ± 880</td>
<td>2654 ± 721#</td>
<td>2654 ± 721#</td>
</tr>
<tr>
<td>NERD (n = 26)</td>
<td>3407 ± 1074</td>
<td>2423 ± 852#</td>
<td>2423 ± 852#</td>
</tr>
<tr>
<td>ERD A-B (n = 31)</td>
<td>3096 ± 928</td>
<td>1538 ± 646*</td>
<td>1538 ± 646*</td>
</tr>
<tr>
<td>ERD C-D (n = 11)</td>
<td>3236 ± 1653</td>
<td>1355 ± 672*</td>
<td>1355 ± 672*</td>
</tr>
</tbody>
</table>

Conclusion: 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 this 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 REFLUX SYMPTOMS M. Carabotti1, G. Esposito1, E. Lahrer2, E. Plozzii, G. Galli1, G. Ranazzi1, E. Di Giulio,1 B. Annibale2
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Introduction: Atrophic body gastritis (ABG) is characterized by loss of oxyntic glands with consequent reduced acid secretion, hypergastrinaemia 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 gasophageal reflux (GER) symptoms have been reported and in one third of them (mostly non acidic) reflux has been documented at pH-monitoring. At this stage, regarding esophageal 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 ABG patients [80% female; median age 60 yrs (27-81)]; BMI 25.7±kg/m2[18.2-33]; fasting gastrinemia 329 pg/ml (215-1476); pepsinogen I 10 ng/l (0–44); positive Ab against parietal cells were included gastroscopy for malignancy surveillance irrespectively to gastrointestinal (GI) symptoms, were included. The presence of GER typical symptoms (heartburn and regurgitation), atypical (cough, no cardiac chest pain and dysphagia) and dyspepsia (postprandial distress syndrome (PDS) and epigastric pain syndrome (EPS)) was assessed by a standardized questionnaire. Hiatral hernia and erosive esophagitis were evaluated. Biopsies from distal esophagus (at least 2) and gastric mucosa (at least 5) were collected. Histopathological evaluation, performed by experienced pathologist who was not aware of the symptoms and clinical data collected: i) histology of intercellular spaces (DIS); ii) basal cell layer hyperplasia; iii) intraepithelial eosinophils; iv) neutrophils and iv) mononuclear cells. Gastric biopsies were evaluated according to updated Sydney System. Moderate-severe body gastric atrophy was confirmed in all patients. No patients with anti-secretory drugs.

Results: 74.3% (36/35) of ABG patients complained at least one GI symptom: 45.7% (16/35) reported GER symptoms [typical (2/14), atypical (9/14) and both typical and atypical symptoms (5/14), 48.6% (17/35) PDS and 11.4% (4/35) EPS dyspepsia. One GER patient had erosive esophagitis (LA-C according to Los Angeles classification) with concomitant hiatal hernia and another one presented a short tongue of columnar lined mucosa at distal esophagus with an area of intestinal metaplasia (Barrett’s esophagus, C2M2 according to Prague Consensus). Among ABG symptomatic patients, 34.6% (9/26) presented GER-related microscopic esophagitis, whereas the remaining symptomatic patients were free of microscopic esophagitis. Esophageal findings, both endoscopic and microscopic esophagitis, were exclusively present in symptomatic ABG patients (Fisher-t: p = 0.00027). Evaluating only autoimmune gastritis patients (n = 26), the occurrence of esophageal findings was not related to the presence symptoms (Fisher-t: p = 0.1915).

Conclusion: A third of ABG symptomatic patients, investigated by specific questionnaire and endoscopic-histopathologic findings of esophageal mucosa ranging from GER-related microscopic esophagitis to Barrett’s esophagus. These findings show that, even in hypochlorhydric patients, esophageal mucosal damage may occur, suggesting the opportunity to accurately investigate esophagogastroduodenitis in ABG symptomatic patients.
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 empiri- cal treatment with PPIs. Responder were defined as having heartburn/regurgita- tion 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 demo- graphics, diagnosis, prescribed PPI regimens, GERD-Q score and symptom frequen- cy were recorded. Data were collected at baseline, weeks 2 and 4 after initiating PPI treatment. Results from the full analysis set (FAS) are presented.

Results: A total of 1,000 patients from 10 centers were screened for this study, of which 987 met the inclusion criteria and were included in the FAS. The mean age was 45.2 ± 11.6 years, the mean body mass index was 23.4 ± 3.3 kg/m², and 50.3% of the patients were male. The mean duration of GERD was 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 1 dose of PPI was 99.5%. Esomeprazole was the most frequently received PPI (57.1% of patients). Other PPIs (rabeprazole, lanzoprazole, pantio- prazole and omeprazole) were received by 50.1% of patients and 7.2% of the patients sequentially received ≥2 PPIs in the duration of the study. A total of 787 (79.7%) patients either completed the 4-week PPI treatment or withdrew after response, of which the responder rate was 74.0% [95% CI, 70.7%– 77.0%] (Table 1). Among the 818 patients who completed 2 weeks’ treatment, the responder rate was 37.0% [95% CI, 33.5%–60.4%]. The overall median time to response, inclusive of the responder group (95% CI: 12–15) was consistent in all studies. Pre-implantation pulsed LESp stimulation was, in general, and despite the increase in 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>Esomeprazole</th>
<th>Other PPIs</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-week responder rate, % [95% CI]</td>
<td>75.2 (342/455)</td>
<td>72.3 (240/332)</td>
<td>74.0 (582/787)</td>
</tr>
</tbody>
</table>

[1] Responder rate = number of responders/number of patients who completed the treatment or withdrew after response (in days).

Conclusion: In Chinese clinical practice, short-term PPI empirical treatment effect- ively 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

P1201 WIRELESS ELECTRICAL STIMULATION FOR MANAGING GASTROESOPHAGEAL REFLUX DISEASE IN THE RABBIT MODEL
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Introduction: Electrical stimulation of lower esophageal sphincter (LES) has been applied to augment pressure (LESp) of gastroesophageal reflux disease (GERD). EndostimTM-like active appliance was efficient but approved to increase LESp pressure (LESp) and commercially treat gastroesophageal reflux disease (GERD). Electric stimulation represents a prospective approach for treating GERD in clinics. This novel wireless LESp stimulation system was also safe and effective for treating GERD rabbits. After implantation, its passive medical replacement can benefit patients and keep the long-term efficacy for clinical GERD management.

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

Conclusion: Electric stimulation represents a prospective approach for treating GERD in clinics. This novel wireless LESp stimulation system was also safe and effective for treating GERD rabbits. After implantation, its passive medical replacement can benefit patients and keep the long-term efficacy for clinical GERD management.

P1202 SYSTEMATIC REVIEW AND META-ANALYSIS OF OUTCOMES AFTER LAPAROSCOPIC ANTI-REFLUX SURGERY RELATED TO OBESITY
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Introduction: Laparoscopic Anti-Reflux Surgery (LARS) is an established alterna- tive treatment to pharmacological therapy for patients with Gastro Oesophageal Reflux Disease (GORD), yet its safety and efficacy in obese patients is controversial. A systematic review and meta-analysis was performed to com- pare LARS related to obesity.

Aims & Methods: The primary outcome measure was the relative incidence of recurrent reflux related to BMI. Secondary outcomes were relative incidence rates in the form of endoscopic dilatation or surgery, conversion to open surgery, and early return to theatre. Embase, MEDLINE and the Cochrane Library (January 1970 to November 2016) were searched for studies reporting clinical outcomes of LARS in patient cohorts stratified by Body Mass Index (BMI). Data was grouped according to BMI, <30 kg/m² (non-obese) and ≥30 kg/m² (obese).

Results: Eleven eligible observational studies comparing LARS in non-obese (n = 129) and obese (n = 162) patients were included. The relative incidence of reflux was significantly lower in the non-obese cohort (OR 0.34, 95% CI 0.19 to 0.60, p = 0.001), however no significant differences were observed in rates of operative morbidity (OR 0.87, 0.65 to 1.18, p = 0.38), redo surgery (OR 1.08, 0.68 to 1.72, p = 0.73), endoscopic dilatation (OR 1.06, 0.49 to 2.33, p = 0.88), conversion to open surgery (OR 1.17, 0.55 to 2.48, p = 0.68), or early return to theatre (OR 0.77, 0.44 to 1.37, p = 0.38).

Conclusion: LARS can be performed safely in obese patients, but risks higher operative morbidity. Clinicians caring for patients with obesity should be aware that obesity may adversely affect LARS outcome and careful consideration be given in the consent process inherent within the optimal management of GORD.

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

P1203 GASTROESOPHAGEAL REFLUX DISEASE REFRACTORY TO PROTON PUMP INHIBITOR THERAPY. INCOMPLETE ACID INHIBITION OR DIAGNOSTIC ERROR?
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Introduction: The use of PPIs represents the main treatment in gastroesophageal reflux disease (GERD), having demonstrated its effectiveness both in the control of inflammation and symptomatology. However, between 10–20% of patients present persistent symptoms or lesions despite the treatment.

Aims & Methods: The aim of the study was to assess the presence of acid reflux in patients submitted to our department with the diagnosis of refractory GERD, due to low or no response to PPIs. This was a retrospective study including 190 patients (55 men, 135 women) referred to our service with the diagnosis of GERD from January 2008 to December 2015. Based on the diagnostic criteria, two groups were made: Group 1: included 63 patients (33.2%) diagnosed of GERD due to typical symptomatology and at least one positive complementary study (pHmetry or endoscopy). All of them underwent a 24-H pHmetry study with a dual channel, esophageal and gastric, on-PPI treatment. In 17 patients the pHmetry was completed with multichannel intraluminal impedance (15 cases) or Bilitec (2 cases). Group 2: included 127 patients (66.8%) who had been diagnosed of GERD only on the basis of typical symptoms; all of them underwent esophageal double channel 24-H pHmetry off-PPI. All of the studies (24-hour pHmonitoring or multichannel intraluminal impedance-pH studies) (MARK III, Delta and Digitrapher pH-Z, Synectics, Gyen, Medtronic) were performed according to standard technique.

Results: Pathological reflux was present in 91 patients (47.9%), 24 from group 1 and 67 from group 2. Pathological acid reflux was therefore ruled out as a cause of symptoms in 52.1% of all cases studied: 60 patients (47.2%) from group 2, and 33 from group 1. In addition, out of the 24 patients with pathological reflux in group 1 (true refractory patients), 9 had an incomplete response, with a percentage of time with pH < 4 less than 7.5% (mild reflux), which probably was not the cause of the symptomatology.

Conclusion: Proton pump inhibitors (PPIs) are the drugs of choice in the treat- ment of GERD. However, its efficacy may be compromised for a variety of reasons including: non-compliance, bioavailability, episodes of nocturnal acid break-through, poor gastric emptying, etc. In most of the patients referred for implantation or stimulation-related adverse effects were reported in the two- month follow-up.

Conclusion: Electric stimulation represents a prospective approach for treating GERD in clinics. This novel wireless LESp stimulation system was also safe and effective for treating GERD rabbits. After implantation, its passive medical replacement can benefit patients and keep the long-term efficacy for clinical GERD management.
studying with the diagnosis of refractory reflux to PPIs, this diagnosis had only been based on GERD-compatible symptoms. When 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 pathological reflux). More than half of the patients (61.9%) who have a diagnosis of GERD confirmed by complementary tests that do not respond to treatment with PPIs, acid reflux is not the cause of their symptoms.

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

**P1204 LOW-FODMAP DIET RESULTED EFFECTIVE IN REDUCING SYMPTOM PERCEPTION IN PATIENTS WITH FUNCTIONAL HEARTBURN**

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2Department Of Surgery, Oncology And Gastroenterology, University of Padua, Padua/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 endoscopy 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, volup-tuary habits and response to proton pump inhibitor (PPI) treatment were recorded. By means of MII-pH we splitted patients in two populations: NERD group (abnormal esophageal acid exposure or number of refluxes) and FH group (correlation and no heartburn relief during PPI treatment). All enrolled patients were evaluated with validated questionnaires (Likert and VAS) to evaluate heartburn occurrence pre- and post a nutritional approach with low-FODMAP diet for 6 weeks.

Results: We included 31 patients (20 female; mean age 49.1 yrs; mean BMI 24.4) into the study. NERD group was composed of 13 patients (6 female; mean age 48.7 yrs; mean BMI 25.7). FH group was composed by 18 patients (11 female; mean age 50.9 yrs; mean BMI 23.9). All patients showed symptom improvement regarding bloating, abdominal pain and stools composition (p < 0.001) after low-FODMAP diet (see Table 1). Moreover, we observed a very important improvement of heartburn in the FH group (from 8.4 ± 2.5 to 2.3 ± 1.3; p < 0.001 on VAS scale) compared to the NERD group (7.2 ± 2.2 a 6.9 ± 1.9; p = 0.624 on VAS).

Table 1: abdominal symptoms perception pre- and post- low-FODMAP diet in NERD and FH groups

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Pre-diet</th>
<th>Post-diet</th>
<th>P value</th>
<th>Pre-diet</th>
<th>Post-diet</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abdominal pain</td>
<td>3.6 ± 1.8</td>
<td>2.7 ± 0.9</td>
<td>0.041*</td>
<td>5.8 ± 2.1</td>
<td>1.7 ± 1.3</td>
<td>0.0001*</td>
</tr>
<tr>
<td>Bloating</td>
<td>4.3 ± 2.0</td>
<td>3.1 ± 1.7</td>
<td>0.187</td>
<td>6.3 ± 1.5</td>
<td>2.1 ± 0.9</td>
<td>0.0001*</td>
</tr>
<tr>
<td>Wind</td>
<td>4.9 ± 2.3</td>
<td>3.3 ± 1.7</td>
<td>0.055</td>
<td>6.1 ± 1.9</td>
<td>2.2 ± 1.15</td>
<td>0.0001*</td>
</tr>
<tr>
<td>BSC (type 3–5)</td>
<td>3/13</td>
<td>7/13</td>
<td>0.226</td>
<td>2/18</td>
<td>13/18</td>
<td>0.005*</td>
</tr>
</tbody>
</table>

Legend: BSC = Bristol Stool Classification; *=statistically significant (p < 0.05)

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.

**P1206 SINGLE SESSION FOCAL CRYOBALLOON ABLATION THERAPY IS SAFE AND EFFECTIVE IN THE TREATMENT OF DYSPLASTIC 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 Focal CryoBallon Ablation system (FCBA; C2 Therapeutics, Incorporated, Westwood, MA) is an 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. FCBA comprises a handheld, through-the-scope system with a deformable balloon that is simultaneously inflated and cooled using nitrous oxide, resulting in ice patches of approximately 2cm2 on the targeted mucosa. Previous studies applying FCBA to limited areas of BE (1 to 2 small BE islands per patient) have shown promising results. Data on

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

Table 1: Stage distribution of neoplastic progression between males and females

<table>
<thead>
<tr>
<th>Stage</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>40</td>
<td>5</td>
<td>45</td>
</tr>
<tr>
<td>1</td>
<td>8.5%</td>
<td>33%</td>
<td>42.5%</td>
</tr>
<tr>
<td>2</td>
<td>6.4%</td>
<td>13%</td>
<td>19.4%</td>
</tr>
<tr>
<td>3</td>
<td>56%</td>
<td>3%</td>
<td>28.6%</td>
</tr>
<tr>
<td>4</td>
<td>47%</td>
<td>9%</td>
<td>56%</td>
</tr>
</tbody>
</table>

Stage 0: Normal Barrett’s Esophagus; Stage 1: Low-grade dysplasia (LG); Stage 2: High-grade dysplasia (HG); Stage 3: Adenocarcinoma in situ (AIS); Stage 4: Adenocarcinoma (A).
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. 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 7CM2 (IQR 4–10) and 1 (IQR 0–2) days for RFA. The maximum median VAS score at all times was 2 (IQR 0–4) after FCBA and 4 (IQR 3–5) after RFA. 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.

Conclusion: Our multicenter, prospective trial shows that a single treatment with CryoBalloon ablation is safe, well-tolerated and effective for eradication of dysplastic BE.

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

Table 1: Baseline characteristics and maximum pain scores after RFA (p < 0.01). FCBA patients used analgesics during median 1 (IQR 1–1) days, compared to 4 (IQR 1–11) days for RFA patients (p < 0.01).

<table>
<thead>
<tr>
<th>FCBA (N = 20)</th>
<th>RFA (N = 35)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1A. Baseline characteristics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male, gender, n (%)</td>
<td>17 (85%)</td>
<td>29 (83%)</td>
</tr>
<tr>
<td>Age, mean (SD) years</td>
<td>65 (±8)</td>
<td>66 (±8)</td>
</tr>
<tr>
<td>Worst diagnosis prior to FCBA</td>
<td>LGD, n</td>
<td>10 (50%)</td>
</tr>
<tr>
<td>Prior treatment</td>
<td>ER, n</td>
<td>10 (50%)</td>
</tr>
<tr>
<td></td>
<td>CRIM, n</td>
<td>10 (50%)</td>
</tr>
<tr>
<td>1B. Maximum pain scores on day 1 to 14 post treatment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum VAS, median (IQR)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Day 1</td>
<td>2 (0–4)</td>
<td>3 (1–7)</td>
</tr>
<tr>
<td>Day 2</td>
<td>1 (0–4)</td>
<td>3 (1–6)</td>
</tr>
<tr>
<td>Day 3</td>
<td>1 (0–3)</td>
<td>3 (1–4)</td>
</tr>
<tr>
<td>Day 4</td>
<td>1 (0–2)</td>
<td>2 (1–4)</td>
</tr>
<tr>
<td>Day 5</td>
<td>0 (0–2)</td>
<td>2 (1–5)</td>
</tr>
<tr>
<td>Day 6</td>
<td>0 (0–1)</td>
<td>2 (1–5)</td>
</tr>
<tr>
<td>Days 7 to 9</td>
<td>0 (0–1)</td>
<td>2 (0–4)</td>
</tr>
<tr>
<td>Days 10 to 14</td>
<td>0 (0–0)</td>
<td>1 (0–2/3)</td>
</tr>
</tbody>
</table>

Conclusion: In this multicenter, non-randomized, open prospective cohort study, patients reported less post-procedural pain and dysphagia after FCBA as compared to RFA and, moreover, FCBA patients used less analgesics. Although a randomized trial should provide definitive evidence for differences in post-procedural tolerability, our results strongly suggest a significantly different post-procedural course, thus favoring FCBA over RFA.

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

P1208 COMPARATIVE OUTCOMES OF RADIOFREQUENCY ABLATION FOR BARRETT’S OESOPHAGUS WITH DIFFERENT BASELINE HISTOLOGY

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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, cryoablation 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. They link cryoablation endpoints like pain may play a determining role in selecting the best treatment modality. In contrast to heat-based ablation, FCBA preserves the extracellular matrix which might be associated with less pain while maintaining sufficient depth of ablation. In this study, we aimed to compare post-procedural pain between focal RFA and FCBA.

Aims & Methods: Between January 2016 and March 2017 all patients undergoing focal ablation therapy of BE, either with RFA or FCBA performed in two tertiary referral centers in the Netherlands, were approached to complete a digital diary. A short questionnaire was daily sent to patients for 14 days post-treatment, to assess (1) odynophagia, (2) chest pain in rest (both were assessed usingVAS 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: COM2, RFA: COM1, 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.
CD4+ AND CD8+ LYMPHOCYTE RATE AND PDL-1 LEUKOCYTE EXPRESSION ARE PREDICTIVE OF CLINICAL COMPLETE RESPONSE AFTER NEOADJUVANT CHEMORADIOLOGY FOR SQUAMOUS CELL CANCER OF THE THORACIC OESOPHAGUS

M. Giovannini1, M. Barthet1

Outcome details were retrieved and clinical CR and recurrence/relapse rate was immunohistochemistry for PD1, PDL1, CD80, CD4 and CD8 was performed. Samples taken at diagnosis available in our Pathology Unit archive.

Patients had neoadjuvant CTRT for locally advanced SCC and having had histological confirmation of SCC of the thoracic oesophagus who underwent to neoadjuvant CT-RT were included in this study. Patients were included in the study if they had neoadjuvant CTRT before esophagectomy, 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.

The discordance rate between initial diagnosis of HGD on BS and final results on EMR specimen is high, around 47%. Intra and inter observer concordance was 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. This could have a direct impact on the management of BE.

References


P1210 CD4+ AND CD8+ LYMPHOCYTE RATE AND PDL-1 LEUKOCYTE EXPRESSION ARE PREDICTIVE OF CLINICAL COMPLETE RESPONSE AFTER NEOADJUVANT CHEMORADIOLOGY FOR SQUAMOUS CELL CANCER OF THE THORACIC OESOPHAGUS

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References


P1211 IDENTIFICATION OF THREE DISTINCT BIOLOGICAL SUBTYPES IN ESOPHAGEAL AND JUNCTIONAL ADENOCARCINOMA BY RNA SEQUENCING

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Introduction: Esophageal adenocarcinoma (EAC) is a highly aggressive malignancy with poor prognosis. Advances in therapy have achieved incremental improvements in overall outcome in EAC, but over- and undertreatment of undefined subgroups of patients might undermine these benefits (Courrech Staal et al. 2010). The biological diversity of EAC complicates patient selection and treatment stratification and impedes the development of new targeted agents. Further insight into the heterogeneous molecular pathology of EAC and a possible relation to outcomes and response to current treatment strategies is urgent.

Aims & Methods: We included ~75 patients with EAC and junctional adenocarcinoma (JAC) and performed a genome-wide gene expression analysis using Illumina sequencing technology. Count files were obtained, which served as input into the R language and environment for statistical computing for further analyses.

We performed unsupervised hierarchical clustering of the tumor RNA profiles to identify distinct subtypes. The histological diagnosis of HGD was recommended in 4 cases (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 already in 12% of 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 0.4, and ranged between 0 and 0.6 for the EMR specimen. The inter-observer 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 histological diagnosis of HGD between experts was 0.5 for biopsies and between 0 and 0.6 for the EMR specimen. The kappa coefficient regarding the diagnosis of HGD between BS and EMR was ranged between 0 and 0.6.

Conclusion: The discordance rate between initial diagnosis of HGD on BS and final results on EMR specimen is 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. This could have a direct impact on the management of BE.

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 predictor for both overall survival time and disease-free survival. In addition, overexpression of TRPM2-AS could promote the proliferation and inhibit the apoptosis of ESCC cells, while knockdown of TRPM2-AS has a reverse function. Furthermore, downregulation of TRPM2-AS enhanced the expression of p53 in ESCC cells.

Conclusion: This study suggested that long non-coding RNA TRPM2-AS could be a potential oncogene of ESCCC. TRPM2-AS expression might serve as another potential therapeutic target and prognostic biomarker. In addition, our study demonstrates that TRPM2-AS contributes a lot to inhibiting apoptosis of ESCC by regulating the expressions of p53 in vitro, which may be a potential oncogene and therapeutic target for ESCC.

Disclosure of Interest: All authors have declared no conflicts of interest.
increased apoptosis of OACMi5.1C cells whereas did not affect apoptosis of QCMi3 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 to assess the feasibility 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 a main adverse event. Esophageal perforation causes mediastinal emphysema, mediastinitis, and pneumothorax, those sometimes require emergency surgery.

Aims & Methods: We evaluated the predictive factors for esophageal perforation in patients who received esophageal ESD. This was a retrospective observational study in a single institution. Between May 2004 and March 2016, 549 consecutive patients who underwent ESD were followed up in the ESD Database at Kitasato University Hospital. ESD was performed under local anesthesia or sedation. The primary outcome was determination of the predictive factors for esophageal perforation in patients who received esophageal ESD. The secondary outcome was clinical outcomes. Perforation was defined as a hole in the esophageal wall exposing the mediastinal cavity. Logistic regression multivariate regression analysis with penalized 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. Watanabefaculty member of a course sponsored by EA pharma Co., Ltd. Y. Fujisawa: Faculty member of a course sponsored by EA pharma Co., Ltd. Research grants from Ono.

All other authors have declared no conflicts of interest.

Reference


P1217 SAFETY AND EFFICACY OF CHEMORADIOThERAPY AFTER ENDOSCOPIC RESECTION IN PATIENTS WITH SUPERFICIAL ESOPHAGEAL SQUAMOUS-CELL CARCINOMA

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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 pathological T1b (muscularis mucosae) and T1b/a tumor invading the submucosa to a depth of 200 μm or less). In accordance with the guidelines, we have actively performed endoscopic resection for esophageal squamous-cell carcinoma (SCC). Evidence of submucosal or lymphovascular invasion on histopathological examination of the resected specimens was considered to indicate non-curative resection, chemoradiotherapy (CRT) was additionally administered, taking into account the risk of lymph-node metastasis. In principle, CRT comprised 2 courses of cisplatin plus 5-fluorouracil. Patients who were 76 years or older or who had mild renal dysfunction received 2 courses of nedaplatin plus 5-fluorouracil. The radiation dose was 50.4 GY in patients who had a tumor-positive vertical margin and 44.4 Gy in those who had a tumor-negative vertical margin. The field of radiation was determined according to the recommendations of the Japan Clinical Oncology Group Study (JCOG0508/UMIN-CTR: identification number: UMIN00000058).

Aims & Methods: We retrospectively studied patients who underwent endoscopic resection in our hospital to evaluate the clinical utility of additional CRT in patients who had evidence of submucosal or lymphovascular invasion on histopathological examination of the endoscopically resected specimens. Among 364 patients with ESCC (425 lesions) who underwent endoscopic resection from January 2000 through July 2015, a total of 93 patients (93 lesions) had a histopathological diagnosis with submucosal or lymphovascular invasion. Among these 93 patients, 41 received additional CRT (CRT group), and 52 were followed without CRT (follow-up group). CRT comprised cisplatin and nedaplatin or 5-fluorouracil and radiotherapy in 2, docetaxel plus cisplatin, 5-fluorouracil, and radiation in 1, and radiation alone in 1.

Results: The median age was 68 years (53 to 79) in the CRT group and 72 (59 to 89) in the follow-up group (p = 0.03). The median tumor diameter was 22 mm (6 to 55) in the CRT group and 25 (3 to 47) in the follow-up group (p = 0.63). The tumor invades the MM in 9 patients, the SM1 in 3, and the submucosa to a depth more than 200 μm (SM2) in 29 in the CRT group and the LPM in 3 patients, the MM in 16, the SM1 in 18, and the SM2 in 15 in the follow-up group (p = 0.91). Lymphatic invasion was positive in 21 patients in the CRT group and 12 in the follow-up group (p < 0.01). Vascular invasion was positive in 27 patients in the CRT group and 29 in the follow-up group (p = 0.32). Invasion of the submucosa to the vertical margin was found in 7 in the CRT group and 9 in the follow-up group (p = 0.97). CRT-related grade 3 or 4 early adverse events were leukopenia 24.3% (10 patients), neutropenia 29.3% (12), febrile neutropenia 4.9% (2), diarrhoea 2.4% (1), anorexia 17.0% (7). In the CRT group, 38 of 40 patients received chemotherapy as scheduled. Treatment was discontinued in the second course in 2 patients, and 7 required dose reduction. Lymph-node metastasis were found in 2 patients in the CRT group and 7 in the follow-up group (p = 0.15). In 2 patients with recurrence in the CRT group, lymph-node metastases were seen in the irradiated field 46 and 49 months after treatment, respectively. 1 patient in the CRT group and 3 in the follow-up group died of esophageal cancer (p = 0.43). The overall survival (OS) rate at 2 years was 97.4% in the CRT group and 93.8% in the follow-up group (p = 0.02). The disease-free survival (DFS) and relapse-free survival (RFS) rate at 2 years was 97.1% in the CRT group and 83.4% in the follow-up group (p = 0.02).

Conclusion: Additional CRT after endoscopic resection in patients with esophogeal 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

found in 100% (35/35) of patients with curative resection at median follow-up of 22 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 block 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 curative 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 CT1 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 the 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 in the Gray-Equal-Value (GEV). 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, endoscopic 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 those with stage II, III, and IV were 16 (36%), 2 (5%), and 3 (7%), respectively. 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 those with stage II, III, and IV were 16 (36%), 2 (5%), and 3 (7%), respectively. All patients underwent concurrent systemic chemotherapy. 45 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 to CR (primary site) was 85 days (range, 70–554 days) and 6 months or longer period was required to confirm CR due to the remaining PBT induced erosion or ulceration in 7 patients (15%). One patient whose primary site did not reach to CR showed prolonged ulceration for 385 days. On 43 patients (98%) developed local recurrence and/or regional lymph node recurrence or distant metastasis, and the median time to local recurrence from CR was 257 days (range, 111–722 days). The endoscopic finding of local recurrence was resembling submucosal tumors (SMT) in 3 and flat lesion in other 3 tumors. All 6 patients with local recurrence were indicated for endoscopic treatment (ER; PDT; 2). No complications, such as major bleeding or perforation, were observed. And, 6 patients (100%) were alive without any recurrence at the median follow up period of 11 months (range, 1–32 months).

Conclusion: Longer period was required to confirm CR after PBT with chemotherapy in some cases comparing with the historical reports of that of conventional CRT. Careful closed endoscopy follow-up according to the way of conventional CRT enabled early detection of local recurrence and preferable local control with salvage endoscopic treatment.

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

References

P1220 CLINICAL OUTCOMES OF ENDOSCOPIC SUBMUCOSAL DISSECTION FOR SUPERFICIAL ESOPHAGEAL NEOPLASMS OF PATIENTS WITH HEAD AND NECK CANCER

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Introduction: Surveillance programs of gastrointestinal endoscopy for detection of a second primary cancer in patients with head and neck squamous cell carcinoma (HNSCC) are very important since it can detect synchronous or metachronous esophageal squamous cell carcinoma (ESCC) in up to 15%–25%. The detection of ESCC in an early phase has paramount importance, since superficial lesions are amenable to endoscopic submucosal dissection (ESD) 2.

Aims & Methods: The aim of this study was to investigate the clinical outcomes of ESD for superficial esophageal neoplasms (SEN) of HNSCC patients in an oncology tertiary center. From 2010 to 2016, 3290 endoscopies were performed in patients with HNSCC and in 1887 chromoscopy with Lugol and NBI were performed. A total of 26 SENs, submitted to ESD, in 25 patients were retrospectively analyzed.

Results: The median tumor size was 4.37 cm (±1.83). The en bloc resection were 100% and free margin (R0) were 92.3%. The two patients with positive margins had a depressed component in endoscopic evaluation. Recurrence occurred in 1 (4.0%) of them and one of these cases was successfully treated. The circumferential extension, number of patients & 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>
</tr>
</thead>
<tbody>
<tr>
<td>25–49%</td>
<td>1 (2.56%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>50–74%</td>
<td>14 (53.84%)</td>
<td>5 (35.71%)</td>
</tr>
<tr>
<td>75–99%</td>
<td>6 (23.07%)</td>
<td>2 (33.33%)</td>
</tr>
<tr>
<td>100%</td>
<td>5 (19.23%)</td>
<td>5 (100%)</td>
</tr>
<tr>
<td>75–100%</td>
<td>11 (42.30%)</td>
<td>7 (63.85%)</td>
</tr>
</tbody>
</table>

The circumference of the resection ≥75% was significantly associated with post-operative stricture (OR = 3.5; P < 0.05). The average number of endoscopic dilatations for resolution of stenosis was 9.16 (±7.62). No procedure-related mortality occurred. Follow-up data median was 11 months.

Conclusion: Endoscopic surveillance of HNSCC is very important for SENs of HNSCC. ESD and ESD of these lesions are feasible and safe with acceptable complication risks despite the high rates of stenosis in resections >75% of the circumference.

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

References
1. Zhang Y, Chen Q, Bao L et al (2016) 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 through-the-scope 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 capital equipment. Early studies for FCBA of Barrett’s esophagus have shown 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: In this ongoing multi-center prospective trial in China, patients with one flat type (Paris 0-IIb) unstained lesion (USL) on Lugol’s chromoscopy, <6 cm in length and <50% of circumference, with a confirmed diagnosis of Moderate or High Grade Intraepithelial Neoplasia (MGIN/HGIN) were
Aims & Methods: we investigated the clinical outcomes, and prevention of post-ESD stenosis. Required in such situation, thus causing health economic problem. In this study, of the circumference of the lumen. Frequent balloon dilatation via endoscopy is of superficial esophageal squamous cell carcinoma (SCC). However, esophageal 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 dilatation via endoscopy is required in such situation, thus causing health economic problem. In this study, we investigated the clinical outcomes, and prevention of post-ESD stenosis. Aims & Methods: A total of 667 cases in 516 consecutive patients were treated by ESD in our department from April 2006 to December 2016. We investigated the following 2 items. 1. Clinical outcomes and complications. 2. Usefulness of oral steroids administration, the local steroids injection, endoscopic transplantation of tissue-engineered autologous oral mucosal epithelial cell sheets, or oral steroid oral local injection combination therapy for the prevention of post-ESD stenosis. Results: 1. Clinical outcomes: End in bloc resection rate was 99.8% and end in bloc curative resection rate was 90.0%. The rate of perforation, post-ESD bleeding, and post-ESD stenosis was 0.2%, 0.8% and 6.1%, respectively. 2. Prevention of post-ESD stenosis: (1) Oral steroid vs Steroid injection vs Cell sheet transplantation: In oral steroid group, the stenosis rate was 14.9%, and the ulcer healing period was 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 esophagus, post history of chemo-radiation therapy or endoscopic resection) were the stenosis prevention treatment-resistance 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: Eophageal ESD achieved high en bloc resection rate and curability with low rates of complications. Oral steroid, steroid injection therapy and cell sheet transplantation may be effective treatment strategy for reducing post-ESD stenosis. However, the above-mentioned 4 factors are the stenosis prevention treatment-resistant factors in these 3 therapy cases. Furthermore, the cases which have more than 2 factors and complete circular cases were regarded as the stenosis prevention treatment-resistant cases. SH oral local injection combination therapy is very useful for prevention of post-ESD stenosis and has a potential for treatment-resistance factors.

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

Reference


P1223 DIAGNOSIS OF TUMORS IN THE CERVICAL AND UPPER THORACIC ESOPHAGUS: EFFICACY OF ENDOSCOPIC ULTRASONOGRAPHY USING A JELLY-FILLING METHOD WITH WATER-SOLUBLE LUBRICATING JELLY

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Introduction: Endoscopic ultrasound (EUS) is the standard modality for qualitative diagnosis of submucosal tumors (SMTs) and determining the depth of invasion of esophageal cancer. Standard EUS, however, comprises a continuous water-filling or water-filled balloon method, which creates some problems for further diagnostic maneuvers (e.g., difficulty filling the water balloon, poor image quality because of balloon compression). Aspiration of water is especially problematic during the diagnosis of lesions in the cervical or upper thoracic esophagus. To resolve such disadvantages, we recently reported a method that includes probe EUS with a jelly-filling technique (EUS-J) for diagnosing superficial esophageal squamous cell carcinoma (SCC). The procedure is characterized by filling the esophageal lumen with a water-soluble lubricating jelly (K-Y lubricating jelly; Johnson & Johnson, Tokyo, Japan) that is used for routine endoscopy and is harmless to humans. In the present study, we retrospectively evaluated the usefulness of EUS-J with water-soluble lubricating jelly for lesions located in the cervical and upper thoracic esophagus.

Aims & Methods: Patients with an esophageal SCC or SMT in the cervical or upper thoracic esophagus were included. EUS-J with water-soluble lubricating jelly was performed using a high-resolution probe. Before examination, several 5-mL syringes containing the Water Soluble Lubricating Jelly were prepared. With the patient under conscious sedation with midazolam, an endoscope (GF-2TQ260M, Olympus, Tokyo, Japan) was inserted into the targeted area in the esophagus. A 30- or 20-MHz miniature probe was then inserted through the left channel of the endoscope, and 40 mL of jelly was instilled through the rubber sheath until the esophageal lumen was filled.

Results: From December 2010 to March 2017, we used EUS-J to evaluate 61 patients with esophageal SCCs and 10 with SMTs in the cervical or upper thoracic esophagus. There were 10 lesions in the cervical esophagus and 61 in the thoracic esophagus. Of the 61 SCCs, 13 were resected by endoscopic chemoradiotherapy. The other 48 SCCs did not undergo chemoradiotherapy. Of these 61 patients with esophageal SCC, 60 lesions (98.3%) could be detected with EUS-J. 44 lesions treated either by endogastronomy (n = 7) or endoscopic resection (n = 37). Histologic diagnosis was T1a in 27 lesions, T1b in 17 lesions. In the overall accuracy of diagnosing invasion depth was 70.5% (31/44 lesions) by EUS-J. Among the 10 SMTs, we diagnosed seven leiomyomas derived from muscularis mucosa and one lesion due to vertebral body compression. The remaining two lesions were, respectively, a diminutive SMT (<3 mm) and a small lesion in the cervical esophagus adjacent to the hypopharynx. Neither was detectable using EUS-J because of their small size and difficulty with instrumental maneuvering. There were no adverse events during EUS-J, including aspiration pneumonia. EUS-J lubricating jelly is useful and safe for diagnosing lesions in the cervical or upper thoracic esophagus. To our knowledge, this is the first report of using EUS with lubricating jelly for lesions located in this anatomic region.

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

Reference


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Introduction: The patients with early gastric cancer (EGC) who have undergone non-curable endoscopic resection (ER) need additional surgery. Our previous study reported short-term data about 29 days were optimal time when consider the surgical and oncological safety. (Ann Surg Oncol. 2014 Jan;21(1):1232-9.) This study is long-term follow-up study to evaluate the impact of previously proposed optimal time interval from ER to additive surgery by on the surgical and oncological outcomes. Aims & Methods: A total of 2850 patients who were diagnosed with EGC underwent ER at the Severance and Gangnam Severance Hospitals, Seoul, Korea, between January 2007 and December 2014. We analyzed totally 302 (10.6%) patients who underwent additive gastrectomy after non-curable ER. The patients were divided into 2 groups according to the time interval point, as the earlier operation group (group A) and the later operation group (group B). The time interval point, at which operative time and estimated intraoperative blood loss (EBL) of the earlier operation group and the later operation group
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 operations after 29 days. Of the 302 patients, 133 were in Group A (≥29days) and 169 in Group B (>29days). There were more differences between two groups about ASA score, ER Specimen size, intra-op. transfusion, POD #1 Hemovac® discharge, Maximal postoperative CRP in the clinicopathological characteristics. Like previous 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.

Conclusion: Based on long-term follow-up data, surgery time after ER in EGC does not affect oncological outcome. These long-term follow-up results suggest that adding surgery at about 1 month after ER is optimal for better surgical outcomes without affecting the oncological outcomes.

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

Reference

P1225 THE POINT TO DISTINGUISH EARLY GASTRIC CANCER FROM DEPRESSION TYPE OF GASTRIC INTESTINAL METAPLASIA
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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 and “patchy redness” in the gastric mucosa. Even though most are intestinal metaplasia (IM), EGC is found among these lesions. A light blue crest (LBC) has been a highly accurate sign of the IM. There are, however, additional two endoscopic findings that should improve the accuracy of diagnosis of EGC. They are 1) “intrathelial microinvation (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. 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 endoscopes 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 know whether they 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 is 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)
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 Keimyung University Hospital. First Affiliated Hospital, School of Medicine, Zhejiang University, Hangzhou, China

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

References

P1228 COMPARISON OF ENDOSCOPIC SUBMUCOSAL DISSECTION AND SURGERY FOR THE TREATMENT OF EARLY GASTRIC CANCER: SINGLE-CENTER LONG-TERM OUTCOME STUDY

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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 outcome.

Aims & Methods: We performed a retrospective analysis of 1243 patients with stage I early gastric cancer without lymph node involvement. 551 patients were treated with ESD, and 692 patients were treated with subtotal or total gastrectomy. Long-term overall and disease-specific survival rates, development of new lesions, and complications were analyzed.

Results: The mean age was higher in the ESD group (64.9 ± 9.5 vs. 58 ± 11.7, P = 0.001) and female distribution was higher in surgery group (30.5% vs. 38.9%, P = 0.001). In ESD, 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% of ESD group and in 1.3% of surgery group (P < 0.001). ESD group showed less complications (4.5% vs. 16.3%, P < 0.001) and shorter hospital day than surgery group (5.27 days vs. 12.09 days, P < 0.001).

Conclusion: Although the development of new lesions were more frequent than surgery, ESD was similar overall survival rate and even higher disease-specific survival rate than surgery. Also, ESD has less complications and shorter hospital day than surgery. Therefore, ESD is an effective therapeutic method in early gastric cancer as well as surgery.

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

P1229 HEMATOLOGISTS SHOULD ORDER ENDOSCOPIC EXAMINATIONS TO EXPERTS OF ENDOSCOPY IN CASE OF GASTRIC CANCER: SINGLE-CENTER LONG-TERM OUTCOME STUDY

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Introduction: Gastric malignant lymphoma (ML) is most popular lymphoma of the gastrointestinal tract. Especially we often see gastric MALT lymphoma in case of H. pylori cases of the gastrointestinal tract. Especially we often see gastric MALT lymphoma in case of H. pylori infection. Gastric malignant lymphoma is most popular lymphoma of the gastrointestinal tract. Especially we often see gastric MALT lymphoma in case of H. pylori infection.

Aims & Methods: In this single center study, we investigated a total of 72 gastric MALT lymphoma cases in our hospital and other 7 hospitals. We estimated total number of endoscopic examinations to achieve diagnosis of gastric MALT lymphoma endoscopically and histologically. In addition, we had analyzed the difference of abilities to diagnose of gastric MALT lymphoma between experts and trainees on endoscopic examinations using past endoscopic profiles (245 profiles).

Results: The average number of endoscopic examinations up to diagnose gastric MALT 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 non-experts was 5.4 times. 5.4 times of endoscopic examination of experts 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 findings. Typical representative appearances of gastric MALT 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.

Conclusion: In single non-curable factor (REGATTA): a phase 3, randomised controlled trial.

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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 electrophilication and incision. Scissors-type knives are fairly easy to manipulate in colorectal ESD. We have fabricated SB knife Jr type (SBkJ), short scissors-type knife with outer insulated layer, in collaboration with SUMITOMO RAKELITE CO.

**Aims & Methods:** SBkJ is short length (electrode length: 3.5 mm) to be easy to handle in narrow colorectal lumen. The surface of the rotatable monopolar scissors is coated with insulating material in order to enhance the cutting power and prevent electric effects in the surrounding tissue. The shearing structure makes sharp cutting quality and very small round tips prevent to grasp the muscular layer. SBkJ was used in circumference incision, submucosal dissection and hemostasis. After infected hyaluronic acid in submucosal layer, grasped the tissue, confirming safety, make incision. SBkJ was used not only in incision but also in hemostasis. At sites containing blood vessels or bleeding, they were grasped and induced coagulation using SBkJ. It has been used on 180 colorectal lesions from January 2008.

**Results:** The circumference 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 substantially effective at the sites diffusion sites difficult to obtain the submucosa 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 SBkJ which is used cutting and coagulation.

**Conclusion:** This short insulated scissors-type knife (SBkJ) 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.

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**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 of EUS-FNA and MIAB and safety of those EUS-FNA and MIAB were compared.

**Results:** The location of the SET was esophagus (n = 6), stomach (n = 29), and duodenum (n = 2). The histological diagnosis were gastrointestinal stromal tumors (n = 10), leiomyoma (n = 17), aberrant pancreas (n = 3), poorly differentiated adenocarcinoma (n = 2), metastatic carcinoma (renal cell carcinoma, n = 1), and no-diagnosis (n = 4). There were significant differences in the clinical characteristics-including sex and age-of the patients in the EUS-FNA group and the MIAB group. In EUS-FNA, 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 rate 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). Histological diagnosis was made in 72.2% of the EUS-FNAs and 94.7% of the MIABs (p = 0.0089).

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

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**P1235 CLINICAL TRENDS AND BURDEN OF DEATH IN GASTRIC CANCER: A SIX-YEARS SURVEY**

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**Introduction:** 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 of EUS-FNA and MIAB and safety of those EUS-FNA and MIAB were compared.

**Results:** The location of the SET was esophagus (n = 6), stomach (n = 29), and duodenum (n = 2). The histological diagnosis were gastrointestinal stromal tumors (n = 10), leiomyoma (n = 17), aberrant pancreas (n = 3), poorly differentiated adenocarcinoma (n = 2), metastatic carcinoma (renal cell carcinoma, n = 1), and no-diagnosis (n = 4). There were significant differences in the clinical characteristics-including sex and age-of the patients in the EUS-FNA group and the MIAB group. In EUS-FNA, 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 rate 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). Histological diagnosis was made in 72.2% of the EUS-FNAs and 94.7% of the MIABs (p = 0.0089).

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

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**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 obese (BMI ≥25) by Asia-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 ± 3 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 = 0.003) in obese persons. The trend was significant to overweight (P = 0.001), but not significantly to underweight (P = 0.12).

**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.
Introduction: In 2012 the reported incidence of gastric cancer in both sexes was 13.2/100,000 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 and the use of non invasive diagnostics like serology (Pepsinogens and Gastrin 17) as suggested in the guidelines of Kyoto and Maastricht VI is up to now limited in clinical practice. Aim of the study, therefore was to establish the burden of gastric cancer in the diagnosis of the last six years, focusing on the detection of early gastric cancer.

Aims & Methods: Six years (from July 2010 to July 2016) were considered in search for diagnosis of gastric cancer as reported in the archives of the Pathology Department of Parma University. Overall, 816 cases of gastric cancer were found but we decided to consider only the surgically removed cases, therefore the available sample is based on 584 cases. For every cases we classified the cancer in early, following the Kodama classification, and advanced. The presence of atrophic gastritis nearby the neoplasia was assessed according with OLGA classification. 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 78.58, range 36–105ys) The diagnosis of early gastric cancer was made in 44% (75.5%) (M = 24, F = 20 mean age 75.68ys, range 47–95ys). 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 ones. The node status was also recorded. Early cancers showed a 25% of node metastasis compared with 84.65% in advanced ones. As regards the number of involved nodes, in early presentation of neoplasia we found 98% of pN1 staging whereas in advanced the pN1 cases were only 9.1%.

Concluded gastric cancer diagnosis is still confirmed as very 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

were significantly decreased in GC tissues comparing to adjacent normal tissues both in Chinese cohort (n = 48 pairs) and TCGA cohort (n = 450). CEB29L1 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 suggesting that CEB29L1 might function as a tumour suppressor. The functional interaction of CEB29L1 was then confirmed. Ectopic expression of CEB29L1 in three GC cell lines (AGS, BGC823, MKN45) suppressed tumor proliferation in vitro (p < 0.01) and colony formation assays (p < 0.001). CEB29L1 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 CEB29L1 in wound healing and gel invasion assays, respectively. Conversely, CEB29L1 knockdown in MKN28 demonstrated opposite effects. Orthotopic mouse model also showed inhibited tumorigenicity with CEB29L1-overexpressing BGC823 cells. Mechanically, RNAseq and gene set enrichment analysis (GSEA) revealed that AMPK and ERBB2/ERBB4 signaling were involved in the tumour suppressive role of CEB29L1 in GC. Consistent with our RNAseq data, anti-proliferative and AMPK activation were determined as the key upstream kinase; whilst ERK1/2 was the most strongly down-regulated in CEB29L1 over-expressing GC cells, suggesting that CEB29L1 up-regulates AMPK concomitant with down-regulation of ERBB2/ERBB4 signaling. Moreover, co-immunoprecipitation experiments confirmed the direct interaction between CEB29L1 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 CEB29L1, while a converse effect was observed in CEB29L1 silenced MKN28 cells. Administration of an AMPK activator, AICAR, inhibited growth of control cells but not CAB39L-expressing (thus AMPK activated) cells, suggesting that CAB39L might function as a tumour suppressor. The functional effect in GC. Ectopic expression of 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 a converse 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. Consistently, novel tumour suppressors silenced by reduced 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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References

Disclosure of Interest: All authors have declared no conflicts of interest.
P1241 RECOVERY OF GASTRIC FUNCTION IN CHRONIC ATROPHIC GASTROENTEROPATHY USING GASTROINTESTINAL pH MONITORING OVER A 3 YEARS STUDY
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Introduction: The relationship between Helicobacter pylori (H. pylori) eradication and atrophic changes is debated. Although some studies report a partial restoration of (pH) levels after eradication of H. pylori, it is not clear whether the finding reflects gastric mucosal healing. L-cysteine, reducing acetatedehyde production after food intake, has been proposed for prevention of gastric carcino genesis 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 ng/mL, were included in the gastrointestinal endoscopy with gastrin biopsies and PGI and G-17 measurement by means of Gastropanel®. 22 out of 62 patients had autoimmune gastritis while 40 of them reported previous H. pylori 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 G-17 were measured at baseline and after 3, 6, 12, 24, 36 months after starting therapy.

Results: The PGI serum increased level serum 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 it decreased 10.58, after 6 months 11.65, after 12 months 12.19, after 24 months 13.88, and after 36 months was 14.21 (p < 0.0001). The G-17 serum level resulted gradually decreased over the 36 months therapy, as it follows: G-17 mean value was 51.33 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 < 0.004).

Conclusion: After L-cysteine administration, patients with chronic, atrophic, body gastritis showed long-lasting improvements of physiological gastric pH function, reflected by a significant increase of PGI levels and a parallel decrease of G-17 serum levels over a 36 months follow-up period.

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

Reference

P1242 ANDROGEN RECEPTOR DIRECTLY REGULATES CELL CYCLE-RELATED KINASE TO PROMOTE GASTROCARCINOGENESIS
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Introduction: Signaling pathway mediated by androgen receptor (AR) plays an important role in the development of gender-related tumors, such as hepatocellular carcinoma, prostate cancer. Gastric cancer (GC) is the third cause of cancer death all over the world, and its incidence in male is also much higher than female. However, the molecular mechanisms of AR in gastric cancer are still poorly characterized.

Aims & Methods: To investigate the role of AR in gastric cancer, we identify the transcriptional downstream targets of AR by chromatin immunoprecipitation. We detected mRNA and protein expression level of AR and its target in paired GC samples by RT-PCR and western blot. The biological functions of AR signaling pathway in GC cell lines were determined by colony formation and cell migration/invasion assay.

Results: CCRK was demonstrated as the direct target of AR by chromatin immunoprecipitation. AR expression was elevated in most (6/7) GC cell lines compared with the immunized gastric cell line GES1. CCRK was up-regulated in all (7/7) tested GC cell lines. The correlation of AR and CCRK expression was statistically significant. Higher mRNA level of both AR and CCRK were detected in GC tissues compared with the adjacent normal tissues (P < 0.01). Ectopic re-expression of AR or CCRK by stable transfection promoted colony formation and invasiveness (P < 0.05). Consistently, the numbers of colony formation, migrated cells and invasive cell were reduced by knockdown of AR or CCRK in GC cell lines.

Conclusion: Our results demonstrate that AR directly regulates CCRK expression in GC. AR and CCRK gene may act as a potential oncosgene in gastrocarcino genesis 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.

P1243 FLYING OFF COURSE WITH A 2WW DIRECT ACCESS TO TEST PILOT: NOTTINGHAM’S EXPERIENCE OF THE SUSPECTED UPPER GASTRO-INTESTINAL CANCER PATHWAY CHANGE WITH GP Vetting and OGD BOOKING
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Introduction: Timely progress through diagnosis pathways is a leading quality measure for NHS cancer services. A hypothesis of sooner diagnosis being achievable with direct access to hospital tests from primary care is a core part of CRUK ACE program (1), and in the context of UGI cancer pathways, there is known wide variation of direct access (DA) OGD (2). This pilot evaluates the efficacy and utility of DA OGD or clinic (DA OPD) for GP concerns a patient may have about OG cancer. Comparison was made with standtest 2WW pathway, where allocation to OGD and OPD first was randomised. The pilot was conducted in the DA OGD group.

Aims & Methods: Pilot and UG standard 2WW referrals 01/01/16-01/08/16 were identified from Cancer Centre records.

Results: 192 patients were in the pilot pathway, 430 via the standard 2WW. GPs were more likely to allocate patients to DA OGD (52%) compared with 32% having having DA OGD allocated by the hospital. Despite under-utilisation of protected slots for DA OGD, time to DA OGD compared to DTT did not differ (11.0 days [95%CI 10.5,11.5] versus 12.4 days [95%CI 11.0,13.3]). The same was concluded for DTT OPD. The pilot time on pathway was not different to the pilot group at 16.8 days [95% CI 4.9,28.6] compared to 17.9 days [95% CI 16.9, 18.9].

The subgroup of patients allocated to the pilot in DA OGD did have a quicker exit from the pathway, at 12.4 days [95% CI 6.5,18.3] compared to 14.8 days [95% CI 12.9,16.6] on the DTT OGD group. The pilot overall detected 8 cancers (4.2%); the standard 2WW path detected 55 (12.8%). OG cancers were in 4 of the DA OGD (4%) and 14 of the DTT OGD (10.2%). A further 10 non-OG cancers were detected in the DTT group after clinicians requested further investigations to determine the cause of their symptoms. Those patients allocated to OPD first by either GP or hospital were as likely to have cancer as those having OG, with 4.3% of those in the pilot having cancer detected this way, but none OG cancer, and 10.3% found to have cancers in the standard 2WW group following investigation directed after clinic visit. Of these 65% were cancers other than OG cancers and would not be detected on OGD alone.

Conclusion: OGD as a sole investigation has its utility in excluding or detecting OG cancer. A high proportion of cancers detected via 2WW criteria might be missed by using OGD alone. A high proportion of cancers detected via 2WW criteria might be missed by using OGD alone. Only a randomised controlled trial would be detrimental and lead to missed opportunity to detect other cancers that cause symptoms overlapping with those often ascribed to OG tumours.

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

Reference
1.1www.cancerresearchuk.org 2. PLoS ONE 11(7):e0159725

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 a weight loss commonly undergo duodenal biopsy to assess for presence of coeliac disease. We hypothe size 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 with weight loss undergoing upper gastrointestinal endoscopy for the purpose 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,
and 6 of these patients had coelac, whilst 4 had other pathology such as gran-ulation 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 anemia or elevated TTG antibodies.

Conclusion: We observed that the frequency and 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 (forceps and pot) and improve the safety (potential perforation and bleeding risk) of the procedure.

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

P1245 FUNDING DISPARITIES IN DIGESTIVE CANCER RESEARCH IN THE UNITED STATES

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Introduction: In 2015, the five most common digestive cancers (colorectal, pancreatic, liver, gastric, and esophageal) accounted for 16% of incident cancer cases and 14% of all cancer deaths. It is unclear whether the amount and recent trends in US federal funding for digestive cancer research corresponds to the burden of disease.

Aims & Methods: We obtained the total annual funding for cancer (including the five most common digestive cancers) from 2008 to 2015 using a public database of research funded by US federal agencies. We calculated funding in 2015 constant USD using the Consumer Price Index. Cases and deaths estimated by the American Cancer Society were used to calculate funding per death or case for each cancer. For comparison, we also extracted data for the three most common cancers (breast, lung, prostate) and all cancers combined. As funding for research in the United States was boosted by the American Recovery & Reinvestment Act of 2009, we calculated funding per death for digestive cancers decreased by 20% for esophageal cancer, increased for the other digestive cancers during the study period. Funding disparity, measured by proportional death and funding, was highest for colorectal cancer, 34% for gastric cancer, and 37% for liver cancer; funding for esophageal and gastric cancer among digestive cancers and for lung cancer over-50% for colorectal cancer.

Funding disparity, measured by proportional death and funding, was highest for colorectal cancer, 34% for gastric cancer, and 37% for liver cancer; funding for esophageal and gastric cancer among digestive cancers and for lung cancer over-50% for colorectal cancer but increased for the other digestive cancers during the study period. Funding per death among digestive cancers in 2015 was highest for liver cancer and lowest for esophageal cancer. Funding per death for breast cancer was more than 3-fold the average for all cancers. Funding per death for digestive cancers decreased by 20% for esophageal cancer, 24% for colorectal and gastric cancer, and 28% for liver cancer; funding per death for pancreatic cancer was the lowest of all digestive cancers and for lung cancer over-all digestive cancers. For all digestive cancers, the number of deaths and cases was about twice the amount and recent trends in US federal funding for digestive cancer research corresponds to the burden of disease.

Conclusion: In 2015, the five most common digestive cancers (colorectal, pancreatic, liver, gastric, and esophageal) accounted for 16% of incident cancer cases and 14% of all cancer deaths. It is unclear whether the amount and recent trends in US federal funding for digestive cancer research corresponds to the burden of disease.

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

P1247 CURCUMIN DOWNREGULATES INTERLEUKIN (IL)-17 BY INCREASING THE EXPRESSION OF INDOLEAMINE 2,3- DIOXGENASE (IDO) IN HELICOBACTER PYLORI-INFECTED HUMAN GASTRIC MUCOSA

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Introduction: IDO promotes the effector T-cells apoptosis by catalyzing the rate-limiting first step in tryptophan (Trp) catabolism. We demonstrated that the high expression of IDO in H. pylori-infected human gastric mucosa attenuates Th1 and Th17 immune response, but IDO expression is not yet fully understood. The presence of the nutrient compound curcumin suggests its use as an anti-H. pylori agent, but mechanisms that underlie its helpful activity are still not clear.

Aims & Methods: Five antral biopsies were taken from 22 patients (10 M, median age 47.5 yrs, range 20-74) who underwent gastroscopy for dyspeptic symptoms: 1 for urease quick test (Eurospital, Trieste, Italy), 2 for histology (Giemsa staining for H. pylori), and 2 for organ culture. A C-urea breath test was also performed (at least two tests positive and all the three tests negative to be considered H. pylori-negative). For histology, H. pylori-infected or colonized for colorectal cancer but increased for the other digestive cancers during the study period. Funding per death among digestive cancers in 2015 was highest for liver cancer and lowest for esophageal cancer. Funding per death for breast cancer was more than 3-fold the average for all cancers. Funding per death for digestive cancers decreased by 20% for esophageal cancer, 24% for colorectal and gastric cancer, and 28% for liver cancer; funding per death for pancreatic cancer was the lowest of all digestive cancers and for lung cancer over-all digestive cancers. For all digestive cancers, the number of deaths and cases was about twice the amount and recent trends in US federal funding for digestive cancer research corresponds to the burden of disease.

Conclusion: In 2015, the five most common digestive cancers (colorectal, pancreatic, liver, gastric, and esophageal) accounted for 16% of incident cancer cases and 14% of all cancer deaths. It is unclear whether the amount and recent trends in US federal funding for digestive cancer research corresponds to the burden of disease.

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

Results: In a H. pylori-negative cohort, IDO expression was significantly higher than normal control (p16, 10%; CDH1, 44%; RUNX-3, 16%) (p < 0.05). In the H. pylori eradication group, methylation rates of p16 and CDH1 decreased in 58.1% and 61.3% of the patients, and the median values of hypermethylation were significantly lower at one year compared with the non-eradication group. However, RUNX-3 hypermethylation did not differ significantly at one year after H. pylori eradication. The non-eradication group hypermethylation did not change after eradication.

Conclusion: H. pylori infection was associated with promoter hypermethylation of genes in gastric carcinogenesis, and H. pylori eradication might reverse p16 and CDH1 hypermethylation.

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

TUESDAY, OCTOBER 31, 2017 09:00-17:00
H. PYLORI II - HALL 7

P1246 HELICOBACTER PYLORI ERADICATION MODULATES ABBRENT CPG ISLAND HYPERMETHYLATION IN GASTRIC CARCINOGENSES

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Introduction: Helicobacter pylori infection induces aberrant DNA methylation in gastric mucosa. We evaluated the effect of Helicobacter pylori eradication on promoter Cpg island hypermethylation in gastric carcinogenesis.

Aims & Methods: H. pylori-positive patients with gastric adenoma or early gastric cancer who underwent endoscopic resection were enrolled. According to H. pylori eradication after endoscopic resection, the patients were assigned to H. pylori eradication or non-eradication group. H. pylori-negative gastric mucosa from normal participants provided the normal control. CpG island hypermethylation of tumor-related genes (p16, CDH1, and RUNX-3) was evaluated by quantitative MethyLight assay in non-tumorous gastric mucosa. The gene methylation rate and median values of hypermethylation were compared after one year by H. pylori status.

Results: In H. pylori-positive patients, hypermethylation of p16 was found in 80% of H. pylori-negative patients; median p16 hypermethylation rate in the larger relative funding decrease for liver cancer, it remained the best-funded digestive cancer relative to both incident case and death. Liver cancer funding was 3.5-fold to 4-fold the average for all cancers. Funding per death for digestive cancers decreased by 20% for esophageal cancer, 24% for colorectal and gastric cancer, and 28% for liver cancer; funding per death for pancreatic cancer was the lowest of all digestive cancers and for lung cancer over-all digestive cancers. For all digestive cancers, the number of deaths and cases was about twice the amount and recent trends in US federal funding for digestive cancer research corresponds to the burden of disease.

Conclusion: In 2015, the five most common digestive cancers (colorectal, pancreatic, liver, gastric, and esophageal) accounted for 16% of incident cancer cases and 14% of all cancer deaths. It is unclear whether the amount and recent trends in US federal funding for digestive cancer research corresponds to the burden of disease.

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

Reference
P1248 ALTERATIONS IN SALIVARY MICROBIOTA IN SUBJECTS WITH HELICOBACTER PYLORI-ASSOCIATED GASTRITIS

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Introduction: Alterations in salivary microbiota have been linked to elevated inflammatory responses and has been reported in patients with inflammatory bowel disease and pancreatic cancer. As yet, the potential association between salivary microbiota in patients with gastritis and Helicobacter pylori (HP) infection has not be determined.

Aims & Methods: In this study, we characterized the salivary microbiota in patients with H. pylori (HP)-associated gastritis and the potential changes of salivary microbiota after receiving HP eradication. We enrolled subjects who were scheduled for diagnostic upper GI endoscopy. We excluded patients with peptic ulcer or cancer found on endoscopy, who have received prior HP eradication therapy, and who have recent exposure to antibiotics or acid suppressive therapies. Unstimulated saliva samples were obtained from subjects during fasting state prior to endoscopy. End-stage gastric 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 was determined by Linear Discriminant Analysis Effect Size (LEfSe) was used to identify differentially expressed bacterial DNA in different groups.

Results: We enrolled 16 subjects with confirmed HP gastritis and 14 HP-negative subjects. Baseline salivary samples of all subjects were found to have significantly higher salivary microbial diversity than corresponding gastric samples. The predominant microbial family identified in the stomach is Helicobacteraceae (55.2%) whereas Helicobacteraceae constitutes only 0.1% of salivary microbiota. In contrast, the predominant families in saliva microbiota are Prevotellaceae (23.9%) and Neisseriaceae (20.3%). When compared to HP-negative subjects, salivary microbiota in HP-positive patients showed a significant increase in the Bacteroidetes and Spirochaetaceae, and a decrease in Flavobacteriaceae families. HP eradication therapy resulted in a significant reduction in the relative abundance of family Helicobacteraceae 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 had 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 investigations.

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

References


P1250 AUTOIMMUNE GASTRITIS WITH PREVIOUS OR CONCURRENT H. PYLORI INFECTION PRESENTS DISTINCT FUNCTIONAL AND MORPHOLOGICAL FEATURES

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Introduction: Autoimmune gastritis (AG) results in hypochlorhydria due to parietal cells destruction. It is characterized by lower levels of serum pepsinogen (P1) and P2 and increased levels of gastric chief cells. Previous epidemiologic, serologic and pathologic features of AG patients with and without previous HP infection. To recruit eligible and eleven consecutive patients with AG, undergoing endoscopy, were included. Serum gastrin, P1, P2 and Cromogranin A levels were determined in all patients. Multiple gastric biopsies were obtained for histology, OLGA staging and HP detection. Previous or current HP infection (HP+) was confirmed in patients by antibody, and/or pathologic and/or serologic data. Statistics was performed using non parametric tests.

Results: Present or previous HP infection was confirmed in 50/211 patients while 161 were negative (HP−). When we compared HP+ vs HP−, AIG, no differences were found for age and gender distribution, antral and fundic/body atrophy, OLGA staging, P1, P2 and Cromogranin A levels. Gastrin levels and P1/P2 ratio, a global marker of gastric damage we previously identified, were higher in HP− vs HP+ (p < 0.02). Interestingly, 15% HP+ presented antrectal atrophy. Severity of ECL hyperplasia was higher in HP+ (p = 0.02) with a 3.5 RR of developing nodular or carcinoid lesions when compared with HP−. Serum P1, P2, P1/P2 and gastrin levels correlated with disease severity in HP+ (p < 0.01) but not in HP−.

Conclusion: HP+ AIG have/have had a mild infection without differences in OLGA staging when compared with HP−. HP+ are characterized by lower gastrin and gastrin/P1/P2 levels that, considered the lack of differences in OLGA staging suggest an intrinsic difference of gastric physiology. HP− showed selective G Cell damage leading to lower levels of gastrin and Gastrin/P1/P2 ratio. Consequently, they have lower degrees of ECL hyperplasia and a lower risk of developing carcinoids when compared with HP+. The presence of antrectal atrophy in HP− could be explained with the supposed autoimmune antrectal damage hypothesis in AIG+ 3. In conclusion, HP+ and HP− AIG have some differences in serological phenotype and HP infection may correlate in AIG patients with lower ECL hyperplasia and lower risk of neuroendocrine tumor.

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

References


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 miRNAs 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 miRNA isolation. hsa-miR-155, hsa-miR-21, hsa-miR-146a and hsa-miR-223 expression levels were determined using comparative 2-ΔΔCt analysis by using Real-Time PCR Systems, SDS 2.0 software programme. Statistical analysis of miRNAs between H. pylori positive and negative groups were compared with the Mann-Whitney U test. p < 0.05 was considered statistically significant.

The relationship between categorical variables were tested using Pearson's chi-square test. The relationship between levels of interleukin-1, interleukin-6 and interleukin-8 according to a number of works is accompanied by infection with Helicobacter pylori. The aim of this study was to investigate the transition of level of interleukin-1β and interleukin-6 levels before the onset of cancer.

Table 1

<table>
<thead>
<tr>
<th>H. pylori positive N=46</th>
<th>H. pylori negative N=49</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hsa miR-155</td>
<td>Hsa miR-223</td>
</tr>
<tr>
<td>0.980199 ± 0.980356</td>
<td>0.932742 ± 0.932742</td>
</tr>
<tr>
<td>0.293990 ± 0.293990</td>
<td>0.103437 ± 0.103437</td>
</tr>
<tr>
<td>0.48</td>
<td>0.87</td>
</tr>
</tbody>
</table>

Results: H. pylori positive (n=46) and negative (n=49) were included. H. pylori was not able to effective the hsa-miR-155, hsa-miR-21, hsa-miR-146a-6 and hsa-miR-223 expressions in serum specimens and nuclear factor-κB (NF-κB) and Transforming growth factor, beta (TGFβ) pathways. There was no statistically difference between H. pylori positive and negative individuals in the analysis of hsa-miR-155, hsa-miR-21, hsa-miR-146a-6 and hsa-miR-223 miRNA expression levels (Table 1). In surveys, there is no statistically difference between each groups, the level of education, intake of smoking-alcohol, hypertension, diabetes, cardiovascular disease, family history of gastrointestinal disease, type of gastro-duodenal disease.

Conclusion: This study may contribute to the literature in terms of preventing pro-cancerous progression in the cases of cancer resulting from H. pylori infection before the onset of cancer.

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: Change of interleukin level can be in patients with of chronic infections, in particular at Helicobacter pylori infection. Change of interleukin level in infected patients is significantly increased, for example, increase in level of interleukin-8 according to a number of works is accompanied by infection with virulent strains of a microorganism. CagA gene coding synthesis of the cytotoxin (Caga) of the same name capable, in addition, to exert impact on development of inflammation, 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-1β and interleukin-6 in laboratory examinations of patients with the chronic gastritis associated with H. pylori infection depending on existence or lack of a gene of cagA in a microorganism genome. 40 patients with the chronic gastritis associated with H. pylori have been examined. Examination was made for absence or presence of a gene of cagA in a microorganism genome and taking biopsy from stomach antrum (2 biopates) for the purpose of verification of H. pylori infection. Detection of a microorganism was made by rapid urease test, a histologic method and molecular-genetic research–the polymerase chain reaction (PCR) with definition of genes of urease (ureC, ureD). Besides, the PSR method presence of a cagA gene in a genome of H. pylori was detected. All patients were divided on two groups: with cagA (+) strains and with cagA (−) strains. Levels of interleukins 1-β, 4-8 decided by imunofluorescence analysis (the Vektor-Best kit, Russia).

Results: cagA gene was detected in 30 patients (cagA(+) group) and absence in 10 patients (cagA(−) group). In cagA(+) patients mean level of interleukin-1β was 395.6 pg/ml, but in cagA(−) patients 311.2 pg/ml (p < 0.05). Level of interleukin-6 in cagA(+) patients was 2.4 pg/ml but in cagA(−) patients 0.32 pg/ml (p < 0.05). Level of interleukin-4 in cagA(+) patients was 21.6 pg/ml, but in cagA(−) patients 83.4 pg/ml (p < 0.05).

Conclusion: Presence in a genome of H. pylori cagA gene is accompanied by reliable increase in level of pro-inflammatory cytokines (IL-1β, IL-6) and decrease in level anti-inflammatory interleukin-4 that can be an additional factor of development of an inflammation during H. pylori invasion.

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

P1253 THE TRANSITION OF HELICOBACTER PYLORI ERADICATION IN OUR INSTITUTION

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Introduction: The incidence and mortality 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 therapy for chronic gastritis 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 been 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.

Aims & Methods: The aim of this study was to investigate the transition of H. pylori eradication therapy including therapy with vonoprazan in our institution. This study was a retrospective single center study between January 2010 and December 2016. The subjects were patients who had received H. pylori eradication therapy. The subjects were divided into a conventional triple therapy group (PPI, omeprazole lansoprazole, esomeprazole, and rabeprazole) and a group who received triple therapy with vonoprazan instead of a PPI. Regimens with amoxicillin, clarithromycin and a PPI or vonoprazan were regarded as 1st line treatment, and a regimen with metronidazole instead of clarithromycin was regarded as 2nd line treatment. Success rates of 1st line treatment and 2nd line treatment with a PPI or vonoprazan were compared.

Results: There were 1278 patients who underwent H. pylori eradication therapy. The mean age of the patients was 61.5 years (13-92), and the patients included 722 males and 556 females. The patients who received H. pylori eradication therapy included 857 patients with chronic gastritis, 301 patients with stomach/duodenal ulcers, 82 patients with gastric cancer, 27 patients with polyps, and 12 other patients. The number of patients with chronic gastritis undergoing...
eradication therapy of *H. pylori* increased remarkably from 48.4% in 2012 to 75.8% in 2016. The success rate was 72.5%. The success rate of conventional PPI regimen was 75.8% (846/1116), and that of the vonoprazan regimen was 85.1% (74/87). The success rate of vonoprazan regimen was significantly higher than that of the PPI regimen (Fisher’s exact test: p < 0.05). The success rate of *H. pylori* eradication in 2nd line treatment was 84.7% (210/248). The success rate of *H. pylori* eradication in patients who received the conventional PPI regimen was 84.4% (35/42), and that in patients who received the vonoprazan regimen was 87.5% (21/24).

**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.

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**Introduction:** Potent acid inhibition with acid inhibitory drugs is crucial to the successful eradication for Helicobacter pylori infection. Vonoprazan, a potassium competitive acid blocker, was developed in Japan in the 2000s. Vonoprazan is considered to be useful for *H. pylori* eradication instead of a PPI in first line treatment.

**Aims and Methods:** We investigated the influence of CYP3A5*3 and CYP2C19 genotypes and susceptibility to antimicrobial agents for outcome of vonoprazan-containing eradication regimen for 7 days in 105 Japanese: (1) with amoxicillin 750 mg and clarithromycin 20 mg twice daily (bid) as the first-line treatment (n = 76); (2) with amoxicillin 750 mg and metronidazole 250 mg bid as the second-line (n = 29). Eradication rate was assessed at 8 weeks via 13C-urea breath test. CYP3A4*52, CYP3A5*3 and CYP2C19*2/3*5 were genotyped for all patients.

**Results:** Eradication rate on intention-to-treat analysis was 82.6% (95% confidence interval: 72.5%-87.9%), 76.3% (95%CI 66.6–86.7%) in the first-line treatment and 93.1% (97.0%, 95% CI 89.1–96.3) in the second line. None with CYP3A4*52 was observed. 38.3% of patients (46/120) were CYP3A5*1/*3 type and 55.0% were *3/*3 type. In naïve patients, the prevalence of clarithromycin-resistant strain was 42.1% (14/33). Eradication rate in patients with CYP3A5*1/*1 or *1/*3 type (CYP3A5*1/*1 and CYP3A5*1/*3) was 72.7% (54.5%-86.7%, 24/33), which was significantly lower than that in the *3/*3-type strain (90.7%, 77.9%-97.4%, 39/43, p = 0.039) in the first-line treatment. However, no significant differences of clinical outcome in the second-line therapy were seen among CYP3A5*3 genotypes.

**Conclusion:** Eradication rates of vonoprazan-based eradication therapy can be achieved high compared with PPI-based therapy. However, because CYP3A5*3 genotype may be one of determinate for outcome of eradication regimen including *H. pylori* infection, genotyping of CYP3A5*3 will be required to be paid attention for clinical outcome before treatment.

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

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**Introduction:** *H. pylori* infection. Vonoprazan (VPZ) based therapy is one of most popular *H. pylori* eradication in the world. 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 and Methods:** Our aim was to investigate the efficacy of the VPZ-based eradication therapy. The subjects were 999 patients who were diagnosed as *H. pylori* infection in our institution from June 2014 to December 2016. The patients were grouped into three: VPZ group and conventional PPI (Lansoprazole or Rabeprazole) group. We evaluated the first-, second- and third-line eradication status. Each regimen of VPZ group was first-line eradication (VPZ 20 mg bid+ amoxicillin 750 mg bid+ CAM 200 mg bid for 7 days), second-line eradication (VPZ 20 mg bid+ amoxicillin (AMPC) 750 mg bid+ Metronidazole 250 mg bid for 7 days). Each regimen of PPI group was first-line eradication (PPI bid+ AMPC 750 mg bid+ Metronidazole 250 mg bid for 7 days), second-line eradication (PPI bid+ amoxicillin 750 mg bid+ Metronidazole 250 mg bid for 7 days). One of the following PPI was used: Lansoprazole (LPZ) 30 mg, Rabeprazole (RPZ) 20 mg. After several months, eradication status was examined by urea breath test, stool antigen testing and blood antibody test.

**Results:** 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 290 patients (75%). In the second-line eradication (74%), and the eradication was achieved in 300 patients (80%) respectively. The eradication rate of VPZ was statistically higher than RPZ and LPZ (P = 0.0006, and = 0.019 respectively). The number of second-line regimen of VPZ patients was 24, and the eradication was achieved in 19 patients (79%). RPZ patients were 68, and the eradication was achieved in 60 patients (88.2%), and LPZ patients were 68, and the eradication was achieved in 60 patients (88.2%) respectively. There were statically no significant differences in second-line regimens. Adverse events
such as erosion and diarrhea were reported in 6.6%(9/136) of patients in VPZ, in 10.5% in RPZ, 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.

P1257 CAN TWO WEEK BISMUTH BASED QUADRUPLE THERAPY FOR RESISTANT H. PYLORI INFECTION STILL BE USED IN THE UK?

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Introduction: H. pylori infection cures peptic ulcer disease (PUD); however, treatment strategies and many experts require repeated courses of treatment. We, and others, have recently documented that currently, within the UK, less than 30% of patients with with proven PUD, are subsequently documented to have been cured by H. pylori eradication 1,2. 

Currently, resistance is common regarding 2nd line treatments, but the British National Formulary recommends a two regimen containing bismuth subcitrate, omeprazole, tetracycline and metronidazole. However since 2016, bismuth subcitrate has not been available in the UK, but is thought to be an important in treating persistent H. pylori infection.

Aims & Methods: The aim of this observational cohort study was to evaluate the effectiveness of a 2 week bismuth based quadruple therapy in patients who had previously failed to get eradication rates. Patients were identified from electronic hospital records using endoscopy data set, patient administration records, and pathology data sets from Jan 2011 to Dec 2016.

Initial failed H.pylori eradication was defined by either by a positive 13C-Urea Breath Test (13C-UBT) or positive HpStool Antigen test (HpSA) following H. pylori treatment in either primary or secondary care. All patients were seen, assessed and warned about the importance of compliance with treatment and of possible side effects by the specialist (RL) or the dyspepsia nurse specialist (LB). After treatment, patients were examined and HpSA and 13C-UBT were repeated.

Results: Within the inclusion period, (and from >560 patient records), 41 patients (22 female, mean age 44 yr, range 17-84 yr) were identified as having persistent H.pylori infection by +ve 13C-UBT (n = 25), HpSA (n = 10) or histology/CLTest (n = 6). All had failed at least one treatment, but 14/41 (34%) had failed 2 or more. Most patients were non or light drinkers (90%) and non-smokers (74%). OGD was performed in 19 patients to clarify indication for further attempts at H. pylori eradication and showed evidence of ulcer disease (ulcer, scarring or erosions) in 13/19 (68%). Culture and antibiotic sensitivity testing was unsuccessful in 3/5 patients. At least 6 weeks after the end of treatment, 5 patients were HpSA negative , but 5 patients failed to attend for assessment of eradication. During the follow up period from 2011 onwards, 11 patients underwent repeat 13C-UBT or HpSA testing, and all remained cured of infection.

Conclusion: Two week standard bismuth based quadruple therapy remains a highly effective treatment for persistent H. pylori infection in those patients in whom eradication of infection is mandated by the an underlying ulcer diathesis. The high eradication rate is likely due to the use of bismuth high doses of antibiotics, but also by specialists ensuring patients complied with their medication.

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

References

P1258 MAY PROBIOTICS MONOTHERAPY ERADICATE HELICOBACTER PYLORI? A SYSTEMATIC REVIEW WITH POOLED-DATA ANALYSIS

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Introduction: Despite several evidences in literature have demonstrated a role for probiotics as adjunctive treatment for Helicobacter pylori (H. pylori) eradication, national and international guidelines as well as meta-analyses suggest that only co-administration of probiotics may have a beneficial effect on the prevention of side effects and eradication rates. Herein, we performed a systematic review with pooled-data analysis aimed to clarify whether probiotics alone may eradicate the bacterium.

Aims & Methods: Methods of analysis and inclusion criteria were based on PRISMA recommendations. Relevant publications were identified by a research in PubMed, EMBASE, 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 described ad proportions/percentages, and 95% confidence intervals (CI) were calculated. For continuous variables, we calculated the weighted mean difference. Odd ratios (OR) were calculated, where available, based on the Mantel-Haenszel method. Data were entered into the RevMan 5.3 software.

Results: Four studies (both randomised 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 weighted 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%). Multistain combinations were effective in 14 out of 105 patients, with a pooled eradication rate of 14% (95% CI 16-43%). In the comparison probiotics versus placebo, we found an OR =9.65 in favor of probiotics, with a 95% CI of 1.97-47.36 (p = 0.005). Finally, probiotics induced a mean reduction in delta values of 8.61% (95% 3.88-11.34, p < 0.00001). No study provided data about adverse events.

Conclusion: Probiotics alone show a minimal effect on the eradication of H. pylori, thus suggesting a presumable direct effect. However, they cannot be indicated as a therapeutic regimen for the low eradication rate.

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

P1259 EFFECTIVENESS AND SAFETY OF PYLERA® IN PATIENTS INFECTED BY HELICOBACTER PYLORI: A LARGE, PROSPECTIVE, REAL-LIFE STUDY

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Introduction: The new bismuth-containing quadruple therapy is currently advised in treatment of H. pylori infection in several guidelines. Our aim was to assess the real-life effectiveness and safety of this therapeutic regimen in a large population of patients who were infected by H. pylori.

Aims & Methods: Consecutive dyspeptic H. pylori-positive patients were enrolled, both naïve for treatment and already unsuccessfully treated. Patients were treated with Pylera® (3-in-1 capsules containing bismuth subcitrate potassium 140 mg, metronidazole 125 mg and tetracycline 125 mg) 3 capsules four times a day plus omeprazole 20 mg or esomeprazole 40 mg two times a day for 10 days. Efficacy was confirmed using a urea-breath test (at least 30 days after the end of treatment). Efficacy and safety were assessed.

Results: Three hundred and twenty patients were included in the study: 131 (40.9%) patients were naïve, and 189 (59.1%) patients with previous failure to previous treatment. H. pylori eradication was achieved in 299 (93.4%, 95% confidence intervals (CI) 92-96%), 5 patients failed to attend for assessment of eradication. During the follow up period from 2011 onwards, 11 patients underwent repeat 13C-UBT or HpSA testing, and all remained cured of infection.

Conclusion: Two week standard bismuth based quadruple therapy remains a highly effective treatment for persistent H. pylori infection in those patients in whom eradication of infection is mandated by the an underlying ulcer diathesis. The high eradication rate is likely due to the use of bismuth high doses of antibiotics, but also by specialists ensuring patients complied with their medication. These data, together with the poor outcomes of H. pylori eradication when undertaken by general physicians, also highlight the need for H. pylori eradication to be undertaken by specialists who have access to alternative sources of co-loddal bismuth subcitrate.

Disclosure of Interest: All authors have declared no conflicts of interest.
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Introduction: Clarithromycin-containing triple therapy can be considered as a suitable option for first-line Helicobacter pylori (H. pylori) eradication in areas with less than 20% resistance rates to Clarithromycin. On the other hand, resistance to Clarithromycin is increasing in Iran, influencing the efficacy of standard triple therapy in this country. Therefore, regimes containing other antibiotics have to be considered in Iran.

Aims & Methods: One hundred and forty patients with peptic ulcer disease and naïve to eradication therapy were randomly divided into two groups to receive either 10-day standard triple therapy (Pantoprazole 40 mg, Amoxicillin 1 gr and Clarithromycin 500 mg, all given twice daily) or 10-day Levofloxacin-containing triple therapy (Pantoprazole 40 mg BD, Amoxicillin 1000 mg BD and Levofloxacin 500 mg daily). Eight weeks after the treatment, H. pylori eradication was assessed by 13C-urea breath test. Results: One hundred and thirty three patients completed the study. According to intention to treat analysis, H. pylori eradication rates were 75.7% (95% confidence interval (CI): 65.7%-85.7%) and 58.5% (95% CI 47.1%-70%) in standard and Levofloxacin-containing therapies, respectively. Also, per-protocol eradication rates were 83% (95% CI: 74%-92%) and 61% (95% CI= 49%–73%), respectively. The rates of severe adverse effects of therapy were 7.1% and 2.9% in the mentioned groups, respectively.

Conclusion: Both Clarithromycin-containing triple therapy and Levofloxacin-containing triple regimen seem to be suitable options for first-line H. pylori eradication in Iran. We suggest using Clarithromycin in quadruple regimen 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.

Tuesday, October 31, 2017: 09:00-17:00

Small Intestinal I - Hall 7

P1261 EFFICACY AND TOLERABILITY OF REBAMIPIDE IN TRIPLE THERAPY FOR ERADICATION OF HELICOBACTER PYLORI: A RANDOMIZED CLINICAL TRIAL

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Introduction: Rebamipide is an orally prostaglandin E2 and I2 synthesis inducer. A latest clinical trial showed that the adhesion of H. pylori to stomach wall was reduced by rebamipide. This could improve eradication rates by increasing the availability of H. pylori to antimicrobial.

Aims & Methods: We aimed to determine eradication rate, the effectiveness and advantage of rebamipide in triple eradication therapy of H. pylori infection. Subjects comprised patients undergoing eradication therapy for H. pylori eradication in Iran. We suggest using Clarithromycin in quadruple regimens such as hybrid or concomitant therapies and reserve Levofloxacin to be used in second-line eradication regimens, as it is recommended by Maastricht V Consensus Report.

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

References


P1263 EPICALLOCCATECHIN-3-GALLATE FROM GREEN TEA AMELIORATE 5-FLUOROURACIL-INDUCED INTESTINAL MUCOSITIS


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Introduction: Chemotherapy-induced mucositis is a common complication during anticancer treatment. Epicalloocatechin-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-Fluorouracil (5-FU), EGCG plus 5-FU. Mucositis was induced by intraperitoneal injection of 5-FU (400 mg/kg). EGCG (50 mg/kg) was administered orally for 5 days from the day before administration of 5-FU. After 6 days of 5-FU injection, the mice were sacrificed and intestinal tissue was obtained. WBC count was performed with whole blood from Inferior vena cava of mice. The end points were villus height, crypt/villus 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 significant 5-FU effect. Histologic findings showed that crypt dilatation, villus stunting, and villus atrophy were reduced in EGCG plus 5-FU group than in 5-FU group (Figure 1). Quantitative analysis showed that the villus height (EGCG plus 5-FU, 352 μm; 5-FU, 319 μm; p < 0.05) was significantly increased in EGCG plus 5-FU group, compared with 5-FU treated group, in significantly higher levels. 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-FU (C) EGCG plus 5-FU. Figure 2. mRNA expression of TNF-α, and interleukin (IL)-6.

Conclusion: EGCG derived from green tea reduced 5-FU induced intestinal mucositis. This suggests a possibility for novel treatment of chemotherapeutic-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 INTESTINAL MICROFLORA

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Introduction: Proton pump inhibitors (PPIs) have been shown to play an important role in the pathogenesis of nonselective amino acid transporters (LATs), which transport amino acids into cells, are correlated to various cancers. However, studies on PPIs for cancer have been scarce.

Aims & Methods: To investigate whether PPIs can increase the susceptibility to peroral enteropathogenic bacterial infection was not because of the immunological modification by PPIs, but it was mainly because of the increased number of pathogenic bacteria passing through the stomach.

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

P1265 EXPRESSION OF AMINO ACID TRANSPORTERS IN ANTI-TUMOR 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, patients suffering from anticancer agent-induced intestinal mucosal injuries, 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 nonspecific 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 carcinogenesis has been reported by many research groups.

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 measured the protein expressions among the small intestines using anti-LAT antibodies.

Results: After the administration of 5-FU, the body weight, food intake, water consumption, and fecal volume decreased; thus, a systemic influence was observed. The length and villus height of the intestinal tract decreased because of the administration of 5-FU, and mucosal damage with histological change was observed. The number of PAS-positive cells decreased in the small intestinal mucosa, and it was assumed that the 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 Peyers’ patches 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 small intestines, we observed that LAT1 expression significantly increased and LAT2 expression decreased after the administration of 5-FU.

Conclusion: It was considered that the uptake capacity of amino acids, such as Gly, Ala, Ser, Thr, Cys, Asn, and Gin, that transported through LAT may be decreased in case of small intestinal mucosal injuries. On the other hand, LAT1 expression associated with the production of inflammatory cytokines suggested that LAT1 is a gastrointestinal inflammatory marker.

Disclosure of Interest: All authors have declared no conflicts of interest.
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 lesions 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: CMC 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 alone also reduced the thickness of mucous layer in our analyses. One hour after ASA injection, 1% Evans blue dye was injected via tail vein to visualize small intestinal lesions. Ninety minutes after ASA treatment, the entire small intestine was removed for histological examination. To further investigate the importance of mucus, rebaudioside (Reb, 300 mg/kg) or saline were orally administered for one week prior to ASA administration. Reb is a gastric mucotoxic 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 severe mucosal lesions, 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 ASA-induced small intestinal mucosal injury. Moreover, orally administered Reb significantly suppressed reducing small intestinal mucus and the exacerbation of ASA-induced mucosal lesions in these phenomena. Furthermore, we also investigated the role of ASA on small intestinal mucus in rats treated with oral gavage of 5% peanut milk. Histological examination revealed an increase in small intestinal eosinophils, predominantly at the villous tips, indicating recruitment to the mucus. 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.

P1268 PREBIOTIC EFFECTS ON HEALTHY AND CHEMOTHERAPY-INDUCED SMALL BOWEL INJURY IN RATS

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Background: Intestinal mucositis is a common 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 maltase/palatinase/Hydrolase activity were quantified by biochemical assay. White and red blood cell types were quantified by whole blood analysis. Fecal volatile fatty acids (VFAs), acetate, propionate, 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. FOS, MOS, pre and post 5-FU 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 (240.40±8.83 mM/L; p<0.05). Ileal Villus height and crypt depth was significantly decreased in all treatment groups after 5-FU injection (p<0.05) and prebiotic treatment did not significantly modify this parameter. Similarly, jejunal and ileal sucrase activity was decreased in all groups after 5-FU injection (p<0.05), correlating with histological measurements. Tissue MPO activity was significantly increased post 5-FU injection, reflecting increased neutrophil activation, and was unchanged by prebiotic treatment. Interestingly, MOS and GOS both lowered %circulating neutrophils pre-5-FU compared to water controls (p<0.05). Pre-5-FU treatment with GOS significantly increased the fecal VFAs acetid (16.76±1.22 mM/L) and propionic acid (4.60±0.99 mM/L) compared to saline treated controls (7.7±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 indicated 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.

References

P1267 ANTIBIOTIC-INDUCED DYSBIOSIS IN THE MOUSE SMALL INTESTINE PROMOTES ALLERGIC SENSITISATION

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Introduction: Food allergy is characterised by a Th2 helper type 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. 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.
**P1209 THE RELATION OF CHEMOKINE RECEPTOR CXCR3 AND GUT-HOMEOSTASIS IN PROPRIO T-LYMPHOCYTES IN CROHN’S DISEASE PATIENTS**


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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 expression in CD patients compared to controls. A total of 56 duodenal biopsies were obtained from CD (n = 15), functional dyspepsia (FD)/irritable bowel syndrome (IBS) (n = 24) or iron deficiency patients (n = 17) with ethical approval. Lamina propria (LP) cells were isolated from biopsies using EDTA, collagenase and granulocytes centrifugation with Ficoll. Expression of CXCR3, a4, and b7 on isolated T-lymphocytes was examined by flow cytometry. Statistically significance was assessed using T-test or Spearman correlation.

Results: The expression of CXCR3 on CD4 lymphocytes was significantly lower (58.6%) compared to controls (86.6%). 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 subsets of lymphocytes, 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**


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**P1270 METHODOLOGICAL QUALITY OF CLINICAL PRACTICE GUIDELINES ON PROBIOTICS IN ACUTE GASTROENTERITIS IN CHILDREN USING THE APPRAISAL OF GUIDELINES FOR CLINICAL PRACTICE GUIDELINES (AGREE) 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 more focused on prevention and treatment of its complications; every day, we find more publications on the use of adjuvants to decrease its duration. Probiotics have gained greater importance because some of them report benefits. We look for Clinical Practice Guidelines (CPG) that recommend their use in AGE. The AGREE II instrument was developed to address the issue of variability in guideline quality, so it is a tool that assesses the methodological rigour and transparency in which a guideline is developed.

Aims & Methods: To assess the methodological quality of clinical practice guidelines (CPG) on the use of probiotics in infant diarrhoea. The search was conducted in December 2016, of CPG based on the evidence, in PubMed, ScienceDirect, and Lilacs. In PubMed, the search terms were: probiotics AND infants, limit: ‘guideline’. In ScienceDirect: Probiotics AND infants, limit: Medicine and Dentistry and LILACS: ‘probiotics’ AND ‘infants’ and ‘probiotic’ AND ‘guidia’.The CPG selected were evaluated with the instrument AGREE II by two evaluators who were independent one from the other and by a third evaluator, when there were discrepancies. The confidentiality of the information was maintained by the index of the Instrument for each CPG. Four had an overall score greater than or equal to 5 and were recommended, and one with modifications, according to the instrument AGREE II. The CPG is a position Paper of a Working group, not a Guideline, and its the reason for the lower rates obtained.

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

References


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**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 consumption 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
**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 ‘carrhosis’, 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 hydrogen breath test (HBT), one xylose 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. When different methods 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 3.44–12.73) 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 a more exact method of detecting the disorder. However, systematic assessment of the extent 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 Breathreacher microlyser (Quintron, USA). Gastrointestinal symptoms were assessed utilising the Structured Assessment of Gastrointestinal Symptoms Instrument (SAGIS). The association between methane exhalation and symptoms during the 2 weeks prior the test were evaluated using non parametric test.

Results: 100 consecutive patients (55%) aged 52.2 ± 15.7 years (mean ± SD) were included. Of these, 14 with positive GBT and 19 without SAGIS data were excluded, resulting in 67 data-sets available for analysis. Methane peak and methane baseline values were highly correlated (r = 0.96, p < 0.001). Methane peak and methane baseline values were highly correlated with the SAGIS diarrhoea score (r = −0.35, p < 0.01, Figure 1). Contrary to our 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 production microbes modulate human gut function.

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

P1275 CELIAC DISEASE AND POSITIVE IGA TISSUE TRANSGLUTAMINASE IN PATIENTS WITH DISTAL RADIUS AND ANKLE FRACTURE: A CASE-CONTROL STUDY

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Introduction: The prevalence of osteoporosis is higher among patients suffering a distal radius fracture than in healthy controls [1]. Celiac disease (CD) is associated with low bone mineral density [2], and overall findings indicate an increased risk of fracture in CD patients [3, 4]. This study is to our knowledge the first case control study investigating whether there is a higher prevalence of CD in adult patients suffering a peripheral fracture (distal radius or ankle) than in healthy age- and sex matched controls.

Aims & Methods: Main objective was to investigate if patients with a recent fracture of the distal radius or ankle have a higher risk of having CD than healthy controls. 400 consecutive patients over the age of 40 with acute distal radius fracture (n = 293) or ankle fracture (n = 107) were included in a case control study by referral from the orthopedic department at Foroed General Hospital, Norway. The controls were 197 age- and sex- matched subjects from Sogn and Fjordane County identified from the National Population Registry, with no previous fracture history. BMD of the hips and spine was measured and history of previous fracture, comorbidities, medication, lifestyle factors, body mass index (BMI) and nutritional factors were registered. Serum analysis to detect serum CRP and osteoporosis including IgA tissue transglutaminase was performed.

Results: See table.

<table>
<thead>
<tr>
<th></th>
<th>Controls</th>
<th>All fractures</th>
<th>Distal radius fracture</th>
<th>Ankle fracture</th>
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</thead>
<tbody>
<tr>
<td>N</td>
<td>107</td>
<td>293</td>
<td>400</td>
<td>197</td>
</tr>
<tr>
<td>Fracture cases %</td>
<td>26.8</td>
<td>73.3</td>
<td>77.3</td>
<td>82.7</td>
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<tr>
<td>Female gender %</td>
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<td>80.2</td>
<td>77.3</td>
<td>82.7</td>
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<td>44.7</td>
<td>39.0</td>
<td>22.3</td>
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<tr>
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<td>33.8</td>
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<tr>
<td>Mean age</td>
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<td>57.1</td>
<td>61.4</td>
<td>60.3</td>
</tr>
<tr>
<td>Mean BMI1</td>
<td>26.5</td>
<td>28.6</td>
<td>27.1</td>
<td>27.2</td>
</tr>
<tr>
<td>Known CD %</td>
<td>1.0 (n = 0)</td>
<td>1.4 (n = 4)</td>
<td>1.0 (n = 4)</td>
<td>1.5 (n = 3)</td>
</tr>
<tr>
<td>Known TG3 %</td>
<td>2.8 (n = 3)</td>
<td>2.8 (n = 7)</td>
<td>2.5 (n = 10)</td>
<td>1.3 (n = 2)</td>
</tr>
<tr>
<td>Known CD or</td>
<td>2.8 (n = 3)</td>
<td>3.8 (n = 11)</td>
<td>3.5 (n = 14)</td>
<td>2.8 (n = 5)</td>
</tr>
<tr>
<td>Positive TG3 %</td>
<td>6.6</td>
<td>2.4</td>
<td>3.6</td>
<td>5.6</td>
</tr>
</tbody>
</table>

1body mass index 2celiac disease 3IgA tissue transglutaminase 4vit D < 37 nmol/L

Conclusion: The prevalence of celiac disease was in preliminary analyses not significantly higher among patients with a distal fracture (3.5%) than among healthy age- and sex- matched controls (2.8%). Osteoporosis and low Vitamin D levels are significant risk factors for distal radius fracture, but this is not the case with ankle fractures.

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

References

P1276 INTERLEUKIN 1BETA, CLAUDIN AND OCLCLUDIN CONCENTRATIONS IN SERUM AND AUTONOMIC NERVOUS SYSTEM ACTIVITY AMONG NEUROLOGICAL ASYMPTOMATIC CELIAC DISEASE PATIENTS–PILOT STUDY

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Introduction: Celiac disease (CeD) is an immune disorder, triggered by gluten intolerance in genetically susceptible patients. Clinical outcome includes severe intestinal manifestations, including neurologic complications in about 10% of patients. Previous studies confirmed the subclinical changes of自主性神经系统 (ANS) activity resulting to impaired gastric myoelectric activity. In CeD disturbances of parasympathetic-sympathetic balance of the ANS activity with sympathetic dominance is observed. Tight junctions impair-ment is one of postulated pathomechanism in CeD and its complications. Transmembrane proteins of tight junctions include claudin and occludin. There is lack of publications referring to soluble claudin and occludin concentrations in CeD. Interleukin-1 beta (IL-1beta) is an important mediator of the, and there are no data concerning on its influence on gastric myoelectric activity and ANS activity in CeD.

Aims & Methods: The study was aimed to evaluate occludin, claudin and IL-1beta concentrations in serum in neurologically asymptomatic patients with CeD and its correlation with selected parameters of ANS activity markers (heart rate variability, electrogastrography HRV) and gastric myoelectric activity (EGG). Thirty four patients with CeD (70% females, mean age 34 years, 41.2 ± 16.6) were evaluated. Serum concentrations tested for occludin, claudin, IL-1beta concentrations in serum using ELISA, and HRV and EGG.

Results: Biochemical parameters. Patients with CeD presented with lower average level of occludin (1.41(0–2.9) ng/mL) than healthy subjects (1.80(0.39–4.8) ng/ML) (P = 0.07, the Mann-Whitney test). No significant impact of CeD on the average results of IL-1 beta concentrations was observed (P = 0.44, the Mann-Whitney test). The rest HRV. In the celiac group the assessment of HRV revealed a negative significant correlation of claudin concentration and low and very low frequencies (VLF-RR). Singaper’s rank correlation coefficient: r = −0.51, P = 0.018) as well as positive correlation between IL-1beta and LF/HF was demonstrated (r = 0.51, P = 0.032). Statistically significant, negative and strong correlation of IL-1 beta concentration and DP (Dominant Power of EGG) (r = −0.58, P = 0.038) was shown.

Conclusion: ANS activity measured by EGG and HRV seems to be correlated to presence of IL-1beta. In celiac group the serum concentration of claudin and occludin do not correlate to ANS activity. Due to former research on autonomic imbalance in CeD with sympathetic overdrive, the hypothesis of influence of IL-1beta on ANS activity should be considered.

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

P1277 WIDE HETEROGENEITY AND HIGH MORTALITY IN UNDEFINED AND NON-COEHLI REFRACTORY SPRUE: A RETROSPECTIVE EVALUATION OF 7 CASES

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Introduction: Small bowel villous atrophy (VA) is mainly related to coeliac disease (CD), but that develops in HLA DQ2/DQ8 positive patients and improves on a gluten-free diet. Other forms of VA unrelated to CD are common variable immune-deficiency, autoimmune enteropathy, small bowel malignancies, medication-related enteropathies, HIV, tropical sprue, and giardiasis [1–3]. However, there are also forms of VA in which CD can be neither confirmed nor excluded and there are forms of VA in which, although CD is excluded, a definitive diagnosis cannot be made. Some years ago, we coined the terms undefined sprue (US) and non-coeliac refractory sprue (NCRS) to define these two
P1278 EVERYDAY LIFE RESTRICTIONS CAUSED BY LONG-TERM TREATED CELIAC DISEASE: PREDICTION 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 poor adherence to the life restrictions caused by celiac disease.
Aims & Methods: 232 adults (women 69%, median age 27.0 yr) with a childhood diagnosis of celiac disease fulfilled a questionnaire evaluating their experiences about health and lifestyle, possible co-morbidities, adherence and attitudes towards GFD and long-term follow-up of celiac disease. In addition, they completed validated Gastrointestinal Symptom Rating Scale (GSRS) and Psychological General Well-Being (PGWB) 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 with gluten-free dishes (58%) and visiting a friend (30%). Patients reporting restrictions had more often anaemia (38% vs 22%, p = 0.013) and severe symptoms (16% vs 6%, p = 0.047) at diagnosis, whereas the groups did not differ in age, gender or other clinical and histological presentation. Current age (9.4 vs 11.0 years, p = 0.015) and time from the diagnosis (18.6 vs 17.9 y, p = 0.468) were also comparable, as well as were self-perceived 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 no also difference in specific gastrointestinal symptoms as measured by GSRS scores, but patients considering the disease restrictive reported more overall symptoms possibly related to celiac disease than those without restrictions (32% vs 17%, p = 0.007). Furthermore, dietary adherence (strict GFD 78% vs 82%, p = 0.770) was 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 anaemia at diagnosis might require special attention and tailored follow-up in these circumstances.
Disclosure of Interest: All authors have declared no conflicts of interest.
References

P1279 SYSTEMATIC REVIEW OF THE ECONOMIC BURDEN OF COELIAC DISEASE
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Introduction: The prevalence of diagnosed coeliac disease (CD) has rapidly increased since the developed countries at the last 30 years. The economic burden of diagnosing, managing, and monitoring CD can be substantial but is poorly understood. To assess the economic burden of CD, we systematically reviewed current evidence quantifying economic costs and health resource utilization (HRU) for CD in North America and Europe.
Aims & Methods: Searches of Medline, Embase, EconLit, the Cochrane Library, and conference abstracts systematically identified literature published in English during the last 10 years assessing direct and indirect costs, cost-effectiveness studies, and cost-utility studies related to CD. Cost estimates were adjusted to 2015/2016 to account for inflation.
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 was $5,000 and $3,400 (SUS 2013) to more than a person 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 than 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
M. Gerber: Michele Gerber is employed by Takeda Pharmaceuticals International Co, Cambridge, USA
All other authors have declared no conflicts of interest.
References
2. All authors have declared no conflicts of interest.

P1280 PNPLA3 R573S/409H POLYMORPHISM PREDICTS THE DEVELOPMENT AND THE SEVERITY OF HEPATIC STEATOSIS, BUT NOT METABOLIC SYNDROME, IN PATIENTS WITH CELIAC DISEASE
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Introduction: Metabolic syndrome (MS) and hepatic steatosis (HS) are frequent in patients with celiac disease (CD) after commencing gluten-free diet (GFD), but data about predictive factors for such a condition are still scarce.
Aims & Methods: We aimed to evaluate the role of PNPLA3 rs738409 in the development of MS and HS in CD patients after starting GFD. From June 2014 to September 2016 we consecutively enrolled all patients referred to academic gastroenterological centre, suffering from CD, with our without HS. All patients underwent anthropometrics and serological investigations, ultrasonography (US) to evaluate the degree and severity of HS and genotyping of PNPLA3 rs738409 polymorphism.
Results: Finally, 370 subjects were enrolled (136 with HS and 234 without HS). After genotyping assays, CC genotype was found in 194 subjects (52.4%), GG genotype in 138 subjects (37.3%), while 38 individuals (10.2%) showed the GG genotype. At binary logistic regression, only G and GG alleles were predictive for the development of HS (OR 1.97; p = 0.01 for G carriers and OR 6.9; p < 0.001 for GG carriers), while BMI (OR 3.8; p < 0.001) and waist circumference (OR 2.8; p = 0.03) at CD diagnosis were the only independent factors for the development of MS. The intergroup comparison among HS patients showed that
the severe grade of HS was more frequently observed in GG than in CC carriers (27% vs 11.3%; p = 0.001, OR 2.18).

Conclusion: PNPLA3 G and GG carriers with CD have higher susceptibility to hepatic steatosis, but not to metabolic syndrome. Moreover, patients with GG alleles display a more relevant disease in terms of severity of HS based on US evaluation.

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

References

P1282 HOW MANY HOURS DO STABLE COELIAC PATIENTS ACTUALLY NEED A DEXA SCAN?
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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.

Aims & 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. 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 78%, iron in 88%, calcium in 85% and vitamin D in 69%. DEXA scans occurred in 74% of patients (n = 119), including 65% (n = 77) who were screened around the time of diagnosis. However, only 24% (n = 28) actually warranted the scan according to guidelines1,2, and 68% (n = 81) did not fulfil criteria for a DEXA. In 8% of patients (n = 10), there was inadequate data. Of the 81 patients who did not warrant a DEXA scan, 77 results were available: normal in 48% (n = 37), osteopenia in 43% (n = 33) and osteoporosis in 9% (n = 7). Of the 7 patients that had osteoporosis, 4 patients were under 50 years old (57%). Of the appropriate DEXA requests, 25% (n = 7) were normal, 39% (n = 11) had osteo- poria 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 in most CD patients because it is easier than attempting to judge an individual’s risk in the setting of conflicting guidelines. The pick-up rate of osteoporosis in 36% of appropriately screened patients (vs 9% in inappropriate scan requests) suggests that targeted screening allows for a more rational and cost-effective use of a limited resource. We hope that the guidelines can now be updated with more clarity for the practitioners who request DEXA scans in CD patients.

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

References

P1283 MONITORING PATIENTS WITH COELIAC DISEASE: WHO ACTUALLY NEEDS A DEXA SCAN?
M. Yalchin, R. Ekersley, T. Coysh, S. Mann
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Disclosure of Interest: All authors have declared no conflicts of interest.

References
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Introduction: A life-long gluten-free diet (GFD) is the only available treatment for patients with celiac disease (CD). Adherence to the GFD is associated with symptoms remission, reversal of mucosal atrophy and, possibly, prevention of CD-related complications. However, data on the long-term effects of a good or poor adherence to the GFD are limited.

Aims & Methods: The aim of this study was to assess the rate and accuracy of compliance to a strict GFD in patients with a CD history of more than 30 years and to compare endpoints such as complications, symptoms and histology between patients following a strict GFD and patients not compliant to the diet. Between 2015 and 2016, data from all patients diagnosed with CD at the Fondazione IRCCS Ca’ Granda before 1985 were retrieved. Patients not undergoing regular follow-up at the clinic were contacted in order to collect recent clinical data (e.g. results as regards symptoms, adherence to the GFD, laboratory data, and complications occurrence). All patients were asked to fill in a questionnaire investigating their knowledge on gluten free products and behavioral rules; in case of patients with CD diagnosis in childhood, the same questionnaire was administered to their parents.

Results: Clinical data from 196 patients were collected and analyzed. Patients were divided into 3 groups according to their adherence to GFD: 133 patients reporting a lifelong strict GFD, 29 patients on GFD at the time of follow-up but with a history of at least 5 years of gluten-containing diet (GCD), and 35 patients who reported to be on a GCD. No significant differences were found between groups regarding symptoms and histology at diagnosis, onset of associated autoimmune disorders, family history of CD and compliance to follow up. The onset of complications at follow-up did not significantly differ in the three groups as well. Follow-up history was available in 63 patients (32.1%). Persistence of villous atrophy was as expected more frequent in patients on GCD as on GFD (46% vs. 7% vs. 20 patients with normal histology during long-term GCD). The questionnaire was returned by 90 patients and 66 parents: a slightly better knowledge about the GFD and its behavioral rules was found between patients on lifelong GFD and patients with ongoing or past GCD (p = 0.03).

Conclusion: Poor adherence to the GFD is reported by almost one-third of patients with a long-term history of CD, confirming the high rate of poor compliance to such a strict diet among patients. Poor adherence to the GFD could be considered a major predictor of persistent or villous atrophy, but this does not necessarily imply the development of CD complications. Moreover, results from follow up biopsies showed that a GCD does not imply recurrence of villous atrophy in all patients, attesting the possibility that some CD patients may maintain a gluten tolerance over time.

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

References
volume reductions with TED. Plasma citrusine changes with TED may reflect increased enteric motility. 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. Olivier: I am an employee for Shire.

PI287 LACTULOSE, LACTOSE AND FRUCTOSE INGESTION INDUCES SPECIFIC PATTERNS OF GASTROINTESTINAL SYMPTOMS IN CHINESE SUBJECTS WITH FUNCTIONAL DISPEPSIA AND IRRITABLE BOWEL SYMPTOMS

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Introduction: Prevalence rates of Functional Dyspepsia (FD) in East Asia are three times higher than Irritable Bowel Syndrome (IBS) rates. Many researchers have suggested that IBS subjects in the region experience their pain and discomfort in the upper abdomen, leading to misdiagnosis as FD.

Aims & Methods: We aimed to compare patterns of gastrointestinal (GI) symptoms induced in the Chinese population with FD or IBS during provocative hydrogen breath testing (HBT) with lactulose, lactose and fructose. Subjects fulfilling the ROME III classification of FD and IBS, and control subjects with no known GI disorder/symptoms were recruited. All subjects underwent HBT the ROME III classification of FD and IBS, and control subjects with no known GI disorder/symptoms were recruited. All subjects underwent HBT with lactulose (10 ml), lactose (25 g) and fructose (25 g). Subsequent breath tests were performed after a washout period of at least one week. Blood pressure and heart rate were recorded every 15 minutes for 3 h. GI symptoms were recorded during these 3 h intervals and telephone follow-up 24 hours later.

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, respectively. Subjects with IBS subjects in the region experience their pain and discomfort in the upper abdomen, leading to misdiagnosis as FD.

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were evaluated: Group 1 (no colon/stoma present/no colon-in-continuity), Group 2 (≥50% colon to stoma or colon-in-continuity), and Group 3 (other bowel anastomoses). 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, -0.9 [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 2, -2.7 [1.2]; Week 24, -5.1 [3.7]). Response rates were higher with TED versus placebo in all groups, but the difference was significant only in Group 1 (76% vs 19%, P = 0.001; Group 2, 56% vs 40%, P = 0.36; Group 3, 57% vs 29%, P = 0.035). Adverse events were reported by 94%, 72%, and 86% of Group 1, Group 2, and Group 3 patients receiving TED, respectively.

Table: Baseline Patient Characteristics

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Group 1: No Colon, Stoma Present, No Colon-in-Continuity</th>
<th>Group 2: ≥50% Colon, No Stoma, Colon-in-Continuity</th>
<th>Group 3: Other Bowel Anatomies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stoma present, n (%))</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Colon-in-continuity</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Injury</td>
<td>1 (6)</td>
<td>3 (19)</td>
<td>3 (17)</td>
</tr>
<tr>
<td>Vomitus</td>
<td>0</td>
<td>0</td>
<td>4 (27)</td>
</tr>
<tr>
<td>Cancer</td>
<td>0</td>
<td>0</td>
<td>1 (14)</td>
</tr>
<tr>
<td>Other</td>
<td>4 (24)</td>
<td>4 (25)</td>
<td>4 (22)</td>
</tr>
<tr>
<td>Colon-in-continuity, n (%)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>18 (100)</td>
</tr>
<tr>
<td>BMI, kg/m²</td>
<td>23.6</td>
<td>23.6</td>
<td>22.3</td>
</tr>
<tr>
<td>Cause of SBS-IF, n</td>
<td>9 (53)</td>
<td>7 (44)</td>
<td>0</td>
</tr>
<tr>
<td>Crohn’s disease</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vascular complications</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Injury</td>
<td>1 (6)</td>
<td>3 (19)</td>
<td>3 (17)</td>
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<td>Cancer</td>
<td>0</td>
<td>0</td>
<td>1 (14)</td>
</tr>
<tr>
<td>Other</td>
<td>4 (24)</td>
<td>4 (25)</td>
<td>4 (22)</td>
</tr>
<tr>
<td>Colon-in-continuity, n (%)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>18 (100)</td>
</tr>
<tr>
<td>Jejunojejunostomy, n (%)</td>
<td>11 (65)</td>
<td>5 (31)</td>
<td>0</td>
</tr>
<tr>
<td>Ileostomy</td>
<td>6 (35)</td>
<td>9 (56)</td>
<td>0</td>
</tr>
<tr>
<td>Colostomy</td>
<td>0</td>
<td>0</td>
<td>4 (27)</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>2 (13)</td>
<td>0</td>
</tr>
<tr>
<td>Ileocolonic anastomosis, n (%)</td>
<td>0</td>
<td>0</td>
<td>3 (17)</td>
</tr>
<tr>
<td>Mean (SD) PS volume, liter/week</td>
<td>137.7 [70.9]</td>
<td>113.7 [79.8]</td>
<td>52.2 [39.2]</td>
</tr>
<tr>
<td>Mean (SD) PS volume, liter/week</td>
<td>7.1 (6.7)</td>
<td>5.1 (3.1)</td>
<td>6.2 (6.5)</td>
</tr>
</tbody>
</table>
| Conclusion: Patients with SBS-IF in Group 1 had the highest baseline PS volume and responded best 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. Olivier: I am an employee for Shire.

P1292 USE OF 3D COMPUTED TOMOGRAPHIC ENTEROCLYSIS TO OBTAIN INFORMATION ON THE LENGTH OF THE SMALL INTESTINE AND ON THE SIZE, SHAPE, LOCATION OF INTESTINAL NEOPLASIAS

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Introduction: We established a new imaging technique, 3D computed tomographic enteroclysis (CT enteroclysis), to explore the small bowel (1). In our hospital, this examination is performed routinely to detect gross lesions in the small intestine. In our study, we analysed the clinical performance of 3D CT enteroclysis to evaluate its safety, feasibility, and usefulness for small intestinal neoplasias.

Aims & Methods: Data on 3D CT enteroclysis performed in our hospital from January 2010 to March 2017 were reviewed. In 3D CT enteroclysis, the small bowel was inflated with air using a nasoduodenal tube, CT images were taken, and the 3D overviews, virtual endoscopy views, and virtual dissection views were generated using a virtual colonoscopy system. Total volume of injected air, intraintestinal pressure, and length of the depicted small bowel were recorded. The images of small intestinal neoplasias were collected and compared with other diagnostic methods.

Results: One-hundred thirty 3D CT enteroclysis were performed for 93 males and 46 females. The mean age was 49.2 y (17–87). Examinations were performed for definite/suspected Crohn’s disease in 55, intestinal obstruction in 54, and other gastrointestinal neoplasias in 25 and others in 5 patients. Informed consent was obtained from all patients, followed by RNA extraction. Gene expression profiling with an oligonucleotide microarray was performed in a training set of 4 matched tumor-normal pairs of superficial SNADETs. Genes and pathways that had significant differences between pairs were identified, followed by a set-level gene enrichment analysis with a pre-validated curated gene set. Results were confirmed with rt-PCR in all other independent SNADET pairs.

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

P1290 GENE EXPRESSION PROFILING OF SUPERFICIAL SPORADIC NON-AMPULLARY DUODENAL EPITHELIAL TUMORS

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Introduction: Sporadic non-ampullary duodenal epithelial tumors (SNADETs) are rare, accounting for less than 1% of gastrointestinal neoplasms, and thus the mechanism behind the pathogenesis and carcinogenesis of these neoplasms is still poorly understood. However, with the overall increase of small bowel cancer in recent years, there is an increasing need to clarify the morphology of SNADETs. This study was conducted with the objective of identifying genetic markers and pathways specific to superficial SNADETs through gene-expression profiling.

Aims & Methods: This was a prospective pilot study on patients with a diagnosis of superficial SNADETs who were treated at the Department of Gastroenterology, Graduate School of Medicine, The University of Tokyo Hospital, Tokyo, Japan. Before enrollment, all patients underwent endoscopic evaluation to preclude ampullary lesions, and had a preoperative histologic diagnosis of either adenoma or adenocarcinoma. Patients with familial polyposis were excluded. Immediately before resection of the target lesions, a simple biopsy sample from the duodenal tumor and a paired sample from the surrounding normal duodenal mucosa was endoscopically obtained from each patient, followed by RNA extraction. Gene expression profiling with an oligonucleotide microarray was performed in a training set of 4 matched tumor-normal pairs of superficial SNADETs. Genes and pathways that had significant differences between pairs were identified, followed by a set-level gene enrichment analysis with a pre-validated curated gene set. Results were confirmed with rt-PCR in all other independent SNADET pairs.

Disclosure of Interest: From Jan 2014 to Jan 2016, a total of 12 consecutive patients were enrolled in this study. One patient was excluded due to a post-treatment diagnosis of familial polyposis. In a training set of 4 tumor-mucosa pairs, 626 probes (168 up-regulated, 458 down-regulated) which consistently demonstrated a 2-fold expression difference between tumor and normal mucosa in all matched pairs were identified. RT-PCR of genes most highly differentially expressed between the tumors and normal mucosa was performed in the 4 pairs in the training set as well as 7 independent pairs. Consistent gene expression patterns concurrent with microarray results were demonstrated in all pairs, confirming the results of this study. Gene set enrichment analysis of the training set using a curated data set demonstrated a strong association between SNADETs and colorectal adenomas (p < 0.0001) and APC down-regulation (p < 0.00001). No other significant associations were demonstrated.

Conclusion: Superficial SNADETs demonstrate gene expression characteristics that strongly resemble those of colorectal adenomas. Gene expression profiling of clinical samples from superficial SNADETs has demonstrated that characterization of these lesions has also demonstrated the significant role of APC down-regulation in the pathogenesis of SNADETs, suggesting that an adenoma-carcinoma sequence similar to colorectal adenomas may be seen in SNADETs. Further analysis of genes which may play a key role in the carcinogenesis of these neoplasms is required.

Disclosure of Interest: All authors have declared no conflicts of interest.
the size and locate the position of the lesions, and present objective information for surgeons. For SBCE, laboratory detection 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
1. Yoshikawa T, Takehara Y, Kikuyama M, et al. Computed tomographic enterography and virtual endoscopy for small-bowel tumors. Therefore, 3D CT enteroclysis is a well-established tool in the diagnosis and therapy of small bowel diseases. Ink tattooing of the small bowel is used in some centers to mark pathologic lesions or the depth of small bowel insertion.

Aims & Methods: The purpose of this study was to determine the safety, the detection rate within a surgical operation or video capsule endoscopy and the clinical relevance of ink tattooing during balloon-assisted enteroscopy (BAE). Between 01.01.2010 to 31.12.2015 229 BAE were performed in 156 patients (pts) at the endoscopy unit of Klinikum Augsburg. We performed a retrospective analysis of all 81 (52%) patients who received an ink tattooing during BAE.

Results: Main indications for BAE were known angiodysplasia (37 pts), suspected bleeding of the small intestine (32 pts) and anemia (19 pts). Other indications were known or suspected tumor of the small intestine (17 pts) and Crohn’s disease (3 pts). In 27 patients no pathologic findings were found. In 41 patients an active bleeding, angiodysplasia or hemangioma were found and further therapeutic interventions were performed. Tumor/polyps (11 pts), inflammatory lesions (7 pts) and ulcerative diverticula (1 pts) were other findings. In all 81 patients ink tattooing of the small intestine was performed with no complications. 46 (57%) of 81 patients received a follow-up mainly due to re-bleeding. 5 patients underwent surgery directly after enteroscopy with ink-tattooing and therefore received no follow-up. In total 26 (32%) patients received a capsule endoscopy after BAE at our hospital. The ink tattooing could be detected via capsule endoscopy in 19 of these 26 patients (73%). The ink tattooing of the procedure could be detected via retracing endoscopy in 14% (n = 8) of patients who underwent a double balloon enteroscopy (DBE) for further evaluation of findings and to obtain tissue samples. In terms of histological diagnoses, adenocarcinomas were found in 43% (n = 6), Neurendocrine tumours in 29% (n = 4), Gastrointestinal stromal tumours in 14% (n = 2) of all patients. Nine patients received a second ink-tattooing of the small intestine within these examinations without any complications. Ink tattooing had no clinical relevance or therapeutic consequence in 62 of the 81 (72%) patients within the observation period. 5 of these 62 Patients received no further diagnostic or therapeutic steps due to their clinical situation. In 9 patients ink tattooing influenced the choice of approach (antegrade versus retrograde) for re-enteroscopy after a video capsule endoscopy. In 7 patients the ink tattooing was used for intraoperative localization and in 3 patients for intraoperative localization as well as for enteroscopy. The intraoperative detection rate of the ink tattooing was 100%.

Conclusion: Ink tattooing of the small intestine is a minimally invasive and safe endoscopic procedure to mark the depth of scope insertion or a pathologic lesion during balloon-assisted enteroscopy. It is a useful tool to avoid unnecessary examinations and aids the intraoperative localization of pathologic lesions. A complete 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.
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 position of the device. All patients were followed up by a nutritionist with a specific section on diet and diet plan.

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, the migration of the balloon was spontaneous without needing endoscopic removal. All 6 patients successfully swallowed the balloon without requiring endoscopic removal. The balloon treatment is based on gastric space-occupying effects that increase the feeling of satiety and may also affect 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 Elipse™ is the world’s first intragastric balloon that does not require endoscopy or anesthesia.

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
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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 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).

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

Results: Among 50 patients, 15 patients received laparoscopic sleeve gastrectomy, 24 patients received laparoscopic mini-gastric bypass (MGVB), 5 patients received laparoscopic Roux-en-Y gastric bypass (RYGB) and 6 patients received laparoscopic duodeno-jejunal bypass with sleeve gastrectomy (DJB-SG). The characteristic of the study population was shown as table 1. The differences of mean for calcium, vitamin D, PTH and BMD after bariatric surgery were -0.16 mg/dl (P = 0.003), -0.15 ng/ml (P = 0.001), 8.68 mg/g (P = 0.06) and -0.04 g/cm2 (P = 0.14) respectively.

Table 1: Characteristics of study population one year after bariatric surgery

<table>
<thead>
<tr>
<th></th>
<th>LSG</th>
<th>MGB</th>
<th>RYGB</th>
<th>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>
<td>50</td>
</tr>
<tr>
<td>Age, years</td>
<td>34.7 (7.4)</td>
<td>37.4 (11.7)</td>
<td>41.4 (14.1)</td>
<td>44 (10)</td>
<td>37.8 (10.5)</td>
</tr>
<tr>
<td>Sex(M:F)</td>
<td>7.8</td>
<td>5:19</td>
<td>23</td>
<td>3:4</td>
<td>17.33</td>
</tr>
<tr>
<td>BMI(kg/m2)</td>
<td>29.8(4.7)</td>
<td>27.6(4.4)</td>
<td>27.9(2.9)</td>
<td>24(2.4)</td>
<td></td>
</tr>
<tr>
<td>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>
<td>9.5(0.4)</td>
</tr>
<tr>
<td>PTH(ng/ml)</td>
<td>63.8(21.3)</td>
<td>70.4(25.9)</td>
<td>73.1(4.2)</td>
<td>50(14)</td>
<td>62.9(4.2)</td>
</tr>
<tr>
<td>VIT.D (ng/ml)</td>
<td>19.4(7.7)</td>
<td>14.6(9.8)</td>
<td>12.9(8.6)</td>
<td>16.9(5.3)</td>
<td>15.6(7.5)</td>
</tr>
<tr>
<td>VIT.D insufficiency (6.7%)</td>
<td>83(3.3%)</td>
<td>3(60%)</td>
<td>0</td>
<td>12.23(5)</td>
<td></td>
</tr>
<tr>
<td>VIT.D deficiency (&lt;5.3 ng/ml)</td>
<td>0</td>
<td>0</td>
<td>1(20%)</td>
<td>0</td>
<td>1(2%)</td>
</tr>
<tr>
<td>BMD(g/cm2)</td>
<td>1.11(0.25)</td>
<td>1.15(0.23)</td>
<td>1.18(0.26)</td>
<td>1.11(0.19)</td>
<td>1.15(0.17)</td>
</tr>
</tbody>
</table>

Conclusion: One year after bariatric surgery, the prevalence of osteoporosis and osteopenia was low. The serum Vitamin D level increased significantly but no significant change of BMD was noted. Further longitudinal studies are warranted to clarify the long-term effect of bariatric surgery on BMD in Chinese population.

Disclosue 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. IMB gnomon balloon implant was 09 months. Statistical analysis was performed according to sex and degree of excess weight (overweight and grade I, II and III). Data were analyzed using Student t-test, and to 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 gastric leak condition with psychologist and 94% of them did not make a psychological evaluation before the procedure. 158 (1.54%) due fail on weight loss or weight gain–These were analyzed in relation to follow-up with nutritionist 58 patients had no comorbidities, 52 had hypertension, 45 had dyslipidemia, 32 had diabetes, 16.98 kg (SD:6.04) and average weight regained in this interval was 22.08 kg (SD:11.05). The mean diameter of the anastomosis was 24.78 mm (±6.04) and the average number of APC sessions was 1.78 times (±0.61). The average reduction of anastomosis diameter was 14.86 mm (±7.24) and the final average diameter was 10.42 mm (±8.07). The average weight loss between the first and last APC was 13.37 kg (±7.82) and the average decrease of BMI was 4.59 kg/m2 (±2.78). 122 patients (20.02%) did not achieve the target GI diameter and 05 patient (0.9%) did not lose weight even with the desired GI diameter. From the 146 patients who started with the GI balloon and were followed for 12 months, the weight recovery was less than 2 kg of the weight loss. Of the 554 patients APC, 51 (9.2%) required dilatation balloon due to symptomatic stenosis at least once. No further complications were reported.

Conclusion: Argon Plasma Coagulation (APC) has been shown to be an effective and safe endoscopic technique for the reduction of gastro enteric anastomosis in patients undergoing bariatric surgery who have regained weight with dilation of the anastomosis. The reintroduction of the patient to the multidisciplinary team is mandatory 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

P1301 WEIGHT REGAIN AFTER BARIATRIC SURGERY - ARGON PLASMA COAGULATION FOR GASTROJEUNAL ANASTOMOSIS DECREASE

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Introduction: The weight regained has been a described growing problem in patients after bariatric surgery. This weight regained is multifacntial and associated with dilation of Gastrojeunostomy (GJ). For the patients with significant weight regain some revisitional procedures had been attempted and more recently endoscopic revisitional 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 GI from Jan-2014 to April-2017. 554 RYGB subjects with weight regain a dilation anastomosis (>18 mm) and at least 2 APC sessions 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 defect was measured using a 33-mm long Olympus scope between an 40 mm scope and an 42 mm scope with a maximum of 03 applications. APC set was at 2–3ml with 65–85W. GJ diameter target was 8–12 mm estimated with pre-measured grasper. At first APC session, pre-op weight and BMI, post-op weight nadir, actual weight and BMI and estimated diameter of GI 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 statistic, 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 (±42.93). Average initial weight and average weight loss in this interval was 22.08 kg (±11.05). The mean diameter of the anastomosis was 24.78 mm (±6.04) and the average number of APC sessions was 1.78 times (±0.61). The average reduction of anastomosis diameter was 14.86 mm (±7.24) and the final average diameter was 10.42 mm (±8.07). The average weight loss between the first and last APC was 13.37 kg (±7.82) and the average decrease of BMI was 4.59 kg/m2 (±2.78). 122 patients (20.02%) did not achieve the target GI diameter and 05 patient (0.9%) did not lose weight even with the desired GI diameter. From the 146 patients who started with the GI balloon and were followed for 12 months, the weight recovery was less than 2 kg of the weight loss. Of the 554 patients APC, 51 (9.2%) required dilatation balloon due to symptomatic stenosis at least once. No further complications were reported.

Conclusion: Argon Plasma Coagulation (APC) has been shown to be an effective and safe endoscopic technique for the reduction of gastro enteric anastomosis in patients undergoing bariatric surgery who have regained weight with dilation of the anastomosis. The reintroduction of the patient to the multidisciplinary team is mandatory 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 unfeasible. In this scenario, 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 (75.3%). Mean age was 64.26 (60–80) years. Ten patients had no comorbidities, 52 had hypertension, 45 had dyslipidemia, 32 had insulin resistance, 12 had type II diabetes, and 10 had ischaemic 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 kg/m²) according to the Pan American Health Organization (OPAS). 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>Final</th>
<th>Reduction</th>
<th>%TBWL</th>
<th>BMI(kg/m²)</th>
<th>Excess weight(kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>103.37 ± 17.14</td>
<td>21.71 ± 7.78</td>
<td>21.07 ± 6.07</td>
<td>37.89 ± 5.41</td>
<td>35.13 ± 16.98</td>
</tr>
<tr>
<td>Final</td>
<td>81.66 ± 15.71</td>
<td>8.03 ± 2.88</td>
<td>20.70 ± 6.07</td>
<td>29.86 ± 4.76</td>
<td>13.82 ± 15.49</td>
</tr>
<tr>
<td>%EWL</td>
<td></td>
<td></td>
<td></td>
<td>60.27 ± 30.01</td>
<td></td>
</tr>
</tbody>
</table>

*p < 0.0001 for all comparisons between values at baseline and at the end of the study. IGB(intragastric 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.

P1306 THE ROLE OF BILE ACIDS AND GUT MICROBIOTA IN CORONARY ARTERY DISEASE: RESULTS OF THE MARACUB 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 regulates the basal energy expenditure and gluco-lipidic metabolism. In animal models of atheroma development (ApoE−−; and LDL−− mutant mouse model) 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 in or 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 faecal BA were quantified by high pressure liquid chromatography and tandem mass spectrometry. The faecal 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 concentrations of total BA was 1.02 ± 0.16 mol/l in patients with CAD and 2.16 ± 0.38 mol/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 ± 0.213 mol/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.

P1307 LOW FODMAP DIET: REINTRODUCTION PHASE DOES NOT MODIFY EFFICACY, BUT BEWARE OF REAL TRIGGER FOODS!

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Background: The low-FODMAP diet (LF/D) is used to treat patients with irritable bowel syndrome (IBS) even if some nutritional concerns have been raised. It starts with an elimination phase and is followed by a reintroduction phase to clearly detect the “symptom trigger” foods in order to suggest a definitive and less restrictive diet tailored to the patient’s needs.

Aims & Methods: The aims of this study were to evaluate: 1) the effects of FODMAP reintroduction on a) body composition and nutritional status, using Bioelectrical Impedance Vector Analyses (BIVA), b) abdominal symptoms, c) quality of life, d) anxiety/depression, e) sleep quality. 2) if the patients’ perception of the “trigger” foods was accurate.

Results: 66 IBS patients (54F, 12 M; 44.8 ± 13.0 yrs.) started (T0) a LF/D for 8 weeks (T1) and followed a 9–14 week reintroduction period (T2). They underwent blood tests at T0 and T1, BIVA, anthropometric data, IBS-Symptom Severity Score, Bristol Stool Chart (BSC), SF36, Hospital Anxiety and Depression Scale and Pittsburgh Sleep Quality Index were performed at T0, T1 and T2. The patients were monitored by a nutritionist to verify their compliance.

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 faces 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.

Conclusion: 66 IBS patients 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 = 0.0003).

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.

P1308 THE EFFECTS OF A CONTROLLED GLUTEN CHALLENGE IN PATIENTS WITH SUSPECTED NON-COEILIAC 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-blind provoked gluten and placebo containing muffins. They were instructed to eat two muffins a day (11 g gluten) for four days, followed by a three days' 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 = 0.0003).

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.
both at T1 (8.4 ± 1.6) and T2 (8.2 ± 1.7). When starting, LFD patients considered as trigger foods fructose (67%), fructans (27%), fructose (17%), galacto-oligosaccharides (GOS) (17%) and polyols (3%); the reintroduction phase (T2) enabled us to detect lactose in 70%, fructans in 30%, fructose in 37%, GOS in 33% and polyols 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 polyols (κ: 0.16) 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 the patients’ 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 nutri-

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 symptoms 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 control.

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 and GLUT5 expression 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 (rM = 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 pathogenesis of the fructose bowel syndrome. However, in secondary malabsorption decreased GLUT5 expression was detected. Further investigation is needed to understand the essential factors in FM and the influence on functional gastrointestinal disorders.

disclosure of interest: All authors have declared no conflicts of interest.

P1307 BETTER RESPONSE TO LOW FODMAP DIET IN JH NEGATIVE PATIENTS WITH DISORDERS OF GUT-BRAIN INTERACTION

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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 FGID.

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 35.5 (range 18-79) years. Patients were more likely to exhibit JH compared to males (38.62 [61.3%] vs. 6/22 [27.3%]; p = 0.006). Global symptom response rate to a diet low in FODMAPs was 64/84 (76.2%). Our data showed significantly better response to a low FODMAP diet in JH negative patients than in JH positive patients (36/40 [90.0%] vs. 28/44 [63.6%], p = 0.005, ITT). Response of 7 patients was unknown because of early therapy discontinuation before nutritional re-counseling. When excluding 7 patients with therapy discontinuation from our calculations, the difference in diet response between JH negative and JH positive patients remained significant (36.39 [92.3%] vs. 28/38 [73.7%]; p = 0.036).

Conclusion: Our data indicate an association between global symptom response to a diet low in FODMAPs and joint hypermobility status in FGID patients. An understanding of the structural pathophysiological features of JH is necessary for better management of patients suffering from intestinal permeability causing gastrointestinal symptoms in JH positive patients and limiting response to low FODMAP diet should be considered. Our findings represent a further step towards pathophysiological features in FGIDs and might help to select patients for individually appropriate therapies.

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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 randomized, single-blind, placebo controlled, single-center study. Healthy adults with baseline fiber intake ≥14 g/1000 calories/day, <10% daily calories from added sugar; ≥5 servings of fruits and vegetables/day; and ≥15% daily calories from saturated fat were recruited. Exclusion criteria included known GI disease or symptoms, antibiotic/probiotic use within 4 weeks of the study, pregnancy, and vulnerable adults. At baseline visit, participants completed a symptom and demographic questionnaire and underwent esophagogastroduodenoscopy (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 partici-
pants consumed a 7-day standardized diet with typical United States high-sugar, low-fiber diet (45% carbohydrates, 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 Ussing chamber. Intestinal permeability was evaluated using transepithelial 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 (0.001-300 μM) of serotonin (5-HT) on the submucosal side. These measurements were repeated after the dietary intervention. Data are pre-

sent 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 of 1 was 23.1 kg/m2. Baseline and 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 participants had positive duodenal cultures (> 100,000 CFU/mL, anaerobic) despite having no symptoms. Of the 6 who had no growth initially, 1 developed bacterial overgrowth following intervention. There was no signifi-
cant change in TEER (26.45 ± 1.98 vs 26.18 ± 2.45 Ohms/cm²), FITC flux (217 ± 34.72 vs 217 ± 6.42 ng/ml/g) or baseline Isc (48.27 ± 0.69 vs 51.58 ± 2.52 ng/ml/g) or baseline Isc (48.27 ± 0.69 vs 51.58 ± 2.52 ng/ml/g). There was a significantly lower ΔIsc response to increasing concentrations of 5-HT after dietary intervention (P < 0.05, two-way ANOVA).

Conclusion: A low-fiber, high sugar diet led to gastrointestinal symptoms in participants who normally consume a high-fiber diet. This diet was associated with a significant decrease in 5-HT evoked secretory response in the duodenum, sug-

gesting a potential role for dietary modulation of host serotoninergic 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 ANOREXIC EFFECTS OF CHOLECYSTOKININ

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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 levels of CCK in blood were shown to be high in FD patients. In FD patients, stress have important roles of pathogenesis of the disease.

Aims & Methods: We undertook to clarify whether stress influences the actions of cholecystokinin (CCK) on appetite and gastric emptying. As stress, we gave restraint stress, corticosterone releasing factor (CRF) or urocortin (UCN1) injection intraperitoneally (IP). We also examined the effects of CCK and restraint stress on c-Fos expression in the neurons of appetite center of the brain. In the gastric emptying study, SD rats were fasted overnight. The amount of the mixture (food and glass beads) left in the stomach was measured after 2 hours of the perorally injection of mixed food, and gastric emptying rate was calculated. In the study on appetite, CCK was IP injected and the amounts of food was measured at 1 and 2 hours after the injection. In some experiments, CRF or UCN1 was IP injected and the interaction with CCK on food intake was examined.

In another study, restraint stress was given to rats and the interaction with CCK was evaluated. To study the involvement of brain in the interaction between CCK and stress, c-Fos expression in the neurons was examined and evaluated.

Results: CCK dose-dependently inhibited gastric emptying. CCK dose-dependently inhibited food intake during 1 hr and 2 hr. CRF (100mg/kg rat) significantly inhibited food intake. However, there was no interactive action between CCK and CRF on food intake. UCN1 (3 nmol/kg rat) inhibited food intake at 1 and 2 hours. There was an synergistic action between CCK and UCN1 on food intake.

Restraint stress amplified suppressive effect of CCK on gastric emptying and food intake. c-Fos expression of the neurons in the nucleus of soritary tract (NTS) and paraventricular nucleus of hypothalamus (PVN) by CCK was amplified by the addition of restraint stress.

Conclusion: The result suggests that stress might amplify anorexic effects of CCK through the activation of satiety center of the brain that might be the possible pathogenesis for postprandial distress syndromes of FD.

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

P1310 PEPTIDE TYROSINE-TYROSINE (PY) ENHANCES EFFECTS OF CHOLECYSTOKININ (CCK) ON GASTRIC MOTILITY AND FOOD INTAKE IN RATS

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Introduction: Cholecystokinin (CCK) and peptide tyrosine-tyrosine (PY) have been reported to suppress appetite and gastric emptying. Both peptides raise in blood by feeding, and maintain high levels simultaneously for 1–2 hours. Therefore there might be possible to cause interactive actions between two peptides, inducing satiation to finish food intake.

Aims & Methods: In this study, we undertook to elucidate whether CCK and PY have the interaction to decrease food intake. Study on gastric emptying. Male SD rats were fasted overnight, and 1 mL of mixture of food and glass beads was given into the stomach and then PY or CCK or CCK followed by PY was administered. The mixture of food left in the stomach was measured and gastric emptying rate was calculated. Study on appetite. PY or CCK was IP injected to the rats just before setting food to eat. The amounts of food were measured at 1 and 2 hours after the injection. To clarify the involvement of the brain in the interaction between CCK and PY, c-Fos expression was examined.

Results: CCK (0.5–10 nmol/kg) dose-dependently inhibited gastric emptying (p < 0.001). CCK 10 nmol/kg maximally inhibited food intake (p < 0.01). PY 25–250 pmol/kg significantly inhibited gastric emptying for 1 or 2 hrs after the injection (p < 0.01). PY 250 pmol/kg significantly inhibited food intake for 1 hr after the injection (p < 0.01). The combination of CCK 10 nmol/kg and PY 250 pmol/kg inhibited gastric emptying more than CCK alone (p < 0.001) or PY alone (not significant). PY and CCK additively inhibited food intake when PY was injected 20 minutes later from CCK injection. PY significantly amplified c-Fos expression induced by CCK in the nucleus of soritary tract (NTS) and paraventricular nucleus of hypothalamus (PVN) in the brain.

P1311 REGULATION OF MICRORNAS BY P53 FAMILY MEMBERS IN HEPATOCELLULAR CARCINOMA

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Introduction: Transcription 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. Meganuclease analyses were performed to identify p53- and p73-regulated microRNAs. Verification of p53- and p73-dependent microRNA expression was performed by qPCR. To evaluate the effect of HCC-relevant therapeutics on p53-dependent regulation of microRNAs transfected Hep3B cells were incubated with Doxorubicin, Sorafenib, Tivantinib, and Regorafenib in vitro.

Results: Overexpression of p53 and p73 induced a rash of microRNAs. p53 induced miR-34a by 2.4-fold, miR-145 by 2.7-fold and led to a slight reduction of miR-149. In the presence of p53 miR-34a was induced by 5.4-fold, miR-145 by 3.2-fold, and miR-149 by 5.5-fold. p53-dependent expression of miR-34a was further increased in the presence of Doxorubicin (5.7-fold), 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 hypothesise that regulation of tumour suppressive microRNAs represents an effector mechanism by which p53 family members exert their role in tumour 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.

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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 specific functions, 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.

Aims & Methods: The aim of this study was to characterize the so far unknown regulation of the IGFBP2 gene by p53 family members in HCC. Hep3B cells were transfected with rAd-p53 and -TAp73 and their transcriptional regulation of IGFBP2 was determined by qPCR. Intra- and extracellular IGFBP2 protein levels were analyzed by Western Blot and ELISA. Transfasc database analyses were performed to identify potential BS for p53 and p73 in the IGFBP2 locus. These sequences were cloned, mutated and analyzed for p53 family binding in luciferase reporter assays. Binding of p53 and p73 to the identified BS was confirmed by CHIP experiments.

Results: TAp73 transfection increased IGFBP2 expression by up to 60-fold and revealed three elevated intra- and extracellular IGFBP2 protein levels. Intracellular IGFBP2 protein was not detected in controls. p53 transfection induced IGFBP2 expression by up to 7-fold. Two potential p53 and p73 BS are located in the promoter region, another 5 potential p73 and one p53 BS were identified in intron 1 of the IGFBP2 gene. Intron 1-dependent luciferase activity was increased by up to 110-fold after TAp73 transfection and up to 20-fold after p53 transfection. Mutation and deletion of the identified p53 BS in intron 1 resulted in a reduction of luciferase activity by up to 85%. Deletion of one
potential p73 BS reduced luciferase activity by 85%. CHIP analyses verified binding of p53 to TAp73 and p53 in HCC. We demonstrate for the first time an interaction of TAp73 with IGFBP2 and therefore an important, so far unknown link between the p53 family member and IGFBP2. p53 proteins exert predominantly tumor-inhibiting effects, whereas the IGF axis is of critical importance for proliferative events. The particular ratio of both important signaling seems to be decisive for tumor characteristics and treatment response. Our results therefore not only expand our knowledge about p53 mechanisms, but also indicate that fine-tuning these signaling pathways provides new therapeutic options in clinical management of HCC.

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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 Shear Wave Elastography from General Electrics (2D-SWE.GE), while using Transient Elastography (TE) as the reference. We included 226 subjects in our study, with or without chronic liver disease, in whom LS was assessed using 2D-SWE.GE (LOGIQ E9, GE Healthcare) and TE (FibroScan, EchoSens). Reliable LS measurements were defined for TE as the median value of 10 measurements with a success rate of ≥60% and an interquartile range (IQR) < 30% of the median LS values. For 2D-SWE.GE 10 LS measurements were acquired in a homogenous area and the IQR and the IQR/M were calculated in each case. We divided our subjects into 3 groups according to the 2D-SWE.GE IQR/M: IQR/M < 0.10: 41 (18.1%) cases; 0.10 < IQR/M < 0.30: 155 (68.6%) cases; IQR/M > 0.30: 30 (13.3%) cases. We calculated the correlation coefficient between TE and 2D-SWE.GE in each group.

Results: All 226 (100%) subjects included had ≥10 valid measurements by means of 2D-SWE.GE and reliable results by TE. A strong positive correlation was found between LS values obtained by means of 2D-SWE.GE and TE in the IQR/M < 0.10 group (r = 0.84, p < 0.0001). A weak positive correlation was found between LS values obtained by means of 2D-SWE.GE and TE in the IQR/M > 0.30 group (r = 0.30, p = 0.0013). No statistical differences were found between the correlations in the IQR/M < 0.10 and 0.10 < IQR/M < 0.30 groups (p = 0.43).

Conclusion: Using the IQR/M < 0.30 as quality criteria significantly increase the reliability of LS measurements by means of 2D-SWE.GE. Using IQR/M < 0.10 criteria does strongly improve the reliability of 2D-SWE.GE LS measurements as compared to IQR/M < 0.30 criteria.

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References

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P1314 MONITORING OF LIVER FUNCTION IN PATIENTS WITH NONALCOHOLIC FATTY LIVER DISEASE IN COMBINATION WITH METABOLIC SYNDROME

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Introduction: 13C-methacetin breath test (13C-MBT) is used to specify the detoxification function of the liver by determination its metabolic capacity and degree of hepatocytes recovery.

Aims & Methods: The study involved 113 patients with MS aged from 37 to 82 years old with history of 20-25 kg/m2 in patients with 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 13C-methacetin on 40 and 120 minutes. Also evaluation was carried by mathematical deduction which measured the liver dysfunction stage.

Results: The data showed normal detoxication liver function in patients without MS (20.11 ± 0.55). The results were below normal in patients with BMI higher than 25 kg/m2 in which 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% (M(x) = 0.66, Cum.Dose 40 = 0.7, Cum.Dose 120 = 0.54).

Conclusion: In assessing to the data of 13C-MBT, main attention is paid to mathematical calculation of CO2 labeled methacetin. 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 TRANSGENERATOR 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 transcription activation domain (TA) or dominant negative (DN) - p53 and its siblings are capable of activating or inhibiting the transcription of specific target genes. We previously identified the gene for insulin-like Growth Factor Protein 4 (IGFBP4) as a potential p53-family target gene with prognostic relevance in hepatocellular carcinoma (HCC). In contrast to p53, the IGF system takes part in tissue growth and cell survival. IGFBP4 acts as inhibitor limiting IGF effects suggesting a possible interaction with p53 affairs.

Aims & Methods: The aim of this study was to characterize the regulatory influence of p53 family members on the IGFBP4 gene. Hep3B cells were transfected with pAd-p53, -TAp73, -TAp63, -DPN63, and -DPN73. Transcriptional regulation of IGFBP4 was determined by real time qPCR. Intracellular IGFBP4 protein levels were examined by Western Blotting and ELISA. TRANSFAC 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 30-fold in DPN63- and by 3-fold in p53-transfected cells. Induction of intracellular IGFBP4 protein was detected in all transfected Hep3B cells, whereas extracellular IGFBP4 levels were only measurable after TAp73 and DPN63 transfection. Database analysis identified 2 putative p73 binding sites within intron 1 of the IGFBP4 gene. Intron 1-dependent luciferase activity was increased by up to 20-fold in 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 tumor-inhibiting mechanisms and IGF-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-family network and IGF signaling. We therefore suppose that the particular balance of these pathways decides 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 TYROSINE KINASES MELLILOTS AND CORONARY HEART DISEASE AGAINST THE BACKGROUND OF METABOLIC SYNDROME. HOW TO DIAGNOSE?

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Introduction: It is known that to determine nonalcoholic fatty liver disease (NAFLD), which develops in progress of body mass index (BMI) from 19% to 35%, using instrumental and laboratory methods, which include an ultrasound, the determination of the transaminase levels, steatostest, 13C-methacetine test. However, these research methods do not allow to clearly differentiate steatosis from the steatohepatitis, that reduces their credibility.

Aims & Methods: 163 patients (75 men, 88 women) with 2 type diabetes mellitus and coronary heart disease with metabolic syndrome, were examined. The average age of patients was 57.1±5.7 years. 57.7% were diagnosed as steatosis group, 66 - steatohepatitis group. In 25 patients liver pathology was not found, which identified as a control group.

For verification of steatosis and steatohepatitis diagnosis the level of ALT, diabetes, BMI, and data 13C-methacetine breath test were evaluated.

Results: The rate of liver metabolism based on 13C-methacetine test results in patients without NAFLD was 22.0±0.666%, 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±0.53% in patients with steatohepatitis. ALT level in control group was 0.4±0.05mmol/l, with steatosis 0.7±0.06 mmol/l, with steatohepatitis 0.9±0.16 mmol/l. The diameter of vena portae in control group was 11.2±0.26 mm, in group of steatosis 11.9±0.21 mm, in patients with steatohepatitis 13.7±0.15 mm. There were investigated, that the rate of metabolism and its cumulative dose on 120 minute has decreased in steatohepatitis. A correlation 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 methacetine and the cumulative dose 13CO2 in the background of the increase of a diameter of venac portae compared with a group of steatosis in steatohepatitis group. The investigation 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 0.68 mmol/l) and the diameter of the portal vein (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 (ALT and vena portae diameter). 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 of 237 patients with NAFLD submitted to transient elastography by Fibroscan, between 2015-01-2017. Exclusion criteria: age >18years, 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 polyps(cases) and without colorectal polyps(controls). Demographic variables, cardiovascular/metabolic risk factors, comorbidities, laboratory parameters and Fibroscan scores of steatosis(CAP > 300 dB/m) and fibrosis(F4: > 10KPa) were evaluated.

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 58.32±5.51 years (vs70.9±10.53 p=0.089), with men predominant (51.7±63.5% p=0.272), mostly located in the left colon (55.2±44.8%; p=0.314) and number and mean size of 1.46±0.88 and 6.89±6.56 mm, respectively. After multivariate analysis for colorectal polyps we found that with F4 liver fibrosis (34.5% vs 14.9%; p=0.026; OR=3.1) and obesity (BMI > 30 kg/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 (AUCROC 0.689 = 0.008; S=85.7%; Sp=51.2%), mainly F4 (42.8%vs14.6%; p=0.004; OR = 4.38), hyperuricemia (30Kg/m²: 55.2% vs 12.5%; p=0.041; OR = 3.5); and peptic ulcer disease (9.5% vs 12.5%; p=0.043; OR = 8.53); advanced adenoma was associated with liver steatosis (88.2% vs 83.7%; p=0.024; OR=3.50), F4 liver fibrosis (41.2%vs16.2%; p=0.046; OR = 5.24) and obesity (58.5%vs32.6%; p=0.040; OR = 2.96), advanced adenoma/adenocarcinoma was associated with F4 fibrosis (20.0%vs1.2%; p=0.021; OR = 1.224), hyperuricemia/gout (40.0%vs10.3%; p=0.040; OR = 4.38) and dilated cardiomyopathy (20.0%vs11.0%; 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-OBESE INDIVIDUALS

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Introduction: Non-alcoholic fatty liver disease (NAFLD) is a common clinicopathological condition of the liver that may progress from simple steatosis to NASHi, 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 added that there might be a correlation between weight gain and metabolic diseases.

Aims & Methods: In our research; the relationship between NAFLD in non-obese individuals and the amount of weight gain during adulthood was investigated and a new index that is different from BMI was proposed. 362 individuals were included in the survey. The subjects were selected among patients who had abdominal ultrasonography(USG) in our clinic, during the last 6 months. A 5% increase in echogenicity detected in the USG was defined as the diagnostic
limit for hepatosteatosis. The beginning of adulthood was taken as 20 years old. Patients were evaluated for the presence of diabetes, hypertension or cardiovascular disease and ALT, AST, fasting plasma glucose and cholesterol values were recorded. Statistical evaluations were done with IBM SPSS.

NAFLD evaluation with SAMI 3 cut-off value

| SAMI > 3 | 144 | 38 |
| SAMI < 3 | 25  | 77 |

Sensitivity 85.2%
Specificity 66.95%
PPV 79.12%
NPV 75.49%

Results: Among 362 participants 169(46.7%) were men with an average age of 44.81±10.73. 78 (21.6%) participants were NAFLD(+/−) obese people 169(59.5%) were NAFLD(+/−) and average age was 48.07±10.13 years with normal BMI. NAFLD(+/−) people was 38.739. Non-obese NAFLD(+/−) patients reported they had gained significant amount of weight during their adulthood. This information led us to create, a new index named “Subtracted Adulthood Mass Index” (SAMI) to estimate the risk of NAFLD development in non-obese individuals. SAMI is calculated by dividing the difference between the subject’s current weight and his/her weight at the age of 20 years to his/her height squared (kg/m2). SAMI values for non-obese attendants were calculated. When the cut-off value was set as SAMI 4 kg/m2, sensitivity was 76.3%, specificity was 79.1, positive predictive value (PPV) was 84.3% and negative predictive value (NPV) was 69.4%. At a cut-off of SAMI 3 kg/m2 sensitivity was 85.2%, specificity was 66.9%, PPV was 79.1%, NPV was 75.4%.

Conclusion: In this pilot study, we found that weight gain in adulthood is an important predictor of NAFLD development in non-obese individuals. The new index named SAMI can correctly identify non-obese people under the risk of developing NAFLD. Cut-off value of SAMI has been set as 3 kg/m2. We also observed that NAFLD prevalence increases as SAMI value goes up. We propose that SAMI is appropriate for clinical use to estimate the risk of NAFLD in on-obese individuals.

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

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4. Cisplatin-resistant HepG2 cells were resistant to cisplatin therapy.
5. OCT3 expression could be a valuable tool for improved prognosis of cisplatin resistance.
6. We suggest that ATP7B does not seem to be involved in cisplatin resistance, at least in hepatic cells. OCT3 represents a novel marker of cisplatin resistance.

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

References

P1321 AUTOMATED RAPID DETECTION SYSTEM USING THE QUENCHING PROBE METHOD FOR DETECTING rs738049 POLYMORPHISM IN PNPLA3 IN NONALCOHOLIC FATTY LIVER DISEASE

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Introduction: Recent studies have shown that the single nucleotide polymorphism (SNP) rs738049 in the PNPLA3 gene is strongly associated with severity of nonalcoholic fatty liver disease (NAFLD). However, the traditional direct sequencing (DS) method is time-consuming and labor-intensive. The i-densy fully automated genotyping system with QP, which is based on the quenching probe (QP) method, automatically detects target genes in blood samples by fluorescence quenching within 90 min.

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'-ctctctctctctgctgctac-3', 5'-gggtagaggacacatt-3', respectively. PCR consisted of initial denaturation for 1 min at 95 °C, and 60 cycles of denaturation at 95 °C, and 40 cycles of annealing at 60 °C, and 30 cycles of elongation at 72 °C for 30 s. After completion of the PCR, we analyzed melting temperatures. The SNP genotypes were determined by monitoring the change in fluorescence intensity with increasing temperature. The results obtained with the QP method were compared with those obtained with the conventional DS method. Then, we analyzed 73 patients with NAFLD according to PNPLA3 genotype in terms of alanine aminotransferase (ALT), aspartate aminotransferase to platelet ratio index (APRI), Fibroscan value, and cumulative hepatocellular carcinoma (HCC) development rate.

Results: The genotypes obtained with the QP method were identical to those obtained with the conventional DS method. In 73 patients with NAFLD, the frequency of the PNPLA3 genotypes CC, CG and GG was 21 (28.8%), 24 (32.9%) and 28 (38.4%), respectively. Serum ALT, APRI and Fibroscan value according to PNPLA3 genotypes CC, CG and GG were 26 (14–59), 33 (11–113) and 46 (17–175) U/L, 0.3 (0.1–1.0), 0.5 (0.2–6.8) and 0.7 (0.2–3.1), and 4.4 (2.7–25.1), 5.6 (2.5–26.5) and 6.6 (3.6–38.6) kPa, respectively (p = 0.001, p = 0.001 and p = 0.033 by Jonckheere–Terpstra test). HCC developed in none of the patients with CC genotype, one (4.2%) with CG and four (14.3%) with GG. The cumulative HCC development rate in patients with GG genotype was significantly higher than that in those with CC + CG genotype (p = 0.043 by log-rank test).

Conclusion: The i-densy using the QP method can automatically, quickly and easily identify PNPLA3 genotypes in real-world clinical settings. These findings indicate the feasibility of personalized medicine for NAFLD.

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

References
Our analysis of long-term Cu exposure presents new insights from a WD patient and from the rat animal model confirmed our observations. The intracellular Cu load was significantly affected by siRNA and verapamil indicated by siRNA and drug activation (verapamil). Notably, cell viability and fold, respectively) which was however transient and dependent on Cu exposure.

Results: KO cells can survive for many months in the presence of high Cu and oestasis genes. Functional analysis of candidate genes was assessed via siRNA and intracellular Cu load (atomic absorption spectroscopy) was assessed. RT-PCR was performed to quantify the expression of genes related to Cu homeostasis genes. Functional analysis of candidate genes was assessed via siRNA transfection. Additional measurements of CTRL expression was performed by flow cytometry (FACS) and Western Blot.

Aims & Methods: HepG2 cells lacking functional ATP7B (KO) were used for measuring cell viability and 

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.

References:
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 is associated with the inherited and 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 exposure to 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 genes. Functional analysis of candidate genes was assessed via siRNA transfection. Additional measurements of CTRL 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 modification of the cells. Two genes involved in Cu homeostasis displayed an altered expression pattern (upregulation of M1 and downregulation of CTRL by 28.1 ± 2.5 and −3.2 ± 0.4 fold, respectively) which was however transient and dependent on Cu exposure. The role of MDR1 which presented a stable modification was further investigated by siRNA and drug activation (verapamil). Notably, cell viability and intracellular Cu accumulation was 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.

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

P1324 THE NONALCOHOLIC FAT LIVER DISEASE FIBROSIS SCORE IN PREDICTING FIBROSIS IN MORBIDLY OBESE PATIENTS BEFORE BARIATRIC SURGERY: THE NONALCOHOLIC FATTY LIVER DISEASE FIBROSIS SCORE IN PREDICTING FIBROSIS IN MORBIDLY OBESE PATIENTS BEFORE BARIATRIC SURGERY

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Introduction: Non-alcoholic fatty liver disease (NAFLD) and non-alcoholic steatohepatitis (NASH) are increasingly common cause of chronic liver disease 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 specificity of liver biopsy, 29 patients (42%) had some degree of fibrosis, with 19 (68.9%) having significant fibrosis (F3–4). With standard thresholds, the specificity for 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 and morbidity 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 a non-invasive predictor of steatosis (Bedogni et al.,2006) and a cut-off value ≥0.60 was set 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. FLI significantly predicts the activity 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

P1324 THE NONALCOHOLIC FAT LIVER DISEASE FIBROSIS SCORE IN PREDICTING FIBROSIS IN MORBIDLY OBESE PATIENTS BEFORE BARIATRIC SURGERY: THE NONALCOHOLIC FATTY LIVER DISEASE FIBROSIS SCORE IN PREDICTING FIBROSIS IN MORBIDLY OBESE PATIENTS BEFORE BARIATRIC SURGERY

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Introduction: Non-alcoholic fatty liver disease (NAFLD) and non-alcoholic steatohepatitis (NASH) are increasingly common cause of chronic liver disease 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 specificity of liver biopsy, 29 patients (42%) had some degree of fibrosis, with 19 (68.9%) having significant fibrosis (F3–4). With standard thresholds, the specificity for 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 and morbidity obese patients subjected to bariatric surgery.

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

References:
Conclusion: We conclude that Fibroscan® represents an eligible tool to diagnose liver disease in Austrian bank employees. Compared to the previous work of Bedogni et al FLI predicts fatty liver at a lower cut-off level, at least for the examined population. This difference might be due to the fact that FibroScan®CAP is more sensitive than ultrasound.

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

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P1326 METABOLOMICS IDENTIFIES PROGRESSIVE NAFLD
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Aims & Methods: 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.

Introduction: 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 associated with severe fibrosis: 1,25(OH)2vitamin D, (p = 0.05), Lysophosphatidylcholine LPC 18:2 (p = 0.003), and high levels of butenyl carnitine (p = 0.04). Of these, LPE was the strongest predictor of severe fibrosis (AUROC=0.795, Sensitivity (Se) = 88.33%, specificity (Sp) = 78.79%), but the other molecules were also significantly associated with severe fibrosis: vitamin D (AUROC = 0.776), butenyl carnitine (AUROC = 0.737), LPC 18:2 (AUROC = 0.768). As the metabolomics permits the evaluation of all these molecules the same time, we can use them combined in order to increase the diagnostic accuracy. In our case, the combined use of the four metabolites determined an AUROC of 0.839, with Se of 100% and Sp of 68.5%.

Conclusion: Using metabolomics, we can identify patients with fatty liver and severe fibrosis who are significantly exposed to a progressive disease and a higher mortality.

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

P1327 CHRONIC RENAL FAILURE IS ASSOCIATED WITH THE DEVELOPMENT OF NAFLD/NASH
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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 & Methods: Our aim was to identify patients on higher risk to develop NAFLD/NASH in a selected patient cohort being admitted for renal disorders.

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

P1328 NONINVASIVE DIAGNOSIS OF NONALCOHOLIC FATTY LIVER IN PATIENTS WITH TYPE 2 DIABETES MELLITUS
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Introduction: Usually for the determination of nonalcoholic fatty liver disease (NAFLD) there are instrumental and laboratory techniques, including ultrasound diagnosis, determination of aminotransferases, steatotest, 13C-methacetin breath test (13C-MBT). These methods in the diagnosis of NAFLD clinical forms is not specific and do not allow make difference between steatosis and steatohepatitis. The determination of NAFLD clinical forms is a priority in the prediction of further disease and choice of treatment. Steatohepatitis is the active form of NAFLD and progresses to fibrosis oftenly with subsequent liver parenchyma degeneracy into cirrhosis. Simultaneously, steatosis could be possibly treated in the early stages of disease.

Aims & Methods: The study involved 65 patients with type 2 diabetes and coronary heart disease with metabolic syndrome, aged 37 to 82 years (mean age 55.8 ± 3.46), 29 men, 36 women. According to the ultrasound, the stage of fatty infiltration were differentiated by such criteria for steatosis as diffuse liver par- enchyma echogenicity intensification against the background of a slight increase in its size (liver echogenicity was significantly higher than normal kidney or lumbar muscle echogenicity); for steatohepatitis - hyperechogenicity of liver par- enchyma and expansion of portal vein (13 mm or more in diameter).

Results: For steatosis and steatohepatitis determination the ALT monitoring was used, where the level exceeding 0.68 mmol/l signed to steatosis, and below 0.68 mmol/l - to steatosis. Portal vein diameter size above 13 mm subscribed steatohepatitis, and below 13 - steatosis. 13C-MBT data, which assessed the liver antitoxic function was used, where the result 13C02 on 120 minute from 10 till 15% was classified as liver detoxification function violation like stea- tohepatitis, and from 15 till 20% - steatosis. The present study found that indicators of ALT and portal vein diameter negatively correlated with cumulative dose 13C02 for 120 minute in case of steatohepatitis.

Conclusion: Differentiation between steatosis and steatohepatitis should be perform by the cumulative dose 13C02 on 120 minute evaluation and ALT levels and portal vein diameter assessment.

Disclosure of Interest: All authors have declared no conflicts of interest.
P1329  
NON-OBESIVE FATTY LIVER DISEASE IN TYPE 2 DIABETES: NOVEL CONDITION OR SIMILAR TO TYPICAL NAFLD STATE?  
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Introduction:  
Non-alcoholic fatty liver disease (NAFLD), the hepatic counterpart of the metabolic syndrome in close relation to obesity and encompasses a disease spectrum spanning simple steatosis through nonalcoholic steatohepatitis (NASH) with or without significant fibrosis, and hepatic carcinomas [1]. Clearly, not all obese subjects develop NAFLD and NAFLD can also be found in non-obese patients. Globally, the reported prevalence of non-obese NAFLD varies widely, ranging from 3% to 30% [2]. Today remains unclear how patients without obesity develop NAFLD, therefore it is important to understand the clinical and pathological conditions of non-obese NAFLD.

Aims & Methods: In this study, we investigated the liver stiffness and liver fat content in addition to other clinical and metabolic parameters in type 2 diabetes patient with non-obese and obese NAFLD detected on ultrasonography (US).

In this cross-sectional study, 245 T2D patients with age of 40-80 years from the Kyiv City Clinical Endocrinology Center were selected. Inclusion criteria were: age over 18 years, presence of T2D in association with fatty liver disease. The diagnosis of fatty liver was based on the results of abdominal ultrasonography, which was done by trained technicins with Ultime PA (Rumdie Co., Kharkiv, Ukraine). Of 4 known criteria (hepatoenothal echo contrast, liver brightness, deep and vascular blurring), the participants were required to have hepatoenothal contrast and liver brightness to be given a diagnosis. According to body mass index (BMI) value patients were assigned else to NAFLD group (n = 157, BMI ≥ 30.0 kg/m²) or to non-obese NAFLD (n = 88, BMI < 30.0 kg/m²) group.

We performed 10 valid measurements of liver stiffness (LS) measured by liver stiffness Wave Elastography (SWE) in every patient, and a median value was calculated, the result being measured in kPa. Also in all patient we calculated fatty liver index (FLI). FLI a validiated prediction score for hepatic steatosis severity designed Bedogni et al [3]. Changes in transaminases activity, serum lipids and cytokines (TNF-α, IL-1β, IL-6, INF-γ) levels were evaluated.

Results: Non-obese NAFLD patient had higher LS (7.52 ± 0.2 vs 6.87 ± 0.09, p = 0001) values measured by SWE, which were accompanied with increased transaminases activity; for ALT 42.1 ± 3.17 vs 35.8 ± 1.28 (p = 0.028) and for AST 40.81 ± 2.68 vs 34.31 ± 1.33 (p = 0.016) respectively. In contrast to non-obese group patient in NAFLD group had significantly higher FLI (86.59 ± 1.09 vs 68.06 ± 1.96, p < 0.001). Markers of chronic systemic inflammatory state were significantly higher in non-obese NAFLD as compared to non-obese patient: IL-1β 44.64 ± 2.20 vs 31.02 ± 1.78 (p < 0.001); TNF-α 54.11 ± 2.20 vs 42.28 ± 1.81 (p = 0.001); IL-8 29.18 ± 1.27 vs 22.05 ± 0.99 (p = 0.001) and INF-γ 195.60 ± 9.47 vs 132.47 ± 7.54 (p = 0.016) respectively. Changes of IL-6 between groups were not significant.

Conclusion: Present, the clinical-laboratory characteristics of non-obese NAFLD are not fully understood. Therefore, we found that non-obese NAFLD associated with higher liver stiffness values and transaminases activities. On another hand, patient with obese NAFLD are characterized with more pronounced liver fat content and elevation of markers of chronic systemic inflammatory state.

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

References

P1330  
CHARACTERIZATION OF LEAN INDIVIDUALS WITH NON-ALCOHOLIC FATTY LIVER DISEASE: RESULTS OF A COHORT STUDY  
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Introduction:  
Non-alcoholic fatty liver disease (NAFLD) is usually considered as the hepatic manifestation of metabolic syndrome and obesity. However, a subset of NAFLD patients are lean. Some studies have reported severe liver fibrosis in lean NAFLD and these patients are still at risk for development of liver cirrhosis.

Aims & Methods: This study aimed to investigate the prevalence and risk factors of lean NAFLD in a cluster of Iranian population. Study population was recruited from Kavar cohort study which has been started from 2006 in Kavar town, a small town near Shiraz. The study sampling was performed between September 2011 and September 2013 among adult subjects (age ≥ 18 years) who underwent voluntary hepatobiliary ultrasound. NAFLD was diagnosed using the presence and absence of chronic liver diseases such as autoimmune hepatitis, hepatitis B or C viruses induced hepatitis, hepatobiiliary cancers, Wilson’s disease, >10 g/day alcohol consumption, and receiving some specific medications known to cause hepatic steatosis (like amiodarone, valproic acid, etc). Lean individuals were defined as those with body mass index (BMI) <25 kg/m². Student’s-t test was used for comparisons of continuous variables and Chi-square test was used for comparison of categorical variables. Receiver operating characteristics (ROC) curve analysis using area under curve (AUC) was used for analysis of optimal cutoff values for BMI and waist circumference in association with lean NAFLD.

Results: 1343 individuals were included. 165 individuals (12.3%) was diagnosed to have NAFLD. 129 individuals (9.6%) had mild NAFLD and 36 individuals (2.7%) had moderate NAFLD. None of the participants had severe NAFLD. In univariate analysis, history of diabetes mellitus (DM) (OR = 2.25; 95% CI: 1.15-4.40, P = 0.015) and metabolic syndrome (OR = 2.80; 95% CI: 1.74-4.48, P < 0.001) were associated with NAFLD. Higher BMI and waist circumference, higher systolic and diastolic blood pressure, higher serum triglycerides, cholesterol, fasting plasma glucose (FPG) and alanine aminotransferase (ALT) were associated with NAFLD (P < 0.05). In multivariate regression analysis, higher BMI and waist circumference, higher ALT, FPG and cholesterol were independent predictors of NAFLD in our study population (Table). A cutoff value of 22.3 kg/m² for BMI was predictor of NAFLD (sensitivity = 72%; specificity = 60%; AUC = 0.728, P < 0.001). A cutoff value of 79.5 cm for waist circumference was predictor of NAFLD in our study population (sensitivity = 80%; specificity = 68%; AUC = 0.753, P < 0.001). Table: Multivariate regression analysis showing independent risk factors for lean NAFLD.

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

Reference

P1331  
ASSESSING BAVENO VI CRITERIA WITH A NEW POINT-SHEAR WAVE ELASTOGRAPHY TECHNIQUE: THE BAVELASTQ P Study  
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Introduction: While some studies have evaluated the ability of new “real-time” elastography devices such as 2-D Shear Wave Elastography (SWE) and Virtual Touch Quantification (ARFI) in predicting the presence of high-risk gastroesophageal varices, no study has explored the potential role of another point-shear wave technique, ElastIQ, in the assessment of clinically significant portal hypertension.

Aims & Methods: The aim of our study was to identify a liver stiffness cut-off value measured by ElastIQ and/or laboratory parameters that could help identify patients who can safely avoid screening endoscopy. In the recently proposed Baveno VI criteria which recommends a liver stiffness value <20kPa measured by transient elastography in combination to a platelet count >150,000 µl. Data were collected on 1385 patients who underwent ElastIQ measurement from January 2013 to January 2016 in our Department. Inclusion criteria were a liver stiffness value of ≥7 kPa and an upper gastrointestinal endoscopy within 12 months, with a diagnosis of compensated chronic liver disease. We choose this specific liver stiffness cut-off value in order to highlight subjects with advanced fibrosis and/or cirrhosis, based on the limited literature available on this specific elastographic technique. Exclusion criteria were history of decompenated liver disease, evidence of porto-splenome-senteric vein thrombosis and non-cirrhotic portal hypertension. Varices were graded as low risk (grade <2) or high risk (grade ≥2).

Results: The study included 184 patients (114 [62%] hepatitis C, and 160 [87%] Child-Pugh A). Varices were present in 36% cases, with 10% prevalence of high-risk varices. According to ROC curve analysis liver stiffness measurement and
platelet count were evaluated as predictors of high-risk varices. Overall 74/194 (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 0.46 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 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 ElastIPQ in the non-invasive assessment of clinically significant portal hyperten-

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

P1332 PROTON PUMP INHIBITORS INTAKE NOT ASSOCIATED WITH HEPATIC ENCEPHALOPATHY IN CIRRHTIC PATIENTS
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Introduction: Inhibitors of PPIs 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, infection and hepatic encephalopathy at hospitalization. Statistical ana- lysis performed with SPSS 21, considering statistical significance p<0.05.

Results: 386 patients, 321 males (83.2%), mean age 60.3 ± 12.1 years. Main eti-

ologies of cirrhosis were alcohol (67.4%), alcohol plus hepatitis C (16.3%) and hepatitis C virus (5.2%). Hepatic encephalopathy was present in 222 (57.5%) of the patients and 26.9% had PPI intake. In univariate analysis hepatic encephalo-

pathy was associated with infection (p<0.001), gastrointestinal bleeding (p<0.001) and Model for End-Stage Liver Disease (MELD) (p<0.001).

There was no association between hepatic encephalopathy and PPI intake (p=0.057), gender (p=0.228) or age (p=0.352). In multivariate analysis, hepato-

tic encephalopathy maintained association with infection (p<0.001), gastroin-

testinal bleeding (p<0.001) and MELD score (p=0.001).

Conclusion: In our series, PPI intake was not associated with hepatic encephalo-

pathy development in cirrhotic patients.

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

Reference

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 important causes of decomposition. In theory, the final result of an infectious disease depends of three major factors: the antibiotic resistance of the bacteria and the individual resistance of treatment to the antibiotic with persistence or pathologi-

city of the bacteria; and finally the patient status in relation to risk factors such as immune status, age, diet and stress. There are conflicting results regarding the clinical outcome of multidrug-resistant (MDR) bacterial infections in cirrhotic patients.

Aims & Methods: Our aims within this study were to 1) analyze the incidence of MDR bacteria in patients with compensated cirrhosis at admission (less than 24 hours after hospitalization), 2) to study its impact on 30 and 90-day mortality, and 3) to determine independent risk factors for 30 and 90-day mortality. We conducted a retrospective cohort study which evaluated all admissions due to decompenated cirrhosis in one center between 2010 and 2015. MDR bacterial infections, its acquisition site and the antibiotic resistance patterns were defined according with the European Centre for Disease Prevention and Control (ECDC) criteria.

Results: A total of 681 hospitalizations were evaluated and 41% had a bacterial infection at admission. The 30 and 90-day mortality rate was 14.7% and 38.1%, respectively. The most common infection was spontaneous bacterial peritonitis (SBP; 40.5%), followed by urinary tract infection (UTI; 25%). About 55.6% of the patients had a microbiological documented infection (MDI). MDR bacteria were identified in 18.6% of all bacterial infections, matching 34.5% of the nosocomial acquired infections and 8.3% of the community-acquired (CA) infec-
tions. Most common MDR by a MDR bacteria (Fig. 2A). 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 SpO2 were independently associated with 30 and 90-day mortality. Higher INR and age were independ-

ently associated with 90-day mortality.

Conclusion: The presence of bacterial infection, independently of the antibiotic resis-
tance profile, was associated with a worse prognosis in cirrhosis. We identified a high incidence of MDR bacteria in patients with UTI. Given the described risk factors for MDR bacteria development, we hypothesize that our results are probably the consequence of a bad antibiotic politics in our district, especially when managing CA UTI.

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

P1334 STATIN THHERAPY IN THE REDUCTION OF PORTAL HYPERTENSION IN PATIENTS WITH LIVER CIRRHOSIS: A META-

ANALYSIS OF RANDOMIZED CONTROLLED TRIALS
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Introduction: Statins have been shown to decrease intrathoracic vascular resistance and portal pressure reduction. This meta-analysis of randomized controlled trials (RCTs) was con-
ducted to determine if statin therapy reduces portal hypertension as measured by the hepatic venous pressure gradient (HVPG) among adult patients with liver cirrhosis.

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 liver cirrhosis patients.

Results: Three studies comprising of 98 patients met the inclusion criteria. The random-effect model, the weighted mean difference was 0.27 mmHg, favoring statin therapy over placebo. There was no evidence of significant heterogeneity (I², 0%; p, 0.9%).

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 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
P3135 IN HOW MANY PATIENTS WILL WE MISDIAGNOSE ESOPHAGEAL VARICES BY USING THE BAVENO VI CRITERIA?

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Introduction: The place of noninvasive techniques for the prediction of presence of portal hypertension in patients with liver cirrhosis is one of the current research aims.

Aims & Methods: The aim of this study was to evaluate the applicability of the Baveno VI criteria in a cohort of known compensated HC 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 2016 to September 2018, which included all patients with perfectly compensated HC 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 and blood tests. By using these criteria we classified the patients in: probably without EV, high risk of developing EV, and the class with high accuracy in predicting EV.

Results: Out of 403 patients, 127 (30.7%) had LS ≥ 20 kPa and thrombocytes > 150,000/mm3, probably without EV (liver stiffness - LS ≥ 20 kPa, and the “gray zone” in between these criteria.

Conclusion: By using the Baveno VI criteria in patients with liver cirrhosis for the prediction of presence of esophageal varices, we can misclassify only 20% of patients.

Disclosure of Interest: S.A. Popescu: I hereby confirm that I have received financial support (congress travel grants, speaker fee) from Philips, General Electric, Abbvie, AstraZeneca, Zentiva
R. Sirli: I hereby confirm that I have received financial support (congress travel grants, speaker fee) from Philips, Abbvie, Zentiva
I. Sporea: I hereby confirm that I have received financial support (congress travel grants, speaker fee) from Philips, Siemens, General Electric, Abbvie, Zentiva, Bristol Meyers Squibb.

All other authors have declared no conflicts of interest.

P3137 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 poor prognosis including a higher incidence of falls, RTAs and overall mortality. Detection of MHE is often difficult due to time constraints associated with the current gold standard, the psychometric hepatic encephalopathy score (PHES), which includes five paper-based tests. A smartphone application (EncephalApp Stroop Test) has been suggested as a viable alternative.

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. An on-off time defined by the PHES test (AUROC = 0.858) and ev (AUROC = 0.885) and with FIB-4 score for decomposition (AUROC = 0.854).

Conclusion: CRBPs predict cirrhosis and development of esophageal varices with high accuracy. Some of the blood derived NIFs have high accuracy in predicting decompensation 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 decompenstion after antiviral treatment.

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

P3136 COMBINED RADIOLOGIC-BLOOD PARAMETERS AND BLOOD-DERIVED INVASIVE PROCEDURES SCORES 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. Only limited studies have evaluated the performance of development of esophageal varices (EV) and decompensation in cirrhotic patients. Similarly there are limited studies evaluating combined estimation of radiologic and blood parameters in predicting fibrosis and outcomes of cirrhosis.

Aims & Methods: We aimed to compare combined radiologic-blood parameters (CRBP) and blood derived non-invasive fibrosis scores (NIF) for predicting tre treatment cirrhosis, development of esophageal varices (EV) and liver decompensation post antiviral treatment (AVT). 1605 patients (Jan 2002 to June 2013) were considered between liver biopsy (LB) and received AVT with pegylated interferon and ribavirin. Three CRBPs (platelet count- bisplenic diameter index [PSI], platelet count-hisplenidienleadioment portal vein index [PSVP]), platelet count-bisplenic diameter-portal-vein-caudate lobe length index [PSCL]) and nineteen blood derived NIFS were calculated from routine blood tests and abdominal ultrasound done prior to starting AVT. AUROCs were calculated for each of these parameters predicting cirrhosis and treatment LB and development of EV and decompensation on follow-up after AVT.

Results: Mean age was 41.9 ± 9.7 years (85% males), predominantly genotypes 4 (65%) and 1 (11%). Pretreatment LB (Scheuer criteria) showed stage-0 fibrosis in 1.1%, stage-1 in 32.9%, stage-2 in 39%, stage-3 in 19.7%, and stage-4 (cirrhosis) in 6.6% of the patients. After AVT, there were 1,089 (67.8%) responders, 482 (30%) nonresponders and 3 (2.1%) relapsers. After median follow-up of 6580.5 patient-years post AVT, 39 (2.4%) developed EV (2 patients had both esophageal and gastric varices and one had only gastric varices) and 52 (3.2%) had decompensation (bleed-9, asci-39, jaundice-22, hepatic encephalopathy-7, hepatorenal-4). CRBPs had higher accuracy for prediction of cirrhosis and EV, while NIFS had higher accuracy for predicting decomposition (Table 1).

The highest AUROCs were seen for MHE on-off time (AUROC = 0.888) and EV (AUROC = 0.858) and with FIB-4 score for decomposition (AUROC = 0.854).

Conclusion: CRBPs 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 decompensation after antiviral treatment.

Disclosure of Interest: All authors have declared no conflicts of interest.
P1336. Table 1: Predictive Accuracy of Different Combined Radiological and Blood Parameters and Non-invasive Fibrosis Scores for Predicting Cirrhosis, Development of Esophageal Varices and Decompensation

<table>
<thead>
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<th>Test</th>
<th>PHES+</th>
<th>PHES -</th>
<th>Stroop+</th>
<th>Stroop -</th>
<th>Kappa</th>
</tr>
</thead>
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<tr>
<td>All patients</td>
<td>7</td>
<td>89</td>
<td>59</td>
<td>57</td>
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<tr>
<td>CLD</td>
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<td>31</td>
<td>18</td>
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</table>

A630
United European Gastroenterology Journal 5(5S)

Abstract: P1336

**Aims & Methods:**
We hypothesized that probiotic bacteria repress intestinal pathogen growth and that can translocate through a weakened gut barrier and cause severe infections. 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.

**Conclusions:** This is the first study to evaluate the efficacy of the Stroop test in Ireland. It was quicker and easier to perform compared to PHES test. Age and years in education had a greater impact on the Stroop test, which may affect its application and interpretation. While our ROC analysis suggests a similar cut off to previously published values, there is significant variability and local validation is likely to be required. Overall the comparison with the gold standard PHES was poor. However, there were no false negative Strop tests suggesting it may be a convenient filter test for MHE.

**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 Ecologic Barrier (Winclove, Amsterdam, The Netherlands) on 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 caprolycetin did not show any differences during intervention.

**Conclusion:** In conclusion, a six month 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 blood urea nitrogen (BUN) in 30 days post-transplant period was 16.17 ± 17.4 mg/dL in patients without DM compared to 18.39 ± 11.95 mg/dL in patients with DM (P < 0.001). Mean serum creatinine level was 1.46 ± 0.95 mg/dL in patients without DM compared to 1.78 ± 1.92 mg/dL in patients with DM (P = 0.001).
Without diabetes 90.6%
with and without DM
Post-liver transplant survival at 6 months, 1 year and 4 years in patients
predictors of mortality after liver transplantation.
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 who had a diagnosis of liver cirrhosis over 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, hyponatremia (p < 0.0001), hyperpotassemia (p < 0.0001), hypouribuminemia (p < 0.0001), high values of bilirubin (p < 0.0001), high values of creatinine (p < 0.0001) were strongly associated with in hospital mortality. In multivariate analysis, the model including albumin, sodium, potassium, creatinine and bilirubin (all p-values < 0.05) had an AUROC of 0.78, CI (0.75–0.81), p < 0.0001. Using this factors as predictors, by multiple regression analysis we obtained the following score: ABCPS score = 0.04 + 0.03*Albumin + 0.05 + 0.02*Creatinine + 0.04 + 0.04*Bilirubin + 0.05 + 0.28*Potassium + 0.04*0.07*Sodium.
Conclusion: Prevention and prompt treatment of kidney injury, hyponatremia, hyperpotassemia, can improve survival. ABCPS score can be an useful score to rule out patients with high mortality rate.
Disclosure of Interest: I. Sporea: I hereby confirm that I have received financial support (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, Zentiva. 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.

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 > 150000/µL 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% etanolic, 11.8% etiology, and 47.5% were Child Pugh A). We represent in 561/774 (2.4%) cases with 8% prevalence of high risk varices. 306/774 (39.6%) were 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 < 20kPa and platelet count > 150000, the AUROC was 0.73, CI (0.68–0.74), p < 0.0001.
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 All other authors have declared no conflicts of interest.

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. The initial group the following score: ABCPS score = 0.04 + 0.03*Albumin + 0.05 + 0.02*Creatinine + 0.04 + 0.04*Bilirubin + 0.05 + 0.28*Potassium + 0.04*0.07*Sodium.
Conclusion: Prevention and prompt treatment of kidney injury, hyponatremia, hyperpotassemia, can improve survival. ABCPS score can be an useful score to rule out patients with high mortality rate.
Disclosure of Interest: I. Sporea: I hereby confirm that I have received financial support (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, Zentiva. 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.

References
Comorbidity | Adjusted Odds Ratio | 95% CI | p-value
--- | --- | --- | ---
Malnutrition | 1.86 | 0.89–3.88 | 0.10
HTN | 0.64 | 0.34–1.18 | 0.16
Anemia | 0.65 | 0.36–1.11 | 0.12
CKD | 1.66 | 0.79–3.54 | 0.18
Diabetes | 1.04 | 0.55–1.94 | 0.91
CHF | 3.92 | 1.77–8.71 | <0.01
Coagulopathy | 1.75 | 1.03–2.96 | 0.04
Alcoholism | 0.48 | 0.25–0.95 | 0.04
HCV | 0.86 | 0.27–2.72 | 0.80

Conclusion: Bariatric surgery increases the risk of subsequent acute liver injury. Post-bariatric surgery patients admitted for ALI are more likely to have anemia, malnutrition, and alcoholism, supporting the hypothesis that baseline nutritional status may predispose to drug-induced ALI. Addressing these potentially modifiable risk factors may decrease the significant morbidity and mortality of ALI.

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

P1344 LONGITUDINAL MONITORING OF LIVER STIFFNESS BY ACOUSTIC RADIATION FORCE IMPULSE IMAGING IN PATIENTS WITH CHRONIC HEPATITIS B RECEIVING ETCENAVIR

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Introduction: Acoustic radiation force impulse (ARFI) imaging measures liver stiffness (LS), which significantly correlates with the stage of liver fibrosis in treatment-naive patients with chronic hepatitis B (CHB). So far, the use of ARFI elastography to monitor change in liver fibrosis has not been properly evaluated during antiviral therapy in CHB patients.

Aims & Methods: We aimed to prospectively assess the clinical usefulness of ARFI during long-term antiviral therapy in CHB patients. Seventy-one CHB patients were consecutively recruited and received antiviral therapy with entecavir. Paired liver biopsies were performed in 27 patients at baseline and week 78 of entecavir therapy. LS was assessed by ARFI at multiple follow-up sessions.

Results: LS significantly decreased with treatment and continued to decrease after normalization of alanine aminotransaminase. Overall, 97.2% patients achieved improvement of LS, whereas 19.7% patients had more than 30% reduction in LS values between baseline and week 104. Multivariate linear regression analysis showed that the degree of LS reduction significantly correlated with the baseline levels of LS value, platelet and cholesterol. 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 (change threshold = 15%) was significantly correlated with the changes in histological fibrosis staging (r = 0.63, P < 0.001).

Conclusion: In CHB patients, LS assessed by ARFI was significantly reduced with the changes in histological fibrosis staging (r = 0.63, P < 0.001), the presence of elevated triglycerides (239.9 ± 49.3 dB/m vs 284.1 ± 28.1 dB/m, p = 0.01) and obesity (240.4 ± 46.7 dB/m vs 290.7 ± 46.6 dB/m, p = 0.01). When comparing patients with CAP > 288 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 < 0.003), 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 waist circumference and female gender (females 4.6 ± 1.3KPa vs males 5.8 ± 1.5KPa, p < 0.01), elevated triglycerides (4.9 ± 1.5KPa vs 6.0 ± 1.1KPa, p = 0.03) and obesity (4.9 ± 1.4KPa vs 6.5 ± 1.1KPa, p < 0.01).

Conclusion: Different components of MS seem to contribute both to fibrosis and steatosis in chronic HBV inactive carriers. In this subset of patients, the interplay between fibrosis values and CAP is an issue that should be made with caution since it may be influenced by metabolic parameters.

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

References
Aims & Methods:
We aimed to investigate patients with chronic HBsAg+ hepatitis who over the levels of HBeAg levels during the NUC therapy to evaluate the predictive parameters of HBsAg seroclearance. Patients with HBsAg, receiving NUC therapy with stable viral suppression by HBeAg and HBsAg in study patients. Normalization of liver function test showed that the test drug can improve functions of liver without any significant adverse effects for a treatment duration of 12 weeks. Limitation include small sample size, small duration and without control. Unlike other studies on CHB evaluating effect of conventional antivirals, we have recruited clinically stable CHB patients who were not diabetic and hypertensive, without liver fibrosis, and without other, demographic, kidney and heart disease, being a pilot study. 2. Future recommendation of double blind randomized clinical trial with small sample size, longer duration and including cirrhotic patients.

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

References

P1347 QUANTIFICATION OF SERUM HBsAG IS A HELPFUL MARKER TO OPTIMIZE THE MANAGEMENT OF ANTIMVIRAL NUC THERAPY IN CHRONIC HBeAg-NEGATIVE HEPATITIS B

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Introduction: Serum HBsAg loss is the recommended stopping rule in nucleo(t)side-analogues (NUC) responders, even if this event occurs rarely. Aims & Methods: We aimed to investigate in patients with chronic HBeAg+ hepatitis the role of HBsAg levels during the NUC therapy to evaluate the predictive parameters of HBsAg seroclearance. Patients with HBsAg, receiving NUC therapy with stable viral suppression (HBV-DNA < 2000IU/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 ElecsysHBsAg II Quant immunoassay (Roche Diagnostics, Indianapolis, USA). HBsAg levels were determined before starting NUC treatment and on-treatment every 12 months. Results: A total of 95 HBeAg-positive, HBeAg-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 with a median age of 50 years. Sequential serum samples from these patients were tested for HBsAg quantification with the ElecsysHBsAg II Quant immunoassay. HBsAg were determined before the seroconversion, and NUC therapy was successfully stopped, without any significant adverse effects in clinical and laboratory examination were assessed. The primary end point was HBsAg loss from baseline.

Conclusions: The results of this study suggest a role of on-treatment HBsAg quantification in the management of NUC-treated patients. HBsAg measurement would be a useful parameter to optimize antiviral treatment schedule. Disclosure of Interest: All authors have declared no conflicts of interest.

P1348 IMPROVEMENTS IN CHRONIC HEPATITIS B PATIENTS AND THE ALTERATION 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 (HBeAg), 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 nasoenteral tube for 20 CHB patients who continued to fail previous antiviral treatment, and according to measurement of HBsAg levels 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, CHB-FMT and CHB-Baseline. We detected 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. 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 Firmicutes (Lachnospiraceae, Ruminococcaceae, Veillonellaceae), Bacteroidetes (S24-7, bacteroidaceae, Prevotellaceae), and Proteobacteria (Akaligenaceae, Enterobacteriaceae). More specifically, Actinomyces 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.

Conclusion: In summary, along with the clearance or reduction of HBsAg, the gut bacterial communities of chronic hepatitis B patients were remarkably alerted after fecal microbiota transplantation, with some taxa abundances changed accordingly, which suggested their potential application as targets for clinical diagnosis and treatments in future. Disclosure of Interest: All authors have declared no conflicts of interest.

P1349 EFFICACY OF PEGYLATED INTERFERON ALFA-2A ADD-ON THERAPY VERSUS NUCLEOSIDE ANALOGUE MONOTHERAPY IN TREATMENT-EXPERIENCED CHRONIC HEPATITIS B PATIENTS: A RANDOMISED, CONTROLLED, OPEN-LABEL TRIAL

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Introduction: Hepatitis B surface antigen (HBsAg) seroconversion is rarely achieved in chronic hepatitis B (CHB) patients during nucleoside analogue (NA) monotherapy. The efficacy of pegylated interferon alfa-2a (peg-IFNα-2a) add-on therapy in those CHB patients remains unclear. Aims & Methods: We aimed to compare the efficacy of peg-IFNα-2a add-on NA monotherapy in treatment-experienced CHB patients. We enrolled hepatitis B e antigen (HBeAg)-negative patients older than 16 from the First Affiliated Hospital of Sun Yat-sen university in China. All had received NA monotherapy for 3 years with sustained undetectable plasma HB DNA. The exclusion criteria included: cirrhosis or other chronic liver diseases, previous immunological therapy, pregnancy and breastfeeding, contraindications for peg-IFNα-2a, or other serious diseases. The eligible patients were assigned to receive peg-IFNα-2a add-on therapy for 48/72 weeks or to continue to receive NA monotherapy for 96 weeks. HB DNA levels, HBV serologic indicators, liver function, renal function, thyroid function, blood cells count and imaging examination were assessed. The primary end point was HBsAg loss from baseline to week 96.

Results: 71 patients were enrolled (22 to peg-IFNα-2a add-on therapy group and 49 to NA monotherapy group), of whom 9 in peg-IFNα-2a add-on therapy group and 25 in NA monotherapy group completed more than 24 weeks of follow-up, the remaining patients have not yet reached 24 weeks of follow-up. There was no significant difference in age, gender, body mass index (BMI), HBsAg levels, alanine aminotransferase (ALT), or aspartate aminotransferase (AST) between the two groups at baseline. At week 24, HBsAg levels in peg-IFNα-2a add-on therapy group were significantly lower than the baseline (2.96 ± 0.14 vs 2.09 ± 0.82 Log10UI/ml, p = 0.009), but there was no obvious change in NA monotherapy group (3.43 ± 0.46 vs 3.44 ± 0.44 Log10UI/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 (0.82 Log10UI/ml ± 0.05) vs 0.01 ± 0.10 Log10UI/ml, p = 0.008). Among those patients who completed 96 weeks of follow-up, two patients in peg-IFNα-2a add-on therapy group (22.2%) achieved HBsAg seroconversion, but none in NA monotherapy group (0%). Conclusion: The peg-IFNα-2a add-on therapy increased loss of HBsAg in CHB patients as compared to NA monotherapy. Disclosure of Interest: All authors have declared no conflicts of interest.
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. SVR2 rates were extracted from clinical trials. Separate models were used for 18–39 and 40–80 age groups to account for difference prevalence and screening rates.

Results: Low, medium and high HCV screening scenarios showed that 3838, 5665 and 8313, respectively. Although DAAs for F0–F4 increase the cost of HCV treatment and 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. SVR2 rates were extracted from clinical trials. Separate models were used for 18–39 and 40–80 age groups to account for difference prevalence and screening rates.

P3151 HEPATITIS C TREATMENT IN HEMODIALYSIS PATIENTS: THE EFFICACY AND SAFETY OF DIRECT-ACTING ANTIVIRALS IN THE REAL LIFE

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Introduction: Hepatitis C virus (HCV) infection is a prevalent condition in patients with end-stage renal disease (ESRD). HCV treatment for HCV in these patients is challenging due to immunosuppression and increased incidence of adverse events. The aim of this study was to evaluate the safety and efficacy of direct-acting antivirals (DAAs) in the treatment of HCV in hemodialysis patients (HD). The mean viral load was 5.5 Log10 (5.3–7.0 Log10). Genotype distribution was the following: genotype 1–81% (13/16) and genotype 4–19% (3/16). Distribution according to fibrosis stages was as follows: F2–62% (10/16), F3–19% (3/16) and F4–19% (3/16). All patients were treatment-experienced with ombitasvir/paritaprevir/ritonavir and dasabuvir (3D). Seven of these patients (44%) received concomitant ribavirin at an average dose of 400 mg per week (200–600 mg per week). The treatment duration was 12 weeks for 13 patients (81%) and 24 weeks for others 3 (19%). Regarding treatment response rates, 74% (14/19) of patients had Rapid Virological Response (RVR) and 100% (19/19) of patients had End of Treatment Response (ETR). The global sustained virologic response (SVR) rate was 100%. Hemoglobin was monitored throughout the treatment, with 2 cases of severe anemia, one led to a 3D suspension at week 21 and the other one to a ribavirin suspension at week 4 of treatment. There were no other serious adverse effects.

Conclusion: In our sample of ESRD under HD patients, DAAs for HCV infection with high efficacy, even in patients who did not meet the expected duration of treatment or dose of ribavirin. The safety of DAA in this group is demonstrated by the non-occurrence of severe adverse effects.

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

References

P3153 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 bicentric clinical
trial included 276 patients with compensated HCV cirrhosis (all genotype 1b), with 6 months and 12 months. All patients were evaluated by means of TE at the beginning and at the end of treatment (EOT), and one subgroup (180 patients) also 12 weeks after EOT, all of them with sustained viral response (SVR 12), and another subgroup (55 patients) also at 24 weeks after EOT (SVR 24). Liver stiffness measurements (LSM) were defined as median value of 10 valid LSM, with IQR < 30% and SR ≥ 60%. Both M and XL probes were used. For diagnosing cirrhosis we used a cut-off value of 12 kPa as proposed by the Tschatschis meta-analysis. We considered a decrease or increase of more than 10% in LSM as being significant.

**Results:** Of 276 subjects, reliable measurements were obtained in 92.7%, so that the final analysis included 256 patients. The mean LS values decreased significantly after DAA: 25.6±11.7 kPa vs. 22.3±12. kPa (p=0.009). Most patients (55% [152/276]) 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 than EOT as compared to baseline: 20.3±10.8 kPa vs. 25.5±11.4 kPa (p=0.001) and also as compared to EOT: 20.3±10.8 kPa vs. 22.8±12.2 kPa, (p=0.04). In the subgroup of 55 patients where LSM were also performed 24 weeks after EOT (SVR 24), the mean LS values were significantly lower at SVR 12 and SVR 24 as compared to EOT (18.7±6.8 kPa vs. 21.6±7.7 kPa and 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, Zenitiva, Bristol Meyers Squibb.

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**References**


**P1354 ACHIEVING SVR AFTER DAA THERAPY FOR HCV DECREASES THE ACCURACY OF BAVENO VI CLASSIFICATION OF HIGH-RISK VARIETIES IN CIRRHOTIC PATIENTS**


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**Introduction:** Baveno VI criteria suggest that cirrhotic patients with platelet count (PLT) > 150,000 µl and liver stiffness measure values (LSM) < 20 kPa bare a low risk of major hepatic varices (EV) and do not require endoscopic screening. The direct-acting antiviral agents (DAA) determine a very high rate of sustained virological response (SVR) which is associated with reduction of liver stiffness and fibrosis. Therefore, the aim of the study was to assess the influence of DAA therapy on the accuracy of the Baveno VI criteria for cirrhotic HCV patients. All consecutive patients with compensated HCV cirrhosis approved for DAA treatment in our center who gave their informed consent were included. All patients were screened for EV before starting the therapy by esogastroendoscopy. LSM (FibroScan®) and usual biological parameters were evaluated at baseline and when assessing SVR 12.

**Results:** 50 patients were included (59.5% men, 40.5% women) between December 2015 and July 2016. All patients achieved SVR 12 (100%). At base line, 17/50 patients had EV. After completing DAA therapy, liver enzymes [GOT (p < 0.001), GPT (p < 0.0001)], AST (p < 0.0001) significantly decreased, while albumin (p = 0.001) did not change. We found a moderate correlation between GOT and LSM both at baseline (r = 0.31; p = 0.001) and at RVS2 (r = 0.45; p = 0.004), but the amplitude of the decrease appears not to be correlated [Δ(ΔGOT) vs. ΔLSM] (p > 0.149; p = 0.3). At baseline, according to Baveno VI criteria, 29 patients were classified at low risk of having EV (accuracy 68%, Se 69.7%, Sp 64.7%, PPV 79.31%, NPV 52.38%). At SVR12, 10 additional patients entered this class, but the accuracy (60%) decreased.

**Conclusion:** DAA therapy induces a significant decrease in liver inflammation and liver stiffness and also a non-significant increase of platelets count. These changes induce a decrease of the accuracy of classification of patients with low risk of having EV (according to Baveno VI criteria), therefore is not advisable to use Baveno VI criteria as surrogate for endoscopy screening for esophageal varices in patients compensated HCV liver cirrhosis who benefit from DAA therapy.

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**P1355 MONOCYTE CHEMOATTRACTANT PROTEIN-1 IN CONCENTRATIONS IN SERUM DEPEND ON OVERWEIGHT IN CHRONIC HEPATITIS C PATIENTS AND INCREASE AFTER SUSTAINED ViroLOGIC RESPONSE**


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**Introduction:** Monocyte chemotactic protein-1 (MCP-1) is a chemokine mediating inflammation and fibrogenesis. It can be induced by proinflammatory activated monocytes and macrophages. Signaling between the mononuclear phagocyte system (MPS) and hepatic stellate cells is key for active fibrogenesis. The extent to which metabolic and immune factors are implicated in fatty liver of patients with CHC is still not clear.

**Aims & Methods:** The aim of the study was to explore the associations between serum MCP-1, liver fibrosis, fatty liver and metabolic factors in CHC patients before, and after antiviral treatment. We included 21 patients in the study (11 men, 10 women, age 42 ± 9.7) with chronic hepatitis C virus (HCV) infection – 17 with genotype 1 and 4 with genotype 3. Liver biopsy was done in 19 and histology showed fatty liver in 8 patients. Fatty liver was present in 17 of all patients on antiviral treatment. MCP-1 was quantified by ELISA in serum. Serum probes were obtained before treatment and after response evaluation. Statistical analysis included Spearman’s rho, Mann-Whitney U test, Wilcoxon’s test and Student’s paired t-test.

**Results:** MCP-1 in serum correlated with BMI (r = 0.522, p = 0.015). MCP-1 correlated with overweight (r = 0.582, p = 0.006) and with other metabolic factors (r = 0.416, p = 0.010). MCP-1 correlated with liver stiffness, fibrosis and antiviral response (r = 0.39, p = 0.042). An increase in serum MCP-1 was found in patients after SVR (p = 0.018), while no significant variation from baseline values was found in NVR patients. The result remained significant in subgroup analysis of SVR patients with F1-F2 (p = 0.028) and in those with fatty liver (p = 0.017). MCP-1 in serum did not show any association with assessment of liver fibrosis, fatty liver, insulin resistance and serum lipid levels.
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 in a liver with chronic 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 leads to insulin resistance and hepatic steatosis. Although it is usually mild in genotype 4, manifests simple steatosis cases Fibrosis is the potential toxic effect to fibrosis, cirrhosis and subsequent hepatocellular carcinoma. Many heritable host factors with observed inter-ethnic variation in the prevalence of steatosis are documented, and in many cases hepatic steatosis may be detected in absence of all these risk factors; so a role for host genetic factors in development of hepatic steatosis in chronic HCV patients may be suggested.

Aims & Methods: In this study, we aim to evaluate the association of HLA class A-B alleles and presence of steatosis in chronic HCV genotype 4 infected patients. This study included two hundred unrelated non diabetic non obese chronic HCV patients with normal lipid profile, 98 of them have biopsy proven steatosis. Serological testing of HLA class I antigens (HLA-A, and HLA-B alleles) were performed with a standard complement-dependent micro-lymphocytotoxicity

Results: The frequency of A02, A03, B15 and B17 alleles were significantly higher in chronic HCV patients with steatosis (OR = 1.77, 2.64, 4.44, 5.68) and 95% CI = 0.96–3.27, 1.02–7.04, 0.84–31.17, 1.12–38.65 with P = 0.034, 0.022, 0.044, 0.015 respectively. On the other hand, the frequency of A01 and B12 alleles were significantly higher in patients without steatosis (OR = 0.56, 0.41) and 95% CI = 0.30–1.05, 0.20–0.83 and P = 0.015 respectively. 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, 1.04–11.05, 2.15–58.13; P = 0.027, 0.009, 0.004) while carrying HLA-A01 alleles may be protected from having HCV associated hepatic steatosis; (OR = 0.34,95% CI = 0.16–0.72; P = 0.005) with constant 9.47 and overall accuracy of 69%. In addition, patients who have moderate activity index in liver histopathology have 5.9 risk to have hepatic steatosis (OR = 5.92, 95% CI = 2.92–11.99, P<0.001).

Conclusion: In chronic HCV genotype 4 patients, carrying HLA-A02, HLA-A03 and HLA-B15 alleles may have a risk for presence of hepatic steatosis while presence of HLA-A01 alleles may have a protective role.

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

Reference

P1357 THE VALUE OF 2D-SWE.GE FOR THE EVALUATION OF LIVER FIBROSIS IN PATIENTS WITH HCV COMPENSATED CHRONIC HEPATITIS PATIENTS
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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 Elasotagy (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-SWE.GE (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 inter-quartile range <30% and for 2D-SWE.GE - the median value of 10 measurements acquired in a homogeneous area and an inter-quartile range (IQR) <30%. To discriminate between various stages of fibrosis by TE we used the following cut-offs: F2: ≥ 7.1 kPa, F3: ≥ 9.5 kPa, F4: = 12.5 kPa [1].

Results: Reliable LS measurements were obtained in 138/145 (95.1%) subjects by 2D-SWE and in 139/145 (95.1%) subjects by TE. On logistic regression analysis, patients who have moderate activity index in liver histopathology have 5.9 risk to have hepatic steatosis (OR = 5.92, 95% CI = 2.92–11.99, P<0.001).

Conclusion: 2D-SWE.GE seems a reliable method for liver fibrosis staging in patients with HCV compensated chronic hepatopathies. The best 2D-SWE.GE cut-off values for F ≥ 2, F ≥ 3 and F ≥ 4 in HCV chronic hepatopathies were 7.2 and 10.7 kPa.

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, Zenitva, Bristol Meyers Squibb S.A. Popescu: I hereby confirm that I have received financial support (congress travel grant or speaker fee) from: Philips, General Electric, Abbvie, AstraZeneca, Zenitva R. Sirli: I hereby confirm that I have received financial support (congress travel grant or speaker fee) from Philips, Abbvie, Zenitva

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 reaching sustained virological response (SVR) in patients infected with hepatitis virus C. It has been suggested that risk is increased in patients treated with the new direct antiviral agents (DAA). In this prospective study we present our results of incidence and prevalence of novo HCC in cirrhotic patients treated with DAA and SVR, and also, the risk factors involved in its development.

Aims & Methods: We included all cirrhotic patients due to HCV infection without previous HCC who reached SVR after DAA treatment in our hospital from February 2014 until December 2016 (n = 197, median of follow-up of 17 months). We evaluated with chi square test the following qualitative variables: age, Child-Pugh stage, alcohol consumption pre-treatment, tobacco consumption pre-treatment, diabetes mellitus (DM) pre-treatment, genotype, radiological and endoscopic portal hypertension features pre-treatment. The quantitative variables were evaluated with student t test: age, no. of platelets pre-treatment, fibrosis stage 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 significantly with the development of novo HCC. The incidence (>1.5%) of novo HCC justifies the screening of HCC.

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

Reference
P1359 IS AN ACUTE LIVER FAILURE REALLY ALWAYS AN ACUTE ONSET OF PRE-EXISTING LIVER DISEASE IS COMMON IN PATIENTS WITH ALF DIAGNOSIS

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Introduction: An acute insult to the liver in patients without pre-existing chronic liver injury can cause acute liver failure (ALF). ALF is a life-threatening condition and requires specialized intensive care. Acute on chronic liver failure (ACOF) is a not yet clearly characterized situation, where the acute insult occurs on top of a pre-existing chronic liver disease without cirrhosis. Various definitions of AOCFL are found in the literature. Discrimination of AOCFL from ALF might be trivial for pre-existing alcoholic or viral hepatitis. However, non-alcoholic steatohepatitis (NASH) in obese or diabetic patients might be more critical situations. Patients admitted to liver transplantation centers with the diagnosis of ALF might be suffering from AOCFL instead. It is also unclear if the ALF and AOCFL 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 AOCFL 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 AOCFL was established by a retrospective examination of patient records. In total 161 patients were recruited (ALF: 131; AOCFL: 30). Clinical records, in particular demographic data, serum parameters and outcome were analyzed for differences between ALF and AOCFL.

Results: Patients with AOCFL were significantly older (50.3 ± 15.1 vs. 39.8 ± 16.2, p = 0.0008) but had a higher BMI (27.5 ± 5.1 vs. 24.5 ± 6.2, p = 0.0014) and were more often male (65% in AOCFL vs. 34% in ALF, p = 0.0008). In addition, the causes that resulted in the liver failure in AOCFL were significantly different from those patients with ALF. Significant differences were also found for liver enzymes, which were significantly lower in AOCFL patients (AST p = 0.01; ALT p = 0.001). Cell death markers and the MELD did not differ between ALF and AOCFL. Moreover, the outcome was not different between the two groups neither separated 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 AOCFL.

Conclusion: In the present study patients with ALF and AOCFL 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 AOCFL, 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.

P1360 EFFECTS OF PREOPERATIVE TRANSARTERIAL CHEMOEMBOLIZATION ON PATIENTS’ SHORT TERM PROGNOSIS AFTER LIVER TRANSPLANTATION

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Introduction: To explore the influence of preoperative transarterial chemoembolization on short-term prognosis in patients with hepatocellular carcinoma after liver transplantation.

Aims & Methods: A retrospective study was conducted among patients with hepatocellular carcinoma who received liver transplantation from January 2009 to September 2015 in Ruijin Hospital. A total of 31 patients (Male: 29; Female: 2) were included. Among them, 14 patients received preoperative hepatic arterial chemoembolization was incorporated into observation group (n = 14), and the other 17 patients who didn’t undergo transarterial chemoembolization were included in the control group (n = 17). The qualitative data included patient demographics, patient’s preoperative and peroperative course.

Results: No statistical difference was found in the total operation time, blood loss and length of hospital stay between two groups, and the occurrence rate of vascular complications, biliary complications and postoperative infection also showed no difference. Although more patients above Clavien IIa were in the observation group, there was no statistical significant difference in the peroperative mortality between two groups. Besides, preoperative TACE could effectively reduce complications caused by immune reaction (p = 0.048). In terms of postoperative index of liver function, TBIL, ALT, AST all had a transient rise during the first 3 days after liver transplantation, but recovered gradually over time. There’s no remarkable difference in the liver function recovery level between two groups (P = 0.495; P = 0.141; P = 0.101). No statistical difference was found in the total operation time, blood loss and length of hospital stay between two groups, and the occurrence rate of vascular complications, biliary complications and postoperative infection also showed no difference. Although

P1361 IMPORTANCE OF INTERFERON-GAMMA RELEASE ASSAYS IN EVALUATING CANDIDATES FOR LIVER TRANSPLANTATION IN A COUNTRY ENDEMIC FOR TUBERCULOSIS

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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 liver transplant centers. 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 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 co-infection in 45.06%, and alcoholic liver cirrhosis in 18.93%; 24.62% of patients had no identified etiology (p value 0.187). Patients with indeterminate Quantiferon as assessed by the PPD test had a significantly higher MELD score (p = 0.044) 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 high MELD score (p = 0.045) showed a worse postLT outcome. Patients with indeterminate Quantiferon associated with hyperbilirubinemia (p = 0.044), hypoalbuminemia (p = 0.032) and a high MELD score (p = 0.045) showed a worse postLT outcome.

Conclusion: Preoperative TACE would effectively reduce complications caused by immune reaction (p = 0.048). It might go unnoticed in the critical situation of an ALF/AOCLF. Thus, patients admitted to liver transplantation centers with the diagnosis of ALF might be suffering from AOCFL instead. It is also unclear if the ALF and AOCFL have different impact on disease course, clinical management and transplant organ allocation.

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

References:
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 factor assesses contribution of 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 30/9/2016. 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 diagnosis 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. 27/170 pts were transplanted for cholangiocarcinoma. 12 post-transplant de novo cancers and 12 IBC/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 developed colorectal dysplasia: 3/4 underwent colectomy. All those who developed colorectal dysplasia/CRC post OLT had co-existing IBD. All 5 colectomy specimens for dysplasia/CRC showed significant co-existing inflammation.

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 those in the normal population, and slightly higher than previously reported in unselected liver transplant groups. We could not find any association between the development of PTLD and aggressive immunosuppressive regimes for co-existing IBD post OLT. The study highlights that IBD/PSC patients remain at significant risk of colorectal neoplasia after OLT and require intensive surveillance.

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

OUTCOME OF LIVER TRANSPLANTATION FOR PRIMARY SCLEROSING CHOLANGITIS IN CONTEXT OF HLA-DR MISMATCH: SINGLE CENTRE EXPERIENCE

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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.

Results: Out of 57 patients, 27 (47.4%) had single mismatch (“M1” group) and 30 (52.6%) had double mismatch (“M2” group) in HLA-DR. No patient had full match. 33/57 (57.9%) patients had ACR: 15/27 (55.6%) of M1 and 18/30 (60%) of M2 (p = 0.94). 4/27 (14.8%) of M1 and 2/30 (6.3%) of M2 had corticosteroid resistant ACR (p = 0.57). Multiple–episodes of ACR occurred in 11/57 (19.3%) patients: 6/27 (22.2%) of M1 and 5/25 (20%) of M2 (p = 0.74). 12/57 (21.1%) had de-novo UC after OLT: 7/27 (25.9%) of M1 and 5/30 (16.7%) of M2 (p = 0.60). In 37 (68.5%) patients, UC was diagnosed prior to OLT. 9/16 (56.3%) patients with M1 and 6/21 (28.6%) patients with M2 had more severe course of UC as compared to course prior to OLT (p = 0.17). 38 patients were evaluated for rPSC, which was diagnosed in 17 (44.7%) individuals. 6/19 patients with M1 and 11/19 with M2 had rPSC (p = 0.19).

Conclusion: Patients with single mismatch in HLA-DR have slight tendency towards development of rPSC and worsening of UC after OLT as compared to patients with double mismatch. Analysis of combined mismatch in HLA-DR and HLA-DQ could demonstrate more substantial linkages in respective clinical variables. Therefore, these data have to be considered as preliminary as typing for HLA-DQ from frozen blood samples is currently underway. Supported by Ministry of Health of the Czech Republic, grant nr. 15-28064A. All rights reserved

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GRANT 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 liver transplantation fibrosis. This was a retrospective observational 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 ≥2F. Demographic, analytical and associated variables in the cohort.

Results: A total of 32 patients underwent Fibroscan® and liver biopsy. Mean age of 48.53 ± 11.20years and male gender in 68.8%(n = 22). The mean time between Fibroscan® and liver biopsy was 29.77 ± 36.90months. The mean elastography score was 13.45 ± 8.31KPa with IQR/med of 17.11 ± 8.66% . Mean CAP score was 207.12 ± 57.35 dB/m. Regarding liver biopsy, 34.4%(n = 11) had significant fibrosis and 25.0%(n = 8) presented steatosis. Comparing two methods, there was no concordance for steatosis (kappa = 0.273; p = 0.117) or inflammation (kappa = 0.063; p = 0.710). On the contrary, a moderate agreement for significant fibrosis (kappa = 0.431; p = 0.003) was verified. The mean elastography score showed an accuracy of 79.7% in predicting histological fibrosis (AUROC = 0.797; p = 0.007) to a cut-off value of 11.6 KPa (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.
Introduction: Orthotopic liver transplant has become the standard of care for end-stage liver disease and hepaticobiliary cancer. Better immunosuppressants paved way for improved survival rates post-transplant. But with this longevity comes a higher prevalence of chronic diseases such as New Onset Diabetes After Transplantation (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 Transplantation (NODAT), Impaired Fasting Gylcaemia (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 2/4/2011 till 26/4/2016. 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


P1365 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), 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, number of organ failure, presence of Child-Pugh C status, and the presence of liver cancer-related mortality. Factors that may affect the survival of 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 = 0.108). 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: 1.44–13.27; P=0.009) were independent predictors of post-transplant mortality. Mean post-liver transplant 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 22.75±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


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Introduction: Serum vitamin B12 (vB12) levels are increased in myeloproliferative diseases by increased production of the haptocorrin transporter and in liver diseases by release of vB12 from hepatocytes death.

Aims & Methods: The aim of this study was to evaluate vB12 as a prognostic marker in patients with cirrhosis and acute on chronic liver failure (ACLF) induced by liver infection. Retrospective assessment of 5 patients admitted to an intensive care unit with ACLF in the context of infection (group 1) and 53 patients with compensated hepatic cirrhosis followed as Hepatology outpatients (group 2). Evaluation of vB12 as a predictor of 30 days’ mortality.

Results: 111 patients, 68% male, age 58 ± 18 years. Group 1 had more advanced liver disease (CPT 11.9 ± 0.3 vs. 6.5 ± 0.2 and MELD 27.0 ± 1.0 vs. 10 ± 0.5), higher vB12 (1413 ± 149 vs. 735 ± 56 pg/mL) and lower survival (1.6 ± 0.4 vs. 6.4 ± 2.7 years). vB12 positively correlated with hepatic function scores (CPT: R = 0.56; 95% CI: 0.30–0.76 vB12 and vB12 with independent factors of mortality (e.g. infection)) in group 1, survival was lower in patients with vB12 (28 ± 3 vs. 37 ± 11 months), and 1 month’ mortality was associated with vB12, CPT, MELD, number of organ failure, urea, lactates and fibrinogen, in univariate analysis (p < 0.001). In multivariate analysis only fibrinogen maintained statistical significance (P < 0.001).

Conclusion: There was a strong association between high levels of vB12 and clinical decompensation of liver cirrhosis. vB12 correlated with scores of liver disease and multiorgan failure, as well as early mortality in patients with ACLD.

Disclosure of Interest: All authors have declared no conflicts of interest.
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 in DWI is ADC, which is the diffusion coefficient for their systemic motion in tissues (ADC). ADC values for b parameter lower than 300 mm²/s 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 suppose 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 s/mm². ADC maps were calculated for b values of 015 and 0500 s/mm². The mean ADC value was obtained by threefold marking ROI covering the whole metastatic lesion. In cases of multiple foci only the lesion with the highest ADC value was included into analysis. On basis of ROC analysis the cut-off values of ADC were established: 2.49 mm²/s for b value of 015 s/mm² and 1.43 mm²/s for b value of 0500 s/mm². The survival outcomes were assessed by mean of Kaplan-Meier estimator. The p value lower than 0.05 was considered significant.

Results: The statistical analysis included Kaplan-Meier estimator for 52 patients with 9 censored cases (17.3%). In ADC maps for b value of 0500 s/mm², the ADC value ≥1.43 mm²/s correlated with longer survival time, whereas ADC value <1.43 mm²/s correlated with shorter survival time. Statistically significant differences were identified by log rank test (p = 0.007). Such a correlation was not observed for ADC values in ADC maps for b value of 015 s/mm² (p = 0.058).

Conclusion: The study showed significant differences in survival rate depending on diffusion influenced ADC values of metastatic lesions.

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

References

P1370 LEARNING CURVE EVALUATION USING ELASTPQ
R. Mare1, I. Sporea2, S.A. Popescu1, R. Sirli1, C. Pienar2, S. A. Popescu: 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 R. Mare1: I hereby confirm that I have received financial support (congress travel grant) from Philips R. Sirli: I hereby confirm that I have received financial support (congress travel grant or speaker fee) from Philips, Abbvie, Zentiva, S.A. Popescu: I hereby confirm that I have received financial support (congress travel grant or speaker fee) from Philips, General Electric, Abbvie, AstraZeneca, Zentiva

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 differences in measurement values obtained in a homogenous area avoiding large vessels and with an IQR/median <30%. The learning curve was evaluated using the Receiver Operating Curve analysis using the expert’s results as reference.

Results: The trainee’s performance in obtaining reliable LSM was good (AUC: 0.735, 95% CI (0.557–0.913), p = 0.01). The trainee started to have similar results with the expert elastography 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. Mare1: I hereby confirm that I have received financial support (congress travel grant) from Philips 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 grant or speaker fee) from Philips, General Electric, Abbvie, AstraZeneca, Zentiva

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Introduction: Type II diabetes and nonalcoholic fatty liver disease (NAFLD) are frequently associated. NAFLD being considered the hepatic expression of the metabolic syndrome.

Aims & Methods: The aim of the present study was to assess the severity of liver fibrosis and steatosis in a cohort of type 2 diabetic patients, using non-invasive methods (Transient Elastography (TE) and Controlled Attenuation Parameter (CAP)). The study included 354 type 2 diabetic patients, who were prospectively randomized (first 6 patients who were referred to the Metabolic Disease Outpatient Clinic on a consultation day), evaluated in the same session by means of TE and CAP (FibroScan EchoSens) to assess both liver fibrosis and steatosis. Each patient was evaluated for the presence of viral hepatitis (B, C) and an AUDIT-C score was performed to exclude alcohol abuse. Reliablie liver stiffness measurements (LSM) were defined as the median value of 10 LSM with an IQR/median <30%. For TE and CAP, M and XL probes were used. A cut-off value of 8.2 kPa [1] was used to define severe fibrosis (F ≥ 3). For differentiation between stages of steatosis we used the following cut-off values [2]: S0(moderate) > 235 db/m, S1(severe) ≥ 290 db/m.

Results: Out of 354 diabetic patients, 142 presented with type 2 diabetes and were excluded with those associated viral hepatitis, those with an AUDIT-C score ≥ 8 and those with unrelable LSM. The final analysis included 239 subjects (39.4% women, 40.6% men, mean age 60.4 ± 9.3; BMI = 31.8 ± 6.1 kg/m²) with reliable LSM. Accordingly to BMI, 10.8% had normal weight, 24.8% were overweight and 62.8% were obese (35.6% obesity grade I, 17.2% obesity grade II and 10% obesity grade III). Moderate and severe steatosis by means of CAP was found in 18.4% and 69.5% cases respectively. Severe fibrosis was detected by means of TE (LSM ≥ 8.2 kPa) in 29.3% (70/239) of subjects.

Conclusion: In our group, 87.9% of diabetic patients had moderate and severe steatosis by CAP and 29.3% of them had severe fibrosis (TE ≥ 8.2 kPa), suggesting an advanced liver disease.

Disclosure of Interest: I. Sporea: I hereby confirm that I have received financial support (congress grant or speaker fee) from Philips, Siemens, General Electric, Abbvie, Zentiva, Bristol Meyers Squibb R. Mare1: I hereby confirm that I have received financial support (congress travel grant) from Philips R. Sirli: I hereby confirm that I have received financial support (congress travel grant or speaker fee) from Philips, Abbvie, Zentiva, S.A. Popescu: I hereby confirm that I have received financial support (congress travel grant or speaker fee) from Philips, General Electric, Abbvie, AstraZeneca, Zentiva

All other authors have declared no conflicts of interest.

References

A640
This study aimed to test the latest approved version of a Medicine and Pharmacy Timisoara, Timisoara/Romania RADS classification of the 298 lesions.

Introduction: In patients with liver cirrhosis, hepatocellular carcinoma (HCC) can be diagnosed by noninvasive imaging methods (contrast-enhanced ultrasound CEUS, contrast CT, MRI).

Aims & Methods: The aim of this study was to evaluate which is the most common enhancement pattern of HCC on CEUS in all three phases (arterial, portal, and late phase). We performed a retrospective study that included patients with a final diagnosis of HCC established by an imaging method (contrast enhanced CT or MRI) or biopsy. A total of 249 patients with HCC were examined (180 men, 69 women, mean age 64 ± 10 years): 181 patients had liver cirrhosis and 68 patients chronic hepatopathy with severe fibrosis. All 249 HCCs were evaluated by CEUS using low mechanical index ultrasound, following an intravenous bolus of 2.4 ml SonoVue. CEUS was considered conclusive for HCC if a typical pattern was present following contrast examination (hyperenhancement in the arterial phase accompanied by portal and/or late phases washout). The nodules were classified according to their size in <5 cm and >5 cm. We re-evaluated all 249 HCCs CEUS studies using the ACR CEUS LI-RADSv 2016 algorithm.

Results: After CEUS examination a conclusive diagnosis of HCC was obtained in 190/249 cases (76.3%). Arterial phase hyperenhancement pattern was present in 227/249 (91.2%) cases, arterial washout in 197/249 (79.1%) cases. The nodules were isoenhancing in the arterial phase was observed in 17/249 cases (6.8%) and hypoenhancement in 5/249 cases (2%). In the portal phase washout was observed in 111/249 cases (44.6%); in 121/249 (48.6%) patients the nodules were isoenhancing and in 17/249 (6.8%) the arterial hyperenhancement pattern was maintained. In the late phase washout was observed in 197/249 (79.1%) cases. The nodules <5 cm were diagnostic conclusive on CEUS in 63.7% (72/113), while nodules >5 cm had a conclusive result in 86% of cases (117/136), p < 0.001. CEUS examination was conclusive for HCC in 76.3% of the cases (190/249), while using the ACR CEUS LI-RADSv 2016 algorithm in 72.2% of all HCCs (180/249), p = 0.35.

Conclusion: In our study, CEUS arterial hyperenhancement is the most common pattern observed in HCC (91.2% of cases), followed by washout in the late phase (>79.1% of cases). The size of the nodule modifies CEUS sensitivity for the diagnosis of HCC: p < 0.001.

Disclosure of Interest: I. Sporea: I hereby confirm that I have received financial support (congress travel grant or speaker fee) from Philips, Abbvie, Zentiva.

A. Popescu: I hereby confirm that I have received financial support (congress travel grants, speaker fee) from Philips, General Electric, Abbvie, AstraZeneca, Zentiva.

R. Sirli: I hereby confirm that I have received financial support (congress travel grants or speaker fee) from Philips, Abbvie, Zentiva.

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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

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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 rates 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 ethanol injection. Clinical assessment, routine laboratory evaluation, CT studies and measurement of serum alpha-fetoprotein (AFP) and DKK1 were performed to follow up patients and repeated to group B patients 1 and 3 months after treatment.

Results: DKK1 significantly can be used for HCC diagnosis even in HCC with inconclusive AFP. The optimum cut off value of DKK1 for diagnosis of HCC was 4.3 ng/mL (AUC 0.89, sensitivity 66.7% and specificity 96.6%) (P < 0.001). Serum DKK1 level significantly decreases after HCC treatment with either radiofrequency ablation or ethanol injection. Clinical assessment, routine laboratory evaluation, CT studies and measurement of serum alpha-fetoprotein (AFP) and DKK1 were performed to follow up patients before and after treatment.

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.

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P1373 EFFECT OF FIBROBLAST GROWTH FACTOR-2 AND ITS RECEPTOR GENE POLYMORPHISMS ON SURVIVAL IN PATIENTS WITH HEPATITIS B VIRUS-ASSOCIATED HEPATOCELLULAR CARCINOMA

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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) and response to treatment. DKK1 has a promising prognostic value and can be used for follow-up of HCC patients before and after treatment.

Aims & Methods: We determined the association of single nucleotide polymorphisms (SNPs) in growth factor signaling–related genes with 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, Flt-1, and c-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 FGF2 rs803879 A allele was significantly associated with small tumor size, early tumor stage, and less vascular invasion. The Flt-1 rs4771249 C allele was associated with low alpha-fetoprotein levels. Kaplan-Meier analysis showed that the patients with the FGF2 rs8038477 TT genotype had lower survival rates than the patients with the CC or CT genotype (P = 0.016) and that the FGF2 rs8038797 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 rs8038797 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.
Conclusion: These observations suggest that the SNPs of the FGFR2 and FGF2R2 genes can be potential prognostic indicators in patients with HBV-associated HCC.

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

References

P1375 EXTRAHEPATIC HEPATOCELLULAR CARCINOMA METASTASIS: IMPORTANCE OF AN EARLY DIAGNOSIS AND TREATED TARGETED THERAPY.

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Introduction: Extrahepatic HCC metastasis are associated with a poor prognosis. Nevertheless there are some effective therapies available.

Aim & Methods: The aim of this study was to assess the main sites of extrahepatic metastasis in hepatocellular carcinoma (HCC) patients and to evaluate the clinical evolution and treatment. This was a retrospective single-center study in which patients with HCC confirmed extrahepatic metastasis between January 2010 and December 2016 were evaluated.

Results: We evaluated 51 consecutive patients, 80% male, with a mean age of 64 ± 11 years at the time of metastasis. In 41% of the patients the 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 more frequent were lung (33%) and bone (14%). The MELD score at the time of metastasis was higher than the MELD score at the HCC diagnosis (p score at the time of metastasis was 0.005). Multivariate analysis, MELD score at the time of metastasis (p = 0.002). In multivariate analysis, MELD score at the time of metastasis (p = 0.004) and metastasis treatment (p = 0.005) were independently associated with OS estimation.

Conclusion: A systematic HCC staging, with thoracic CT and bone scintigraphy, may provide an earlier metastasis detection and enable a targeted treatment with a consequent improvement in survival in this difficult-to-treat population.

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

Reference

P1376 MANAGEMENT OF INTERMEDIATE STAGE HEPATOCELLULAR CARCINOMA

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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 delivering bead-transarterial chemo-embolization (DEB-TACE) in 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 unresectable HCC who received DEB TACE in our hospital were studied. The objective radiological response was classified according to the modified Response Evaluation Criteria in Solid Tumors (mRECIST) v.1.1 by using dynamic CT at one or two months after treatment. Adverse events were evaluated using NC1 CTCAE v. 4.03.

According to Bolondi’s subclassification, the patients of BCLC B stage were divided into four groups (B1: 31, B2: 19, B3: 19, B4: 10). The response rate and tumor factor associated response in these patients group were examined.

Results: The overall response rate and disease control rate in intermediate stage were 36% and 89%, respectively. Considering the subclassification, the response rate in B1 group (61%) was significantly higher than that of B2+B3 group (29%). Although B2+B3 group was constituted by the patients who did not satisfy the up to 7 criteria, only in the patients with less than 7 tumors, the response rate (60%) was similar to that of B1 group. Tumor factors associated response rate was found to be significant on univariate analysis were simple gross classification (class 5 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 LIVER 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 recurrence after DAAs therapy.

Aims & Method: Aim of this study was to prospectively evaluate the rate of HCC recurrence following sustained virologic response (SVR) by DAAs. From April 2015 to September 2016 we consecutively enrolled HCV infected patients previously treated for HCC at Liver Unit of Cardarelli Hospital. All patients had a free-disease survival from HCC of at least 6 months before starting antiviral therapy. The efficacy of HCC therapy was evaluated according to mRcist criteria, CT or MRI. Radiological evaluation was carried out within 30 days from the start of therapy. All patients underwent DAAs therapy, selected on an individual 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: 52–85). The median follow-up was 12 months after the beginning of therapy (range: 6–18 months). Genotype distribution was as follows: 36 patients infected with genotype 1 (85.7%), 5 with genotype 2 and 1 patients with genotype 3. SVR was achieved in 38/42 patients (90.5%). HCC recurrence was observed in 11/38 patients with SVR (28.9%). The median time for recurrence was 9 months from the start of therapy with a range of 1–13 months; with 2 patients who showed recurrence during therapy. Among the patients who did not achieve SVR, 1/4 showed HCC recurrence after 10 months from end of treatment.

Conclusion: Treatment with DAAs are highly effective with a SVR of about 90% even in patients with advanced liver disease. Nonetheless, in patients with previous history of HCC, the eradication of HCV did not reduce the risk of short and medium-term recurrence.

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

References
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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
A study was conducted to investigate the prognostic factors for survival of BCLC-C stage HCC patients in a real-life setting. The aim of this study was to identify the prognostic factors for survival of BCLC-C stage HCC patients. The study included 8677 patients who were diagnosed with primary liver cancer from 2010 to 2012 and 1836 patients were in distant metastasis stages. The results showed that AFP levels, NIACE score, and post-treatment factors for survival of BCLC-C stage HCC patients in a real-life setting. The study identified that AFP levels, NIACE score, and post-treatment factors were independent predictors of worse outcome. The study concluded that AFP levels, NIACE score, and post-treatment factors are independent predictors of worse outcome.
P1383 THE EVOLUTION OF ESOPHAGEAL VARICES 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 intrahepatic 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 2010 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 ± 5 years with extremes ranging from 11 years to 70 years. The sex ratio M/F was 0.42. Five percent of patients had a splenectomy for undocumented reasons before the diagnosis of PHT. Concerning the clinical presentation, 10.9% (n = 11) were hospitalized for melena, 60.4% (n = 61) for hematemesis and melena and 28.7% (n = 29) for non-specific abdominal pain. Clinical examination was normal in 10.9% (n = 11), showed an axies in 11.9% (n = 12), and signs of PHT such as splenomegaly and collateral circulation in 25.3% (n = 26). Among cases, complete blood count showed that 16.8% (n = 17) had thrombocytopenia, 12.9% (n = 13) had bictyonemia, and 42.6% (n = 43) had pancytopenia. In all patients, upper GI endoscopy was performed. Hypertensive gastropathy was found in 30.7% (n = 31), grade I esophageal varices (EV1) in 5.9% (n = 6), grade II in 30.7% (n = 31), 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), it was partial in 33.6% (n = 34), complete in 11.5% (n = 12). Endoscopy lead to the spleen arteriovenous malformation was found in 39.6% (n = 40). All patients performed an etiologic assessment of thrombosis, myeloproliferative syndrome was found in 8.9% (n = 9), deficiency in inhibitors of coagulation in 31.7% (n = 32), celiac disease in 4.9% (n = 5), neoplastic lesions in 2.9% (n = 3), no etiology was found in 51.4% (n = 52). Endoscopic variceal Ligation (EVL) was performed in 70.3% (n = 71), the mean number of ligation sessions was 3 and eradication of esophageal varices was noted in 69.3% (n = 70). All patients received anticoagulant therapy except those having portal cavernoma with no obvious cause and 42.6% (n = 43) of patients received beta-blockers for secondary prophylaxis. During follow up, 5.9% (n = 6) of patients have not been seen at consultation and no rebleeding was noted in 89.1% (n = 90). Concerning portal thrombosis, it was solved in 49.5% (n = 50) and stabilized in 10.8% (n = 11).

Conclusion: The evolution of esophageal varices in non-cirrhotic portal hypertension due to PVT seems to be better than in cirrhotic portal hypertension. Indeed 89.1% of patients in this study didn’t rebleed after eradication of esophageal varices.

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

P1385 LONG-TERM OUTCOMES OF PATIENTS WITH ACUTE CALCULOUS CHOLECYSTITIS AFTER SUCCESSFUL REMOVAL OF GALBILADDER 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 outcome 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 GB stones than in those without complete clearance (10.2%, 16/157 vs 21.4% 3/14; p < 0.05). The frequency of recurrence of gallstone disease in patients with contrast passage to the duodenum on cholangiography after PTCS was lower than that in patients without contrast passage.

Conclusion: Gallbladder stone removal with PTCS would be recommended as an effective and safe treatment modality for the patients with acute cholecystitis who are unsuitable for surgery.

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

P1384 EVALUATION OF COMMON BILE DUCT CLEARANCE AFTER ENDOSCOPIC MANAGEMENT OF DIFFICULT BILARY 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 after injection of contrast medium. False negative/false positive results are under/over-treatment. Direct peroral cholangioscopy (POC) refers to the use of nonspecific 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. Ultraslim (5.9 mm diameter) or Slim (8.5 mm diameter) endoscopes (Fujifilm EG 530N/W or EG 530IF/P) 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 47.4 years ± 11.9) under propofol sedation (25 patients) or deep sedation (3 patients). Mean CBD size was 15 mm ± 3.65; mean stone diameter (13.5 mm ± 1.70); mean balloon dilatation (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 5–9 minutes). POC showed persistent large amount of stones in 91.5% (sludge in 27.7% cases), complete stones clearance in 8.5% and a residual stone in 0.4% cases. CBD cannulation was successful in 15/17 cases (88.2%). Complete CBD clearance was noted in 14/16 cases (87.5%). Despite its utility, the success rate of bile duct cannulation and a 0.025 inch guidewire may become a single device that can facilitate common bile duct cannulation. A combination catheter with a Y-connector smoother. Therefore, the combination catheter with a Y-connector was chosen for the investigation of the bile duct for immediate POC to the CBD. Then the 0.025 inch guidewire may become a single device that can facilitate complete CBD 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 BDA clearance. From January 2016 to July 2016, 11 consecutive patients with BDA ≤ 10 mm in size were enrolled in this study (Stoneone group). In all cases, the combined catheter (Stoneone) 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 in historical control.

Results: The success rate of selective cannulation and stone clearance did not differ significantly (Stonetome group: 90.9% and 100% vs control group: 100% and 100%, respectively). The median time after bile duct cannulation to complete stone clearance and total procedure time in the Stonetome group were significantly shorter than those in the control group (401.5 vs 982.5, 645.5 vs 1380b, respectively). In the Stonetome group, delayed bleeding occurred in 1 patient. In the control group, bile duct injury caused by the guidewire occurred in 3 patients. The costs of the used devices did not differ significantly (Stonetome group: $678 versus control group: $669).

Conclusion: The combined catheter has the same selective cannulation ability as a conventional catheter and a similar capacity to remove BDSs as common retrieval. Therefore, the combined catheter can reduce the procedure time to remove BDSs. Disclosure of Interest: All authors have declared no conflicts of interest.

P1387 ACCURACY OF ASGE CRITERIA IN THE IDENTIFICATION OF PATIENTS WITH SUSPECTED CHOLEDOCHOLITHIASIS
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Introduction: Society for Gastrointestinal Endoscopy (ASGE) emitted, in 2010, guidelines for the clinical orientation of patients with suspected choledocholithiasis (CL), suggesting the direct referal to endoscopic retrograde cholangiography (ERC) in certain groups. However, the ERC is an invasive exam and so it was demonstrated that a significant amount of patients classified with very strong risk of CL did not have alterations in ERC.

Aims & Methods: The aim of this work was to assess the accuracy of the ASGE guidelines in portuguese population. This is a retrospective study that included 212 patients (52.8% female sex, 47.2% male sex; mean age 73.9 (±14.6 years) admitted to the hospital from 2014 to 2016.

Results: Of the 212 patients, 28 (13.2%) had intermediate risk of CL and 184 (86.8%) had high risk, according to the ASGE criteria. These patients were submitted to the following exams/interventions: ERC (154 patients); magnetic resonance cholangiography (50 patients) and endoscopic ultrasound (8 patients). In patients initially classified with high risk of CL, this was confirmed in 119 (64.7%). The same was seen in 10 (35.7%) of the patients with intermediate risk. The overall ERC complication rate was 13% (20 patients), of whom 8 had no CL. Conclusion: The ASGE guidelines showed a limited diagnostic accuracy in the identification of patients who actually require ERC, conditioning a significant number of unnecessary procedures with subsequent complications associated with it. It is the orientation of these patients, with greater use of less invasive diagnostic techniques such as magnetic resonance cholangiography and endoscopic ultrasound.

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

Reference
The role of endoscopy in the evaluation of suspected choledocholithiasis by the American Society for Gastrointestinal Endoscopy, volume 71, No1: 2010 Gastrointestinal Endoscopy

P1388 DOES FIBRIN GLUE APPLIED ON THE CHOLANGIOTOMY IN LAPAROSCOPY AVOID COMMON BILE DUCT EXPLORATION? REDUCE THE RISK OF BILE LEAKAGE? A RANDOMIZED STUDY
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Introduction: Laparoscopic choledochotomy as a method of extracting common bile duct stones is a technique with many advantages. One problem, however, is bile leakage along the T-tube. To some extent the leakage may be reduced if the incision is situated around the T-tube, but this technique has some disadvantages. The aim of this study was to investigate whether application of fibrin glue around the tube results in less leakage than suturing.

Aims & Methods: Between 2012 and 2016 a total of 1347 cholecystectomies were performed in Enköping Hospital. From this group, 42 patients were included in the study and randomized to suturing or fibrin glue for closing the cholecystotomy 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 amylase were controlled daily. If 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: Discussion Fibrin glue may be an option to seal cholangiostomy around the T-tube, but studies with greater statistical power are needed to confirm this.

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

P1389 THE IMPACT OF BARIATRIC SURGERY ON ACUTE CHOLANGITIS MORTALITY AND OTHER OUTCOMES: A NATIONWIDE ANALYSIS
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Introduction: Rapid weight loss after bariatric surgery (BS) has been associated with the formation of gallstones, and subsequent acute cholecystitis and cholangitis (AC). However, the complex post-surgical anatomy limits the possibility of performing an ERC as part of AC treatment. Therefore, the aim of this study was to assess the impact of bariatric surgery on mortality and resource utilization among patients with AC using a national database.

Aims & Methods: This was a case-control study using the National Inpatient Sample 2013, the largest publically available inpatient database in the United States. All patients with an ICD-9 CM code for a principal diagnosis of AC were included. There were no exclusion criteria. Patients with a past history of BS were identified using the appropriate ICD-9-SCM codes. The primary outcome was all cause mortality. The secondary outcome was resource utilization: use of ERC, cholecystectomy, length of hospital stay (LOS), total hospitalization charges and costs. Multivariate regression analyses were used to adjust for the following confounders: Age, sex, race, income in patients’ zip code, Charlson Comorbidity Index, hospital region, location, size and teaching status.

Results: A total of 274,775 patients with AC were included in the study, of which 4,240 (1.7%) had undergone BS. The mean patient age was 51 years and 48% were female. After adjusting for confounders, patients with and without history of bariatric surgery had similar adjusted odds of mortality (adjusted Odds Ratio (aOR): 0.85, 95% CI: 0.51–1.43 vs 0.95, 95% CI: 0.59–1.55). As far as resource utilization, patients with bariatric surgery had lower adjusted odds of ERC (aOR: 0.28, 95% CI: 0.09–0.83, p = 0.02), but higher odds of cholecystectomy (aOR: 3.18, 95% CI: 1.00–10.05, p = 0.04). Both patient groups had similar adjusted length of stay (adjusted mean difference: 1.19 days, 95% CI: 0.09–0.83, p = 0.16) total hospitalization costs (adjusted mean difference: $2237, 95% CI: $2208 – $6782, p = 0.49), and total hospitalization charges (adjusted mean difference: $7477, 95% CI: $8955–$24549, p = 0.39).

Conclusion: Bariatric surgery has no impact on inpatient all-cause mortality among patients who develop acute cholangitis, despite its association gallstone acute pancreatitis and limited ERC performance. In addition, bariatric surgery does not affect resource utilization in this patient population as measured by length of stay and total hospitalization costs.

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

P1391 PATHOLOGICAL, CLINICAL AND RADIOLOGICAL CHARACTERISTICS OF NEOPLASTIC AND NONNEOPLASTIC GALLBILDDER POLYPS
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Introduction: Prevalence of gallbladder polyps in the Netherlands is 943 per 100,000 cholecystectomies. Histopathologically these gallbladder polyps can be divided into neoplastic polyps (with malignant potential) and nonneoplastic polyps (without malignant potential). Although cholecystectomy is only indicated for neoplastic polyps, 47% of polyps after cholecystectomy are nonneoplastic. Further information on the pathological characteristics and subsequent clinical and radiological features could be useful to predict neoplastic or nonneoplastic nature of the gallbladder polyp before surgery.

Aims & Methods: To assess pathological characteristics of neoplastic and non-neoplastic gallbladder polyps and identify preoperative clinical and radiological predictors for neoplastic and nonneoplastic polyps. Data of the Dutch Pathology Registry was used. In this search 2081 histopathologically proven gallbladder polyps (or focal) wall thickening ≥5 mm were identified in patients of ≥18 years undergoing primary cholecystectomy between 2003 and 2013. Of these
Disclosure of Interest:

Preoperative radiological investigations is poor. Nonneoplastic polyps are confirmed, identification of these characteristics on MRI is less common. Although pathological characteristics of neoplastic and nonneoplastic polyps were found to be significantly older than patients with nonneoplastic polyps (mean age 65.0 vs 54.2 years, p < 0.001). Nonneoplastic polyps were significantly larger (mean size 18.1 mm (SD 17.9) vs 7.5 mm (SD 5.9), p < 0.001), more frequently presented as wall thickening (29.2% vs 15.6%, p < 0.001) or as a single polyp (88.3% vs 68.0%, p < 0.001). Gallstones were more frequently found in gallbladders with nonneoplastic polyps (50.1% vs 40.4%, p < 0.001). No preoperative clinical features were predictive for neoplastic or nonneoplastic polyps. Presence of a single polyp on ultrasound was a predictor for neoplastic polyps (OR 6.00 (95%CI 1.32-27.31)). Size and type of polyp were often not mentioned in ultrasound report, or different from histopathological confirmation.

Results: Except for age, no clinical characteristics for neoplastic polyps were identified in this cohort. Although pathological characteristics of neoplastic and nonneoplastic polyps are confirmed, identification of these characteristics on preoperative radiological investigations is poor.

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

References:


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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 inducing apoptosis and affects the expression of gene-related proteins involved in cancer growth, and to identify how metformin affect molecular mechanisms involved in the inhibition of cancer cell growth. Human hepatobiliary 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 mammmalian target of rapamycin (mTOR) by activation of AMPKThr172 - tuberous sclerosis complex 2 (TSC2) pathway, and hyperglycemia impaired metformin-induced AMPKThr172 activation and enhanced phosphorylation of AMPKSer485. 3) Metformin increased expression and secretion of IGF-1 receptor 1 (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 cells, 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 thus they are expected to be important targets for future development of chemotherapeutic agents.

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Introduction: Gallbladder cancer (GBCa) is often diagnosed at advanced stage due to lack of symptoms and the tissue cannot be obtained easily with anatomical reason. The patients with early GBCa has not showed any symptoms and the tissue cannot be obtained easily with anatomical reason. To overcome the weakness of the current methods for the diagnosis of GBCa, we focused on the possibility of “liquid biopsy” with bile juice on the concept of non-invasive diagnostic method in human. We aim to develop diagnostic markers or tumor DNA in bile. To achieve good treatment effect in future, so called “precision medicine” approach based on the character of the each tumor is mandatory.

Aims & Methods: Thirty patients with GBCas were enrolled in this study. Bile juice obtained from 24 of 30 patients was analyzed for mutations of 50 oncogenes (Cancer panel; Haloplex, Agilent Technology) by next generation sequencing (NGS; Illumina, San Diego, CA, USA). Tumor tissues from 20 of 30 patients were analyzed as well as bile juice. Each sample was obtained prior to the
treatment. As negative controls, 19 non-GBCa bile juice and 33 non-GBCa tissue samples were analyzed for mutations of 50 oncogenes in the same way.

Results: In total, 14/19 (73.7%) bile juice samples of non-GBCa contained mutations. In non-GBCa tissues, 31/33 (93.9%) samples were positive for mutations. Mutations in tumor could be detected in bile juice using NGS. Liquid biopsy with bile juice may help us to diagnose GBCa because of high PPV (100%). It may allow us to make new genetic diagnosis of GBCa.

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

References

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. Because 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 older 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 probability was 7.4%. *Probability of Neoplastic GB polyp = e^(e/−7.4) 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

P1397 COMPARISONS OUTCOMES FOR CONTROLLED PHOTODYNAMIC THERAPY IN HIGH GRADE UNRESECTABLE HILAR CHOLANGIARCINOMA

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Introduction: Photodynamic therapy (PDT) provide clinical benefit for patients with unresectable biliary malignancy. In this study, we evaluate the efficiency of controlled PDT for unresectable primary and secondary high-grade hilar cholangiocarcinoma (CC).

Aims & Methods: In cases of high-grade unresectable hilar CC (Bismuth type III or IV) and gallbladder (GB) cancer invasion to hilar portion (Group A), we performed controlled PDT. Controlled PDT means malignant stricture dilatation intervention using balloon catheter up to 150 seconds. Between July 2010 and June 2015, 26 cases (31) of high grade unresectable hilar CC or GB cancer invasion to hilar portion were enrolled for Group A, 23 cases(26) of high-grade unresectable hilar CC (Bismuth type III or IV), 3 cases of GB cancer with hilar invasion were enrolled for Group B. On three months later, serum bilirubin levels decreased from 7.1 to 5.2 mg/dL in group A, 6.9 ± 5.2 to 5.2 ± 3.7 mg/dL in group B (p < 0.05). PDT-induced cholangitis is developed in Group A (3/31, 9.6%) and B (7/26, 26.9%) within seven days (p < 0.001). Progression free survival is superior Group A to Group B that of 14.8 months vs. 8.9 months (P < 0.05).

Conclusion: Controlled PDT with straight applying cylindrical diffuser promise efficacy for clinical parameters and progression free survival compared with transpapillary PDT in unresectable high-grade hilar CC and GB cancer. Additionally, diminished post-PDT cholangitis within 7 days affect improving long term progression free survival.

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

References
CHAPTER 1

Intrahepatic Cholangiocarcinoma (ICC) is famous for its poor prognosis. Deepen the knowledge of the mechanism of ICC contributes to improving the treatment. Osteopontin (OPN) is believed to promote tumorigenesis and metastasis in many kinds of cancers, while its role in ICC is controversial.

Aims & Methods: This study aims to investigate the prognostic value and biological characteristics of OPN in intrahepatic cholangiocarcinoma (ICC).

Results: Intrahepatic cholangiocarcinoma (ICC) is famous for its poor prognosis. Deepen the knowledge of the mechanism of ICC contributes to improving the treatment. Osteopontin (OPN) is believed to promote tumorigenesis and metastasis in many kinds of cancers, while its role in ICC is controversial.

Aims & Methods: This study aims to investigate the prognostic value and biological characteristics of OPN in intrahepatic cholangiocarcinoma (ICC). The role of OPN in tumorigenesis and metastasis in ICC is controversial. The role of OPN in the progression of ICC is still unclear. The aim of this study is to investigate the prognostic value and biological characteristics of OPN in ICC.

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References
P1401 PANCREATIC STENT PLACEMENT AFTER ENDOSCOPIC RESECTION OF AMPULLARY TUMORS IS MANDATORY

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Introduction: Adenoma of the major 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 (94%). After a collective evaluation between the surgeon and the endoscopist, patients were candidate for endoscopic ampullotomy. Outcome parameters included ampulloma characteristics, biotopic accuracy as well as safety, efficacy, recurrence rate, and survival.

Results: Endoscopic resection was successful in 15 patients (79%). Histological recurrences revealed non-specific changes (10.5%), low or medium-grade dysplasia (52.6%), high-grade dysplasia (15.8%) and carcinoma (21%). Biotopic accuracy was 68.4%. In 4 cases histologic specimen revealed an invasive carcinoma: 2 patients underwent pancreaticoduodenectomy and two 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 postoperative pancreatic fistula stents were 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 deep ablation and dielectric 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 neoplasia arising from the intra- or extrahepatic bile duct lining epithelium. Cholangiocarcinoma are presents less than 2% of primary malignancy, however, it is the second 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. Many studies were performed to expose heavy metals from their effectiveness. The heavy metals in drinking-water pose the greatest threat to public health in this regard. Nile River water is seriously contaminated with heavy metals, pesticides and organochlorine carcinogens. This study included 45 patients with cholangiocarcinoma (diagnosed after radiological &histopathological examination) and 20 healthy control attending Mansoura Surgical Gastroenterology centre. All patients and control were permanent residents of North Delta region and the patients were recruited before receiving chemotheraphy or radiotherapy. There were no restrictions based on age, sex, or tumor stage. The serum samples were analyzed for concentrations of zinc, lead, cadmium, iron and chromium by the acid digestion method followed by using atomic absorption spectrometry (AAS). "Bud Scientific Accurus 214 atomic absorption spectrophotometer". The results are reported in mg/L. In addition to CA 19-9 was assayed by IMMULITE® 2000 Xi immunoassay system supplied by Siemens Healthcare (GmbH Henkenstr. 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). Pressive increase in the median values of serum levels of lead (Pb) was found in 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 Cd only has a positive correlation with CA19-9 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 BILARY 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 periampullary 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 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 Manhth-Haemzel 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.
Primary outcome was the rate of endoscopic reintervention before surgery. Secondary outcomes were mortality, overall pancreatic surgical mortality, 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, 308 patients (33%) were treated with SEMS and 609 (67%) with plastic stents. The rate of endoscopic reinterventions after PBD was significantly lower in SEMS compared to plastic stent (OR 0.44; 95%CI 0.20–0.96; p = 0.04). The rate of postoperative pancreatic fistula was significantly lower in the metal stent group (OR 0.44; 95% CI 0.28–0.69; p < 0.01). The rate of postoperative surgical complications, hospital readmission, overall biliary anastomotic fistula and postoperative mortality did not differ between the two groups.

Conclusion: Metal stents are more effective than plastic and should be preferred for biliary drainage when a resectable pancreatic head or pancreatic head tumor is diagnosed 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.

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Introduction: Dietary fat consumption affects the human body fat composition. It has been described that unsaturated fatty acids, enriched in human pancreatic native lipids (AP) [1]. Preliminary results analyzing indirect data have also suggested that patients with AP from world regions with a high unsaturated fat intake have a worse outcomes at lower body mass index [2]. We have also described that oleic acid (an unsaturated fat acid) chlorohydrins are associated to worse outcomes [3]. The Mediterranean regions have a higher unsaturated fat acid intake.

Aims & Methods: We aimed to compare the incidence of necrotizing AP, persistent organ failure (POF) and mortality among patients with AP from centers located in Mediterranean region (group M) and patients in centers in other regions (group C). This was a retrospective analysis of a prospective multicenter (23), nation-wide cohort of patients with AP: the ATLANTIS database. Group M included patients from Spanish autonomous regions in contact with the Mediterranean Sea. Group C included all other autonomous regions. Necrotizing AP and POF were defined according to the revised Atlanta classification. Chi² was used for univariate analysis. Multivariate analysis was performed by means of binary logistic regression, including in the model: sex, body mass index > 30, alcoholic etiology and Charlson score (it includes age and comorbidity) ≥ 3.

Results: We analyzed 1655 patients, 854 (52%) from group M (12 centers) and 801 from group C (12 centers) with a mean age of 64.84 (66%) with median age of 68.95 (1%–94.1%) males. The incidence of necrotizing AP was 281 (17%) patients, persistent organ failure: 113 (7%), mortality 70 (4%). The proportion of patients with necrotizing AP was higher in group M: 178 (21%) vs 103 (13%), p < 0.001. POF was also more frequent in group M: 59 (5%) vs 34 (4%), p = 0.002. Finally, mortality was higher in group M: 49 (6%) vs 21 (3%), p = 0.002. In multivariate analysis, group M was independently associated to necrotizing AP [adjusted OR (aOR) 1.7 (1.3–2.3, p < 0.001), to POF [aOR 2 (1.3–3.1), p < 0.001] and mortality [aOR 2.6 (1.5–4.5), p < 0.001].

Conclusion: Patients from the Mediterranean regions of Spain have a higher incidence of necrotizing AP, POF and mortality. We hypothesize that this disbalance is associated to a higher diet unsaturated fat intake.

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

References
ROSE OF THROMBOPHILIA IN SPLENIC VENOUS THROMBOSIS IN ACUTE PANCREATITIS

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Introduction: Splenic 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 thrombophilia 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 (15 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 19 (73.1%), 3 (11.5%) and 4 (15.4%) patients respectively.

Follow-up ultrasound Doppler was performed to look for the status 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.

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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 necroscopy (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 cocci. More than a quarter of the infected patients had fungal species cultured. The infected patients often had polymicrobial infections (56%). At the second culture 152 isolated 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 effective in the treatment of fungal infections.

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

**Aims & Methods:** We aimed to create a new scoring system, which can predict the severity of AP in early phase of disease. Evaluation of simple attainable potential prognostic parameters obtained at admission (or not later than 6–12 hours after-wards) from patients diagnosed with AP will be performed to assess their potential correlation with the disease severity. Approximately 1200 (900 + 300) patients from multiple centers will be enrolled into this trial using the Registry. This is an observational prospective cohort study (in the which the care or services that patients receive will not be altered; therefore it has a relatively low-risk. The study has an ethical approval by the National Hungarian Ethical Authority (ETT TUKEB). Study management will strictly follow the Ethical Guidelines for Observational Studies.

**Results:** 600 patients were enrolled in the EASY study from different international centers so far. In early phase of AP vomiting, loss of weight, fever, abdominal tenderness, elevated serum creatinine and lactate dehydrogenase level were most common findings in severe AP, as opposed to the mild and moderate groups.

**Conclusion:** EASY score may be an easy and accurate system to evaluate the early severity of AP. Although some parameters have shown correlation with the severity of AP in early phase of the disease, we have to include more patients to have reliable results.

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

**Aims & Methods:** The aim of this study was to evaluate the effect of chronic ischemic heart disease and chronic obstructive pulmonary disease (COPD) in the outcome of acute pancreatitis (AP), in our population. Retrospective cohort study that included all patients admitted with AP from January 2003 to December 2016, in a tertiary referral center. Demographic and clinical variables were analyzed by logistic regression (SPSS v23). Clinical outcomes included organ failure (OF), persistent OF (>48 h), intensive care unit (ICU) admission and mortality.

**Results:** A total of 553 patients with AP were included, 58.4% male, median age 80 (18–98) years. Most common etiologies included gallstones (38.9%) and alcohol (27.3%). Twenty-three percent (n = 129) developed OF (in 43% persistent) and 26.8% (n = 148) were admitted in 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 between OF and COPD found between previous history of coronary disease and COPD (p = 0.914). No association was found between previous history 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.

<table>
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<tr>
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<th>Local Antibiotics</th>
<th>Systemic Antibiotics</th>
<th>Local Antibiotics</th>
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<tr>
<td>OR (95% CI)</td>
<td>P-value OR (95% CI)</td>
<td>P-value Chi²</td>
<td>P-value</td>
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<td>1.54 (0.74–3.21)</td>
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<tr>
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<td>0.48</td>
<td>1.31 (0.64–2.65)</td>
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</table>

**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 effective in the treatment of fungal infections.
Acute pancreatitis (AP) is an uncommon but potentially devastating condition that may occur in patients with organ transplantation. Reported outcomes included organ failure (OF), persistente OF (pOF), mortality, and late recurrence following liver transplantation in our center. We were unable to identify a single risk factor for development of AP. Late AP occurred in 14 patients (7%) with a median delay of 31 months after liver transplant (range 2-176). In 12 patients AP was mild with no mortality and the following etiologies were represented: 4 post-ERCP, 2 alcoholic, 1 biliary (stones and stones), 1 drug-induced (tumour necrosis), 1 obstructive (pancreatic cancer); in 3 patients the etiology was unknown. One patient developed a pseudocyst. Two patients with late acute pancreatitis had a severe necrotizing form and both died. One patient with cirrhosis of the liver graft had chronic rejection and post-ERCP pancreatitis which was complicated by retroperitoneal hemorrhage and graft failure. The other patient with necrotizing pancreatitis of unknown etiology developed MODS and eventually died. Male patients (p = 0.01) and patients transplanted for end stage liver disease resulting from chronic hepatitis B are more likely to develop post-liver transplantation pancreatitis.

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

References

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

Reference

P1416 RETROSPECTIVE 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, paraduodenal, 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 set 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/sequela of necroizing pancreatitis (15), autoimmune (69), paraduodenal (15), genetic (17) and idiopathic (27).
Results: The results show a high frequency of severe exocrine pancreatic insufficiency in the moment of diagnosis of chronic pancreatitis (38%) and it appears stable over the following 5 years. Autoimmune and paraduodenal chronic pancreatitis are correlated with severe exocrine pancreatic insufficiency at diagnosis in a high percentage of cases (51% and 40%), biliary/sequelae of necroizing pancreatitis and idiopathic pancreatitis in an intermediate (33% and 26%), while genetic in a lower percentage (12%).
Conclusion: The exocrine pancreatic function in patients with autoimmune pancreatitis improved in the first five years of the disease, probably due to the efficacy of steroid/immunosuppressive therapy. Pancreatic endocrine function was less compromised at diagnosis, but showed a progressive deterioration in the first five years. Endocrine and exocrine insufficiency were strictly correlated.
Disclosure of Interest: All authors have declared no conflicts of interest.

P1417 "PAINLESS" CHRONIC PANCREATITIS: EPIDEMIOLOGICAL, CLINICAL AND RADIOLOGICAL CHARACTERIZATION
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Introduction: The term “painless” chronic pancreatitis (CP) represents a specific subset of CP characterized by the lack of pancreatic pain. So far, scarcity of data has been reported in the literature about this matter and what differentiates this group of patients from those with chronic pancreatitis associated with pancreatic pain.
Aims & Methods: The aim of the present study is to characterize “painless” CP from the epidemiological, clinical, radiological, functional, and follow-up standpoint, through a comparison with other forms of chronic pancreatitis presenting with pancreatic pain. The Institutional Database of the Gastroenterology Unit of the Verona University was queried, and all chronic pancreatitis cases were retrieved. Patients were clustered based on the presence of “pancreatic-specific pain” into “painless” and “pain-associated” CP. A retrospective case-control analysis was carried out.
Results: Of 678 patients included from March 2006 to March 2016, 436 were considered eligible for the present study. Of these, 368 (84%) were affected by pain-associated CP, while 68 (16%) had “painless” CP. “Painless” patients were older (median age of 58.5 ± 10.8 vs 42.5 ± 15.3, p < 0.001), less frequently presenting with a history of alcohol consumption (35% vs. 55%; p < 0.001), more frequently diabetics (18% vs. 1%; p < 0.001), presenting with steatorrhea (16% vs. 2%; p < 0.001), and asymptomatic (63% vs. 2%; p < 0.001) compared to pain-associated controls. From the radiological standpoint, cases less cases were radiologically presenting with exocrine unbalances than controls (90% vs. 68%; p < 0.001). Moreover, in most of painless cases, the CP cause remained unknown (56%). After a median follow-up of 2.6 ± 2.3 years, the incidence of diabetes was higher in the painless cases than in controls (48% vs. 30%; p < 0.006).
Conclusion: The present study represents the first definition of "painless" CP so far reported in the literature. The "painless" CP is a distinct entity from the epidemiologic, clinical, and radiological standpoint when compared to other forms of CP characterized by pancreatic pain.
Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1418 LONG-TERM OUTCOMES OF A FULLY COVERED SELF-EXPANDABLE METAL STENT WITH ANTIMIGRATION PROPERTIES FOR EUS-GUIDED PANCREATIC DUCT DRAINAGE
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Introduction: Recently, EUS-guided pancreatic duct drainage with transmural stent (EUS-PD) has been used for patients with painful obstructive pancreatitis in whom endoscopic retrograde 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-term outcomes of EUS-PD with an FCSEMS for patients with painful obstructive pancreatitis who failed ERP. Forty-one consecutive patients with painful obstructive pancreatitis underwent EUS-PD with an FCSEMS after failed ERP. The removability without stent exchange was considered in malignant MPD strictures or complete MPD obstruction in benign pancreatic stricture. Technical and clinical success, adverse events, and stent patency were assessed. An endoscopic examination and CT scan was performed every 6 months to assess stent patency in benign stricture.
Results: 15 patients had malignant MPD obstruction and 26 patients had benign stricture. EUS-PD was successful in all 41 patients (technical success rate, 100%), and symptoms improved in all patients (clinical success rate, 100%). EUS-guided pancreaticogastrostomy (n=39) and pancreaticogastrojejunostomy (n=2) were performed. Pain scores improved significantly after FCSEMS placement (P<.01). Early mild-grade adverse events occurred in 5 patients (12.2%) with self-limited abdominal pain, which resolved with conservative treatment. Late adverse events developed in eight patients (22.2%), including distal stent fracture (n=6), stent occlusion (n=2). These patients were successfully treated endoscopically. No other adverse events related to FCSEMS, including stent migration, pancreatic sepsis, and stent-induced ductal stricture were observed during follow-up periods.
Overall mean stent patency duration was 412 days (range 14–1081) during mean follow-up period of 427 days. Median stent patency duration in patients with malignant strictures was 95 days (range 14–297). Mean stent patency in benign stricture was 525 days (range 121–1081). 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

PI419 MONITORING AND OPTIMIZATION OF Pancreatic ENZYME REPLACEMENT THERAPY IN PATIENTS WITH Pancreatic EXOCRINE INSUFFICIENCY

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Introduction: Fundamental aspects in the treatment of pancreatic exocrine insufficiency (PEI) include pancreatic enzyme replacement therapy (PERT). Monitoring the symptoms of malabsorption as well as the nutritional markers is essential.

Aims & Methods: To follow-up patients with PEI receiving PERT and to provide normal nutritional status by optimizing the suboptimal PERT if necessary. Study enrolled 142 patients (88 males, mean age 52 years): 82 patients had chronic pancreatitis (CP), 30- acute pancreatitis (AP), 30- pancreatic cancer/pancreatic adenocarcinoma (PDAC). Enrolled 142 patients (88 males, mean age 52 years): 82 patients had chronic pancreatitis (CP), 30- acute pancreatitis (AP), 30- pancreatic cancer/pancreatic adenocarcinoma (PDAC).

Results: No patients with malignant strictures required FCSEMS revision or exchange during follow-up periods (427 days). Median stent patency in malignant stricture was 95 days (range 14–297). Mean stent patency in benign stricture was 525 days (range 121–1081). 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.

Conclusion: Proper follow-up and correction of suboptimal PERT as well as optimization may reduce the risk of severe malnutrition complications and associated morbidity and mortality by ensuring optimal therapeutic results and better quality of life.

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

References

PI420 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 CARCINOMA.

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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 (IAP1, IAP2, XIAP, SURVIVIN), and might be related to poor prognosis in numerous cancer types. However, the association of HuR, COX-2, HO-1 and IAPs family, and their impact on chemoresistance and carcinogenesis in PDAC still remain unclear.

Aims & Methods: The aim of our study was to assess the relevance and correlation of the IAP regulation by mRNA stabilizing protein HuR and HO-1 and/or COX-2 signaling pathway, and to determine the association with clinicopathological parameters and prognosis of PDAC. Data of 32 patients after pancreateodudodenal resection (PD) in 2011–2016 were analyzed. Patient’s mRNA expression levels of HuR, COX-2, HO-1, IAP1, IAP2, Survivin and XIAP were determined in normal pancreatic tissue obtained from organ donors. Additionally, the correlations among HuR, COX-2, HO-1, IAP1, IAP2, Survivin and XIAP, both as their respective correlations with clinicopathological parameters were analyzed. The Kaplan-Meier method and log-rank tests were used for univariate analysis. Cox proportional hazard model was applied to identify prognostic factors that were independently associated with survival.

Results: HO-1, COX-2, HuR, IAP1, IAP2 mRNA expression were accordingly 3-fold, 8.8-fold, 1.5-fold, 4.8-fold and 5-fold higher, while XIAP and Survivin mRNA expression were 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, while high levels of XIAP were negatively associated with microvascular and perineural invasion. Univariate analysis revealed that mRNA expression of COX-2 and XIAP correlated with worse survival, tumor differentiation and perineural invasion were significantly associated with overall survival (OS) of PDAC patients. In multivariate analysis, high levels of HuR, lymph-node metastases, tumor differentiation and perineural invasion were independently correlated with lower OS in patients with PDAC.

Conclusion: Our results suggested that upregulation of HuR in PDAC patients were significantly related with poor outcome. Even though, significant correlation with IAP proteins in PDAC was noticed, more data is needed to analyze the mechanism underlying HuR and LncRNA 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 development.

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. Abrupt glyctype could be induced by HIF pathway activator

Conclusion: Proper follow-up and correction of suboptimal PERT as well as optimization may reduce the risk of severe malnutrition complications and associated morbidity and mortality by ensuring optimal therapeutic results and better quality of life.

Disclosure of Interest: All authors have declared no conflicts of interest.
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 (Tn antigen). Differential O-GalNAc 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 differs significantly from engineered COSMC-deficient cells, displaying O-GalNAc moieties in addition to O-GlcNAc in cytosolic protein fractions. Further, we could show PI3K/AKT/ MAPK signalling is depending on the state of cellular O-glycosylation. 

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

P1422 THE EXPRESSION AND FUNCTION OF MIR-195 IN PANCREATIC CANCER: EXPRESSION AND FUNCTION OF MIR-195 IN PANCREATIC CANCER
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Introduction: Pancreatic cancer is one of the more common malignant tumors in digestive system, the 5-year survival rate is less than about 6% of pancreatic cancer. Pancreatic cancer with poor prognosis and survival rate is low, due to the early clinical symptom is not easy to find, have a high transfer possible, and the operation difficulty, radiotherapy and chemotherapy is not sensitive. Radical surgical resection is the only opportunity to pancreatic cancer patients get longer survival. Therefore, a deeper understanding of the molecular mechanism of pancreatic cancer occurs, explore new effective treatment is imminent.

Aims & Methods: Pancreatic cancer is a highly malignant tumor and fourth leading cause of cancer-related death in the world. The median survival after diagnosis is 2–8 months, and approximately 3–6% of all patients with pancreatic cancer survive 5 years after diagnosis. This is mostly due to the fact that it is diagnosed at a stage when it is either locally advanced or has already metastasized to distant organs. Hence, there is a paramount need to understand the molecular mechanisms underlying its initiation, progression and therapy. The recent discovery of microRNAs (miRNAs) has revealed a novel mechanism of gene regulation and provided new ways for cancer research. MicroRNAs are small non-coding RNA molecules, which regulate the gene expression at post-transcription level. It is widely reported that miRNAs can act as oncogene or tumor suppressor gene. MIR-195 has been recognized as a tumor suppressor gene that is down-regulated in several types of cancer such as HCC, breast cancer, bladder cancer and gastric cancer. In PC, the role of miR-195 remains unclear. The purpose of this experiment was to explore the regulation role of miR-195 in PC development process. We measured miR-195 expression in three pancreatic cancer cells (PANC-1, SW-1990, PANC 03.27) by qRT-PCR, and PDPE cells were used as a control. We performed study of miR-195 by transfecting Panc-1 cells with miR-195 mimic. We used miRNA qRT-PCR to study the transfection efficiency of miR-195 mimic. The behavior of Panc-1 cells transfected with miR-195 and negative control were analysed by CCK-8 proliferation assay, cell cycle, cell migration and invasion assay. We performed Real-time PCR and western blot to detect the expression of CD4K Cyclin E1 in Panc-1 cells which were transfected with miR-195 mimic and negative control.

Results: We found that miR-195 was decreased in three pancreatic cancer cells (PANC-1 SW-1990, PANC 03.27). We also found that over-expression of miR-195 could suppress the proliferation, migration, invasion and cell cycle of Panc-1 cells. That means the malignancy potential of Panc-1 cells is inhibited by miR-195. Over-expression of miR-195 could down regulate the expression of CD4K Cyclin E1 in Panc-1 cells. 

Conclusion: The expression of miR-195 was down regulated in pancreatic cancer cells. Over-expression of miR-195 suppressed cell proliferation, cell cycle, migration and invasion of Panc-1 cells by down regulated the expression of CD4K and CyclinE1. Moreover, this finding suggests a potential novel strategy for therapeutic interventions of this disease.

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

P1423 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, due to its high mortality and high incidence. In spite of strong efforts in clinical and basic research, the molecular mechanisms responsible for this unusual aggressive phenotype still remain not completely understood and insufficient diagnostic and therapeutic tools still substantiate its ranking as the 4th leading cause of cancer-related deaths in western countries. In PC, cancer cells are well known for their ability to divide uncontrollably and it was initially thought that high glucose consumption is the main energy-source for proliferating tumor cells, but a large body of evidence suggest that most of the cell mass that makes up new cells is derived from the amino-acid metabolism.

Aims & Methods: The aim of this study was the identification of new biomarkers for chemoresistant pancreatic cancer. 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 were analysed using MTT-viability assay and chemosensitive protein-expression were performed using Real-Time-PCR and immunohistochemistry using patient-derived PDAC samples.

Results: SILAC-based identification of the Tryptophan degrading enzyme KYNureninase (KYNU) in chemoresistant PDAC cells revealed an overexpressed and secreted form of the KYNU protein, compared to the chemosensitive counterpart. We further identified various stress-related external stimuli (Gemcitabine, IFNg, Hypoxia) as main inducers of KYNU expression/secretion. A knock-down approach was linked to substantially 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 PDAC patients.

Conclusion: The tryptophan degradation pathway member KYNU is overexpressed in a subset of PDAC patients and is linked to substantially increased cancer cell proliferation. Abundant KYNU expression in PDAC patients is linked to 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 α11 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 (CAF), 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 pancreatic tumor stroma and various other organs. The relation between ITGA11 and silencing of CAF marker expression was performed using ITGA11 siRNA in hPSCs. Additionally, the effect of 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 qPCR, immunostaining, 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 of PDAC patients, and shown by co-localization with the myofibroblasts marker alpha smooth muscle actin (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 overexpressed that ITGA11 was significantly overexpressed in a stroma-rich Panc-1 hPSC tumor. The quantitative gene and protein expression of ITGA11 in subcutaneous tumors, positively correlated with the expression of the CAF markers α-SMA, Col1a1 and PDGF-βR. 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.
Conclusion: In conclusion, this study introduces ITGA11 to be highly and specifically expressed in PDAC and explores its role in the regulation of the phenotype of pancreatic tumor stromal myofibroblasts.

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

References

PI1425 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 ultrasonic therapy and three-dimensionally cultured PDAC spheroids 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 potential of chemotherapies 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 UpTiblue. Growth was assessed by diameter measurement on light microscopy at day 7 and day 10.

Results: Compared to the control group, cell proliferation was decreased in spheroids treated with CT (p < 0.0001), but without US alone. Proliferation was also further impaired in spheroids treated with US combination compared to those treated with CT alone (p < 0.0001), but this synergistic effect of US and CT did not increase spheroid's growth, 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.

PI1427 EVALUATION OF LONG TERM SURVIVAL WITH CHEMORADIOThERAPY WITH GEMCITABINE AND S-1 COMPaRED 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 pancreatic cancer (LA-PC), chemoradiotherapy (CRT) was selected for limited cases. However, very few 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 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) large adenoma (CMA, SMA, CCA, IPMN), invasion (3) alcoholic and concurrent myopathy without multiple primary cancer, 4) unexecuted antitumor therapy. The chemotherapy in CRT administration of GEM (200 mg/m2) once a week for 6 weeks, radiation was performed 1.8 Gy in power of 10 MeV 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 GEM alone, S-1 alone and GEM+S-1 was selected for the primary treatment, and total 26 cases were implemented in more than 2 courses.

Results: Baseline characteristics in CRT and CT group were median age (62, 72.5: p = 0.004), male (20, 12: ns) and tumor location Ph/Pb (17/13, 16/10: ns), respectively. The cases who survived for 18 months and longer were significantly (p = 0.0045) more in CRT (43.3%) than CT group (19.2%). Grade 3/4 adverse effects in CRT group were 13 cases of neutropenia (G4:3 cases and 1 case of gastrointestinal symptom, and those in CT group, neutropenia was 11 cases (G4:4 case), interstitial pneumonia (IP) aggravation was only 1 case). Because of the progression of systemic chemotherapies (CT) for locally advanced pancreatic cancer (LA-PC), chemoradiotherapy (CRT) was selected for limited cases. However, very few 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.

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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). Our group evaluated the therapeutic effect of HIFU therapy with chemotherapy in patients with unresectable PC, and mainly achieve pain control. However, the available evidence is limited and often dated machines, and no study adopted the new TNM therapeutic decision from upfront surgery to neoadjuvant chemotherapy. The preoperative evaluation of the T is of high importance as it might shift the treatment. The objective of the study was to evaluate the accuracy of CT scan and EUS in discriminating T1 lesions from T2 lesions. A total of 62 PC patients, i.e. 14 cases in T1, 48 cases in T2 were analyzed. Clinical and pathological characteristics were also compared.
Aims & Methods: We compared the accuracy of CT scan and EUS in determining the T stage of PC using the 7th and 8th TNM editions. EUS was not able to detect up to 19.2% of lesions. In the group of T2 lesions, 15.6% were miscalculated by CT scan. EUS was found positive in 2 cases that were negative on CT scan.
Conclusion: This study suggested that HIFU therapy has the potential of new combination therapy for PC.
Disclosure of Interest: All authors have declared no conflicts of interest.
P1429 EUS AND CT SCAN ACCURACY IN ESTABLISHING THE T STAGE IN PANCREATIC CANCER: RATING THE UPCOMING TNM 8TH EDITION
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Introduction: Pancreatic adenocarcinoma (PDAC) is a dismal prognosis with an overall 5-year survival rate <5%. Surgically resected patients, although undergoing curative 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, given 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 in 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 and the lymphovascular invasion has already been moved to predict survival 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 improve survival. 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 of surgically 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 consecutively surgically-resected histopathologically-confirmed high-grade pancreatic adenocarcinoma referral center between 2015-2017, who were prospectively included in a dedicated database. Inclusion criteria: a) having both preoperative EUS and CT scan with pancreatic phase evaluation at the centre; b) CT and EUS were performed, at the latest, 30 days apart from each other and from surgical resection; c) no neoadjuvant chemo or radiotherapy was performed. The evaluation of the T by both imaging modalities was compared to the final pathology T re-established based on the new TNM 8th edition, in order to calculate specificity and sensitivity. T-test was used for 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 a mean age at resection of 78 years. The tumor was located in the head in 62/30 (76.7%) patients. Mean diameter of the tumor at pathology was 24.9 ± 10.8 mm, mean diameter at EUS was 24.0 ± 6.6 mm (p = 0.74), and mean diameter at CT was 25.9 ± 10.9 mm (p = 0.73). In 4/30 (13.3%) cases CT scan was not able to detect the lesion before HIFU therapy. EUS results had a lower sensitivity but higher specificity in discriminating T1 lesions from T2 lesions compared to 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 were respectively 64.7% and 77.6% 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 19.2% of lesions. EUS resulted having a lower sensitivity but higher specificity in 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 use of both imaging modalities in combination may better assess the proper therapeutic management as neoadjuvant chemotherapy or upfront surgical resection.
Disclosure of Interest: All authors have declared no conflicts of interest.

References
P1431 PREVALENCE STRATIFICATION OF MALIGNANCY IN RESECTED INTRADUCTAL PAPILLARY MUCINOUS NEOPLASMS INVOLVING MAIN DUCT: IS THE 10 MM WIRSUNG DIAMETER AN ADEQUATE CUTOFF?

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Introduction: According to the 2012 International guidelines on the management of intraductal papillary mucinous neoplasms (IPMN), main-duct IPMN patients with a main pancreatic duct (MPD) diameter of ≥10 mm should have surgical resection, whereas surgery is not always mandatory in those with MPD diameter between 5 and 9 mm.

Aims & Methods: The aim of the study was to analyze 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. Retrospective analysis of patients with surgically resected IPMN between 2001 and 2016. Demographics, clinical presentation, imaging and histological features were compared between patients with preoperative evidence of MPD diameter between 5-9 mm (Group A) and ≥10 mm (Group B). Malignancy was defined as high-grade dysplasia or invasive carcinoma.

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%). There were no significant differences between study groups. The most common location of the MD-IPMN was the head of pancreas (60.6%), and it was multilocul in 34.8% of the patients. The prevalence of no dysplasia, low-grade dysplasia and invasive carcinoma was 15.6%, 42.6% and 8.5% respectively 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

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Introduction: Pancreatic cancer has poor prognosis despite of improvements in multimodal treatments. As aging of the population advances, it is expected that elderly pancreatic 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 safety and efficacy of chemotherapy in patients with unresectable pancreatic cancer. We analyzed and compared survival periods and adverse events between young (≤74 years) and aged patients (≥75 years).

Results: Twenty-seven patients were older than 75 years (group A), and 59 were younger than 74 years (group B). We treated 6/10/2/5/4 patients in group A with GEM/S-1-modified FOLFIRINOX (mFOLFIRINOX)/gem + nabPTX/BSC/fert support/s, c (BSC)/others, respectively. On the other hand, we treated 12/14/11/5/3 patients in group B with GEM/S-1/mFOLFIRINOX/GEM + nabPTX/BSC/others, 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 in 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 197.0 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

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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 (SharKore 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 SharKore Core Needles. This study was an observational multicenter prospective non-randomized clinical trial (NCT02946840). All consecutive patients referred for EUS examination and sampling of solid pancreatic masses underwent EUS-guided biopsy with 25 G SharKore Core needles. This needle has an innovative tip geometry with a cutting surface designed to acquire cohesive tissue fragments of tissue fragments. Histopathological analysis of tissue fragments formed in every mass. At all pressures, 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 recovered, 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 results. The primary outcome was the diagnostic accuracy and procedure-related adverse events.

Results: Study population included 82 patients, enrolled in three centres, between consecutive patients referred for EUS examination and sampling of solid pancreatic masses underwent EUS-guided biopsy with 25 G SharKore Core needles. This needle is an innovative tip geometry with a cutting surface designed to acquire cohesive tissue fragments. Histopathological analysis of tissue fragments formed in every mass. At all pressures, 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 recovered, 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 results. The primary outcome was the percent of diagnoses of malignant tissue. The median survival time of the patients who underwent chemotherapy in group A and in 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 197.0 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.

Aims & Methods: We retrospectively assessed 700 consecutive EUS-FNA procedures from January 2011 to January 2016. 459 (65.5%) solid pancreatic lesions were identified 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 101 (22.5%) cases required an EUS-FNA cytology report. The mean age at EUS-FNA was 64 ± 10.4 years (range: 16-92) and the mean size of solid pancreatic cysts was 15.65 ± 6.5 cm (range: 1-60 cm). In 399 (86.9%) cases on-site cytopathology support was available, while the remaining 101 (22.5%) cases required an EUS-FNA cytology report. The mean age at EUS-FNA was 64 ± 10.4 years (range: 16-92) and the mean size of solid pancreatic cysts was 15.65 ± 6.5 cm (range: 1-60 cm).

Conclusion: KRAS mutations and KRAS/GNAS mutations are found by KRAS test. In the surgery group, methylation of the GNAS complex locus was found in 1/2 IPMNs (95% CI: 0.01-0.16) and in GNAS mutations in 2/3 IPMNs (95% CI: 0.01-0.16). The presence of on-site cytopathologist significantly increases the diagnostic yield.

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References
DO BILIARY STENTS REDUCE THE DIAGNOSTIC PERFORMANCE OF EUS BIPSY IN PATIENTS WITH A MASS IN THE HEAD OF THE PANCREAS?

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Introduction: Plastic stents (PS) for pre-operative drainage and palliation of biliary obstruction

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

Results: During the period study, 49 patients (41 women/8 men) with preoperative EUS-FNA for SPN were recorded. Mean age of patients was 37 ± 15y. Preoperative cholangiography has been performed before stent placement. The location was mostly cephalic (21/36, 59%), but also corporeal in 25% (9/36), caudal in 25% (9/36), in 22% (4/18) for procedure. Mean number of needle passes was 2.2 ± 0.7. EUS-FNA allowed certain preoperative diagnosis of SPN in 74% of cases (35/47), probable diagnosis in 6% (3/47), negative in 4% (2/47) and wrong in 6% (3/47). No acute complication of EUS-FNA was reported. A mean follow-up of 36 ± 12 months, only one local recurrence was noted. In this 74 years old man case, a 19G needle was used (2 trans-gastric passes), and recurrence occurred after 84 months.

Conclusion: In this large multicenter retrospective series, a systematic preoperative EUS-FNA did not seem to modify the SPN recurrence rate. Therefore this study allows to validate this attitude as a possible alternative. The data for the series are incomplete at the date of submission of the abstract. The final data will be reported on the day of presentation.

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

References


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Introduction: Solid-pseudopapillary neoplasm (SPN) is a rare condition, first described by Frantz in 1939. It occurs mostly in young women, and surgical resection is recommended. Its local recurrence rate is less than 10% and usually occurs within 4 years after surgery. Before such a surgery, especially in young people, EUS-FNA (Endoscopic ultrasonoraphy with fine needle aspiration) is discussed to confirm diagnosis but rarely performed due to suspected needle tract contamination by neoplastic cells. The aim of our large multicenter study was to assess the short- and long-term safety of preoperative EUS-FNA in SPN.

Aims & Methods: This study is a multicenter retrospective register of all SPN diagnosed in the last decade in 14 European expert centers (GRAPHE task force). Inclusion criteria was realization of preoperative EUS-FNA followed by surgical resection. Patient and tumor characteristics were collected, as the EUS-FNA technique (number of passes, needle size, trans-gastric or trans-duodenal access). Immediate or late complications of EUS-FNA and recurrence of SPN were then recorded.

Results: During the period study, 49 patients (41 women/8 men) with preoperative EUS-FNA for SPN were recorded. Mean age of patients was 37 ± 15y. Preoperative cholangiography has been performed before stent placement. The location was mostly cephalic (21/36, 59%), but also corporeal in 25% (9/36), caudal in 25% (9/36), in 22% (4/18) for procedure. Mean number of needle passes was 2.2 ± 0.7. EUS-FNA allowed certain preoperative diagnosis of SPN in 74% of cases (35/47), probable diagnosis in 6% (3/47), negative in 4% (2/47) and wrong in 6% (3/47). No acute complication of EUS-FNA was reported. A mean follow-up of 36 ± 12 months, only one local recurrence was noted. In this 74 years old man case, a 19G needle was used (2 trans-gastric passes), and recurrence occurred after 84 months.

Conclusion: In this large multicenter retrospective series, a systematic preoperative EUS-FNA did not seem to modify the SPN recurrence rate. Therefore this study allows to validate this attitude as a possible alternative. The data for the series are incomplete at the date of submission of the abstract. The final data will be reported on the day of presentation.

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

References

P1439 DIAGNOSIS OF Pancreatic Neuroendocrine Tumours using SurePath Cytology and Immunohistochemistry without Need for Excision Biopsy

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Introduction: Pancreatic neuroendocrine tumours (PNETs) are relatively rare, i.e., 21 per 100,000 individuals per annum, and account for only 1–2% of all pancreatic tumours. They are separated into 2 major categories: 1) well-differentiated (WD-PNETs) which have round to oval nuclei, coarsely stippled chromatin and finely granular cytoplasm and 2) poorly-differentiated (PD-PNETs) which have a diffuse architecture with an irregular nucleus and less cytoplasmic granularity. WD-PNETs tend to have an indolent course (survival ~67% at 5 years) but ~50% have metastasised at the time of diagnosis. PD-PNETs are high-grade cancers with an aggressive course resembling NETs arising in lung. WD-NETs contain neurosecretory granules which stain for synaptophysin and/or chromogranin. Endoscopic ultrasonoraphy 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 cytologists.

Results: Sixteen (16) patients with a mean age 65 years (8 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.

Conclusion: 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
mitotic index derived from Ki67 staining helps identify WD-NETs which can be monitored and PD-NETs which need aggressive treatment.

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

P1440 EFFECTS OF IGF2BPs ON GROWTH AND PROLIFERATION OF NEUROENDOCRINE PACRANE TUMOR CELLS. L. Nietzsche1, F. Sperling1, K. Theuerkorn1, H. Griesmann1, S. Krug1, S. Hüttemeier2, P. Michel1
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Introduction: Pancreatic neuroendocrine neoplasms (PNEN) are highly angiogenic tumors which despite of various targeted options including mTOR and VEGF inhibition frequently develop secondary drug resistance. IGF2BPs (IGF2 mRNA-binding proteins) represent a family of canonical RNA-binding proteins (RBP) comprised of three members (IGF2BP1–3) which have been described to promote stem and/or progenitor cell maintenance with reported expression and oncogenic roles in aggressive cancers. IGF2BPs show a differential expression pattern in various solid tumors including pancreatic neuroendocrine tumors.

Aims & Methods: We aimed to characterize the role of IGF2BPs in progression and resistance of pancreatic neuroendocrine neoplasms. We used three different siRNA-pools (IGF2BPs) to inhibit the different IGF2BPs in pancreatic neuroendocrine BON1 tumor cells. Cellular effects where 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 parallelized 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 IGF2BP1 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 enzyme of 3 days, and PARP and caspase 3 enzymes, as well as annexin staining on FACS. Rather, si-IGF2BP1 increased the expression of both the anti-apoptotic and pro-survival factor BCL-2 and the cell cycle inhibitor CDKN1B. In contrast to IGF2BP1, knock-down of IGF2BP3 rather induced cell viability, whereas IGF2BP2 modulation had no impact on cell viability and cell cycle progression indicating opposing effects of the three IGF2BPs on PNEN progression. These in vitro findings were parallelized by distinct expression patterns of IGF2BPs in human and murine PNEN tissues. Elucidation of IGF2BP-modulated RNAs in PNEN cells is ongoing.

Conclusion: In summary, our data suggest that IGF2BP1 promotes tumor progression by enhancing cell cycle progression and clonogenic growth, whereas IGF2BP3 and -3 exert no tumor-promoting role in PNEN.

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

References

P1442 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. S. Massironi1, S. Pusceddu2, F. Cavalloli1, A. Zilli1, G. Tamagno1, D. Femia2, N. Prinz1, C. Ciuffardi1, D. Conte1
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Introduction: The chemopreventive effect of aspirin (ASA) and other NSAIDs have 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 neoplasms (GEP NEN) has not yet been evaluated.

Aims & Methods: Aim of the study was to retrospectively evaluate the clinical outcome of GEP NEN patients treated with ASA at three different European referral Centres for NENs. All the GEP NENs patients followed up in three European Centres (Fondazione IRCCS Ca’ Granda Ospedale Policlinico Milano, Italy; Fondazione IRCCS Istituto Tumori Milano, Italy; Mater Misericoedisce 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 tomo- graphy, magnetic resonance and Gallium 68PET) were performed to follow up the patients at each Centre.

Results: In the 253 patients included (121 M, median age 64 yrs), the primary neuroendocrine tumor was located at the stomach (35%), pancreas (38%), small bowel (8%), appendix (37%), colon (49) or unknown (97). 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 assumptions (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 is the presence of simple cysts, but serous cystadenomas (SCAs) or neuroendocrine tumors (NETs) can be frequently found as well. The aim of this study is to describe pancreatic manifestations in patients with VHL, considering the peculiarity and rarity of this disease.

Aims & Methods: All patients who referred to the established multi-disciplinary team in our center (Molinette Hospital - Turin) for management and follow-up of VHL were included in the study; we considered the ones with pancreatic involvement (simple cysts, SCAs or pNETs). We collected data about the patients (demographics and medical history), about the lesions (imaging features, histological and cytological analysis) and about the management.

Results: Overall of 24 patients, 18 of which (75%) had a pancreatic involvement. Simple multiple pancreatic cysts were found in 13 patients, SCAs were found in 2 patients and NETs in 7 patients. The mean age of the patients with pancreatic lesions was 42 (min 25 - max 75), 11 were males and 7 females (1.6:1 M:F). 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 affecting the head in 1 case and the tail in the other. No surgery was performed.

Conclusion: 75% of our VHL patients showed pancreatic involvement, mostly in males compared to females. 72% of patients with pancreatic lesions suffered from simple cysts, 39% from NETs and 11% from SCAs. To note that all NETs were G1 and behaved in a benign fashion. Surgery was performed only in patients with NETs in the pancreatic head and in patients with symptomatic cystic disease.

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) NETs 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 PNETs cohort, including all stages. Methods: PNETs cases diagnosed from 1988 to 2013 were retrieved from the Surveillance, Epidemiology, and End Results (SEER) database. Clinopathologic 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 tumours size. Univariate analysis showed that tumour size was significantly correlated with survival (P<0.001), no matter surgery was performed or not. However, subgroup analysis suggested this association to be linear for patients with localized and regional tumours (P<0.001), but stochastic in patients with distant stages (P=0.703). On multivariate analysis, tumour size was an indicator for metastasis (HR = 1.010, 95% CI: 1.008-1.012, P=0.001 and size <20 mm: HR = 0.009, 95% CI: 1.161-1.474, P<0.001 for size >40 mm). For tumours ≤20mm, surgical treatment was associated with significantly improved survival compared with those patients who did not undergo operation (P<0.001).

Conclusion: 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 ≥20mm, surgical treatment should be considered preferably.

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

Reference

P1445 THE LARGEST FAMILY IN TURKEY WITH MULTIPLE ENDOCRINE NEOPLASIA-TYPE 1 AND A NOVEL MUTATION
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Introduction: Multiple Endocrine Neoplasia type-1 (MEN-1) occurs usually sporadically but it due to its autosomal dominant disorder it may affect other family members too. The combination of parathyroid, pancreatic islet cell, and anterior pituitary tumors is characteristic of MEN-1 although it may be accompanied by a substantial number of non-endocrine tumors. The mutations in MEN1-1 result in the inactivation of MENIN protein which codes for a nuclear protein encoded by this gene and is responsible for tumor-suppression under normal circumstances. Herein we present the largest MEN1-1 family in Turkey to the best of our knowledge and a newly discovered mutation in MEN-1 that effects this family.

Aims & Methods: The family inherited the specific MEN-1 mutation is originally 5 ebinakariharsi, Giresun and most of the members have moved to Istanbul and Yalova. Consanguineous marriages have been practiced within the family. Family tree mapping was structured and contained fifty-five members. Among them, eleven patients underwent biochemical, radiologic and if necessary endosonographic evaluation along with the genetic testing. Additionally, we learnt that 2 of the members had the family had died of pancreatic malignancy. Diagnostic criteria for familial MEN-1 include: i) the presence of at least one MEN-1 associated tumor that are from parathyroid, pituitary, or GEP tract origins, 2) at least one first-degree relative with one or more of these endocrine tumors and/or 3) positive genetic testing for abnormal MEN-1 mutation. For our index case, DNA sequencing of the MEN1-1 gene performed using Sanger sequencing technique at ABI 3500 sytem. For the other family members only the targeted mutation analysis is performed.

Results: Among the family members we had peripheral blood DNA from 9 and we extracted the tumour tissue DNA from 1 patient. MEND1 gene was analyzed by Sanger sequencing. Our index case was ZK who had hypophysis adenaoma, parathyroidectomy and pancreatic neuroendocrine tumour and had whipple operation. A three nucleotide deletion p.ser560argfs*3[C.1680_1683 del TGA] was detected. Seven other family members were analysed and tested positive for the mutation. Genetic counseling and information about pre-implantation genetic diagnosis (PGD) was given to all patients who are tested positive for the mutation. All 7 patients had p.ser560argfs*3[C.1680_1683 del TGA) three nucleotide deletion same with that of index case. Out of 15 patients, MEN-1 diagnosis was confirmed in 11. Tumours detected at patients with MEN-1 diagnosis were: nonfunctional pancreatic neuroendocrine tumour at three, parathyroid adenoma/hyperplasia at 6 patients and hypophysis adenaoma

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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. Beside the phenotype described here is the neuroendocrine mutation 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 members to be effected with PGD has a pivotal importance. We could point out that awareness is the most important caution for prevention.

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

P1446: PROGNOSTIC VALUE OF THE DIFFERENT PRE-TREATMENT BIOMARKERS FOR PATIENTS WITH NEUROENDOCRINE TUMORS

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Introduction: Several inflammatory response materials could be used for predic- tion of prognosis in cancer patients. The neutrophil lymphocyte ratio (PLR), platelet lymphocyte ratio (PLR), thrombocytosis (the platelets number > 400*10^9/mm³) have been introduced for prognostic scoring system in various cancers.

Aims & Methods: The objective of this study was to determine whether the PLR, or thrombocytosis could predict the clinical outcomes in G1-G2 neuroendocrine tumors. We performed a retrospective review of 31 patients with neuroendocrine tumors with ki 67 below 20% diagnosed in Fandeni Clinical Institute between 2011-2017. Data about site of the primary tumor, presence of metastasis, PLR, PLR, thrombocytosis (platelet count > 400) and survival were collected and analysed.

Results: The patients characteristics were: primary tumor location was: 61.29% pancreas, 22.58% gastrointestinal tract, 16.13% unknown, 61.29% had hepatic metastasis, 6.45% had locally advanced tumor. The primary tumor was resected in 35.48% patients. The overall 2-year survival rate was 77.42%. The Ki 67 index (p < 0.04), PLR (cut off > 300) p < 0.01 have statistical significant impact on survival in univariate 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.

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P1447: FUNCTIONAL RELEVANCE OF THE OVEREXPRESSION OF PLAC8 IN NEUROENDOCRINE Pancreatic TUMORS

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Introduction: Neuroendocrine pancreatic tumors represent the second prevalent entity of malignant tumors of the pancreas and show an overall mortality of about 60%. At the moment surgical resection is the only option of potentially curative therapy, as with the currently available chemotherapeutic and radiotherapeutic approaches an inhibition of tumor growth but no regression of the tumor can be achieved. Therefore for about 80% of pNET patients no curative therapy can be offered. To obtain the identification of novel potential target genes for the development of new therapeutic strategies, primary issues from pNET patients were analyzed. Amongst others Plac8 (Placenta-specific 8) was identified, which is a small protein of unknown function, showing different forms of cellular localization depending on the cell type analyzed, indicating at its ability to fulfill a variety of physiological functions.

Aims & Methods: In the course of this study, the function of Plac8 in neuroendo- crine pancreatic tumors is to be unveiled to evaluate its value as a potential target for pNET therapy. Therefore primary tumor tissue of about 100 pNET patients were analyzed for Plac8 expression by quantitative realtime PCR and immuno- histochemistry. Furthermore established pNET cell lines from human origin were transfected with siRNAs against Plac8 and there proliferative activity and sensitivity were analyzed by MTT and MTT assay. Changes in these impor- tant characteristics of tumor cells were further examined by westernblot analyzes of key regulators of apoptosis and cell growth.

Results: Plac8 is highly expressed in primary human pNET tissue on RNA-as well as on protein level. Functional in vitro analyses show the siRNA mediated knockdown of Plac8 not only in human but also in rat cell lines leads to significantly reduced proliferative activity and reduced cell growth. These effects come along with indicative changes in the expression of central regulators of cell cycle while cell cycle pathways seem to be unaffected.

Conclusion: Overexpression of Plac8 in neuroendocrine tumors of the pancreas promotes the proliferative phenotype of the tumor cells while the inhibition of Plac8 inhibits cell growth and metabolism. Therefore in the future Plac8 could represent a very interesting target molecule for the treatment of pNETs.

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

P1448: CLINICAL OUTCOMES OF SUPERFICIAL LARYNGOPHARYNGEAL CANCER WITH LYMPHO-VASCULAR INVASION AFTER ENDOSCOPIC LARYNGOPHARYNGEAL SURGERY

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Introduction: Since the majority of laryngopharyngeal carcinomas are detected at an advanced stage, most cases are treated with concurrent chemotherapy and radiation therapy. The key to improving the prognosis and quality of life is early detection of the primary cancer and treatment using minimally invasive surgery. We previously reported the good oncologic outcomes with ELPS (Endoscopic laryngopharyngeal surgery) for superficial laryngo-pharyngeal carcinoma. However there is no clinical evidence for an additional treatment nor prognosis about the cases conducted endoscopic resection which were diagnosed to be superficial carcinoma with lympho-vascular invasion histopathologically.

Aims & Methods: This study aimed to investigate the optimal additional treat- ment and clinical course for the surflcial laryngo-pharyngeal carcinoma with lympho-vascular invasion. We analyzed clinicopathological data in 9 patients showed Lympho-vascular invasion receiving ELPS between 2007 and 2014.

Results: Positive lympho-vascular invasion was found in 9 cases. Detected the tumor depth was SEP in 7 lesions and MP in 2 lesions. Mean alcohol consumption is 9.99 g per week. 5 cases are low activity ALDH2 heterozygotes and have alcohol flushing reaction. No pathologic findings correlated with lympho-vascular invasion; 2 cases with vascular invasion(y0, v1), 2 cases with lympho-vascular inva- sion(y1, v1). Two patients underwent an additional chemoradiotherapy without recurrence. Four patients had a cervical lymph node or local recurrence, two of them were salvage ELPS cases after chemoradiotherapy. One of two salvage cases also had distant metastasis and was given palliative treatment, and finally died. The other one underwent surgical salvage and remained alive. One case with lymphatic and vascular invasion had no adjuvant therapy and remained without recurrence. And the other 2 cases had recurrence but died of other cause.

Conclusion: Lympho-vascular invasion is a risk factor for cervical lymph node metastasis, which has a possibility to a very aggressive disease. In those cases, chemoradiotherapy as an additional treatment is recommended as far as possible. If patients already had prior radiotherapy, close follow-up is essential to detect recurrence early. In those cases, chemotherapy or additional surgical resection are also considerable if the general conditions are satisfactory.

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

P1449: LONG-TERM OUTCOMES OF EARLY GASTRIC CANCER WITH LATERAL MARGIN POSITIVE AFTER ENDOSCOPIC RESECTION

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Introduction: The positive lateral margin after endoscopic resection(ER) of early gastric cancer(EGC), additional surgery or endoscopic submucoosal dissection(ESD) are recommended. However, the additional surgery often diffi- cult due to advanced age or patient’s comorbid conditions.

Aims & Methods: The aim of this study is to investigate of appropriate manage- ment in patients with positive lateral margin after ER. We analyzed Wednesday, November 01, 2017 09:00-14:00

ENDOSCOPY AND IMAGING III - HALL 7
PI450 EFFICACY OF THE FORCED COAGULATION MODE WITH LOW-FREQUENCY POWER SETTING DURING ENDOSCOPIC SUBMUCOSAL DISSECTION

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Introduction: Bleeding control is one of the most important factors to success endoscopic submucosal dissection (ESD) in safety. We have reported the endoscopic coagulation technique using soft coagulation mode (S method) is effective. This study was performed 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 treatment. We have therefore found that forced coagulation mode with low frequency power setting (F1-10 method) can exhibit precogulation function without bursting vessels. It is suggested that F1-10 method is useful for large vessel precogulation.

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. In ex vivo study, we compared the hemostatic ability between relatively large vessels penetrating between muscle layers are dissected. 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 treatment. We have therefore found that forced coagulation mode with low frequency power setting (F1-10 method) can exhibit precogulation function without bursting vessels. It is suggested that F1-10 method is useful for large vessel precogulation.

Table 1: Mean procedural counts at the point of UGI certification

<table>
<thead>
<tr>
<th>UGIB</th>
<th>Total</th>
<th>Therapy</th>
<th>DOPS</th>
<th>Argon</th>
<th>Banding</th>
<th>Clipping</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>
</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>
</tr>
</tbody>
</table>

p-value: 0.143 < 0.0001

Conclusion: Training on endotherapy prior to certification is limited. The current UGI certification process does not comprehensively assess endotherapy. Aims & Methods: Trainees awarded certification in gastroscopy between September 2009–2016 were identified from the national trainee electronic portfolio (JETS). Trainee inputs and formative assessments (direct observation of procedural skills - DOPS) for UGIB therapy, up to their certification date, were analysed. Only trainees with ≥ 200 procedures were included, which is the minimum number of cases to allow certification within the UK, thereby excluding those who had submitted baseline information which may have contained therapeutic data. Exposure rates from medical endoscopists (physician and surgical trainees) were compared with non-medical endoscopists (NME).

Results: 885 trainee portfolios were analysed (765 medical and 120 NMEs), with a median procedural count of 276 (IQR 124). The median number of therapeutic entries and DOPS were 4 (IQR 11), and 1 (IQR 3) respectively. Overall rates for endotherapy and DOPS were 2.9% and 0.8% per procedure. When stratified by therapy, the median exposure to each therapy was either 0 or 1, with means displayed in Table 1. 25.2% of trainees had no exposure to any type of 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 endotherapy considered (overall p-value 0.10, p < 0.0001).

Disclosure of Interest: All authors have declared no conflicts of interest.
Institute of Oncology (IOV-IRCCS) BO Unit between 01/03/2015 and 01/03/2016.

**Aims & Methods:**
Advanced diagnostic imaging technologies and specific endoscopist and pathologist for early detection of dysplasia (DYS) and/or oesophageal adenocarcinoma (OAC). International guidelines recommend endoscopic surveillance of Barrett's oesophagus (BO) as the main risk factor for oesophageal adenocarcinoma. The aim of this study is to investigate the diagnosis changes in all. Location—stomach—13 (72%), duodenum—2, rectum—2, proximal jejunum—1.

**Introduction:**
In our cohort 41% were male, with mean age of 47.7 years. Endoscopic diagnosis of BE by directed biopsies of esophageal tissue was performed.

**Results:**
In our cohort 41% were male, with mean age of 47.7 years. Endoscopic diagnosis of BE by directed biopsies of esophageal tissue was performed.

**Conclusion:**
Endoscopic diagnosis of BE by directed biopsies of esophageal tissue was performed.

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

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**Introduction:**
Endoscopic full-thickness resection (EFTR) for sub-epithelial lesions (SETS) of GI tract is less frequently described; possibly due to technical challenges involved in dissection and need for resultant defect closure. Current study describes single-center experience of EFTR for treatment of SETS.

**Aims & Methods:**
Prospective database of patients undergoing EFTR for SETs over 6-years (2011–2017) was abstracted. Patient selection for EFTR—endoscopic ultrasound (EUS) and CECT. Inclusion criteria—encapsulated lesions, predominantly endophytic component and absence of features of invasive malignancy. Exclusion criteria—patients unfit for general anesthesia or major invasive procedure, uncorrectable coagulopathy or high risk features for malignancy. All procedures performed under general anesthesia with endotracheal intubation. High-definition endoscope (GF-HQ190 or CF-HQ190, Olympus Corp., Japan) with distal transparent hood and carbon dioxide insufflation used in all. Submucosal (SM) elevation by Gelofuscin, mucosal incision and SM dissection performed to expose SET. Encapsulated SET enucleated maintaining intact capsule. Adherent and attached muscularis propria (MP) layer fibers divided. IT or dual-knife™ used for dissection and coag-grasper for hemostasis.

**Results:**

**Abstract:**

**Conclusion:**
Endoscopic diagnosis of BE by directed biopsies of esophageal tissue was performed.

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

**References:**

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**Introduction:**
Endoscopic full-thickness resection (EFTR) for sub-epithelial lesions (SETS) of GI tract is less frequently described; possibly due to technical challenges involved in dissection and need for resultant defect closure. Current study describes single-center experience of EFTR for treatment of SETS.

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**Results:**

**Abstract:**

**Conclusion:**
Endoscopic diagnosis of BE by directed biopsies of esophageal tissue was performed.

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

**References:**

Conclusion: EFTR is safe and effective for resection of SETs. Pre EFTR EUS and CECT may be useful to select appropriate candidates. Secure closure of defect is necessary for intussusception defects. Further studies comparing EFTR and surgery are recommended.

Disclosure of Interest: A. Bapaye: Speaker-Boston scientific corporation, Cook endoscopy, Olympus and Taewoong medical

All authors have declared no conflicts of interest.

P1455 PROPHYLAXIS OF VARICEAL BLEEDING IN CIRRHOTIC PATIENTS: EFFICACY AND SAFETY OF ENDOSCOPIC VARICEAL LIGATION – A TERTIARY CENTRE

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Introduction: In the natural history of chronic liver disease, variceal bleeding represents a life-threatening complication of portal hypertension, with high risk of recurrent bleeding and mortality. Current guidelines recommend endoscopic variceal ligation (EVL) in primary prophylaxis and the combination of both in secondary prophylaxis.

Aims & Methods: We aimed to evaluate the efficacy of EVL therapy in both primary and secondary prophylaxis of variceal bleeding in cirrhosis and to establish the patient's clinical outcome. This was a retrospective observational cohort study of a total of 444 EVL procedures performed in 250 cirrhotic patients, who were admitted in a gastroenterology department of a tertiary centre, between 2004–2016, to receive EVL as prophylaxis of gastrointestinal variceal bleeding. Sessions of ligation were repeated every two to three weeks in order to reach variceal eradication. The clinical outcome included the recurrence of bleeding (primary endpoint), the eradication success rate of oesophageal varices, EVL-related complications and overall and bleeding-related mortality.

Results: The mean follow-up period for all 250 cirrhotic patients enrolled in the study was 73.2±40.0 months, with mean age of 63.9±10.8 years and a predominance of male gender (80.4%; n=201). At initial endoscopy, 237 (61.9%) patients had active variceal bleeding and 47.1% (n=116) were considered high risk. EVL was performed as primary prophylaxis in 50.9% (n=226) and secondary prophylaxis in 49.1% (n=218). Varices were obliterated in 209 (83.6%) patients with mean number of EVL procedures necessary to eradicate varices of 1.8±0.95 and a maximum of procedures of 6. Recurrent bleeding occurred in 11.2% (n=28) of cases with a mean time to re-bleeding occurrence of 8.1±14.2 months. Major and significant complications were verified in 8.1% (n=36) of patients. The main complications were bleeding related to EVL procedure in 10.8% (n=27) and infection (2.5%) patients with mean time between EVL and complication occurrence of 11.1±11.9 days (minimum:0; maximum:43). Intra-procedure complications occurred in 11(2.5%) patients with no death, despite of two cases of Sengstaken-Blakemore balloon necessity. The overall mortality was 5.4%(n=24), being 0.4%(n=2) related to variceal bleeding.

Conclusion: EVL seems to be an efficient, safe and relatively simple therapeutic option for primary prophylaxis and secondary prophylaxis of variceal bleeding in cirrhotic patients. Since the main complications occur over 1 week after EVL procedure, the majority of patients can be safely treated in an ambulatory setting.

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

P1456 THE VALUE OF ENDOCOSCOPIO FUL-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 assess the value of endoscopic full-thickness resection (EFTF) technique for gastric and duodenal submucosal tumors (SMTs) originating from the muscularis propria (MP) layer. A total of 276 patients with single gastric SMTs originating from the MP layer were performed EFTF between January, 2010 and February, 2014. The tight adhesion of the tumor to gastric or duodenal serosal layer could be seen in every case from endoscopic ultrasound (EUS) before the procedure. The SMTs orientated endoscopically were performed EFTF 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 duodenal bulb, 2 located in duodenum, 2 located in the pylorus. The largest size was 1.7 cm (range 0.7–6.0 cm). The success rate of EFTF was 98.9% (273/276). EFTF was failed in 3 cases: one case was out of control because of bleeding into enteroceola, two cases required conversion into laparoscopic surgery because of projectile lobulations of the tumor outside the cavity. The median operation time was 65 min (range, 14–210 min). In en bloc resection rate was 98.1% (268/273), piecemeal resection rate was 1.9% (5/273). The median length of hospital stays was 4.4 days (range, 1–23 days). Pathological outcomes revealed that the tumors were classified 137 (49.7%) leiomyoma, 103 (37.3%) leiomyomas, 8 (2.9%) calcifying fibrous tumors, 7 (2.5%) glomus tumors, 5 (1.8%) displaced pancreas, and 3 (1.1%) fibromatoses. The procedure-related complications were as follows. Different degrees of postsurgical gastric pain occurred in 168 (60.9%) cases, among which 24 (8.7%) cases resulted in complications after related abscesses: 28 patients were found after EFTF. 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.

P1457 BLUE LIGHT IMAGING AND LINKED COLOR IMAGING FOR DETECTION AND CHARACTERISATION 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 BLI and LCI 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. Patients were prospectively enrolled. All patients had chronic gastritis under conscious sedation. 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 capillaries, superficial 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 whitened surface with whitening in LCI or white light or light blue crest 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 Sydney 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.
P1458 LONG-TERM OUTCOMES OF ENDOCOPIC SUBMUCOUS DISSECTION (ESD) FOR RELATIVE INDICATION GROUP OF EARLY ESOPHAGEAL SQUAMOUS CARCINOMA (EESC) IN AGED PATIENTS

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Introduction: According to the Japanese Esophageal Society Guidelines, Early Esophageal Squamous Cell Carcinoma (EESC) 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 EJ patients, most will refuse AT due to higher degrees of debilitating symptoms in China.

Aims & Methods: The aim of this study was conducted to evaluate the long-term outcomes of aged RI patients without AT after ESD.

Results: Between January 2008 and December 2013, a total of 158 aged EJSCC 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 11%, p = 0.319) and postoperative stricture rate (31.8% vs 21.3%, p = 0.134) were higher in RI group than in AI group. 5-year recurrence-free survival rate (85.8% vs 87.2%, p = 0.501), metastasis-free survival rate (100% vs 98.6%, p = 0.437), overall survival rate (96.6% vs 90.0%, p = 0.613) and cause-specific survival rate (98% vs 98.5%, p = 0.264) for AI group and RI group were comparable.

Conclusion: Aged EJ EESC patients without AT (esophagectomy 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 endoscopies), patients, 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 and 38.5% (n = 82) were FI. The most frequently found foreign bodies were meat balls (n = 37) and fish bones (14.6% (n = 30). Most FB/FI were found on the proximal esophagus (56.1%, n = 115). Endoscopic removal was performed on 129 cases (63.4%), endoscopic mobilization in 54 (26.3%), and in 22 endoscopic removal wasn’t achieved (10, where referred of otolaryngology; 2 for surgery and 10 were deferred to endoscopy with sedation, in operating room).

Endoscopy under sedation was performed in 20 cases (9.7%). About 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 ENDOCOPIC 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 to 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 11%, p = 0.319) and postoperative stricture rate (31.8% vs 21.3%, p = 0.134) were higher in RI group than in AI group. 5-year recurrence-free survival rate (85.8% vs 87.2%, p = 0.501), metastasis-free survival rate (100% vs 98.6%, p = 0.437), overall survival rate (96.6% vs 90.0%, p = 0.613) and cause-specific survival rate (98% vs 98.5%, p = 0.264) for AI group and RI group were comparable.

Conclusion: Aged EJ EESC patients without AT (esophagectomy 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.

P1461 COMPARATIVE STUDY OF ESD AND SURGICAL RESECTION FOR GASTRIC SETS ORIGINATED FROM MUSCULARIS PROPRIA

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Introduction: Endoscopic resection for gastric subepithelial tumors (SETS) originated from muscularis propria (GSET-PM) has offered less invasive alternatives to surgical resection. The aims of this study were to compare endoscopic submucosal dissection (ESD) with surgical resection for the removal of GSET-PM.

Aims & Methods: This study involved 17 patients with GSET-PM removed by ESD and 76 patients who underwent curative surgical resection. ESD was attempted in GSET-PM with small tumors which was below 5 cm and showed an endoluminal growth pattern according to endoscopic ultrasound (EUS) finding.

Results: ESD group were more likely to have upper portion (10/17, 58.8%) and surgery group were more likely to have mid portion (41/76, 53.8%) (p = 0.039). ESD group were smaller median tumor size (25.6 mm vs 35.9 mm, p = 0.037) and higher endoluminal ratio (58.5 ± 9.1% vs 45.8 ± 15.4%, p = 0.002). ESD group were mostly to have Yamada type III (10/17, 58.8%) and surgery group were mostly Yamada type I (52.6, 68.4%) (p < 0.001). Complete resection by ESD was lower than by surgical resection (82.4% vs 100%, p < 0.001). In ESD group, 3 performed surgical resection after ESD (1 incompletely resection and 2 uncontroled bleeding) and 1 showed perforation was completely resected with endoscopic closure. In surgery group, complications occurred in 6 patients (1 leakage, 1 stricture, 1 hernia and bowel obstruction, 1 wound infection and 2 worsened general condition after surgery). Although surgery group were lower in complication rate than ESD group (p = 0.006), severity of complications were higher in the surgery group and there were no mortalities in the ESD group compared with 2 in the surgery group. There was no statistical difference of recurrence and the follow-up period between two groups.

Conclusion: ESD can be one of good options for the resection of endoluminal GSET-PM and could be replace treatment by surgical resection in Yamada type III with a high endoluminal ratio.

Disclosure of Interest: All authors have declared no conflicts of interest.
P1462  CAP ASSISTED UPPER ENDOSCOPY VERSUS SIDE-VIEWING ENDOSCOPE FOR EXAMINATION OF THE MAJOR DUODENAL PAPILLA: A RANDOMIZED, BLINDED, CONTROLLED, NON-INFERIORITY CROSSOVER STUDY (CAPP- 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 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 (poor = 1, excellent = 10).

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 = 1.0). 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 (IN)ACCURACY OF CAMBRIDGE PROTOCOL FOR PATIENTS HARBOURING CDH1 MUTATION: A CONSECUTIVE SERIES

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Introduction: Hereditary diffuse gastric cancer (HDGC) accounts for 1 to 3% of all gastric cancers and is mainly 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 access the validity of Cambridge protocol with a high-resolution endoscopy 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 endoscopy–for arrest of bleeding or for closure of bowel perforations or chronic fistula. 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 (PadlockTM, Aponos Medical, USA). Data from a prospectively maintained database of all patients undergoing the new Endoscopic-Clip procedure was abstracted. Patient demographics, 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-wires 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–57.9 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 fistuлаe–5 (26.3%) (esophagus–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 (PadlockTM, 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. All authors have declared no conflicts of interest.

References
Results: 19 patients underwent EA, with a mean age of 63.5 ± 17.7 years and a successful resection of the tumor of 17.4 ± 8.8 mm. The male to female ratio is 0.7. "En bloc" resection was done in most cases 15/19 (78.9%). 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

P1466 PER ORAL ENDOSCOPIC MYOTOMY: UPDATED RESULTS FROM A UNITED KINGDOM CASE SERIES
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Introduction: Per-oral 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 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 ranks test to compare pre- and post-POEM ES and 4sIRP and pre and post-treatment GORD-HRQoL score. Repeated measures ANOVA was used for multiple time-point comparisons.

Results: POEM was performed in 51 patients (22F, age 48.6±13.5 years). Further baseline data is presented in table 1. Median gastric and oesophageal myotomy was 3 cm (2–4) and 10 cm (3–18) respectively with a selective circular myotomy in all cases and a posterior approach in 11. POEM was clinically successful in n=48/51 (94%) eligible for review at 3m. Reduction in ES at 3m; 8.5 (5–12) vs 0 (0–6) p < 0.0001 was sustained in 31 patients with median follow up of 15m (3–36); 8.5 (5–12) vs 0 (0–7) ANOVA p < 0.0001. Reduction in IRP-4s was observed 24.05 ±/−10.47 mmHg vs 7.81 ±/−4.91 mmHg (p = 0.0001). Revision of POEM was performed in n=3 at 6, 16 and 27m with clinical success achieved in all cases at 3m review. Pre and post-myotomy EndoFLIP showed an increase in oesophago-gastric junction diameter from 5.87 mm to 11.27 mm (p = 0.0001) (n = 11) and distensibility improved from 1.14 mm/mmHg to 2.87 mm/mmHg (p = 0.008) (n = 8). Median post-POEM GORD-HRQoL score (n = 50) was 1 (0–3). 8 patients with scores >12 improved with medical treatment; 15.5 (13–31) vs 6.5 (1–11; p = 0.0078) as did 5 cases of acid reflux identified by 24 hr pH testing in n = 19 at time of analysis. Endoscopic displacement was encountered in n=2 and replaced endoscopically including readmission of 1 patient for delayed mucosal incision site healing (Clavien-Dindo Grade Ib). There were no cases of mortality, perforation, infection/major bleeding.

Table 1: Baseline characteristics

<table>
<thead>
<tr>
<th>Patient Demographics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (mean, SD, range) (years)</td>
</tr>
<tr>
<td>Male (n) (%)</td>
</tr>
<tr>
<td>Female (n) (%)</td>
</tr>
<tr>
<td>Clinical Data</td>
</tr>
<tr>
<td>Duration of disease (mean, SD, range) (years)</td>
</tr>
<tr>
<td>Eckardt Score (median, range)</td>
</tr>
<tr>
<td>Chicago Subcategorisation</td>
</tr>
<tr>
<td>Achalasia Type I (n) (%)</td>
</tr>
<tr>
<td>Achalasia Type II (n) (%)</td>
</tr>
<tr>
<td>Achalasia Type III (n) (%)</td>
</tr>
<tr>
<td>DES</td>
</tr>
<tr>
<td>Uncategorised (EndoFLIP) used</td>
</tr>
<tr>
<td>Non-Sigmoid Oesophagus (n) (%)</td>
</tr>
<tr>
<td>Sigmoid Oesophagus (n) (%)</td>
</tr>
<tr>
<td>Treatment History</td>
</tr>
<tr>
<td>Prior Achalasia Treatment</td>
</tr>
<tr>
<td>Prior Botulinum Toxin Injection; BTX (n) (%)</td>
</tr>
<tr>
<td>Prior Pneumatic Dilatation; PD (n) (%)</td>
</tr>
<tr>
<td>Prior Heller Myotomy; LHM (n) (%)</td>
</tr>
</tbody>
</table>

(continued)

Conclusion: This is the largest UK case series of POEM for achalasia including the first successful UK POEM procedure for DES. At our institute, POEM was performed successfully in a potentially more challenging cohort where 52.9% had prior endoscopic/surgical treatment with intervention. Our results are in line with international consortia and ASGE findings that POEM is a safe and efficacious procedure for the treatment of achalasia and oesophageal spastic disorders for both short term and sustained symptomatic benefit.

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

Reference
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P1467 NEW CHALLENGE FOR SAFER ENDOSCOPIC SUBMUCOSAL DISSECTION USING CO2 LASER
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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 disposable flexible hollow fiber probe. Compared to conventional ESD (C-ESD) using electric surgical knives, ESD using CO2 laser (L-ESD) method 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, procedure time, adverse events, and the quality of the resected specimen were evaluated. To evaluate the smoothness of the cutting surface in the resected specimens, we compared the length of the resected side of the submucosa (LRS) with the length of the muscularis mucosa (LMM). Results: The en-bloc resection rate was 100% in both groups. Although the mean L-ESD procedure time was 23.3 ± 20.8 minutes, and was significantly longer than that in the C-ESD group (9.4 ± 6.6 minutes; p < 0.02), 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

P1468 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
Grade 2A) corrosive-induced injury of upper gastrointestinal tract. Patients in which biopsy could not be done or where the lesion was missed by hospital were excluded from the study. The study was approved by the Institutional Ethics committee and was funded by a fluid research grant received from Institutional Review Board at Christian Medical College, Vellore, India. The data was analysed using SPSS version 17. The continuous and categorical variables were expressed as, mean ± SD and the non parametric continuous variables were expressed as median. Comparison between groups were 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 and gastro-intestinal injury 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. The remaining 71 patients in whom the median follow up period was 31 months (range 2 m–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(92%) had weight loss and 11(18%) patients required gastrostomy tube insertion. In all, 43(73%) patients underwent barium study during follow up and strictures were noted in 21(36%). The site of stricture was esophageal in 11(53%), stomach in 8(38%) and combined esophago-stomach and in 20%(39%). Esophageal stricture was seen in all patients with Grade III B esophageal injury, 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% (2/9) of patients with Grade III B injury as well 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

PI1469 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 histological diagnosis so far, while pCLE-based diagnosis has not been generally accepted yet. Therefore, more studies assessing diagnostic accuracy of pCLE are warranted.

Aims & Methods: The aim of the study consisted in the analysis of the accuracy of three risk scoring systems used in non-variceal upper digestive bleeding for assessing patient’s prognosis, previously estimated to be predictive for re-bleeding/death after gastrointestinal bleeding. We assessed prospectively a batch of 1872 patients admitted in the Gastroenterology Department of Emergency County Hospital Timisoara in a 12-year period, in which we calculated 3 risk scoring systems, Rockall, Cedars-Sinai and Baylor, based on clinical and endoscopic data. We compared their accuracy for assessing patient’s prognosis, expressed as the need of blood transfusions, number of hospitalization days, re-bleeding, surgery and death. Discriminative ability was assessed using the area under the receiver operating characteristic curve (AUROC).

Results: The batch included 1134 (60.6%) male and 738 (39.4%) female, mean age 62.7±8 years. Regarding the need of blood transfusions, the predictive ability of the scores is as follows: Rockall AUROC 0.59 (CI 0.55-0.62), sensitivity (Se) = 81.7%, specificity (Sp) = 35.5%, positive predictive value (PPV) = 28.4%, negative predictive value (NPV) = 86.1% (p < 0.0001); Cedars-Sinai AUROC 0.59 (CI 0.55-0.63), Se = 72.4%, Sp = 41.3%, PPV = 28.5%, NPV = 82.3% (p < 0.001); Baylor AUROC 0.56 (CI 0.49-0.63), Se = 41.9%, Sp = 75.5%, PPV = 40.6%, NPV = 76.5%. Number of hospitalization days: Rockall AUROC 0.66 (CI 0.55-0.77), Se = 61.5%, Sp = 65.2%, PPV = 90%, NPV = 25% (p = 0.003); Cedars-Sinai AUROC 0.63 (CI 0.50-0.75), Se = 53.1%, Sp = 73.9%, PPV = 89.5%, NPV = 27.4%; Baylor AUROC 0.52 (CI 0.51-0.73), Se = 47.06%, Sp = 66.6%, PPV = 84.2%, NPV = 25%. Re-bleeding: Rockall AUROC 0.66 (CI 0.63-0.67), Se = 61.5%, Sp = 65.2%, PPV = 90%, NPV = 25% (p = 0.003); 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 = 9.3%, NPV = 97.9%; Baylor AUROC 0.55 (CI 0.41-0.66), Se = 50%, Sp = 66.2%, PPV = 5.1%, NPV = 94%. Death: Rockall AUROC 0.65 (CI 0.58-0.73), Se = 79.1%, Sp = 53.1%, PPV = 18.2%, NPV = 99.5% (p = 0.001); 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 = 76.09%, 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). Score variation was superior in Rockall in estimating the hospitalization period (p = 0.004) and re-bleeding (p = 0.004), and Cedars-Sinai proved to be superior in 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.

PI1471 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 patients with advanced gastrointestinal and biliary cancer, and 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 reported that PEG tube placement complications in cancer patients may be superior when compared to non-cancer patients.

Aims & Methods: The aim of this study was to evaluate the complications rate after PEG tube placement in cancer patients. We did a single-centre prospective database including all patients with PEG tube insertion between March 2014 and June 2016, evaluating the complications during 6 months follow-up.

Results: A total of 265 patients (83% men, mean age 59 years) underwent PEG tube insertion. 224 patients (84.5%) had head and neck cancers and 33 patients

Disclosure of Interest: All authors have declared no conflicts of interest.
(12.5%) had esophageal cancer; 207 patients (78.1%) had stage IV disease. At the time of analysis, 138 patients (52%) had grade 3 dysphagia and the mean body mass index (BMI) was 20.9 Kg/m2. All the patients underwent antibiotic prophylaxis previous to the procedure. There was an increase on BMI to 23.8 Kg/m2 at 6 months follow up. Eight patients (3.8%) had immediate complications after the procedure (bleeding from the PEG tract; 6; anesthetic complications - 2). The overall complication rate at the first month of follow up was 14.4%, at the third month 20.5% and at the sixth month 11.7%. The overall peri-PEG infection rate was 14%, and was the main complication at the first month of follow up. Development of hyper-granulation tissue was the most frequent complication at the third month of follow-up. Buried bumper syndrome occurred in 10 patients (3.7%). None of the patients had tumor seeding at the gastroscopy site. Overall mortality was 26.4%, none of the deaths attributable to PEG tube insertion.

Conclusion: PEG placement is a safe and effective technique in cancer patients. The rate of major complications and tube site infection were similar to the results found in literature for non-cancer patients.

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

References

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 gastrointestinal endoscopy under sedation (GES) [1, 2], but about the incidence and the role of inapparent aspiration is scarce. Furthermore, patients undergoing endoscopies experience respiratory symptoms such as coughing, shortness of breathing, fever and other respiratory adverse events within 24 hours relatively often in more than 5% [3]. Since coughing during endoscopy has been attributed to an increased risk of aspiration-related postprocedural infection [4] respiratory infections might be underreported. Additionally, patients in advanced age are not only determined as a high-risk group for GI adverse events following colonoscopies [5], but are also more likely to develop hospital-acquired pneumonia [2]. Therefore, the aim of the study was to determine the risk of pneumonia, lower respiratory infection (LRI) and systemic inflammatory activation after GES.

Methods: A total of 250 consecutive inpatients who had undergone GES 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. Vomiting cases 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%, GES group vs. 0.4%, control group, p = 0.18, χ² test) and LRI (4.8% vs. 2.0%, p = 0.041 in general, but in the older age group (2.6% vs. 0.0%, p = 0.041, and 7.8% vs. 2.5%, p = 0.034, respectively) were detected. Inflammatory parameters were significantly increased after GES, particularly on day three. GES patients received antibiotic treatment more frequent while pulmonary inflation did not differ.

Conclusion: This data confirms a higher risk of pneumonia due to GES 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

P1477 AN ANALYSIS OF COMPLICATIONS FOLLOWING ENDOSCOPIC SUBMUCOSAL DISSECTION IN A WESTERN SETTING–MAKING THE CASE FOR A SHORTER LENGTH OF STAT

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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 1–10%. Cost and resource provision in a publicly-funded Western healthcare setting favours shorter planned stays following ESD.

Aims & Methods: We aimed to identify the type and site of lesions being treated in a Western setting as well as the rate, timing and predictors of complications in order to evaluate current admission practice. An electronic database of all ESD procedures performed in our academic institution from 2012–2017 was analysed. Parameters were the number, type, onset and management of complications following ESD. Significant complications (bleeding and perforation) necessitating hospital admission were categorised as early (within 24 hours) and delayed (24 hours to 28 days) post procedure.

Results: A total of 410 ESDs were performed within the time period (225 colorectal, 117 oesophageal, 52 gastric and 16 duodenal). There were 21 complications (ESD for gastric and duodenal lesions had a higher complication rate (11.5% and 12.5% respectively). The table below stratifies the complications according to type, location and onset.

<table>
<thead>
<tr>
<th>Type of Complication</th>
<th>Colorectal</th>
<th>Oesophageal</th>
<th>Gastric</th>
<th>Duodenal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early</td>
<td>3/225</td>
<td>1/117</td>
<td>0/52</td>
<td>0/16</td>
</tr>
<tr>
<td>Delayed</td>
<td>5/225 (2.2%)</td>
<td>1/117 (0.9%)</td>
<td>2/52 (3.9%)</td>
<td>1/16 (6.3%)</td>
</tr>
<tr>
<td>Total (early)</td>
<td>8/225</td>
<td>1/117</td>
<td>2/52</td>
<td>1/16</td>
</tr>
<tr>
<td>Total (delayed)</td>
<td>6/225 (2.7%)</td>
<td>1/117 (0.9%)</td>
<td>4/52 (7.7%)</td>
<td>1/16 (6.3%)</td>
</tr>
<tr>
<td>Grand total of all complications</td>
<td>14/225 (6.3%)</td>
<td>2/117 (1.8%)</td>
<td>6/52 (11.5%)</td>
<td>2/16 (12.5%)</td>
</tr>
</tbody>
</table>

19 of the 21 total complications (90.5%) were successfully managed endoscopically. 1 patient underwent an emergent right hemithoracotomy for a delayed colonic perforation and 1 patient had radiological embolisation for a bleed 7 days following a caecal ESD. 72.7% (8/11) of the patients who experienced delayed bleeding presented 7–10 days following ESD. Of this, 50% occurred following recommencement of anticoagulants/antiplatelets.

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 delayed bleeding. Given that the majority of delayed complications occurred due to the endoscopy and post procedure, a standardised 5 day inpatient stay would prove futile in our cohort.

Disclosure of Interest: P. Bhadari: 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 dilatation of refrainatory benign oesophageal strictures remains controversial.

Aims & Methods: To evaluate the prevalence and factors predicting response to treatment of benign reflux oesophageal strictures with scheduled endoscopic dilatations

Results: The study sample included 42 (56%) male patients and the mean age was 55.9 ± 17.6 years. Dysphagia scale at baseline was 38 (24.7–43.3). Sphincter of Oddi dysfunction was identified at least once in 39 (52%) patients and in 25% of dilations in 39 (52%) patients. From the study sample, 23 (36.1%) patients fulfilled criteria of refractory strictures. In this subgroup, there was a significant association with post-surgical aetiology (p = 0.02). Location of the stricture (p = 0.014) and 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 0.05–0.46, 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 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 patients submitted to endoscopic dilation of benign oesophageal strictures between October 2010 and November 2016. Scarcities 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.

Results: The study sample included 42 (56%) male patients and the mean age was 55.9 ± 17.6 years. Dysphagia scale at baseline was 38 (24.7–43.3). Sphincter of Oddi dysfunction was identified at least once in 39 (52%) patients and in 25% of dilations in 39 (52%) patients. From the study sample, 23 (36.1%) patients fulfilled criteria of refractory strictures. In this subgroup, there was a significant association with post-surgical aetiology (p = 0.02), location of the stricture (p = 0.014) and 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 0.05–0.46, 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 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 endoscopic specialties (NME).

Aims & Methods: We prospectively identified trainees awarded certification for gastroscopy, flexible sigmoidoscopy (FS) and colonoscopy from the JETS database. For each specialty, we collected data on lifetime procedural counts, for-mative 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 provisional 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%) trainees. 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 (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 PAPILLOMA 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 gastroduodenoscopy examination. Endoscopic papillectomy can be achieved with curative resection for benign adenoma and some early papillary carcinoma. However, some complications are accompanied with the procedure, like pancreatitis and bleeding. This retrospective study is to evaluate therapeutic effect and safety of endoscopic papillectomy on duodenal papilla tumors.

Aims & Methods: From June 2009 to November 2016, the information of patients who received endoscopic papillectomy was recorded, which included basic characteristics and clinical outcomes, such as recurrence rate, bleeding, pancreatitis. Eighty-four patients (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.
Pancrætic stents and biliary stents were inserted in 9 and 12 patients respectively. In general, 5% (2/40) and 12.5% (5/40) cases had intraoperative and postoperative bleeding respectively. 20% (8/40) cases suffered from pancreatitis, of which mild, moderate and severe happened in 3, 4 and 1 cases. Six patients had tumor recurrence. And 3 patients received repeat endoscopic papillectomy, two received 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

Sex
Male Female
29 8
Age (years, mean ± SD)
55.1 ± 10.0
Endoscope type
Gastroscopic
32 8
Resection method
EMR EPMR ESD
21 17 2
Pathological results
LGD, HGd, Tis, Tim, Tsm, Non-tumor
12, 24, 0, 2, 0, 2
Tumor sizes (cm)
0.20 ± 0.88, 1.50 ± 0.69
Biliary Stent
Yes, No
12, 28
Pancreatic stent
Yes, No
9, 31
Hospital stays (days, mean ± SD)
6.7 ± 13.4
Follow-up time (months, mean ± SD)
36.6 ± 28
Adverse events
Intraoperative bleeding
5%(2)
Postoperative bleeding
12.5%(5)
Perforation
2.5%(1)
Cholangitis
0
Pancreatitis, Mild, Moderate, Severe
20%(8), 7.5%(3), 10%(4), 2.5%(1)
Recurrence
16.2%(6)
Surgery
7.9%(3)
Mortality
7.7%(3)

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.

Conclusion: Endoscopic papillotomy 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 demonstrated 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 6 months after (new DOPS). Trainees at early stages of training (total procedures < 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. 517 (new DOPS (77.7%) and 223 (3.0%) 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 (6.6% vs. 3.0%, p < 0.001). Frequencies of low scores (pooled scores of 1/2) were similar for gastroscopy (p = 0.53) and sigmoidoscopy (p = 0.34), 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 adenomata carries an increased risk of perforation compared to other locations in the upper or lower GI tract.1,2 Additionally in endoscopic resection of widespread adenomata (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 of the successful implantation of a mini-vacuum sponge with extended length of the suction tube and reduced in volume compared to a standard esophageal vacuum sponge.3

Aims & Methods: From September 9th, 2015 to March 20th, 2017 endoscopic resection of widespread duodenal or papillary adenomata of >=2 cm in D2/D3 was performed in five patients. There was a surgical indication for Whipple's resection as primary intervention or in case of failure in all patients. All patients agreed and gave their informed consent to the procedure.

Results: Five patients with widespread duodenal adenomata were included (2x papilla, 3x D2/D3 extrapapillary adenomata; 5x tubular; 3x HGIN, 2x LGIN). The macroscopic mean maximum diameter and perpendicular diameter of the lesions were 4.3 ± 2.8 cm (largest 7.5 ± 3.7 cm; smallest 2.2 ± 1.8 cm). In all cases the implantation of mini-vacuum sponge Evac reduced in volume to 1.2 ± 1.5 cm (dia. length) with extended suction tube; Braun Corp, Melsungen). Continuous suction was applied over several days (~125 mm Hg; ActiVac, KCI Medical, Wiesbaden) depending on the size of the resection area and healing status (n = 10 days, 4–14 days). An endoscopic/radiologic vacuum sponge exchange was performed every 3–5 days. In 4 cases additional atraumatic over-the-scope-clips (OTSC, Ovesco Tuebingen) were placed during the procedure and in 5/8 cases additional hemoclips were applied to secure the wall and for hemostasis. In 5/8 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 mos). 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 LGIN). In one case 10 days after resection an acute bleeding occurred with the need of endoscopic clipping and prophylactic radiologic coiling of the gastroduodenal artery with uneventful course. In a second case a minor bleeding occurred without necessity of transfusion during ablation of an OTSC three mo after the primary intervention. All patients were asymptomatic during follow-up.

Conclusion: The endoscopic resection of large duodenal adenomata in D2/D3 is feasible and was safe in our collective using the application of a duodenal mini-vacuum sponge for local drainage of hematoma or bile to Whipple’s resection. The results in this first small collective should be reproduced in a prospective multicentric trial.

Disclosure of Interest: J. Hochberger: Fujifilm Europe: research support, honoraria for lectures Boston Scientific Europe and US; research support, honoraria for lectures ERBE Elektromedizin: research support.

All other authors have declared no conflicts of interest.
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 (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 perforations, according to PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-analyses) guidelines.

Results: 46 studies on animal models were identified. 15 studies, including 4 guidelines. PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-analyses) from 1966 till September 2016 was searched. A systematic review and meta-analysis were performed on studies reporting technical and clinical success of endoscopic closure of acute perforations, according to PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-analyses) guidelines.

Conclusion: Meta-analysis of the available literature showed that endoscopic closure of acute perforations is a safe, effective, and reproducible method with a high technical and clinical success rate. However, further studies are needed to assess its effectiveness in clinical practice and to determine the optimal endoscopic device and technique for each perforation type and location.

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

References

P1486 RISK FACTORS FOR COLORECTAL POLYP IN ASYMPTOMATIC YOUNG ADULTS UNDER THE AGE OF 50
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Introduction: Current guidelines recommend that adults age 50 to 75 be screened for colorectal cancer (CRC). However, CRC incidence rates have increased among young adults and have decreased among older adults.

Aims & Methods: The aim of this study was to investigate the risk factors of colorectal polyps in young adults aged <50 years. From January 2016 to December 2016, we compared the risk factors of colorectal polyp group with non-polyp group in patients aged <50 years who underwent screening colonoscopy. The risk factors examined included body mass index (BMI), metabolic syndrome, smoking, alcohol consumption, and physical activity.

Results: Of the 1862 patients, prevalence of colorectal polyps and adenomatous polyps were 13.1% and 7.8%, respectively. Multivariate analysis revealed that metabolic syndrome (OR, 1.89; 95% CI, 1.13–3.17, P = 0.015) was independent predictor for colorectal polyp. Age over 40 years (OR, 1.6–6.8). Technical success for endoclip closure was 94.8%, complication rate was 1.9% (95% CI: 91.1%- 98.9%). Technical success for endoclips closure was 94.8% (95% CI: 88.5%-98.6%), and complication rate was 4.2% (n = 6/214, 95% CI: 1.6%-8.3%). Technical success for endoclips closure was 94.9% (95% CI: 85.6%-100%), and clinical success was 83.2% (95% CI: 69.5%-92.3%), and complication rate was 2.7% (95% CI: 90.1%-99.8%). For OTSC (Over the scope clip device), technical success was 97% (95% CI: 88%-99.7%), clinical success was 97% (95% CI: 88%-99.7%), and complication rate was 1.87% (95% CI: 91.2%- 98.8%). The technical success for endosuturing (endoscopic suturing device) was 92.7% (95% CI: 82% to 98%), clinical success was 87% (95% CI: 74.9%–94.8%), complication rate was 1.9% (95% CI: 91.1%-98.9%).

Conclusion: Our study suggests that endoscopic closure is a suitable treatment option for acute iatrogenic gastrointestinal perforations with a reasonable technical and clinical success and for each case and for more endoscopic closure by per group. A total of 214 endoscopic closures were attempted in these studies. The overall technical success rate was 94.8% (n = 201/214, 95% CI: 92%-97.6%), clinical success was 92.3% (n = 199/214, 95% CI: 88%-95.8%), and complication rate was 4.2% (n = 6/214, 95% CI: 1.6%-8.3%).

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

References
Aims & Methods: The study included 35 patients with 39 colorectal lesions who underwent ESD (group SB) or endoscopic polypectomy (group NSB). The rates of laterally spreading tumor of granular type (LST-G), 11 lesions; non-granular type (NG) tumors, 28; adenomas, 11; mucosal cancers, 22; and submucosal cancers, 6. The mean procedure time was significantly shorter in group SB (10.8 min vs 10.1 min; p < 0.005). No significant differences were found in en bloc resection, complete resection, postoperative bleeding, and perforation rates. No accidental symptom associated with balloon endoscopy was observed.

Conclusion: Using a balloon overture can be expected to improve not only access to the lesion but also facilitate scope manipulation for colorectal ESD.

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

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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 endoscopy, an advancement 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 Embase were searched. Original articles or abstracts for congress in English were reviewed. The authors were sent the authors 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 case reports. The mean number of ESD cases described was 68 (range: 11–302). Most institutions opted to admit patients following the procedure. (7/18) 38.9% were prospective studies, (7/18) 38.9% retrospective series and (6/18) 33.3% were case reports. The mean number of ESD cases described was 68 (range: 11–302). Most institutions opted to admit patients following the procedure.

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domains—Communication (COMM), Situational Awareness (SITA), Leadership (LEAD) for the Decision-making (DM) part. 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 = sub-optimal performance). CIR and PDR measures are routinely calculated for all colonoscopists using the HCQS Electronic Reporting System with manual validation of these data. Feedback is presented on a quarterly basis to practitioners—endoscopists are expected to achieve 90% CIR and 20% PDR. Correlation of these factors with practitioners ENTS scores were measured using the Pearson test.

### ENTs scores

<table>
<thead>
<tr>
<th>Operator</th>
<th>COMM</th>
<th>SITA</th>
<th>LEAD</th>
<th>T&amp;D</th>
<th>CIR (%)</th>
<th>PDR (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>96</td>
<td>99</td>
<td>100</td>
<td>100</td>
<td>95.2</td>
<td>72.5</td>
</tr>
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<td>2</td>
<td>94</td>
<td>94</td>
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<td>95</td>
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</tr>
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<td>8</td>
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<td>87.5</td>
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</table>

**Results:** 9 endoscopists with known variability in standard colonoscopy KPIs consented to an assessment of ENTs using the MARS tool. Their ENTs scores were correlated with existing KPIs for each colonoscopist (Oct 2016–May 2017), providing an overall positive correlation between ENTs domains and CIR (COMM 0.58; SITA 0.66; LEAD 0.66; DM 0.75) and PDR (COMM 0.49; SITA 0.55; LEAD 0.50; DM 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. 0% in ENTs competent group).

**Conclusion:** The MARS tool is a practical way to measure of ENTs performance designed as a 360 degree feedback and identifies areas for development within independently practitioners that are not currently highlighted by standard colonoscopy KPI measures. There is some correlation with current KPI feedback panels but unlike a specific validated ENTs assessment tool assessment current assessment panels. Both CIR and PDR primarily depend on the colonoscopists’ individual skills rather than the team elements required by polypectomy or EMR and these more complex tasks may show stronger correlation with MARS ENTs evaluation.

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

**P1493 RANDOMIZED CLINICAL TRIAL EVALUATING THE EFFECT OF A VISUAL EDUCATIONAL BOOKLET ON THE PREPARATION OF COLORECTAL CANCER SCREENING PATIENTS**

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4Universidad Autónoma de Madrid, Madrid/Spain

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**Introduction:** Safety and diagnostic accuracy of colonoscopy depend on the quality of bowel cleansing. Several factors have been reported to affect the quality of bowel cleansing, one of them being visualization of the mucosa.

**Aims & Methods:** We performed a prospective, randomised, endoscopy blinded clinical trial between February 2016 and January 2017 included. Our aim was to investigate whether a visual educational booklet (EMI-137, Edinburgh Molecular Imaging (EMI)) which has demonstrated potential to improve the level of cleanliness achieved in hospitalized patients who are undergoing a colonoscopy. Patients >18 years undergoing colonoscopy were included. Exclusion criteria were: previous colonoscopy in the last 3 years, previous colectomy, known inflammatory bowel disease, urgent colonoscopy, dementia or refusal to participate in the study. Both groups received 4 L polyethylene glycol solution. The intervention consisted of a visual educational booklet (visual cohort). Demographic data, personal history, reason for admission and for colonoscopy, work shift in which it performed, and results at endoscopy were collected. The Boston Bowel Preparation Scale (BBPS) was used to assess the bowel preparation. A BBPS score <6 or with at least one segment >3 was considered a poor preparation.

**Results:** One hundred and thirty six patients were included. 51.5% were male, with a mean age of 63.3±17.6 years, and 95.9% of Spanish nationality. The mean body mass index was 27.3±5.2 kg/m². Educational attainment was below secondary education in 71.05%. Most patients had a history of hypertension (72.1%), and the gastroenterology ward (21.32%). Anemia (31.62%), abdominal radiographic findings (16.91%), hematochezia/rectal bleeding (15.44%), diarrhea (11.03%), and abdominal pain (8.82%) were the most frequent indications. Patients characteristics, bowel cleansing and endoscopic findings are shown in table 1. The educational booklet did not suppose a difference in the bowel cleansing attained. Factors that impacted on the level of well and poorly prepared patients in the bivariable study were: age (62.1±18.7 vs 70.5±14.8; p = 0.0019), diabetes mellitus (72.3% vs 42.4%; p = 0.02), hyper-tension (45.63% vs 69.70%; p = 0.016), cardiovascular disease 14.5% vs 36.3%; p = 0.006), and colorectal cancer on colonoscopy (99% vs 81.82%; p = 0.001).

**Table 1:** Baseline characteristics, bowel cleansing and endoscopic findings.

<table>
<thead>
<tr>
<th>PATIENTS N = 136 (n)</th>
<th>Standard management</th>
<th>Educational booklet</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>66.2 (56.8–78.4)</td>
<td>63.3 (53.0–78.3)</td>
<td>0.54</td>
</tr>
<tr>
<td>Male (%)</td>
<td>119 (87.3)</td>
<td>111 (81.6)</td>
<td>0.99</td>
</tr>
<tr>
<td>BMI (kg/m²)</td>
<td>26.9 (24.2–29.7)</td>
<td>26.9 (23.5–29.9)</td>
<td>0.85</td>
</tr>
<tr>
<td>Diabetes Mellitus (136)</td>
<td>18 (25.71%)</td>
<td>19 (28.79%)</td>
<td>0.69</td>
</tr>
<tr>
<td>Hypercholesterolemia</td>
<td>33 (24.74%)</td>
<td>33 (24.74%)</td>
<td>0.74</td>
</tr>
<tr>
<td>Smoking habit (136)</td>
<td>19 (27.14%)</td>
<td>15 (22.74%)</td>
<td>0.55</td>
</tr>
<tr>
<td>Alcoholism (135)</td>
<td>8 (5.95%)</td>
<td>4 (21.21%)</td>
<td>0.13</td>
</tr>
<tr>
<td>Cardiovascular disease</td>
<td>11 (15.71%)</td>
<td>16 (24.24%)</td>
<td>0.21</td>
</tr>
<tr>
<td>Chronic kidney disease</td>
<td>5 (7.14%)</td>
<td>9 (13.64%)</td>
<td>0.21</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>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chronic Obstructive Pulmonary Disease (136)</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>
</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>Chronic Obstructive Pulmonary Disease (135)</td>
<td>6 (8.70%)</td>
<td>5 (7.58%)</td>
<td>0.81</td>
</tr>
</tbody>
</table>

Apendicectomy (136) 18 (25.71%) 4 (6.06%)
Colonrectal cancer 8 (11.43%) 8 (12.12%) 0.90
Adenoma detection rate 29 (41.43%) 18 (27.27%) 0.40
BBPS Right Colon* 2(2–3) 2(2–3) 0.22
BBPS Left Colon* 2(2–3) 2(2–3) 0.37
BBPS* 7 (6–9) 6(5.7–9) 0.17
Cecal intubation rates 67 (95.71%) 62 (93.94%) 0.49
Other gynecological surgery (136) 4 (5.71%) 5 (7.58%) 0.66

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 care system. Heart disease and/or colorectal cancer were predictors of poor preparation for colonoscopy. An optimized preparation should be considered for this type of patients.

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

References

P1495 COMPETENCY OF ENDOSCOPIC NON-TECHNICAL SKILLS (ENTS) DURING ENDOSCOPY TRAINING
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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 as indicators of quality endoscopy and patient safety. Since July 2016, electronic assessment forms (DOPS) for UK trainee endoscopists have been updated to include ENTS as an assessable domain. We aimed to assess the uptake and distribution of ENTS scoring in DOPS and their correlation with other endoscopic skills, across all assessable endoscopic modalities.

Aims & Methods: We identified all DOPS submitted between July 2016 and Feb 2017 from the UK endoscopy trainee database (JETS) and acquired data on trainees, procedures and scores. We collated scores for each of the 4 assessable domains (pre-procedural, procedural, post-procedural and 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: 860 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 (71.3%), sigmoidoscopy 72.4% and polypectomy 73.2%. Scores by individual ENTS components are displayed in Table 1. Of DOPS awarded overall competency, 5.9% (240/4077) lacked full competence in ENTS (p = 0.10 across modalities). Across trainee specialties and endoscopic modalities, competency was greatest for “communication and teamwork” (77.1% overall), but least with ‘judgement and decision making’ (68.3%). Competency in ENTS increased with lifetime procedural count (OR 1.008 per increase in procedure, p < 0.001), and correlated strongly with other assessable domains, including overall score (p < 0.001). After adjusting for procedural count, factors predictive of ENTS competency included trainee seniority (OR for ST5 level: 1.96, p < 0.001), 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).

Table 1: Unadjusted ENTS scores by endoscopic modality.

<table>
<thead>
<tr>
<th>ENTS Component</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>Gastrectomy</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. Competency of ENTS develops with procedural count, and vary with trainee seniority and specialty. Longer term data are required to assess the impact of ENTS on certification.

Disclosure of Interest: All authors have declared no conflicts of interest.
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 improved 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 domains amongst independent practitioners varies. To improve performance in this area of practice requires validated measurement tools and specific feedback against which improvement can be measured. We have previously developed a validated 360-degree multi-assessor rating scale (MARS tool) based on experienced endoscopy assistant ratings for ENTS provided in 4 of 6 domains of ENTS–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 reported during the MARS feedback helped 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.

Conclusion: The MARS tool is a practical way to measure ENTS performance allowing comparison with established normative data of a robust quality assurance system. The benefits of providing overall comparative data has been established previously in sharing more established key performance indicators. The feedback format for data derived from the MARS tool has additionally provided detailed domain-specific ENTS performance ratings that brings to attention areas for improvement in a clear and understandable way that can be re-tested as part of an integrated audit cycle.

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

P1497 OUTCOMES OF ENDOSCOPIC RESECTION OF COMPLEX COLORECTAL LESIONS REFERRED TO A TERTIARY INSTITUTION AFTER FAILED ATTEMPTS AT RESECTION OR ENHANCED SURGERY

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Introduction: Failed prior attempts at resection or heavy manipulation of lesions at resection were free from recurrence and had avoided surgery at last follow up. In 97 lesions (22%), an average of 1.5 (range 1–5) previous attempts at resection had been made, including 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). En bloc resection was possible in fewer patients with previous attempts at resection (14%, 31% and 42% respectively, p < 0.001). Complications associated with heavy manipulations were free from prior 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 were free from recurrence.

Conclusion: Failed prior attempts at resection or heavy manipulation of lesions reduces the chance of achieving en bloc resection and increases the risk of complications and recurrence. Nevertheless, specialist management in a dedicated colorectal unit can achieve good 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 BL1 WHICH MODALITY IS BETTER FOR OBSERVATION OF MICROSAL BLOOD FLOW IN THE SMALL AND LARGE BOWEL USING NB1 (NARROW BAND IMAGING) OR BL1 (BLUE LASER IMAGING)

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Introduction: In recent years, significant advances and innovations have been made in gastrointestinal endoscopic technology. The special light observation using a narrow band light source different from conventional white light is one such innovation. The special light observation with a magnifying procedure has been contributed to improving the diagnosis of lesions in the small and large bowel, such as stomach and large bowel; it is particularly useful for differentiating between benign and malignant lesions and evaluating the depth of invasion. The instruments for narrow band imaging (NBI) were developed by Olympus Co., Ltd., and the blue laser imaging (BLI) by Fujifilm Co., Ltd. These systems are applied to magnifying endoscopy in clinical practice. Studies have examined the usefulness of magnifying observation with NB1 (m-NBI), BL1 (m-BLI), and new and brighter BL1 (m-BLI bright) for the diagnosis of neoplastic diseases, especially for the early detection of gastrointestinal cancers. However, there are relatively few reports describing the application of these techniques to benign diseases.

Aims & Methods: This basic study aimed to explore the potential of magnifying observation using narrow band light by evaluating the visualization of mucosal blood flow in the small and large bowel. The subjects were selected from among patients who had undergone colonoscopy since April 2016. They were randomized into three groups: patients undergoing examination with EC-L00ZP, a high-end instrument manufactured by Fujifilm Co., Ltd. (group F), CF-HQ290ZI, a high-end instrument manufactured by Olympus Co., Ltd. (group O) or PCF-H290ZI manufactured by Olympus Co., Ltd. (group O2).

Each group consisted of 25 patients. The visualization of mucosal blood flow in the small and large bowel by magnifying endoscopic observation using narrow band light was evaluated and scored as follows: good visualization 2; partial visualization 1, and no visualization 0. The 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 and
and O2 have relatively dark xenon light sources and maximum optical magnification levels up to 80 and 110 times, respectively. Therefore, the differences in visualization of mucosal blood flow in the small and large bowel among the groups were considered to be attributable to differences in instrument efficiency.

**Conclusion:** Our results show that magnifying observation with BLI is superior to that with O2 regarding the observation of mucosal blood flow in the small and large bowel. We are planning to conduct a study on the clinical application of magnifying observation with BLI for visualization of mucosal blood flow in the small and large bowel.

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

**P1499**  **MULTIPLE COLORECTAL ADENOMAS WITHOUT APC OR MUTYH GERMLINE MUTATION: A HETEROGENEOUS SUBGROUP OF PATIENTS**

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**Introduction:** Multiple colorectal adenomas (MCRAs) can be defined as an endoscopic feature of ≥ 10 colorectal adenomas in patients (pts) without APC or MUTYH germline mutation. At present its clinical features, management and the presence of extracolonic cancer are not well studied.

**Aims & Methods:** The aim of the present study is to better define the clinical characteristics at diagnosis and during follow-up of MCRa affected patients. From January 2005 and until May 2016 patients with colorectal fibrosis (>10 colorectal adenomas), without deleterious mutations of APC or MUTYH genes, were recruited for the study. Clinical features at diagnosis and extracolonic manifestations were recorded. Forty patients underwent annual colonoscopy at our division with a median follow-up of 3.7 (range: 1-14) years. Degree of fibrosis in ESD or EMR between January 2005 and May 2016. All LSTs were larger than 2 cm in diameter for a diagnostic purpose. Pre-procedural biopsies were performed in 109 lesions (73.2%) and 40.0% (16/40) of patients without prior biopsy. Degree, distribution and depth of fibrosis were not associated with complications such as perforation, post-coagulation syndrome and bleeding.

**Results:** The mean age at MCRa diagnosis was 50.1 ± 14.6 years (range; 19 to 79 years) and 20 pts (41.6%) had at least a first degree relative affected with colorectal neoplasia. Clinical features at diagnosis: the number of polyps ranged between 10 and 20 in 43.7% of the cases; 21 and 50 in 27.1%; >50 in 29.2%; 22.9% of pts had one or more adenocarcinomas (ADC); 16.6% had a previously diagnosed extracolonic cancer (breast, endometrial, thyroid, lung, bladder, brain, lymph, etc.). Twenty-five pts (52%) needed surgery, ten underwent a subtotal colectomy and fifteen a total colectomy. During follow-up twenty-two (55%) pts developed recurrent adenomas and two (5%) had one or more ADC in the retained colorectum; 12.5% of pts developed duodenal adenomas, one had a duodenal adenocarcinoma; we recorded one case of abdominal wall desmoid.

**Conclusion:** MCRA patients in the present study had similar clinical characteristics to MUTYH associated Polyposis (MAP) affected patients. They were generally diagnosed at a mean age of >50 years, they had more than 20 polyps (56.3%) at diagnosis, associated with ADC in 22.9% of the cases and required surgery in the majority of cases (52%). During follow-up, pts also developed recurrent adenomas. Clinical characteristics and family history in these patients support the hypothesis that pathogenic alterations in yet unknown genes may be involved. Further prospective and genomimic technology aimed at this purpose. However, these patients should undergo a closer surveillance than those with sporadic adenomas.

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

**References**


Table 1 Continued

<table>
<thead>
<tr>
<th>Indication</th>
<th>Number of patients</th>
<th>Proximal Adenoma</th>
<th>Proximal SSA/P</th>
<th>Proximal advanced Adenoma</th>
<th>Proximal advanced 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>8.3%</td>
<td>3.1%</td>
<td>0%</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>

**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.

### 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. We report our adoption of optical diagnosis in clinical practice, colonoscopists must be trained and show on-going competence. The learning curve for trainees to achieve the competency has not been fully explored.

**Aims & Methods:** Aim is to evaluate the minimum number of polyps to achieve and maintain the optical diagnostic thresholds per PIVI standards using an upward CUSUM plot. Four trainees without previous experience in optical diagnosis at our institution participated in this prospective study. Four weeks before the commencement of the study they were given a training module on optical diagnosis (OD). OD was based on NICE and WASP classification. During the study period (January 2016-August 2016), each trainee documented the optical diagnosis of polyps less than 10 mm in size. Confidence levels of OD were noted at the same time. Patient demographics and polyp details (site, size, Paris classification and histology) were collected prospectively. OD of each polyp was compared against the polyp histology. Polyps without the histological confirmation were excluded from the analysis. Every trainee had on-going feedback on their performance.

**Results:** A total of 708 polyp observations were performed by trainees during the study period. Total number of adenomas, hyperplastic polyps and sessile serrated adenomas/polyps (SSA/P) were 364,214 and 52 respectively. Trainees OD performance was plotted on a upward CUSUM plot.

**Table 1:** Trainees optical diagnostic performance

<table>
<thead>
<tr>
<th>Trainee</th>
<th>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>

All 4 trainees achieved sustained accuracy (90% threshold) in OD within 12-58 observations. The number of polyps required to reach the plateau varied between 12 to 58. Every trainee’s confidence level improved over time (from 69% to 89%) and the effect was augmented by in-vivo feedback and revision of training module. Table 1 summarises the optical diagnostic performance of all 4 trainees. Negative predictive value for adenomas were above 90% for all trainees.

**Conclusion:** The CUSUM scores of all 4 trainees in the study reached the PIVI standards plateau by the 58th polyp observation. In-vivo feedback and continued training appears important to maintain the performance. Our preliminary findings could be used as a guide to plan the certification process for implementation of optical diagnosis.

**Disclosure of Interest:** B.P. Saunders: Advisory board member - Olympus UK All other authors have declared no conflicts of interest.

### P1503 THE CLINICAL VALUE OF ENDOSCOPIC FULL-THICKNESS RESECTION FOR COLORECTAL SUBMUCOSAL TUMORS ORIGINATING FROM THE MUSCULARIS PROPRIA: A PROSPECTIVE SINGLE-CENTER STUDY

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**Introduction:** Given diminishing quality of life caused by colectomy and rectectomy, a minimally invasive treatment is desirable for colorectal submucosal tumors (SMTs).

**Aims & Methods:** The aim of the current study was to evaluate the clinical efficacy, safety and feasibility of endoscopic full-thickness resection (EFTR) for colorectal SMTs originating from the MP layer. A prospective study was carried out, including a consecutive cohort of 56 patients who underwent EFTR for colorectal SMTs originating from the MP layer between January 2008 and September 2014 in our center. Among these lesions, 21 located in the colon, 9 located in the intraperitoneal rectum and 26 located in the extraperitoneal rectum. The tight adhesion of the lesion to the serosal layer was identified before EFTR in all cases. EFTR was performed using a standard ESD technique under direct endoscopic view. The defect of colorectal wall was closed after resection in all cases. Complete resection rate, complications and lesion recurrence were evaluated.

**Results:** Successful EFTR was performed in 54 (96.4%) patients. The other 2 patients were transferred to suffer laparoscopic right hemicolectomy and EFTR combining laparoscopic operation respectively, because the lesions involved the external organs and were too difficult to get en bloc resection endoscopically. The en bloc resection rate and complete resection rate were both 96.4% (54/56). Among 54 cases, 52 of these lesions were performed with EFTR without laparoscopic assistance, while 2 needed laparoscopic assistance to get the defect closed after resection. The median operation time was 45 min (range, 20–130 min). The median maximum diameter of resected tumors was 1.5 cm (range, 0.5–5.0 cm). Accurate histopathologic results were acquired from all the resected lesions, including 18 leiomyomas, 11 gastrointestinal stromal tumors (GISTs), 8 fibrous tumors, 3 schwannomas, 11 granulomas, 2 displaced endometrium, and 1 hamar- toma. Three patients had local peritonitis and two patients developed postoperative bleeding. All of them recovered after receiving conservative treatments. No single case developed diffuse peritonitis. No lesion residual or recurrence was found during the follow-up period ranging 2–54 months.

**Conclusion:** EFTR appears to be a safe, feasible, and effective procedure for providing accurate histopathologic evaluations, as well as a curative treatment for colorectal SMTs originating from the MP layer. However, it should be performed by the very experienced endoscopists.

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

### P1504 COLONIC ESD BY UTILIZING SHORT DOUBLE BALLOON ENDOSCOPE—HOW TO TREAT DIFFICULT CASES IN COLONIC ESD

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**Introduction:** Colon ESD has been a standard treatment in the world. However, sometimes it is hard to remove the colon tumor during ESD. When we fail to detach the colon with ESD, we have to consider the following three points: if we don’t have enough experience and skill, we should take the training more. If there are lots of vessels and fibrosis in the submucosal layer, it is necessary to choose adequate tools. And if patients have complicated colon, suitable endoscope need to be selected. In such cases we always use DBE.

**Aims & Methods:** We evaluated the outcomes of colonic ESD by using DBE (DBE-ESD). Short DBE we used were EC4501B, EN5301B and EI5801BT (Olympus 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 of the options 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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Introduction: Adenoma detection rate (ADR) is a quality indicator of screening colonoscopy. Monitoring withdrawal time (WT) and use of full-spectrum endoscopy (FUSE) have been suggested to increase the ADR since allow an accurate evaluation of the hidden areas of the colon.

Aims & Methods: We aimed to evaluate whether monitoring WT of 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 WTs were measured without the endoscopists' knowledge of being monitored. In phase 2, endoscopists were informed of being monitored and performed further 660 colonoscopies either with SFVE (n = 330) or with FUSE (n = 330).

Results: No differences were observed among the four arms in terms of demographic, clinical features, and indications to colonoscopy. WT was lower in phase 1 arms compared to phase 2 arms (SFVE: 267 ± 96 vs. 387 ± 65, p = 0.001; FUSE: 293 ± 112 vs. 430 ± 93, p = 0.001). When endoscopists were aware of being monitored and used full-spectrum endoscopy 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 0.50 ± 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 SFVE 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 suboptimal WT, which increases with the use of full-spectrum scopes combined with WT monitoring results in increase of adenoma detection rate. In particular, monitoring WT increases the detection of adenomas in proximal colon, whereas the use of FUSE seems to increase the detection of adenomas in distal colon.

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

P1506 HIGH LEVELS OF “PRESUMED POLYP MISS RATE” AT 1 AND 3 YEARS FOLLOWING INDEX SCREENING COLONOSCOPY: NO ROOM FOR COMPLACENCY


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Introduction: Colonoscopy with polypectomy is considered the optimal method for bowel cancer prevention. Despite improvements in colonoscopy training and technology, it remains as an imperfect tool and the adenoma miss rates vary between 6–27%.

Aims & Methods: Aim is to determine the presumed miss rate for adenomas and sessile serrated adenomas/polyps (SSA/Ps) after a complete screening colonoscopy. Methodology: A prospective observational study was performed at our bowel cancer screening centre over 12 months from July 2015. Patients who underwent a surveillance colonoscopy following an index colonoscopy were included (one and three-year surveillance). All colonoscopies were performed by one endoscopist who used full spectrum bowel cancer screening colonoscopies. Polyp characteristics and procedural data were prospectively recorded and collected. Polyp histology and epidemiologic 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%(167/798), 41.7%(20/48) and 15.2%(36/236) respectively. More adenomas were missed in the proximal colon when compared to distal colon (26.64% vs 18.04%, p = 0.01). Table 1 illustrates the distribution of missed adenomas in each segment of the colon. Adenoma miss rates per size as follows: <5 mm, 6-9mm and >10mm were 24.27 and 8% respectively. Higher number of polyps (>3 detected during index colonoscopy independently correlated with high miss rates (84.3% vs 72%, p = 0.04).

Table 1: Missed polyps at different colonic segments

<table>
<thead>
<tr>
<th>Location</th>
<th>Adenoma miss rate (%)</th>
<th>Sessile serrated adenoma miss rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rectum</td>
<td>9</td>
<td>33</td>
</tr>
<tr>
<td>Rectosigmoid junction</td>
<td>19</td>
<td>0</td>
</tr>
<tr>
<td>Sigmoid colon</td>
<td>23</td>
<td>50</td>
</tr>
<tr>
<td>Descending colon</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>Splenic flexure</td>
<td>26</td>
<td>0</td>
</tr>
<tr>
<td>Transverse colon</td>
<td>27</td>
<td>30</td>
</tr>
<tr>
<td>Hecrapic 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 BSOG (British Society of Gastroenterology) guidelines for an early, 1 year colonoscopy when multiple polyps are seen. The presumed miss polyp 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 assess periodontal disease according to periodontosis-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; 1.247]. Similarly, those with periodontal disease had comparable odds for colorectal adenomas as those without signs of periodontal disease [1.055 (0.785; 1.418)]. In the table below the adenoma detection rate (ADR) and advanced adenoma detection rate (AADR) divided into the periodontosis-risk classes.

<table>
<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.
Introduction: Patients with colitis carry an increased risk for the development of dysplasia compared to those without1. The SCENIC consensus statement recommended 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 colitis of the colon 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: Thirty lesions satisfied the inclusion criteria in 13 patients. Patient demographics and clinical data are presented in Table 1. Mean lesion size was 47.3 ± 22.4 (20–90) mm. All lesions were non-polypoid with distinct margins and no ulceration. High-frequency mini-probe ultrasound confirmed intramucosal lesions in 5 cases where pit/vascular pattern was distorted due to inflammation. En bloc resection was achieved in 6 cases. 69% lesions were deeply scarred malignantly in 100% of 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 complications in colorectal mucosal lesions after endoscopic submucosal dissection (ESD) has been widely used in the minimally invasive treatment of early colorectal mucosa and submucosal lesions. This technique has made it possible to resect even large mucosal or submucosal lesions en bloc, and the recurrence rate is lower. However, due to the thinner colorectal wall and more abundant blood vessels, postoperative complications after ESD is higher in this site. As a result, how to prevent complications related to ESD for colorectal lesions has raised widespread concern. In recent years, more and more researchers placed transanal tube for patients with colorectal cancer resection or intestinal obstruction to promote the early discharge of the gas and liquid in the intestine. The efficacy of this method to reduce incidence of complications and to promote recovery of intestinal function have been verified by a number of studies. Based on this, we applied transanal tube to some patients with colorectal ESD, hoping to provide new ideas for the prevention and treatment of complications.

Aims & Methods: We aimed to evaluate transanal tube for prevention of complications in colorectal mucosal lesions after endoscopic submucosal dissection (ESD). Data of 61 patients with colorectal mucosal lesions undergoing ESD from January to December 2016 were reviewed. All patients were followed up and we analyzed the incidence rate of complications after ESD within one month.

Results: The median age of 61 patients was 61(32–83) years. 21 of all lesions were located at right-below group, 9 at left-below group and 31 in rectum. The mean diameter of the lesions was 3.26 ± 2.27 (0.8–12.0) cm. There were not intraoperative complications including serious bleeding and perforation. Delayed bleeding on the second post-ESD day was detected in 1 (1.6%) patient who was cured by transfusion. 3(4.9%) patients suffered post-ESD electrocoagulation syndrome and perforation did not present in all cases. In this group with transanal tube for decompression, the rates of perforation, delayed bleeding and post-ESD electrocoagulation syndrome were all lower than others which was 1.4 ~ 8.2%, 0.5% ~ 9.5% and 12.1% ~ 40.2% respectively in literature reports.

Conclusion: The application of transanal tube in colorectal mucosal lesions after ESD could effectively reduce the incidences of complications. However, we should do more research to know whether transanal tube need to be placed routinely after ESD or not.

Disclosure of Interest: All authors have declared no conflicts of interest.
P1510 OUTCOMES FOLLOWING UNDERWATER ENDOSCOPIC MUCOSAL RESSECTION OF MID-RECTAL 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 CO\(_2\), and submucosal lifting is usually not required, as water-immersed submucosa cushions itself from the muscularis propria.\(^1\)\(^2\) Theoretically, this reduces the risk of diathermy-induced injury,\(^3\) and allows for more complete resection margins.\(^4\)

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. Studies outcomes included: 1) completeness of UEMR, 2) intra-procedural and 30-day complication rates, 3) percentage requiring submucosal lift, and 4) rates and predictors of polyp recurrence. Procedures were performed by two screening endoscopists accepting tertiary referrals at St. Mark’s Hospital, London, and Russell’s Hall Hospital, Dudley, UK. Recurrence was defined as the presence of any polyp tissue at the resection site. Endoscopy records were examined and correlated with histology. Univariate analyses were performed using Pearson’s chi\(^2\) 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 (35.4%) 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 polyp (2.6%).

Overall, resection at index UEMR was deemed endoscopically complete in 97.9%. Submucosal lift was required in 27.8% and positively correlated with polyp size >30 mm (OR 3.58, 95% CI 1.37–9.38, p = 0.01), but not morphology (flat vs. sessile, p = 0.09). The 30-day complication rate was 4.1% (n = 4), consisting of 2% procedure-related bleeding (n = 2), average diameters: 35 mm) and delayed rebleeding (n = 2; average diameter: 57.5 mm), with haemostasis achieved for all cases. No cases of perforation or mortality were identified. Of the 60.8% (n = 59) who attended for repeat endoscopy post-UEMR, the rate of recurrence or residual polyp was 14.8% (IQR 5.4) at 4 months and 15.2% (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 = 0.03) and recurrent polyp (OR 4.17, 95% CI 1.02–17.05, p = 0.03) and recurrent polyp (OR 4.17, 95% CI 1.02–17.05, p = 0.03).

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,\(^5\) but may be skewed by the tertiary referral nature of the patients. 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

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 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 the study in the past decade and current clinical practice. Study 1: Studies registered at Clinicaltrial.gov were searched for using the search term "water colonoscopy". Study 2: Members of International Waters voluntarily participated in a survey after their attendance at the 4th meeting to obtain a cross-sectional snapshot of current clinical practice. Study 1: Studies registered at Clinicaltrial.gov were searched for using the search term "water colonoscopy". Study 2: Members of International Waters voluntarily participated in a survey after their attendance at the 4th meeting to obtain a cross-sectional snapshot of current clinical practice.
the main complication (48.26%) events, requiring surgery in 5 (10.4%) cases. Perforation was related statistically significant to location (p < 0.05) and LST morphology (p = 0.05). Most frequent location of perforation was transverse colon (OR 88.3; SE 37), 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-G lesions vs LST-G (OR 14.1; SE 19.3) vs LST-E (SE 15.6). 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 1.0; p = 0.9). Post-ESD complications were observed in 15 (8.2%) patients (delayed perforation, bleeding, 0.4%, electrocautery ulceration syndrome, severe esophageal stricture, haemopertoroneum (1) and splenic rupture (1)). Six cases (40%) were managed with surgery. Results from the learning curve progression according to consecutive chronological blocks of 50 cases (33 last bloc) are summarized in table 1. 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 a 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

PI1513 ENDOSCOPIC SUBMUCOSAL DISSECTION FOR COLORECTAL ADENOMATOUS POLYPS: 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 for 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 ≥ 2 cm were included. Lesions were assessed with magnification chromoendoscopy supplemented by colonoscopic ultrasound in selected cases. A lesion specific approach was adopted to technique, with a high level of 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 operating rate of 4.7% after a mean follow up of 19 months. There were 6 microperforations treated with either endoscopic clips or antibiotics alone with no adverse sequelae, and one clinically significant perforation requiring surgery. However, the resected lesion in this case contained an invasive adenocarcinoma with deep submucosal invasion—there was no residual tumour in the surgical resection specimen. Post- procedure bleeding occurred in 6 patients, none of whom required additional intervention. 0.5% of cases 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 to 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.

PI1514 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. Clinopathological 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). 79% 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 patients were 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.

PI1515 RISK OF HIGH-GRADE DYSPLASIA AND SUBMUCOSAL INVASION IN DIFFERENT MORPHOLOGICAL SUB-TYPES OF LARGE COLORECTAL NEOPLASTIC LESIONS RESECTED AT A UK TERTIARY REFERRAL CENTRE

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Abstract: P1512

N = 183

101–150 151–183

1–50 51–100 Total (n, %)

Colorectal location (n, %)

40/50 (80%) 42/50 (84%)

34/50 (68%) 25/33 (75.7%)

25/33 (75.7%) 141/183 (77%)

Success(%,)

47/50 (94%) 46/50 (92%)

50/50 (100%) 33/33 (100%)

176/183 (96.2%) 176/183 (96.2%)

En bloc(%,)

47/50 (94%) 46/50 (92%)

50/50 (100%) 33/33 (100%)

172/183 (93.9%) 172/183 (93.9%)

0(%,)

45/50 (90%) 45/50 (90%)

48/50 (96%) 31/33 (94%)

169/183 (92.3%) 169/183 (92.3%)

Speed (cm/min) Mean (SD)

76.8 (5.02) 15/33 (7.76)

6.7 (5.5) 6.5 (5.1)

9.01 (19.1)

Perforation(%,)

16/50 (32%) 13/50 (26%)

9.50 (18%) 10/33 (30.3%)

48/183 (26.2%) 5/48 (10.4%)
Introduction: Although it is well recognised that the risk of invasive carcinoma in apparently benign 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 (HG-D) 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.

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.
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

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Introduction: Endoscopic mucosal resection (EMR) has been shown to be useful in the removal of large colorectal adenomas. These lesions are often resected by using a piecemeal technique, which a risk of recurrence in 10% to 30% of cases. Recently, hot avulsion technique (HA) has shown promising results in the resection of residual fragments of large colorectal adenomas, with lower recurrence rate.

Aims & Methods: The aim of this study was to evaluate the efficacy and safety of HA at index EMR and at EMR local recurrence. We did a retrospective study based on all the HA performed between June 2015 and February 2017. The endoscopic characteristics, complications and recurrence rate after the initial HA were evaluated.

Results: 33 HA were performed among 29 patients (16 men and 13 women) with an average age of 69 years. The average follow up time was 11 months. HA was used to remove residual adenomatous tissue at 17 index EMR (mean size of the lesions 30 mm) and to remove recurrent fibrotic adenomatous tissue at EMR scar in 12 cases (mean size of recurrence tissue 14 mm). HA was successful in removing residual/recurrent adenomatous tissue in all patients. There were no immediate or long term adverse events. Comparing the two groups, local recurrence after initial HA occurred in one case at the index EMR group (1/17) and in 2 cases at the local EMR recurrence group (2/12). The overall recurrence rate in patients with a minimum 6 months follow up was 15% (3/20).

Conclusion: HA is a safe and effective technique to eradicate both residual tissue in large colorectal adenomas and recurrent fibrotic adenomatous tissue at EMR site, with low recurrence rate.

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

References
P1522 QUALITY IN BOWEL CLEANSING, PERFORMANCE MEASURES AND PATIENTS 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: In screening colonoscopies performed by 20 endoscopists were included in this study. 50.3% of screened individuals were women. Because of the unequal patient count using CitroFix® (CF, n = 261), Picoprep® (PP, n = 2678), Klean-Prep® (KP, n = 804) and Moviprep® (MP, n = 1252), PC and CF were grouped as low volume (LV) purgatives, age and gender adjusted success rates and ADR per purgative were 97.0% and 23.3% for LV, 97.5% and 32.5% for KP and 93.5% and 26.0% for MP. Women had higher success rates than men (p = 0.007) and success rate decreased with patients age (p = 0.008). The 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 rate (p = 0.027). 93.5% of patients in the LV group would use the same purgative again compared to 68.4% in the KP and 73.2% in the MP group.

Conclusion: All investigated purgatives met the required quality standards of ≥90% rate of adequate bowel preparation according to the current ESGE guidelines. Success rates were higher in women and younger patients. Although only <90% of patients consumed the whole volume, the majority of patients would use the same purgative again.

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

P1524 DIFFERENCES IN QUALITY OF BOWEL PREPARATION AT SCREENING COLONOSCOPY 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 the actual ESGE guideline “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 bowel preparation quality in 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 five categories: excellent, good, fair, 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 = 30.36) in private practices vs. 27.92% (SD = 23.11) in hospitals, p = 0.0215), fair (10.68% (SD = 10.89) vs. 15.18% (SD = 9.93), p = 0.0000) and unsatisfactory (0.66% (SD = 0.96%) vs. 1.43% (SD = 1.76), p = 0.0003) while there was no statistical significance among the average values from participants with good bowel preparation quality (47.40% (SD = 26.38) in private practices vs. 51.78% (SD = 19.28) in hospitals, p = 0.6428), poor (2.57% (SD = 2.90) vs. 1.75% (SD = 2.89), p = 0.2987) 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 variable analysis showed evidence 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 = 0.045) were found to be a significant risk factor for LRN.

Conclusion: This retrospective study shows that the occurrence of LRN is frequent. Careful colorectal 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.
Introduction: Familial adenomatous polyposis (FAP) is an autosomal dominantly inherited condition associated with a lifetime risk for colorectal cancer close to 100%. Thus prophylactic colectomy is recommended for patients with FAP. Colectomy with ileorectal anastomosis 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 patients (40%) had rectal involvement (HRA–12 patients (40%); intramucosal 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.

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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 examine the left side of the bowel for diagnostic and surveillance purposes, and is now part of the UK bowel cancer screening programme. It is crucial to achieve adequate bowel cleansing in order to optimise the diagnostic yield of the test, and also to minimise the number of repeat procedures. However, the optimum bowel preparation for this procedure has consistently been debated.

Aims & Methods: Both phosphate enema and (PEG-ES) are commonly used for bowel preparation in flexible sigmoidoscopy at both hospitals participating in this study. We therefore wanted to compare the outcomes for these two methods. We retrospectively reviewed all the patients who underwent flexible sigmoidoscopy from January 2014 to December 2016 using each hospital's electronic endoscopy reporting system. We analysed their demographics, type of bowel preparation used in each case, and the quality of their individually achieved bowel preparation, subjectively graded as “Excellent, Adequate or Inadequate” by the endoscopist performing the procedure. A chi-squared test was used to calculate p-values.

Results: In total 6196 patients underwent flexible sigmoidoscopy during the study period (males 2885 (46.56%), mean age 62.80 years, range 16–101 years). 1247 (20.13%) patients were excluded from further analysis for the following reasons: No bowel preparation, subjectively graded as “Excellent, Adequate or Inadequate” (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 (46.89%), mean age 60.97 years, range 18–95 years) and 2846 (57.50%) (males 1269 (44.59%), mean age 63.98 years, range 17–101 years) had phosphate enema. The results are summarised in the table below.

<table>
<thead>
<tr>
<th>Type of bowel preparation</th>
<th>Excellent</th>
<th>Adequate</th>
<th>Total Adequate and Excellent</th>
<th>Inadequate</th>
</tr>
</thead>
<tbody>
<tr>
<td>(PEG-ES) (n = 2103)</td>
<td>1126 (53.54%)</td>
<td>977 (45.61%)</td>
<td>1074 (98.15%)</td>
<td>207 (9.84%)</td>
</tr>
<tr>
<td>Phosphate enema (n = 2846)</td>
<td>624 (21.93%)</td>
<td>1297 (45.57%)</td>
<td>1921 (67.50%)</td>
<td>925 (32.50%)</td>
</tr>
<tr>
<td>Total (n = 4949)</td>
<td></td>
<td></td>
<td></td>
<td>P &lt; 0.001</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 the preferred option at our hospitals, if there is no contraindication for this.

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

References


P1528 MANAGEMENT OF RESECTION OF LARGE COLONIC 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. 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: 4253 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 34.7%, underwear 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, 4.8% dual antiplatelet, 15.4% vitamin K antagonists [VKAs], 5.1% direct oral anticoagulants [DOACs]). Aspirin and/or thienopyridines were withheld before resection in 53.6% and 91.7% of patients, respectively. Overall, intra-procedural bleeding requiring endoscopic therapy occurred in 8.1% of patients; 28% of them were on ATT, which had always been withheld, but in 48% of patients on aspirin. At multivariate analysis, intra-procedural bleeding was correlated with increasing polypl 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 for perforation, 0.0% (0.9% early and 0.6% delayed) of patients, 86.7% of whom were successfully managed endoscopically. At the moment, 6-months follow-up is available for 35% of the patients, with a positive sessile and/or histological recurrence documented in 22.8%.

Conclusion: The management of resection of LCLs varies widely. The incidence of intra-procedural bleeding correlates with polyp size and prophyllactic 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 ENDOCOPIC 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 through 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 over 2 cm between 2012 and 2017 were collected. Data of endoscopic procedures, complications of polypectomy and histological assessments of the removed polyp were obtained.

Results: Data of 100 patients (male/female: 58/42) was analyzed in the study. Five percent of the 106 removed polyps proved to be pedunculated, 21 were sessile and 34 flat. Six patients had more than one large polyp (>2cm). 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 34 (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 polypectomy 91 hemoclips were deployed to close suspected perforation (8 cases) to cease bleeding (19) or for prevention. Postpolypectomy syndrome developed in 8 cases. Second-look colonoscopy was required in 8 cases due to bleeding within a mean of 4 days after the first examination. Hemoclip insertion was needed in 5 cases and epinephrine injection in 1 case. The bleeding stopped spontaneously in 2 cases. Surgery was needed in 3 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

P1531 ENDOCOPIC SUBMUCOSAL DISSECTION (ESD) OF SUPERFICIAL COLORECTAL NEOLASMS AT THE ANAL CANAL AND ILEOCOEAL VALVE
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Introduction: Endoscopic resection of superficial neoplasms at the perineal rectum is difficult due to pain sensitivity, narrowness of the anal canal, presence of internal rectal plexus, whereas that of at the ileocecal valve (ICV) due to the variable morphology of the ICV itself and ileal involvement.

Aims & Methods: Aim was to assess the feasibility and outcomes of ESD in these locations. Prospectively collected database in a single nonacademic center. From 2010 to 2016, all consecutive patients scheduled to ESD for a superficial neoplasm in the perineal rectum (distal margin < 30 mm from the dentate line) and at the ICV were compared to those in the pelvic rectum and in the cecum and ascending colon, respectively. ESD was performed with the standard technique. Follow-up was scheduled at 3 and 6 months within the first year and then yearly. Biopsies were taken from the scar of the resection site if a residual tissue was detected.

Results: A total 16 neoplasms at IVC were compared to 110 neoplasms in the cecum and ascending colon; 30 neoplasms in the perineal rectum were compared to 84 cases in the pelvic rectum (Table). Features of neoplasms in the perineal and pelvic rectum were no different as well as neoplasms at the IVC and cecum and ascending colon. ESD en block rates were lower in the perineal rectum and at the IVC, but no significant differences were found with the respective control groups (P = 0.490 and 0.404, respectively). ESD R0 rate was significantly lower at the IVC (P = 0.021). Adverse events were not different, although 3 perforations occurred in the cecum and ascending colon. During follow-up (median 36 months; range 24-84); residual tissue was diagnosed at the ICV in 2 (13%) cases, in the cecum and ascending colon in 2 (2%) cases (P = 0.078); in the perineal rectum in 4 (13%) cases and pelvic rectum in 2 (3%).

Conclusion: The ESD of neoplasms at the IVC and perineal rectum is feasible and effective. The complete resection rate is low due to the challenging anatomy of

Reference

P1530 WHAT IMPROVED AND WHAT REMAINS TO BE ACHIEVED IN ORDER TO COMPLY WITH THE NEW RECOMMENDATIONS OF PELOCOPYETOMY BY THE EUROPEAN SOCIETY OF GASTROINTESTINAL ENDOSCOPY
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Introduction: The choice of polypectomy technique differs according to regional preferences and availability. This year, in order to standardize the approach to this techniques, the European Society of Gastrointestinal Endoscopy (ESGE) published recommendations for colorectal polypectomy and endoscopic mucosal resection (EMR).1

Aims & Methods: We aimed to evaluate the recent years evolution of the adherance to the recommendations of colorectal polypectomy and EMR at a tertiary center. We conducted a unincentric analysis of polypectomy and mucosectomy techniques performed consecutively between January and June of 2011 and 2016 at a tertiary center. According to the recommendations, the excision of sessile and flat polyps is considered adequate when performed with cold biopsy forceps or cold snare for polyps ≤3 mm, cold snare if 4-9 mm, cold or hot snare if 10-19 mm and EMR if ≥20 mm. Polypectomy of pedunculated polyps is considered adequate when performed with a diathermic loop in polyps <20 mm, always in association with any prophylactic therapy when polyp size ≥20 mm.

Results: We included 1721 endoscopic procedures of polypectomy and EMR, corresponding to 596 patients (64.2%/n = 900) of those ≥20 mm lesions. For pedunculated 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). Adverse events were not different, although 3 perforations occurred in the cecum and ascending colon. During follow-up (median 36 months; range 24–84): residual tissue was diagnosed at the ICV in 2 (13%) cases, in the cecum and ascending colon in 2 (2%) cases (P = 0.078); in the perineal rectum in 4 (13%) cases and pelvic rectum in 2 (3%).

Conclusion: Even before publication of the European recommendations, there has already been an increase in the proportion of polypectomies performed adeguately 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 follow-up is mandatory to detect residual neoplasms.

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 developed and developing countries, with associated economic and social burden. Early diagnosis is key, and endoscopic resection of colorectal tumors is a well-established therapy for early-stage disease. However, endoscopic treatment is limited in patients with unresectable tumors, and alternative treatments are required. Self-expandable metallic stents (SEMS) are considered as 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 median age of 75.2±13.47 years. The stents were placed with a palliative purpose in 69.6% of cases (n=16) and a transitory procedure before surgery in 30.4% of cases (n=7). Technical and clinical success was found in 91.3% of the patients, without any recorded death during the procedure. In patients whose goal was palliative treatment (75% men and 25% women) they had a mean age of 81.6±9.28 years. In 43.6% 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, approximately 25% of the patients did chemotherapy. There was a 75% mortality rate (37.5% died by 6 months and 37.5% died by 12 months of follow-up). The use of chemotherapy after SEMS placement influenced the complications associated with the procedure (p<0.05) but none of the other variables had a statistically significant influence on early death (up to 6 months).

Conclusion: SEMS is an effective and safe palliative option for unresectable tumors, although the use of chemotherapy after the placement of prostheses may have an influence on the appearance of complications. Malignant colon obstruction of the colon can be treated effectively with the use of endoscopic techniques.

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

References

P1533 RISK FACTORS FOR ADENOMA RECURRENT AFTER ENDOSCOPIC MUCOSAL RESECTION OF LARGE COLORECTAL POLYPS

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Introduction: Endoscopic mucosal resection (EMR) has been shown to be a safe and effective technique for removal of large colorectal adenomas. However, local adenoma recurrence remains a significant limitation, with prior published data describing recurrence rates of 10% to 30% post EMR.

Aims & Methods: This study was aimed to evaluate the outcomes of EMR for large colorectal adenomas and identify the risk factors for adenoma recurrence. We did a retrospective analysis of the colorectal EMR performed between June 2009 and December 2016. Resected lesions larger than 20 mm in diameter with at least 3 months follow up were included. Patients referred for surgery were excluded.

Results: During the study period, 201 colorectal lesions ≥20mm in size were removed after EMR (with associated polypectomy in 68.9% of cases). Mean lesion size was 35 mm and 137 (68.2%) were located in the rectum and left colon. 66 lesions (32.8%) were larger than 40 mm in diameter. Piecemeal resection was performed in 171 lesions (85.1%). Local adenoma recurrence occurred in 44 cases (21.9%) after a mean time of follow up of 7.6 months, and the majority was managed with polypectomy or new EMR. The cumulative risk of adenoma recurrence was 7.5% at 3 months, 15.5% at 6 months and 17.1% at 12 months. In the multivariate analysis, the variables associated with a high risk of recurrence were lesions ≥80 mm in size (p=0.001) and intra-procedural bleeding (p=0.020). The recurrence rate was higher in the patients treated with argon plasma coagulation (p=0.046).

Conclusion: After EMR of large colorectal adenomas, local recurrence rate was 21.9%. The risk factors for adenoma recurrence include lesions ≥40 mm and intra-procedural bleeding. Argon plasma coagulation was not associated with lower recurrence rate.

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

References

P1534 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±5.86 years, 69.1% men) who underwent a baseline colonoscopy with ≥1 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 detect the impact of real times within patients of the same risk. An adjustment for baseline covariates (high-grade dysplasia, villous component) by Cox analysis was also performed.

Results: The real follow-up times in ≥1 adenomas (n=853, 73.18%) and ≥10 mm adenomas (n=799, 66.81%) were 38.54±11.57 and 38.66±11.68 months. The risk of advanced lesions were 0.26%, 1.46%, 2.38%, 9.09% and 10.38% (p=0.0121 advanced lesions in 12, 24, 36, 48 and ≥60 months respectively. The most important increase was at 3–4 years (p=0.052/month). The proportion of advanced lesions within 1–2 adenomas and ≥3 adenomas subgroups at 48 months were 5.43% and 10.43% (p<0.001), but with no differences in small adenomas (<10 mm (p=0.478).

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.

P1535 CLINICAL OUTCOME OF ENDOSCOPIC SUBMUCOSAL DISSECTION OF MALIGNANT NON-PEDUNCULATED COLORECTAL LESIONS

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Introduction: Conventional endoscopic resection, such as snare polypectomy and endoscopic mucosa resection (EMR) of benign polyps in colon and rectum reduces colorectal cancer (CRC) incidence and mortality but the role of endoscopic resection of colorectal polyp removal has been questioned. Endoscopic submucosal dissection (ESD) results in high short-term resection rates of large (≥2cm) benign lesions resulting in low numbers of recurrences. However, there is limited data in the literature on the potential role of ESD in the treatment of patients with early CRC. In the present study, we present our results on performing ESD in patients with small sessile and flat malignant lesion in the colon and rectum in a large European center.

Aims & Methods: Our aim was to investigate the potential role of ESD in treatment of early colorectal cancer. We retrospectively reviewed medical records of
254 patients that underwent colorectal ESD at the endoscopy unit at Skane University Hospital in Malmo¨, Sweden from Jan 2014 to Dec 2016. Indications for ESD were flat and sessile lesions larger than 20 mm in diameter with low or high graded dysplasia (251 cases). Moreover, three patients with known colorectal adenocarcinoma underwent ESD due to significant morbidity excluding surgery, which was identified and included 29 cases of histologically verified submucosal invasive CRC in this study.

Results: This study included 29 patients with median age of 69 years (range 44–89 years). Median tumour size was 40 mm, ranging from 20 - 70 mm. Tumours were either flat (Paris classification Ha, 6 cases), sessile (Paris classification 1s, 19 cases) or a combination of flat and sessile (4 cases). Half of the lesions were located in the rectum and half in the colon. En bloc resection was achieved in 24 cases (83%), piecemeal resection in 4 cases (14%) and ESD was incomplete in one case. Rx complete the resection was found in 26 cases (90%). R0 resection was found in 20 specimen (69%), RX was found in 3 cases (10%) and R1 was found in 5 cases (17%). Lymphovascular involvement was seen in 6 cases (21%). 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 other complications (8.4 days vs. 5.8 days, p < 0.05). The post-procedure hospital stay was concerned, in 55% of the cases, the discharge of the patients occurred after 6–12 days, whereas in the remaining cases, the hospital stay was longer than 12 days. In the majority of cases, the post-procedure hospital stay was 7–10 days. The within hospital mortality was 0.3% (8 cases). Since its introduction in 1968, Endoscopic retrograde cholangiography pancreatitis (PEP) has been a well studied entity. In the last few years, the clinical presentation of pancreatitis, the use of prophylactic necrosis, the patient's post-procedure status; the total complication rate 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.

Conclusion: 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 complication sex ratios were calculated. The mean age, which was equal to 68.3 ± 14.2 (range 6–98 yrs), was higher in the females (69.1 ± 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 other complications (8.4 days vs. 5.8 days, p < 0.05). The post-procedure hospital stay was concerned, in 55% of the cases, the discharge of the patients occurred after 6–12 days, whereas in the remaining cases, the hospital stay was longer than 12 days. In the majority of cases, the post-procedure hospital stay was 7–10 days. The within hospital mortality was 0.3% (8 cases). Since its introduction in 1968, Endoscopic retrograde cholangiography pancreatitis (PEP) has been a well studied entity. In the last few years, the clinical presentation of pancreatitis, the use of prophylactic necrosis, the patient's post-procedure status; the total complication rate 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.

Conclusion: Study findings uncovered that pancreatitis was the most common post-procedure ERCP complication in the patients studied; the total complication rate was in line with that reported in the literature. That result and the fact that no correlation was found between the sex and type of complications and the type of hospital can be attributed to the effective regional hospital organization characterized by a capillary network of specialists capable of performing complete endoscopic procedures throughout the region limiting the need to transfer patients from one hospital to another.

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

P1537 TRENDS IN STATISTICS REGARDING ELECTIVE ERCP PROCEDURES IN THE VENETO REGION: A RETROSPECTIVE STUDY BASED ON ADMINISTRATIVE DATABASES

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Introduction: Since its introduction in 1968, Endoscopic retrograde cholangiography pancreatitis (ERCP) became a common therapeutic tool in the biliary system used to diagnosis and to treat conditions associated to the pancreatobiliary system. It is nevertheless associated to the highest risk of complications of all routine endoscopic procedures. It is important to have a thorough understanding of the potential complications and the adverse events that may be associated to ERCP procedures so that these may be managed appropriately should they occur. The aim of this study was to examine the trends in ERCP usage here in the Veneto Region (Northeastern Italian area) and, in particular, the complications and mortality rate associated to it.

Aims & Methods: Utilizing an anonymous database of hospital discharge records referring to the period between 2007 and 2015, a retrospective study was carried out to examine the complications associated to ERCP. All of the elective hospitalizations for gallstones in the bile duct during which the procedure was carried out within two days of being hospitalized were examined. Hospitalizations for neoplasms were not considered. The study considered the onset of complications or death as outcome indicators as well as the patients' post-procedure 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 complications sex ratios were calculated. The mean age, which was equal to 68.3 ± 14.2 (range 6–98 yrs), was higher in the females (69.1 ± 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 other complications (8.4 days vs. 5.8 days, p < 0.05). The post-procedure hospital stay was concerned, in 55% of the cases, the discharge of the patients occurred after 6–12 days, whereas in the remaining cases, the hospital stay was longer than 12 days. In the majority of cases, the post-procedure hospital stay was 7–10 days. The within hospital mortality was 0.3% (8 cases). Since its introduction in 1968, Endoscopic retrograde cholangiography pancreatitis (PEP) has been a well studied entity. In the last few years, the clinical presentation of pancreatitis, the use of prophylactic necrosis, the patient's post-procedure status; the total complication rate 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.

Conclusion: Study findings uncovered that pancreatitis was the most common post-procedure ERCP complication in the patients studied; the total complication rate was in line with that reported in the literature. That result and the fact that no correlation was found between the sex and type of complications and the type of hospital can be attributed to the effective regional hospital organization characterized by a capillary network of specialists capable of performing complete endoscopic procedures throughout the region limiting the need to transfer patients from one hospital to another.

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

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P1538 EFFECT OF OBESITY, DYSLIPIDEMIA AND DIABETES MELLITUS ON THE RISK OF POST-ERCPI PANCREATITIS

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Introduction: Risk factors for post-endoscopic retrograde cholangiopancreatoscopy pancreatitis (PEP) have been widely investigated. Nevertheless, studies focusing in metabolic conditions especially obesity, dyslipidemia and diabetes mellitus (DM) are still limited. The aim of our study was to evaluate the effect of these factors on the frequency of PEP. 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 PEP based on the consensus criteria.The patients with obesity (Body mass index BMI ≥ 30 kg/m²), dyslipidemia (triglyceride > 2g/L or LDL-cholesterol > 1.6g/L) and DM (history of DM or fasting glucose level
biliary stenting or nasobiliary drainage may be required. External biliary fistulas, jaundice and accompanying cholangitis. In some cases, biliary drainage. One patient presented post ERCP pancreatitis (1.5%).

Objectives: In 19 cases of patients with HHD, 11.1% in patients with dyslipidemia (11.1% vs 5.3%) and DM (9.1% vs 5.3%) groups, results did not rich a statistical significance (p = 0.30, p = 0.30) respectively. This could be explained by the effectiveness of patients. In other hand, PEP was less frequent in the obesity group (3.8% vs 6.9%) but there was no statistical significance p = 0.28.

Conclusion: In our study, metabolic conditions were not associated with an increased risk of PEP. It seems to be wise to display mostly the role of these conditions in larger prospective studies since the expanded prevalence of metabolic syndrome in general population.

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

References
previously flushed with contrast. A 0.025” guidewire was then inserted through the needle into the duct and advanced antegrade to the papilla. If further manipulation was necessary to enter the duodenum, movements were performed with caution in order to avoid fragmentation of the guidewire. Whenever the passage through the papilla was not achieved or the guidewire movements were hampered, we performed a microcatheter technique. After removing the needle, leaving the guidewire in situ, a 3F, 150 cm microcath-
er 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 percutaneous 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 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 hepatico-gastrostomy was performed in the same procedure and in 1 patient with chronic pancreatitis with symptomatic pancreatic duct stenosis. There were no adverse events after the procedure, irrespective of technical success.

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 cholangiodrainage (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 alone and 30% when PTCD was applied). Patients with non-anastomotic strictures (NAS) (odds ratio [OR] 0.25, 95% confidence interval [CI] 0.10–0.57; p = 0.001), requirement of PTCD after LT. However, patients with NAS and requirement of PTCD had less favourable outcomes. The pre-interventional bilirubin level could be a valuable parameter to identify patients at risk of treatment failure. Larger ERCP balloon size resulted in higher efficiency.

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

P1543 RESULTS OF THE FRENCH NATIONAL OBSERVATIONAL STUDY CONCERNING THE PRACTICE OF PROBE-BASED CONFOCAL ENDOMICROSCOPY (CELLVIZIO®)
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Introduction: Confocal endomicroscopy is an endoscopic imaging technique per-
imizing the microscopic analysis of the digestive mucosa in real time (esophagus, stomach, duodenum, colon, biliary tract and pancreas) due to injection of fluo-
rescein which is an intravenous contrast. The aim of this national observational study under the guard of SFED is to evaluate the practice of confocal endomi-
icroscopy 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 standardized data collection sheet. All operators were trained in performing standard endomicroscopy. The intravenous injection of fluorescein was given either in bolus or in a perfusion method at a dilution of 1 or 10%. Demographic, clinical, endoscopic and endomicroscopic data were collected. For each act the correla-
tion with the confocal endomicroscopy and histology and the outcome of the ECM depending on the operator was reported.

Results: In total 399 procedures of confocal endomicroscopy were done on 399 patients (median age was 39/ -14.5, males were 52%) and these were per-
formed in 12 centers. The main indications were: diagnosis and monitoring of Barrett esophagus 28% (111/399), surveillance of gastritis 4% (16/399), charac-
terization of colorectal polyp and searching for dysplasia in IBD patients 17% (68/399), undetermined biliary stenosis 11% (42/399), pancreatic cysts 30% (123/ 399), other rare cases (lymph nodes characterization, lymphoma, GIST, celiac 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), serous 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 throughout 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.

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) repre-
sents a crucial procedure in the management of biliopancreatic 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
intervention for the removal of residual CBD stones is limited by lack of appro-
retained common bile duct stones can be improved by digital, single-operator.
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Disclosure of Interest:
P1545 NEWLY DEVELOPED BASKET FOR DIGITAL, SINGLE-
Aims & Methods: We evaluated the role of SOC and newly developed dormia basket for the evaluation and removal of residual stones after lithotripsy. From March to October 2016, 34 patients who had undergone lithotripsy for retained CBD stones with no evidence of filling defects in occluded balloon cholangiography were included. After balloon cholangiography, the bile duct was evaluated by SOC for the complete evacuation of stones. Detected residual CBD stones were directly retrieved with newly developed dormia basket inserted into the working channel of SOC. The incidence of residual stones detected by SOC, and the success rate of residual stone retrieval under SOC were investigated.
Results: SOC was successfully performed in all patients. Of these, 11 patients (32.4%) had residual CBD stones. The residual stones were successfully removed in 10 patients (90.9%) by dormia basket under SOC. (84.6%) except residual stones were directly retrieved with newly developed dormia basket inserted into the working channel of SOC. The incidence of residual stones detected by SOC, and the success rate of residual stone retrieval under SOC were investigated.
Conclusion: Digital SOC combined with newly developed dormia basket is useful for the detection and extraction of residual stones after lithotripsy for retained CBD stones. The effectiveness of SOC compared to the existing methods.
Disclosure of Interest: All authors have declared no conflicts of interest.

P1546 ASOCIATION BETWEEN PREDICTIVE FACTORS AND RISK OF INFECTION DURING ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY
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Introduction: Endoscopic retrograde cholangiopancreatography (ERCP) relies on the use of ionizing radiation in the form of fluoroscopy. Because use of fluoro-
Results: As a result of analysis of the 892 ERCPs performed during 4 years, the mean duration of fluoroscopy time was 5.52 mins (95% CI, 5.15–5.93). Mean radiation duration were as follows: CBD stones (n = 511, 5.76 mins); malignant stenosis of bile duct (n = 189, 5.78 mins); pancreatic disease (n = 95, 5.28 mins); benign stenosis of bile duct (n = 51, 5.52 mins); and periampullary stenosis (n = 80, 5.77 mins). Multivariate analysis revealed that prolonged duration of fluoroscopy time was related with specific factors of patient included age, BMI, diagnosis and procedure complexity (all p < 0.05). Among the parameters, procedure complexity was the most significant relation with radiation dose. In addition, the first procedure and procedure duration: two more procedures performed during ERCP and mechanical lithotripsy (all p < 0.05).
Conclusion: ERCPs are associated with significantly higher radiation exposure to patients. Further investigation of the specific procedures and factors that increase radiation dose is necessary. Increased awareness of the awareness of increased dose of radiation required when performing ERCP in patients with increased BMI, old age, and who need two more ERCP procedure.
Disclosure of Interest: All authors have declared no conflicts of interest.

P1547 DEVELOPMENT OF AN ERCP REGISTRY FOR QUALITY CONTROL AND BenchmarkING
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Introduction: To obtain representative information about invasive endoscopic procedures is a principal goal to monitor efficacy and safety. A web-based, online central registry can serve this aim allowing structured data collection and analyses. The ERCP registry is an essential tool for measuring quality indicators. The universal usage will allow benchmarking at individual, institutional and national level and will help in quality improvement. Efficacy, safety and impact on different pancreatobiliary disorders will be also measurable.
Results: Hungarian experts in ERCP were invited at the invitation of the registry for discussion and consensus. Detailed data collection form was initially developed based on internationally recommended quality parameters. The prospective observational research project was approved by the Scientific and Research Ethics Committee (Budapest, Hungary). A web-based case report form was developed after finalisation and tested from January 2017 at our department. ERCP related data of consecutive patients were collected prospectively after consenting the patients. The data from the first 100 procedures were analysed to demonstrate the usability of the registry. Ninety-two patients (51 females, 41 males) were involved in this preliminary evaluation with an average age of 69.2 years (23–93 years). The number of elective and urgent examinations were almost equal. The indication of ERCP were the following: bile duct disorder based on laboratory or imaging data was the most common indication (in 31%), cholangitis in 16%, acute biliary pancreatitis in 5%, pancreatic disorder in 3%. The difficulty of procedures was evaluated: grade 1–22%, grade 2–45%, grade 3–30%, grade 4–3%. Fifty-nine procedures were performed in patients with malignant stenosis of the bile duct (n=22; 37.9%). Nineteen procedures were performed on the specific procedure. The endoscopists should be aware of the importance of the registry.
Conclusion: The registry is an essential tool for measuring quality indicators. The universal usage will allow benchmarking at individual, institutional and national level and will help in quality improvement. Efficacy, safety and impact on different pancreatobiliary disorders will also be measurable.
Disclosure of Interest: All authors have declared no conflicts of interest.

P1548 DOUBLE-BALLOON ENTEROSCOPY FOR ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY IN PATIENTS WITH SURGERICALLY ALTERED UPPER GASTROINTESTINAL TRACT
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Introduction: Double-balloon enteroscopy-assisted endoscopic retrograde cholangiopancreatography or DBE-ERCP allows access to the biliary ducts of patients with surgically altered GI anatomy. We studied the feasibility and efficacy of DBE-ERCP at our institution.
Aims & Methods: This is a retrospective study of all patients with surgically altered GI anatomy who underwent DBE-ERCP at our institution between February 2011 and March 2017. The primary endpoint was the global success rate of DBE-ERCP. The secondary endpoints were the success rate of entero-
scopy defined as reaching the desired postsurgical anatomic target, the diagnostic success rate defined as successful cannulation of the native papilla or...
anastomosis, and (3) the therapeutic success rate. We used a 2.2 mm DBE with a 2.8 cm of operating channel (EN-450 T5, or EN850T Fujinon inc Saitama Japan).

Results: A total of 12 patients (sex ratio1/1) with a mean age of 65 [47–82] underwent 14 DBE-ERC. 7 patients had Roux-en-Y gastro-jejunostomy with a biliary-gastric cannulation 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- ERC 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 superificial intestinal lacerations without perforation (complication rate 7%).

Conclusion: DBE-ERC 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 difficult techniques.

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

Reference

P1550 TRANSPANCREAL 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 trans pancreatic sphincterotomy. Both situations are well known as Post-ERC 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 Mantel-Haenszel method was used for dichotomous variables. Quantitative synthesis was performed using Review Manager version 5.0. Primary outcome was success rate. Secondary outcomes were rate of overall complications, and pancreatitis. Clinical heterogeneity was assessed by I² value, where a value exceeding 50% was indicative of heterogeneity. A random effect model was used in case of heterogeneity.

Results: Success rate was higher in NKS group compared to TPS (OR 2.98 [95%CI 1.01–8.55, p = 0.05). Complications and risk of pancreatitis were 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 complications 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

P1551 ENDOSCOPIC REMOVAL OFBILE DUCTSTONES - A RETROSPECTIVE SINGLE-CENTER STUDY

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Introduction: Cholelithiasis is a relative frequent condition in patients with gallbladder stones (prevalence of 3–16%). Endoscopic sphincterotomy and stone extraction are the recommended treatment of bile duct stones. In the case of failed endoscopic therapy, cholecystectomy combined with bile duct exploration or intraoperative endoscopic retrograde cholangiopancreatography should be performed.

Aims & Methods: The main objective of this study was to evaluate the efficacy of endoscopic extraction methods in patients who presented cholelithiasis. We conducted a retrospective single center study over 7 years from Jan 2009 to Dec 2015. Patients with single or multiple bile duct stones submitted to endoscopic retrograde cholangio-pancreatography (ERCAP) were included. We analyzed each technique by considering the following parameters: mean diameter of the stone(s), mean diameter of CBD and success rate defined by number of cases solved endoscopically vs. cases of residual lithiasis/referred to surgery. Every ERCAP was performed using Olympus® side-viewing endoscopes. Stone size, number and CBD diameter were documented on the initial diagnostic cholangiogram. Stones were removed using retrieval balloon catheter, Dormia extraction basket, mechanical lithotriptor and CRE® Ballon Dilator (DASE). In case of residual lithiasis, a biliary 10Fr®7Fr Amsterdam plastic stent was placed and a second ERCAP was planned within 2–4 weeks. The efficacy endpoint was the success rate regarding complete clearance of the bile duct. Statistical analysis
CBD stones any diameter Guidelines on the prevention, diagnosis and treatment of gallstones. European Association for the Study of the Liver (EASL). EASL Clinical Practice Disclosure of Interest: 

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 trials published in full text and studied efficacy of diclofenac or indomethacin prospective controlled 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) were not restricted to languages. Trials published 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: CI 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) nor between patients with average-risk and high-risk (P = 0.15). The effect of non-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.

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P1555 RECTAL DICLOFENAC AND PANCREATITIS AFTER ENDOSCOPIC RETROGRADE CHOLANGIOGRAPHY
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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 investigated the potential of rectal diclofenac to prevent post-ERCP pancreatitis (PEP) in a variety of patients.

Aims & Methods: A cohort of 1354 ERCPs performed at the Hospital Clínico of 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 males and 45.9% females. There were 93 procedures in which cannulation of the desired pathway was not achieved but the papilla had been manipulated so they were patients who had 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.

Taken 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 had been cannulated Wirsung, an incidence of PEP of 8.2% was observed in the group treated with Diclofenac, compared to 3.8% in the non-treated group (p=0.006). 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.
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 CARCINOMA BY USING THE DEEP LEARNING TECHNOLNOGY
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Introduction: The confocal laser endomicroscope (CLE) is of two types, an endoscope-based CLE (eCLE), which is integrated in the tip of the endoscope, and a probe-based CLE (pCLE), which goes through the accessory channel of the endoscope. The biliary tract, which cannot be reached by using eCLE, is observable with pCLE by using cholangioscopy. pCLE has the advantage of obtaining a magnification image that is like taking a biopsy tissue specimen but noninvasively, without the interference of bleeding and mucus secretion. However, it is sometimes difficult because only few gastroenterologists can achieve the required level of diagnostic accuracy.

Aims & Methods: We developed a computer-aided diagnosis (CAD) system based on pCLE imaging using deep learning technology. The purpose of this study was to determine the usefulness of this CAD system for the diagnosis of bile duct cancer. We prepared the classifier of the extracted features of the bile duct cancer pCLE images by using the deep learning framework presented by Kyocera communication system Co. Ltd. Japan. The pCLE images by 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 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 69.8%, 50%, 100%, 53.8%, and 100%, respectively. The images of 6 of the 7 false-negative diagnoses reduced the sensitivity and negative-predictive value. The images of 6 of the false-negative diagnoses, indicating a 1.0 probability, did not show signs of cancer at all. A constant diagnosis was possible while being extremely small lesions and weak lesional specificity and positive-predictive value were good, and the pCLE image was thought to have a characteristic suitable for CAD by using deep learning technology. However, many false-negative diagnoses with a probability 1.0 may have occurred owing to deflection and the lack of learning sets. To improve the performance of the model, it is needed to validate for optimal application and sequences of EUS-FNB techniques in the core tissue acquisition and diagnostic accuracy for pancreatic solid lesions.

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 various 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.

P1556 COMPARISON OF EUS-GUIDED FINE NEEDLE BIOPSY TECHNIQUES FOR CORE TISSUE ACQUISITION AND DIAGNOSTIC PERFORMANCE 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 coverage may still remain that which EUS-TS techniques would result in better acquisition of core tissue and diagnostic accuracy.

Aims & Methods: The aim of our study was to evaluate EUS-TS techniques with a ProCore needle using suction and slow pull suction for solid pancreatic lesions with the experience of cytopathologists. Patients referred to EUS-TS for pancreatic mass lesion were enrolled. We performed EUS-guided fine needle biopsy (EUS-FNB) using a ProCore needle (Cook Medical, Limerick, Ireland) with two needle passes and applied each pass of different techniques (suction or slow pull suction) which were randomly allocated. EUS-TS specimens were evaluated by one experienced cytopathologist who was blinded to applied techniques. The acquisition of core tissue and diagnostic performances were compared between two techniques.

Results: From Aug. 2014 to Dec. 2016, 94 patients with pancreatic mass were enrolled and 12 patients were excluded due to no final diagnosis (n = 5), cystic lesion (n = 5) and loss of follow up after EUS-TS (n = 2). Finally, 82 patients (48 males; median age, 63 years) with 164 needle passes were included without technical failure and procedure-related adverse events. The median size of the lesions was 26 mm (range, 11 to 80 mm). There were 68 malignant and 14 benign lesions. Overall core tissue acquisition and diagnostic accuracy was 84.8% (139/164) and 73.2% (120/164), respectively. There was no significant difference between suction and slow pull suction in the acquisition of core tissue (85.4% vs. 84.1%, p = 1.000) and diagnostic accuracy (72.0% vs. 74.4%, p = 0.360).

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 various 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 in Italy.

Results: The 7 false-negative EUS-FNB performed by 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 cystoenteroscope; b) a 0.035-mch wire was advanced through a 10 Fr cystoenteroscope directly in the cystic duct and quanum improved yearly, by using the NAGI-stent. The 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 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 feasible and successful in patients with acute cholecystitis unfit for surgery. Since this type of stent is cheaper compared to others, the use of such device may result more attractive as a further endoscopic option for these selected patients.

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

P1561 EFFICIENCY COMPARISON BETWEEN 22 G VERSUS 25G NEEDLES DURING ENDOCOPIC 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 assessment solid pancreatic masses. The needles for aspiration currently available are 19G, 22G and 25G and there is no concrete evidence to prove the benefit of one against another.

Aims & Methods: We aimed to compare the efficiency in the diagnosis of solid pancreatic lesions through the EUS-FNA with 25G and 22G needles. Two independent reviewers went through the literature search and the results were analyzed by fixed and random effects. The diagnostic characteristics were calculated for a 95% confidence interval.

Results: 504 studies were found in the search, of which 21 were read and then finally randomized studies were selected to be included in the analysis. Thus, a total of 462 patients were evaluated (233: 25G needle; 229: 22G needle). The sensitivity of the 25G needle was 93% (CI, 89–96%; I2 0.0%), and for the 22G needle was 91% (CI, 85–94%; I2 19.9%). The specificity of the 25G needle was 88% (CI, 70–93%; I2 81.1%). 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 post-test probability of the 25G needle in the study population was 95% and the 22G needle was 93%. 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: Based on randomized studies, this systematic review and meta-analysis did not demonstrate a statistically significant 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

Results: 50 patients were recruited during the study period. The mean (S.D.) age was 47.94 (17.23) years and male:female ratio was 42:8. 37 (74%) patients were male and 13 (26%) were female. 25 (50%) of the cases were diagnosed to have malignancy. 24 cases (48%) had stage I disease, and 26 cases (52%) had stage II disease. 16 (32%) patients had stage III disease and 2 cases (4%) had stage IV disease. 50 patients were recruited during the study period. The mean (S.D.) age was 47.94 (17.23) years and male:female ratio was 42:8. 37 (74%) patients were male and 13 (26%) were female. 25 (50%) of the cases were diagnosed to have malignancy. 24 cases (48%) had stage I disease, and 26 cases (52%) had stage II disease. 16 (32%) patients had stage III disease and 2 cases (4%) had stage IV disease.

Conclusion: EGBD is a safe and effective method for achieving gallbladder drainage and no differences were observed in the technical and clinical success rates and adverse events.

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

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CADAVERIC MODEL

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Introduction: Despite advances in radiotherapy for pancreatic cancer, local gastro-intestinal (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 report on the technical feasibility of endoscopic ultrasound (EUS)-guided hydrogel injection into the peripancreatic 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 to increase the peripancreatic space for the course of radiotherapy.

Results: All three cadavers underwent successful EUS-guided injection of the hydrogel. Cadaver 1 received an initial injection volume of 9 cc at the interface between the head of the pancreas and the duodenal wall to increase the peripancreatic space for the course of radiotherapy.

Conclusion: EUS-guided delivery of hydrogel is feasible and results in an increase in the peripancreatic space in a cadaveric model. The hydrogel is clearly visualized during EUS with hyperechoic echogenicity and on post-procedure CT images without any artifacts in all cases.

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

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Introduction: EUS-guided gallbladder drainage (EGBD) is gaining popularity as an alternative method for drainage of the gallbladder in patients suffering from acute cholecystitis that are at high-risk for cholecystectomy. However, the long-term outcomes and the learning curves of the procedure are uncertain.

Aims & Methods: This was a retrospective review of all patients that received EGBD in the Prince of Wales Hospital between June 2012 to March 2017. All procedures were performed or supervised by a single operator. EGBD was performed in patients that are at high-risk for cholecystectomy and suffering from acute cholecystitis or on long-term cholecystostomy tube drainage. Outcome parameters included demographics, technical and clinical success, procedural characteristics, adverse events and follow-up duration.

Results: 50 patients were recruited during the study period. The mean (S.D.) age was 47.94 (17.23) years and male:female ratio was 42:8. 37 (74%) patients were male and 13 (26%) were female. 25 (50%) of the cases were diagnosed to have malignancy. 24 cases (48%) had stage I disease, and 26 cases (52%) had stage II disease. 16 (32%) patients had stage III disease and 2 cases (4%) had stage IV disease. 50 patients were recruited during the study period. The mean (S.D.) age was 47.94 (17.23) years and male:female ratio was 42:8. 37 (74%) patients were male and 13 (26%) were female. 25 (50%) of the cases were diagnosed to have malignancy. 24 cases (48%) had stage I disease, and 26 cases (52%) had stage II disease. 16 (32%) patients had stage III disease and 2 cases (4%) had stage IV disease.
Aims & Methods: To standardize the radiofrequency ablation (RFA) procedure under EUS using a new system performing 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 central necrotic core. Histopathologically, blinded about ablation powers and times applied, gave the report of the histological examination (millimeters of coagulative necrosis and surrounded zone).

Results: The lower ablation power (10 W) produced the maximum macroscopic ablation area, RFA ablation time at 10 W showed a good linear correlation with ablation times (mean size: 3.25 mm) while B zone diameter increased with the increase of RF application at the fixed power of 10 W. At the microscopic analysis the pathologist didn’t see any difference in size of coagulative necrosis among the different ablation powers (R = 0.24).

Conclusions: 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 of ablation times, but it needs future in-vivo animal studies in order to assess the evolution of these zones (evolving into fibrosis? necrosis? recovering?).

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

References

P1565 THROMBOEMBOLIC DISEASE DIAGNOSED BY ENDOCOSCOPIC ULTRASOUND IN PANCREATIC CANCER: A CASE SERIES

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Introduction: Malignant associated thromboembolic disease (TED) has a complex multifactorial pathogenesis. Tumor cell actinoides that express procoagulant factors including tissue factor and thrombin; in addition, normal host tissues may also express pro-coagulant 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 (DIC). We aimed to assess the role of endoscopic ultrasound (EUS) diagnosing TED in pancreatic cancer patients.

Aims & Methods: We perform a retrospective review of all EUS cases for pancreatic cancer in two centers and assess all TED events diagnosed.

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, 48-81). In 1 patient the EUS indication was a large abdominal mass whose origin was not clear, in the remaining 4 the indication was the pancreatic neoplasm. In all of them was performed EUS with fine-needle aspiration (FNA). EUS identified a focal peripheral embolism (PE) and 1 inferior vena caval thrombosis (IVCT) with right atrial extension: 2 (3.6%) had recently been diagnosed by computed tomography (CT) but 3 (5.4%) were not previously known. In all these, CT confirmed diagnosis.

Table 1: Demographic, clinical and ultrasonographic characteristics of the patients.

<table>
<thead>
<tr>
<th>Case</th>
<th>Age</th>
<th>Gender</th>
<th>Neoplasms</th>
<th>Cytology</th>
<th>Location</th>
<th>Neoplasm</th>
<th>CT confirmation?</th>
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<tr>
<td>1</td>
<td>70</td>
<td>M</td>
<td>Head</td>
<td>Adenocarcinoma</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>65</td>
<td>M</td>
<td>Tail</td>
<td>Adenocarcinoma</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>3</td>
<td>72</td>
<td>M</td>
<td>Tail</td>
<td>Adenocarcinoma</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>4</td>
<td>82</td>
<td>F</td>
<td>Head</td>
<td>Adenocarcinoma</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>5</td>
<td>70</td>
<td>M</td>
<td>Tail</td>
<td>Adenocarcioma</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Conclusion: To the best of our knowledge, this is the first case series of EUS-based TED diagnosis in pancreatic cancer patients. This series underlines the 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
patients needed to be tested by US in order to provide an incorrect diagnosis was
2.3% (95% CI: 1.6-3.1%), while 70.6% (95% CI: 66.2-74.9%) were needed to be

Conclusions: US performed in the emergency room has a low diagnostic perfor-

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

References
1. Tsuchiya T, Itoi T, Sofuni A, Tonozuka R, Mukai S. Endoscopic ultrasono-

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 (EUS-RFA) and using a needle-shafted radiofrequency ablation system (ESRA) through a transgastric echoendoscope. The EUS-RFA ablation time and power were allowed to vary. The animals were sacrificed 2 hours after the procedure. Histopathological assessment of the maximal depth of thermal lesions was performed on three representative slides for each RFA injection.

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 = 10W, 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 190 ± 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, where tissue damage ranged from 3108 ± 373 (Power = 8, Time = 120 s) to 2305 ± 78 µm (Power = 12, Time = 120 s). The EUSRA ablation of the liver parenchyma resulted in tissue damage from 1573 ± 245 µm (Power = 30W, 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 s, Time = 15 s) to 3805 ± 446 µm (Power = 70 W, Time = 11.5 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 hepato-pancreatic lesions 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-pacreatography (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 diverticulum, underwent EUS-guided rendezvous. CBD puncture was performed via the transduodenal approach and the guide wire was advanced antegrade 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: In a total of 2480 ERCPs performed over a 4-year period, 18 cases were selected to undergo EUS-guided rendezvous due to the presence of a large ampullary diverticulum. Primary indication for 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 (66.7%) 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 cases. The mean procedure 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 leak), 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. Alongside 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.

P1569 A RANDOMIZED CONTROL TRIAL ASSESSING THE CONTRAST ENHANCED GUIDED FINE NEEDLE ASPIRATION IN SOLID PANCREATIC NEOPLASMS
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Introduction: The preoperative differentiation of the solid pancreatic neoplasms by endoscopic ultrasound fine needle aspiration (EUS-FNA) remains around 90% and different needles or techniques of sampling has been used for improving the results. Data about the progress in diagnosis when the contrast harmonic enhanced EUS-FNA (CH-EUS-FNA) is used are scarce.

Aims & Methods: We aimed to assess the role of contrast-enhanced EUS-FNA compared to standard EUS-FNA in diagnosing the solid pancreatic neoplasms. Methods: Patients from one tertiary medical center with visible solid pancreatic mass on CT were selected. EUS-FNA(one pass) and CH-EUS-FNA (one pass) were performed randomly in each patients by using a standard 22G needles, an Olympus-Aloka equipment and Sonovue as contrast agent. Core histology was assessed separately for each pass by the same pathologist blinded from the randomization process. The final diagnosis was based on the results of EUS-FNA and surgery, or the findings after 9 months’ follow-up.

Results: The final diagnosis of 40 patients included was adenocarcinoma (n = 36), non-tumouric diseases (n = 2) and pancreticitis (n = 2). The lesions were located in the head of the pancreas (60%), body (32%) and tail (8%). The diagnostic specificity and sensitivity based on core histology was 89% and 94% in the CH-EUS-FNA passes and 86% and 91% in the EUS-FNA passes and the diagnostic value was significantly better in the CH-EUS-FNA group (p = 0.0046, t-test). The visual core size was not significant for the true-positive diagnosis of malignancy.

Conclusion: In a randomized control trial, CH-EUS-FNA improved significantly the diagnosis of solid pancreatic neoplasms over standard EUS-FNA. These techniques are complementary, not competitive, and they can be performed in the same session, resulting the increasing of the diagnostic rate with a minimum of passes.

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

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I. Avni-Biron1

P1570 EARLY CAPSULE ENDOSCOPY PROVIDES BETTER BLEEDING LOCALIZATION VALUABLE 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.

Methods & Study: When a patient presented with GI bleeding of unknown source, we compared 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: Out of 73 enrolled, 72 were included. 2 patients from the initial included group were excluded (one due to technical capsule failure and one was transferred from an outside hospital). Baseline characteristics were similar and depicted in Table 1. The EC group (n = 34) had localization of presumed source of bleeding in 23 (67.6%) 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 = 5) in the SOC group (p = 0.003). However, when melena was the presenting 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 melena/hematochezia had 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. Patients with SB MRI evidence of small bowel bleeding, SB EGD was never diagnostic as a primary procedure, colonoscopy (COLO) had a 50% diagnostic rate, and VCE was diagnostic 100% of the time.

Conclusion: VCE used as the first test in patients with NHGB detects active bowel bleeding more often than the SOC approach, since it examines much more of the GI tract than EGD and COL alone. Detection of the anatomic site of bleeding allows for better therapeutic decisions.

Disclosure of Interest: S. Jawaid: This study was funded by an unrestricted grant from Oglivy & Mather.

All other authors have declared no conflicts of interest.

P1571 MUCOSAL HEALING RATES INDUCED BY ADALIMUMAB IN ISOLATED SMALL BOWEL CROHN’S DISEASE: PROSPECTIVE EVALUATION BY CAPSULE ENDOSCOPY

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Introduction: Detecting mucosal healing (MH) of isolated small bowel Crohn’s Disease (CD) induced by anti-tumor necrosis factor alpha agents are scarce.

Aims & Methods: 1) To evaluate MH rates by capsule endoscopy (CE) in patients with CD who were treated with adalimumab (ADA). 2) To correlate MH with clinical and biological indices of remission. This was a prospective observational, single center study. CD patients with isolated (per CE) active CD (CDAI > 220) SB disease, who were recommended ADA by their treating physician were consecutively recruited; first CE was performed prior to commencing ADA, and the second-14-week after starting ADA. All enrollees underwent a patency capsule study to confirm patency. Disease severity was assessed by the capsule endoscopy Crohn’s Disease activity index (CECDAI) score. MH was defined as CECDAI score < 3.

Results: Out of 31 patients screened, 24 were eligible, and 22 completed the study (as two patients developed an allergic reaction to ADA and were withdrawn). Females: 12 (54.5%), median disease duration: 3 years (IQR 1–7), biologic exposure: 15 patients had lesions located in the SB, 16 in the CD. In our study, we compared MH detected by CE did not correlate with normalization of either CDAI < 150, CRP or fecal calprotectin levels.

Conclusion: ADA induced MH in 36% of CD patients with isolated active SB disease. MH did not correlate with either clinical or biological remission. Thus, further evaluation should be performed after 52 weeks of maintenance therapy.

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

P1572 CORRELATION BETWEEN SMALL BOWEL MRI, Fecal CALPROTECTIN AND CAPSULE ENDOSCOPY IN THE INVESTIGATION OF INFLAMMATORY BOWEL DISEASE

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Introduction: Capsule endoscopy (CE) is widely used to investigate the small bowel (SB). However, patients with inflammatory bowel disease (IBD) are considered to be at higher risk for capsule retention. The ESGE recommends using dedicated cross-sectional imaging to assess SB patency in patients with known Crohn’s Disease (CD) prior to CE. Evidence suggests that a combination of SB imaging (MRI, CE) and faecal calprotectin (FC) together may be more effective in assessing SB inflammation compared to an individual modality alone. We aimed to assess the effectiveness of this approach.

Aims & Methods: Retrospective, multicentre study; consecutive patients who had undergone both SB MRI and CE within 6 months of each other were included. Data collected: patient demographics, indications for CE and MRI. SB and CE findings, and FC levels closest to the time of CE. Continuous data is presented as means ± standard deviation; comparisons were made using T-test (p < 0.05 taken to be significant).

Results: 82 patients (28M/54F, Mean age 41.4yrs) underwent both CE and SB MRI at 4 centres in the United Kingdom, Israel and Portugal. Indications included suspected SB inflammation (n = 81), IBD reassessment (n = 21). Overall, 3 were incomplete CEs, but no case of SB capsule retention. Of 82 SB MRIs, 4 patients had evidence of SB obstruction, 10 had SB thickening and/or inflammation, 3 had other findings (SB pneumatisis, polyps). 64/82 cases were normal and 1 study had poor quality; excluding any conclusion. Of the 4 SB MRIs, 1 had SB perforation, 1 had SB stricture, 1 had SB stricture and SB thickening together; 1 had SB stricture and SB thickening and/or inflammation.

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. CE findings were consistent with FC in 8 CE, 7 had no retention and 1 had CE findings showing SB inflammation.

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
unknown whether fatigue affects the accuracy of SBCE reporting and how many SBCE are read in one session.

Aims & Methods: Thirty-two participants (16 experienced SBCE readers and 16 novices) were invited to participate in this study. Each participant was asked to read 6 pre-selected SBCE studies consecutively. These studies were presented in a random order. All readings took place using the single view mode, where readers were able to choose the frames per second viewed from a range of speeds. Fatigue was measured subjectively using a Likert scale and objectively using a computer-based psychomotor vigilance test. These measures were performed at prior to commencing the study and after every second capsule read. Accuracy in lesion detection was determined by comparison with a gold standard reading derived from the non-consecutive readings of two expert capsule readers. Accuracy was plotted against the order in which SBCE studies were read. The aim of this study was to determine whether fatigue influences 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. All 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 5% when using the 22–28 speed. There was no significant change in accuracy with progressive capsule read when the group was analysed as a whole. The accuracy of experienced readers declined after just one study read, from 38% to 27% and plateaued thereafter. Noive readers demonstrated no significant change in the time points with trend towards improvement, perhaps indicating skills acquisition during the study.

Conclusion: The accuracy of SBCE reporting declines after one study reporting in a given period of time by expert SBCE readers. The optimal time 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, positivity rates and adverse events were all recorded.

Aims & Methods: We aimed to determine the feasibility of same-day CCE post imaging in patients with an incomplete colonoscopy without a contraindication to CCE with an IC for reasons other than poor bowel prep was offered the test following an appropriate recovery time of 1-hour post IC. Informed consent was obtained from all subjects. Upon ingestion of the capsule, the reading of IV myotropism was given to overcome the antimotility effects of fentanyl given during routine colonoscopy. Standard boost-er protocol for CCE was administered. Patient demographics, procedure indica-tions and outcomes of SBCE studies can be read in one session.

Results: To date, 40 same-day CCE have been completed. The mean age was 57 yrs.(22–83 yrs.) and 65% (n=26) were female. Indications for OC were; altered bowel habit 33% (n=13), Iron deficiency anaemia 30% (n=12), Inflammatory Bowel Disease Assessment 15% (n=6), PR bleeding 5% (n=2), abdominal pain 5% (n=2), polyp surveillance 5% (n=2), positive family history of CRC 5% (n=2) and abnormal imaging 2% (n=1). OC were incomplete due to excessive lesion burden in 40% (n=17), 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 mcg 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), appendicitis 35% (n=14). 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 treat-ment 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 COLON 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 in 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. Nowadays, selected patients benefit from extensive cytoreductive 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 up to 21%. Observing patients with unknown whether fatigue affects the accuracy of SBCE reporting and how many SBCE are read in one session.

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 pilot study, ongoing study twenty-four consecutively patients (April 2016–April 2017) with histologically proven peritoneal carcinomatosis from colo-rectal origin were included. Patients were scheduled for exploratory laparoscopy and/or CRS/HIPEC and underwent preoperative dedicated DW-MRI (scan 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 post surgery. Furthermore, both readers evaluated whether PCI estimation could be achieved on a 5-point scale combining PCI and other risk factors for an incomplete surgery, like invasion in hepatic hilum, mesenteric vessels, extensive pelvic invasion of liver metastases. Sensitivity and specificity of the test were calculated and receiver operating characteristic (ROC) curves were constructed. The area-under-the-curve (AUC) was calculated for each reader. Quadratic weighted kappa was used to evaluate the interobserver agreement.

Results: At surgery the mean PCI was 13.8 (range 0–34). For reader 1 the mean PCI was 19.7 (range 0–39) and for reader 2 PCI was 10.2 (range 0–39). The UAC for predicting overall operability was 0.99 for reader 1 and 0.95 for reader 2.

Conclusion: These data suggest that DW-MRI is a robust and highly accurate tool to noninvasively select colorectal cancer patients who could benefit from CRS/HIPEC. Interestingly, no overstaging occurred with DW-MRI; this means that DWI-MRI did not deprive patients from potential curative surgery. In addition, due to the lack of large studies concerning this subject, our ‘pilot study’ in one of the largest DW-MRI colon carcinomatosis studies.

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

P1576 HISTOLOGICAL PREDICTION OF COLONIC POLYPS 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 textural elements from polyt surface and their correlation with Kudo’s pit pattern classification. Textural elements are identified as bright regions in polyt surface and there are characterized according to their shape into tubular and circular: a high presence of tubular patterns is associated to an adenomatous histology whereas the absence of prominent tubular structures is associated to non-adenomatous. Taking this into account, we characterized segmented bright regions using a tubularity metric (Tub) designed to obtain low values for circular shapes and high values for elongated regions of the same area. We tested our method in high definition (HD) white light polyt images which were obtained with a colonoscopy Olympus CF-H190 at Hospital Clinic in Barcelona. Neither conventional nor virtual chromoendoscopy were used. These images were selected to show as much variability in polyt 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 polyt images were analyzed: 38 (74.5%) adenoma and 13 (25.5%) non-adenoma. Mean size of polyt was 14 ± 13 (range 1–40) and had the following morphology based on Paris classification: 5 (9.8%) O-Ip, 27 (52.9%) O-IIa and 19 (37.3%) O-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 polyt histology during colonoscopy. The use of shape characterization is promising, the inclusion of other polyt 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.

Reference

P1577 COLORECTAL LATERALLY SPREADING TUMORS DETECTED AT CT COLONOGRAPHY
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Introduction: Laterally spreading tumors (LSTs) of the colicrectum are classified into the following two subtypes according to their morphology: granular type (LST-G), and non-granular type (LST-NG). While, CT colonography (CTC) is a relatively new radiological technique for imaging the entire color-colicrectum 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 fully delineated.

Results: Patients: 35 patients were included in the study. All patients underwent CTC and colonoscopy. From these patients, LSTs were found in 12 patients (62%). Of these patients, 7 LSTs were detected by CTC and colonoscopy, 1 LST was detected only by colonoscopy and 4 LSTs were detected only by CTC. The total detection rate of LSTs was 44.4%. The accuracy of detection was 80% (9 of 11 LSTs) and the sensitivity was 90.9% (10 of 11 LSTs). The interobserver agreement was 80% (9 of 11 LSTs) and the sensitivity was 90.9% (10 of 11 LSTs).

Conclusion: Automatic prediction of LSTs focusing on their subtypes. We retrospectively reviewed and matched 35 pathologically proven LSTs at the Sendai Medical Center, Japan, between May 2012 and December 2016. Multidetector CT scan using contrast media immediately after total colonoscopy was performed. Images were retrospectively reconstructed by using a 0.5 mm section index. The CTC examination was prepared by PEG-C solution before scanning. CO2 gas as an effervescence agent was then administered just before scanning. This was used for the contrast medium. CTC images were analyzed by AVE Virtual Place software. The CTC and colonoscopy were independently analyzed by endoscopist and radiologist in blind fashion. We investigated misdiagnosed lesions with CTC more than 10 mm detected by CS. We considered the pseudo-negative lesions misdiagnosed with CTC interpretation (PNL) by radiologist and gastroenterologist and also considered the true pseudo-negative lesions misdiagnosed with CTC interpretation (true PNL) by radiologists and gastroenterologists. Because we conceived true PNL showed the limitation of CTC interpretation instead of PNL involved a human error.

Results: PNL was diagnosed by CS at 0-Ip (8 cases, 8 lesions) and 0-IIa (17 cases, 19 lesions), respectively according to the criteria of the Paris classification. True PNL was also diagnosed at 0-IIa (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-IIa 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 lesions 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 like 0-IIa lesion.

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

Reference
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Introduction: The formation of fibrotic tissue in intestinal wall of Crohn’s Disease (CD) patients is transmural and mucosal biopsies are unrepresentative of real intestinal damage. Magnetic Resonance Enterography (MRE) allows a transmural study of the bowel loops. Recently the percentage of gain of contrast intensity has been proved useful to study fibrosis in CD patients. Diffusion Weighted Imaging (DWI) through the restriction of the apparent diffusion coefficient (ADC) allows an accurate evaluation of disease activity in CD patients avoiding contrast agents.

Aims and Methods: The aim of this study is to investigate if DWI sequence of MRE could be used as an active disease at MRE. ADC value had a significant correlation with fibrosis score (r = 0.648; p < 0.0001), AIS (r = 0.763; p < 0.0001) and percentage of gain (r = 0.687; p < 0.0001). A strong correlation emerged between wall thickness and fibrosis score (r = 0.671; p < 0.0001). The
threshold of wall thickness for fibrosis was >6.3 mm (specificity 100% and sen-
sitivity 69.23% with AUC 0.89). The cut-off of ADC value for fibrosis was

Conclusion: The DWI sequence with ADC value can identify fibrosis in intestinal

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
E520 and c-Met 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 fluor-
escent reporter was replaced by a radionuclide chelating moiety for PET imaging.
We have also performed animal testing in a mouse xenograft model for various
cancer stages.

Results: We have identified a number of promising applications within Digestive
Oncology; 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
burden relative to the level of risk.

Conclusion: Future optical imaging of c-Met is promising for use in the clinical
management of these conditions. An imaging agent that enabled more accurate risk stratification of
cancers.

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

P1581 HOMEMADE FIXATION OF FULLY-COVERED SELF-
EXPANDING METAL STENT
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Introduction: Esophageal self-expandable metal stents are currently used as an
alternative for surgical treatment in esophageal neoplasia, benign strictures, fis-
tulas and anastomotic leaks. Migration is a common complication after stent
placement and 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 the devices are 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 stripes 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 carbole.

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 insuf-
flation, 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 used. In cases of stents partially migrated
through the cardia, the same stent was repositioned and fixed with dental floss
strategies as previously described.

Conclusion: According to the results we believe that this homemade technique using
dental floss for external fixation of stents is a simple and cheap method that can
be applied and used to prevent stent migration.

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

P1582 CLINICAL OUTCOME WHEN USING SELF EXPANDING
METAL STENT IN OBSTRUCTIVE COLORECTAL CANCER IN 248
PATIENTS WITH A 7 YEARS EXPERIENCE FROM A TERTIARY CENTER
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Introduction: The reported incidence of colorectal cancer in Sweden in 2014 was
60-65/100,000 inhabitants and caused 25-30 deaths/100,0001. Of all colorectal
cancer, approximately 15-20% debates with acute obstructive symptoms.
Conventional acute surgical procedures in these conditions (open surgery) have
been shown to lead to mortality risk up to 20% and morbidity risk of 45–50%,
followed by increased need for intensive care and more infections and stoma
complications”. Self-expanding Metal Stent (SEMS) for relieving malignant
colorectal obstruction is a treatment option for non-curative cases or for bridging
the patient for later surgery. Studies have shown "clinical success" of SEMS at
90%. An article from 2007 concludes that SEMS in acute colonic obstruction has
better results regarding sickness and side effects compared with acute open
surgery.2

Aims & Methods: Our compilation covers the years 2010–16, when 248 SEMS
interventions(53% men, 47% women, age 28–97) were performed at SU/Ostra
Hospital. In 78% of cases, the obstruction was located below the left flexure. In
80%, SEMS was made for palliative purposes.

Results: Technically, SEMS succeeded in 98% of cases and had clinical success in
90% of cases(abscence in need of emergency surgery). Complications (colony
perforation) occurred in 6% of cases. Mortality within 30 days was 11% and within 90 days 22%. Both of these complications were controlled in 90% of cases. Our interpretation is that SEMS is an effective method of acceptable safety regarding complications in acute malignant colon obstruction. The method is suitable for both intended intestinal relief for palliative purposes, as well as
awaiting later curative measure (bridge to surgery).

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

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A total of 452 endoscopic interventions (mean 3.4 per patient, median 2)

Results:

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

J. Peveling-Oberhag, N. Lubomierski, J. Albert

P1584 LONG-TERM OUTCOME OF ENDOSCOPIC TREATMENT OF SYMPTOMATIC ENTERIC STRICTURES IN CROHN’S DISEASE


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Introduction: Endoscopic treatment of enteric strictures in patients with Crohn’s
disease (CD) is well established; however, long-term outcome is unknown.

Aims & Methods: All patients with CD, who had undergone endoscopic therapy
of symptomatic strictures at Robert-Bosch-Hospital Stuttgart from 2008–2017,
were included in this retrospective cohort study. A follow-up was available for 131/135 (97%) patients with a mean of 30.1 months (0 to 103).

Results: A total of 452 endoscopic interventions (mean 3.4 per patient, median 2 per patient, range 1–69 treatments) were performed in 135 patients (female n = 67, male n = 68, mean age 47.5 years, BMI: 22.8 ± 4.98 kg/m², duration of illness: median 25.1 months). In 165 cases, the dominant structure was located in the ileocecum, in 105 in the colon, esophagus (90), duodenum (54), upper intestine (26), lower intestine (11) or stomach (1). In 166 and 286 cases, there
was an anastomotic and non-anastomotic stricture present, respectively. Treatment consisted of hydrostatic balloon dilatation (n = 447); bougienage (4), and cSEM (1). Dilatation was performed to a mean of 14 mm (SD: 2.4, range 7 to 24 mm). In seven cases complications occurred after endoscopic treat-
ment (bleeding: n = 5; infection: n = 1; perforation: n = 1) which resulted in an extension of the hospital stay (n = 5), antibiotic therapy (1) and surgery (1). Immediate clinical success was observed in 438 of 452 of cases (96.9%). A single intervention was performed in 61/135 patients (45.2%), two interventions in 36 (26.7%), and three or more in 38 (28.1%). In 41 of 135 patients (30.4%), surgical treatment of the stricture was required in the course of disease.

Conclusions: Endoscopy of symptomatic stricture in CD is safe and effective. Repetitive dilation is feasible with a significant reduction of clinical symptoms, and surgery was required in about 30% of patients at long-term follow-up.

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

References


P1585 Endoscopic Intralesional Steroid Injection is Effective in the Treatment of Benign Refractory Oesophageal Stricture, a Meta-analysis

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Introduction: Endoscopic dilation is an effective treatment in oesophageal strictures, but recurrences may require frequent and repeated dilations in the long term. Several trials have been conducted to determine the efficacy of intralesional steroid injection in the treatment of benign refractory oesophageal strictures, since the first pediatric case series was published in 1969. However, a meta-analysis has not been carried out yet.

Aims & Methods: The aim of the analysis is to summarise the results and establish evidence in support or against the complementary treatment. A meta-analysis was performed using the preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P). Two reviewers conducted a comprehensive search on databases from inception to February 2016, to identify trials comparing the efficacy of dilation combined with or without 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.

Results: There were 45 articles found in Embase, 55 in PubMed, and 6 in the Cochran 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 periodical dilation intervention combined with intralesional steroid injection was performed in 142 cases, but recurrences may require frequent and repeated dilations in the long term in patients treated by intraluminal steroid injection as well. We recommend the use of intraluminal steroid injection for benign refractory oesophageal strictures.

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

References

Results: Between 01.01.2012 and 01.04.2016, 152 stents were inserted in 125 patients with palliative 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 (32.4%) were documented to have gone on or recurrent dysphagia after the procedure, of which the causes were: tumour overgrowth or ingrowth in 9 (5.9%); stent migration in 15 (9.9%); distal obstruction due to gastric folds in 2 (1.3%); dysfunction of the anti-reflux valve in 3 (2.0%); and food bolus obstruction in 12 (4.6%). The obstruction was classified as external in 3 (2.1%) 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 gastrosopies 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 bronchus. 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.

Conclusions: 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 “stent 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

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available in many centers and have revolutionized the management of iatrogenic bowel 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 bile leaks (n = 12), benign biliary strictures with intrahepatic biliary dilatations (n = 21), postoperative hernia (n = 1), 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 catheter calibers over 6 months followed by manometric studies before catheter withdrawal (n = 6), biliary stenting with plastint (n = 2), Insertion of pigtail catheter (n = 15), preoperative progressive pneumo-peritoneum for their adhesiolysis effect to manage post-operative huge incisional hernias before their surgical repair (n = 1), and selective embolization of bleeding hepatic and/or splenic pseudo-aneurysm (n = 1) using tissue adhesive (n =Butyl 2 Cyanoacrylate).

Results: All percutaneous procedures were technically successful. No recorded early or late complications. After manometric studies, all managed cases with bile leaks did not show any clinical evidence of restenosis during 6 months follow-up. Overall, 14 out of 30 patients (46.7%) were only managed by different interventional radiology procedures. Second step surgical repair was needed for 13 patients (43.3%) and endoscopic managed for 3 patients (10%) with biliary leaks.

Conclusion: Minimally invasive interventions are valuable techniques in the management of different post-cholecystectomy complications. In fully equipped centres, expert multidisciplinary teams would achieve high cure rates for iatrogenic biliary injuries.

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

P1590 WHAT IS THE ROLE OF ANGIGRAPHY IN ACUTE COLONIC AND SMALL BOWEL BLEEDING?

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Introduction: Angiography is a diagnostic and therapeutic modality that is widely available for upper gastrointestinal bleeding but is used less frequently when the source of bleeding is placed distally to the Treitz angle.

Aims & Methods: To assess the usefulness of angiography in the diagnosis of colonic and small bowel bleeding and to determine the efficacy and complications of therapeutic procedures. Retrospective study; we included all patients with colonic and small bowel bleeding that were submitted to angiography with or without embolization, admitted to the gastroenterology department of a tertiary hospital between February 2006 and November 2016. Statistics: Chi-square/Fisher exact test, T-student.

Results: From 2006 to 2016 276 patients were evaluated, 63.6% male, mean age = 75 years (29–95). Angiography was done for: bleeding recurrence (32.6%), hemodynamic instability (33.3%), both (27.3%) or failure to endoscopic hemostasis (3%). The aetiology after angiographic study was: presumed diverticular (n = 28), anastomosis (n = 8), confirmed diverticular (n = 6), tumoral (n = 5), post-muco-secotomy/polypectomy (n = 4), unclarified (n = 12), others (n = 3); Dieulafoy, ileum ulcers, radiation proctitis. Angiography showed additional clinical information in 58.8% of patients (n = 17). Twenty-three patients (34.8%) underwent arterial embolization, all with technical success, with bleeding recurrence in 3, of which only one was submitted to surgery; there were 2 cases of bowel ischemia. The reasons for deciding not to embolize were: absence of active bleeding (90.7%) and end-vessel bleeding (9.3%). There were no differences between the groups in demographic data, comorbidities, mortality, source of bleeding, haemoglobin at admission/diagnosis and change in haemoglobin (p = 0.005). Arterial embolization was more frequent if hemodynamic instability (p = 0.029); The average time of hospital stay was lower in the group submitted to embolization (8.8 vs 11.5 days, p = 0.014). Overall, 11 patients died, due to: re-bleeding/hypovolemic shock (n = 5), exacerbation of comorbidities (n = 3), hospital acquired infection (n = 2) or post embolization complication (n = 1).

Conclusion: Arteriography was a valid option for the diagnosis of colonic and small bowel bleeding; allowed therapeutic intervention in more than one third of patients, with 87% of clinical success and reduction of hospitalization time.

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

WEDNESDAY, NOVEMBER 01, 2017 09:00-14:00

SURGERY III - HALL 7

P1591 PROGNOSTIC VALUE OF CARDIOPULMONARY EXERCISE TESTING FOR MORBIDITY RISK AND SURVIVAL AFTER OESOPHAGECTOMY FOR CANCER

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Introduction: Surgery for radical treatment of oesophageal cancer carries significant inherent risk. Objectively Identifying patients that are high risk of complications is of importance. The aim of this study was to assess the prognostic value of physical fitness variables determined objectively by cardiopulmonary exercise testing (CPET) in patients undergoing potentially curative surgery for oesophageal cancer (OC) within an enhanced recovery programme.

Aims & Methods: Consecutive 180 OC patients (106 ACA, 11 SCC, 3HGD) underwent preoperative CPET with prospective recording of morbidity and survival. Non-parametric receiver operating characteristic (ROC) curves and logistic regression were used to assess the relationship between CPET variables and postoperative morbidity severity score (MSS).

Results: Of 180 patients, 120 were included for analysis (median age 65 yr., 100 male, 75 neoadjuvant therapy); 60 did not proceed to surgery and were excluded. Postoperative morbidity and mortality occurred in 83 (69%, CD ¼ 27, 22.5%) and 4 (3.3%) patients respectively. ROC curve analysis showed oxygen uptake (peak V02) gave an area under the ROC of 0.66 (95% CI 0.55 to 0.77, p = 0.001), anaerobic threshold (AT) gave an area under the ROC of 0.62 (95% CI 0.51–0.74, p = 0.048) and optimum cut-off of 10.5 ml/kg/min (sensitivity 60%, specificity 44%). Multivariable analysis revealed peak V02 to be the only independent factor to predict morbidity severity CD ¼ 3 (OR 0.85, 95% CI 0.75–0.97, p = 0.018). Cumulative survival was associated with operative MSS (Chi2 = 4.892, DF 1, p = 0.027) but not with CPET variables. Conclusion: CPET is a significant predictor of morbidity after oesophagectomy with peak V02 the most important factor.

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

P1592 PROPENSITY SCORE ANALYSIS OF 18-FDG PET/CT ENHANCED STAGING IN PATIENTS UNDERGOING SURGERY FOR OESOPHAGEAL CANCER

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Introduction: PET/CT has become an integral part of the staging pathway for operable esophageal cancer (OC), primarily used to identify occult distant metastases unseen by conventional radiological modalities. The aim of this study was to analyze the effect of PET/CT introduction on overall survival and assess patterns of recurrence after oesophagectomy.

Aims & Methods: Consecutive patients undergoing oesophagectomy for cancer [median age 63 (31–80) yr., 395 male, 425 ACA, 71 SCC, 325 neoadjuvant therapy] were studied. Two hundred and twenty-three patients underwent PET/CT enhanced staging protocols and the primary outcome measure was overall survival based on intention to treat.

Results: Overall 3-year survival pre-PET/CT was 42.5% compared with 57.8% post-PET/CT (Chi2 6.571, df 1, p = 0.004). On multivariable analysis, pT stage (HR 1.486 [95% CI 1.27–1.74] p = 0.001), pN stage (HR 1.116 [95% CI 1.05–1.20] p = 0.001) and PET/CT (HR 0.689 [95% CI 0.53–0.89] p = 0.004) were independently associated with duration of overall survival. Recurrent cancer was observed in 125 patients (51.4%) pre-PET/CT, compared with 74 patients post-PET/CT (37.8%, p = 0.015), and was less likely to be distal in location after PET/CT inception (39.5 vs 27.0%, p = 0.006).

Conclusion: PET/CT enhanced staging is an important and independent factor associated with improved survival in patients undergoing oesophagectomy for cancer.

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

P1593 PREDICTION OF LYMPH NODE METASTASIS FOR SUPERFICIAL ESOPHAGEAL CANCER WITH USING RANDOM FOREST ANALYSIS

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Introduction: Although surgical techniques and perioperative management for esophageal cancer has been developed, it cannot be still safe to be performed esophagectomy. Therefore, endoscopic submucosal dissection (ESD) for the superficial cancer have been increased. We also need to consider the risk of lymph node metastasis before treatment in each patient and the aim of this study is to predict lymph node metastasis for superficial esophageal cancer.
Aims & Methods: Seventy patients who were diagnosed as clinical Tla-MM, Tlb-SM1 or Tlb-SM2 and underwent esophagectomy at the Keio University, Tokyo, Japan between July 2000 and June 2016 were enrolled in this study. Patients who underwent esophagectomy as additional resections after ESD were included. We used random forest analysis to predict lymph node metastasis. Results: There were 62 men and 8 women in this study. The mean age of all patients was 62.8 ± 8.2 years. The main location of the tumor was in the middle thoracic esophagus (Upper: Middle, Lower: 13: 39: 18, respectively). 14 patients had lymph node metastasis in pathological findings; 2 patients (25%) were diagnosed as clinical Tla-MM, 2 (6%) patients (31.3%) were Tlb-SM2. Random forest technique (2000 trees) resulted in an estimate of error rate of 25.7%. Lymph node metastasis was most associated with the factor of pathological T (relative importance 100%) followed by lymph node status and ICW and SIR were the most important prognostic indicators.

Disclosure of Interest: c

COPING AND QUALITY OF LIFE AFTER DISCLOSURE OF INTEREST:

P1595 COPING AND QUALITY OF LIFE AFTER DISCLOSURE OF INTEREST: 50.6. Overall, mean C30-QL2 was 72.9 (SD 16.3). Mean C30 functional scales were: PF = 80.8 (SD 16.6), RF = 85.0 (SD 20.7), EF = 81.5 (SD 17.0), CF = 87.4 (SD 14.0) and SF = 90.0 (SD 14.0). Avoidance Strategies score was negatively correlated with Social Function (rho = -0.60, p = 0.004). The remaining correlations between COPE-NVI scales, C30-QL2 and C30 functional scales were statistically not significant. Nineteen patients completed the questionnaire twice, with 3–6 months between the two fillings. The mean differences of the COPE-NVI scales were not statistically significant.

Conclusion: In our series, patients used Positive Attitude to manage everyday life (i.e. emotional indifference or drugs) were used, social abilities were compromised. Moreover, after surgical intervention coping seemed to be a stable feature. Therefore, in the early follow-up after surgery multidisciplinary team can identify and the coping features of patients in order to improve them to get a better outcome.

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

P1596 A RELIABLE AND ACCURATE ALGORITHM TO QUANTIFY THE TUMOR STROMA QUOTIENTS IN HUMAN TISSUE: INFLTRATION OF CD3+ AND CD8+ LYMPHOCYTES CORRELATES WITH IMPROVED SURVIVAL IN HEPATOCELLULAR CARCINOMA AND PANCREATIC CANCER

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Introduction: The tumor micro environment plays a vital role in the growth of malignancies. Through for example tumor-infiltrating lymphocytes (TILs) it influences overall and disease free survival of patients in various cancer entities. Therefore, it is an important question to investigate their value. However, there is great heterogeneity about how to quantify these cells in the tumor tissue. Therefore, we present a novel Quantification of the Tumor Stroma (QTS) Algorithm to reliably and accurately quantify cells of the tumor stroma and to perform a correlation with survival after resection of patients with hepatocellular carcinoma and pancreatic cancer.

Aims & Methods: Immunohistochemical staining of CD3 and CD8 antigens in frozen sections of metastatic colorectal cancer (mCRC) and ovarian cancer (OvCa) as well as in paraffin sections of hepatocellular carcinoma (HCC) and pancreatic cancer (PCa) was performed. For each entity 10 slides per antigen were examined (n = 80). In these different entities reliability and accuracy of computed quantification was tested in order to develop a general algorithm (Figure). First, reliability of identification of hot spots was investigated using two blinded observers. Hot spots were defined as regions with the highest density of TILs. The absolute amounts of cells were compared with the intra-assay-correlation coefficient (ICC). Second, accuracy was tested. To examine whether quantification of 1 vs 3 hot spots yields accurate results CD3+ CD8+ ratio as well as the absolute cell numbers were compared with the ICC respectively. Third, computed counting methods (1) ZEN 2 software counting (ZC), (2) ImageJ software with subjective threshold (ISC) and (3) ImageJ with colour deconvolution (IAC) was performed to a manual counting (gold standard) using a linear regression analysis. Finally, 60 resected tumor tissues of HCC and 30 of PCa were retrieved. 3 hot spots have been selected for every slide and groups of high/low infiltration of CD3+ and CD8+ lymphocytes have been created according to the median value. Then, statistical correlation with overall survival (OS) and disease free survival (DFS) was performed.

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 of CD3+ CD8+ 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 = 0.016) and PCa (p = 0.001) as well as improved OS in PCa (p = 0.006). Conclusion: In this study we introduced a systematical way to count tumor stroma cell infiltrate 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,

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):
P1598 LIVER RESECTION IN OBESE PATIENTS WITH HEPATOCELLULAR CARCINOMA
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Introduction: Obese 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 2001 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 tumors in the obese patients group than in the non-obese patients group (p < 0.05). The two groups showed no differences in the liver function tests except the indocyanine green retention rate at 15 minutes. There were no significant differences between the two patients group in the number of tumors, diameter of tumor, prevalence of cirrhosis, frequency of portal invasion, the operative procedure, operative duration, blood loss, incidence of postoperative complications, postoperative hospital stay, and in-hospital mortality (3.3% vs. 1.4%). No significant difference was found in relapse-free survival rate, or overall survival rate between the two groups, too. Thirteen patients underwent laparoscopic surgery, and 34 patients had open surgery. The two groups showed no difference in the background, including BMI. However, the operation time (265 min vs. 397.5 min) and the postoperative hospital stay (14 days vs. 18 days) were significantly shorter, and the blood loss (50 ml vs. 600 ml) was less in the laparoscopic surgery group than in the open surgery group (p < 0.05).

Conclusion: Liver resection in the obese patients with HCC was safe, and laparoscopic liver resection might be more useful for reducing the surgical stress and reducing the hospital stay.

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

References

Disclosure of Interest: All authors have declared no conflicts of interest.
tertiary centers has been performed. DPTS are traced by the pharmacies of our two hospitals and all cases of DPTS were analysed thanks to the database of the pharmacies of our two hospitals since May 2014 (first DPTS used for non bariatric upper digestive tract fissula) or 10 french DPTS have been used according to the size of the fissula and the choice of the physician. Technical success was defined as the possibility to place the DPTS within the fissula. Clinical success was a composite endpoint combining clinical amelioration of the patient and healing of the fissula allowing the removal of the DPTS.

**Results:** 17 patients have been treated by DPTS from May 2014 to March 2017 for an upper digestive tract leaks not linked to bariatric surgery. Fistulas were linked to a lewis-santy surgery in 8 patients (47%), total gastrectomy in 4 (23.5%), boerhaave syndrome in 2 (11.8%), endoscopic perforation in 2 (11.8%) and aortic surgery in 1 (5.9%). An infected collection was present in 16 patients (94%) and 11 (64.7%) suffered from a clinical sepsis. The mean delay between surgery and the diagnostic of fistula was 10 days and the delay of the diagnosis of fistula and the endoscopic drainage by DPTS was 16.4 days. DPTS were used alone in first intention in 11 cases (64.7%), in first intention in combination with a SEMS in 11.7% and in second intention after failure of a SEMS in 3 (11.7%). All patients had a technical success and 15 patients (88.8%) had a clinical success. The mean delay for refeeding after DPTS was 17 days. The mean ablation time of the DPTS was 73 days. 3 patients presented a complication (1 stenosis, 1 bleeding and 1 migration).

**References**


**Conclusion:** Endoscopic internal drainage using DPTS seems to be an interesting therapeutic option for upper digestive tract leaks not linked to bariatric surgery. DPTS are effective, safe, cheap and could replace SEMS not always well tolerated and with a high rate of migration. Prospective multicenter studies are needed to confirm these preliminary results.

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

**References**


**Conclusion:** Endoscopic internal drainage using DPTS seems to be an interesting therapeutic option for upper digestive tract leaks not linked to bariatric surgery. DPTS are effective, safe, cheap and could replace SEMS not always well tolerated and with a high rate of migration. Prospective multicenter studies are needed to confirm these preliminary results.

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

**References**

surgery. Patients presented heart rate over 120 bpm. Images from CT showed left side of the free abdominal wall. An Upper GI series was performed to localize the leak opening and enter to peritoneal cavity. Either 9.8 or 5.8 mm diameter gastroscope were used. In 10 patients with orifice smaller than 5.8 mm balloon dilatation of the leak opening allowed peritoneal access. The approach of AL was possible in (100 to 700ml). Sample was taken for bacterial cultures. The culture was flushed and succion out with sterile saline solution (200ml to 1000ml). In cases of inadequate location surgical drains catheters were repositioned or replaced using endoscopic forceps and snare. Fistula tract closure. Catheters were advanced using endoscopes through the leak all the way down to the skin. Once the tip of the endoscope was outside the peritoneum the latex drains were removed. Catheters were snared or grasped and pulled back into the peritoneum leaving the proximal end close to the fistula opening. In 5 patients without surgical drainage systems one laparoscopic port was localized inside peritoneum and re-opened under endoscopic vision to allow drainage catheters placement. In 8 patients peritoneal adhesions were endoscopically lib- erated from endoscopic forceps or knives to facilitate peritoneal navage.

Results: Heart rate returned to normal within 24 hours and leukocytosis improved after 72 hours. In 50% of patients heart rate returned to normal immediately. Average time for the whole procedure was 45 minutes. Abdominal catheters were removed between 7 and 18 days once full resolution of the drainage was achieved. Twenty patients were discharged within the first 24 hours. The rest were discharged between 3 and 8 days. Partially covered SEMS were placed for 6 to 8 weeks leading to complete closure of leaks. There were no adverse events related.

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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Introduction: A diverting loop ileostomy with procedure of intestinal resections and anastomosis decreases morbidity from anastomotic leaks and may even reduce the risk of anastomotic leak as shown in recent studies. Reversal of a temporary ileostomy is considered a simple surgical procedure presenting with a low morbidity and mortality rates. However, ileostomy reversal may be asso- ciated with number of complications requiring reoperation, with anastomotic leak (AL) being most critical often leading to failure in restoration of digestive tract continuity.

Aims & Methods: The study aimed at evaluating the results of restoration of intestinal continuity in patients primarily operated on for colorectal cancer and inflammatory conditions. We assessed the frequency of failure following the surgical procedure of diverting loop ileostomy closure. The study was conducted at a tertiary referral center. 147 adult patients (89 men, mean age 50.5y ± 16.71 and 58 women, mean age 49.3y ± 16.99y) were enrolled to this study. All included patients underwent surgical closure of a temporary loop ileostomy at the Department of General and Colorectal Surgery, Lodz, Poland, between 2004 and 2016. The need for collection was collected in a retrospective manner basing on hospital records. The analyzed parameters included length of hospitalization, gender, age, BMI, concomitant conditions, American Society of Anesthesiologists classification score (ASA) and the character of postoperative complications. Statistical analysis was used to evaluate the correlation between the variables and postoperative complications.

Results: AL as a postoperative complication with the need to create a new ostomy was a critical postoperative complication in patients undergoing AL as a critical postoperative complication is still unclear.

Aims & Methods: The aim of this study was to analyze the association between body composition the postoperative complications and 90-day mortality in patients undergoing bilipancreatic cancer surgery. Retrospective study of patients with pancreatic, ampullary or bile duct carcinoma that underwent sur- gery between March 2012 and October 2016. Body composition (skeletal muscle mass, fat area, subcutaneous fat area and muscle radiation attenuation) was assessed in diagnostic or staging computed tomography (CT), in axial images at the level of the 3rd lumbar vertebra. Postoperative complications were recorded according to Clavien-Dindo classification and categorized as minor (grade I–II) or major (grade III–IV). The relationship of body composition with the number of complications requiring reoperation, with anastomotic leak (AL) being most critical often leading to failure in restoration of digestive tract.

Conclusion: The impact of body composition on the outcomes following pan-creatingoduodenectomy is still unclear.

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Conclusion: The impact of body composition on the outcomes following pan-creatingoduodenectomy is still unclear.
Disclosure of Interest: All authors have declared no conflicts of interest.

References

WEDNESDAY, NOVEMBER 01, 2017
IBD III – HALL 7

P1608 ASSESSING THE EFFECT OF ETHNICITY ON URINARY METABOLIC PROFILES IN INFLAMMATORY BOWEL DISEASE

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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 these differ in patients from different ethnic backgrounds. Moreover, clinical phenotype varies between Caucasians and South Asians (SA) (3), however discriminatory 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.

Aims & Methods: Samples from 405 IBD patients (283 Caucasian and 122 South Asian) and 137 healthy controls (98 Caucasian and 48 South Asian) were ana-

Abstract: P1608

<table>
<thead>
<tr>
<th></th>
<th>Caucasian (n and %)</th>
<th>South Asian (n and %)</th>
<th>p value</th>
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<tbody>
<tr>
<td>All IBD</td>
<td>283</td>
<td>122</td>
<td>–</td>
</tr>
<tr>
<td>CD</td>
<td>160 (57%)</td>
<td>42 (34%)</td>
<td>–</td>
</tr>
<tr>
<td>UC</td>
<td>123 (43%)</td>
<td>80 (66%)</td>
<td>–</td>
</tr>
<tr>
<td>Controls</td>
<td>98</td>
<td>39</td>
<td>–</td>
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All (Cau and SA) All (Cau and SA) All (Cau and SA) All (Cau and SA)

Separation P values (100 permutation testing)

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<tr>
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<tr>
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<td>Yes</td>
<td>p = 0.001</td>
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<tr>
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<td>Yes</td>
<td>p = 0.001</td>
<td>0.659</td>
</tr>
<tr>
<td>Controls vs UC +</td>
<td>Yes</td>
<td>p = 0.007</td>
<td>0.798</td>
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<tr>
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<td>Yes</td>
<td>p = 0.001</td>
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Caucasian          Caucasian          Caucasian          Caucasian

Separation P values (100 permutation testing)

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<tbody>
<tr>
<td>Controls vs CD +</td>
<td>Yes</td>
<td>0.634</td>
<td>0.627</td>
</tr>
<tr>
<td>Controls vs UC +</td>
<td>Yes</td>
<td>p = 0.012</td>
<td>0.815</td>
</tr>
<tr>
<td>CD vs UC +</td>
<td>Yes</td>
<td>p = 0.008</td>
<td>0.882</td>
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SA                SA                SA                SA

Separation P values (100 permutation testing)

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<tbody>
<tr>
<td>Controls vs CD +</td>
<td>No**</td>
<td>N/A</td>
<td>0.393</td>
</tr>
<tr>
<td>Controls vs UC +</td>
<td>No**</td>
<td>N/A</td>
<td>0.337</td>
</tr>
<tr>
<td>CD vs UC +</td>
<td>No**</td>
<td>N/A</td>
<td>0.217</td>
</tr>
</tbody>
</table>

*Montreal classification
+OPLSDA model examining the differences in urinary metabolic profiles between these cohorts
++p value cannot be calculated if OPLSDA model has negative Q2 values

OPLSDA models also separated South Asian healthy controls from Caucasians healthy controls, and South Asian Crohn’s disease from Caucasian Crohn’s disease, but in UC no robust model could be made.

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 were 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

P1609 EFFECTS OF ACUTE CHANGES IN FERMENTABLE FIBRE INTAKE ON REGIONAL COLONIC FERMENTATION AND TRANSIT IN PATIENTS WITH QUIESCENT ULCERATIVE COLITIS

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Introduction: Reduced saccharolytic fermentation has been described in patients with quiescent ulcerative colitis (UC). Such defects may differ across colonic regions among with acute variations in dietary fibre intake. These aspects deserve further study.

Aims & Methods: We aimed to define regional colonic fermentation by direct intestinal pH-transit profiling in patients with quiescent UC following acute variations in fermentable fiber intake. A randomized, double-blind, crossover trial was performed. Patients with quiescent UC (Partial Mayo Score ≤1; faecal calprotectin <150μg/g) and healthy controls who were not taking any...
Table 1: Colonic pH and transit responses to acute changes in fermentable fiber intake

<table>
<thead>
<tr>
<th>Overall</th>
<th>Mean pH (95% CI)</th>
<th>Mean colonic pH (95% CI)</th>
<th>Mean distal colonic pH (95% CI)</th>
<th>Median (IQR)</th>
<th>CTT (h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>UC n = 15</td>
<td>Low fiber</td>
<td>6.4 (6.2–6.5)</td>
<td>5.6 (5.3–5.7)</td>
<td>7.0 (7.6–8.2)</td>
<td>17 (9–23)</td>
</tr>
<tr>
<td></td>
<td>High fiber</td>
<td>6.8 (6.7–6.5)</td>
<td>5.4 (5.2–5.6)</td>
<td>8.1 (7.6–8.4)</td>
<td>21 (16–39)</td>
</tr>
<tr>
<td>p-value</td>
<td>0.20</td>
<td>0.00</td>
<td>0.99</td>
<td>0.01</td>
<td>0.13</td>
</tr>
<tr>
<td>UC n = 25</td>
<td>Low fiber</td>
<td>6.9 (6.3–7.5)</td>
<td>5.2 (5.1–5.4)</td>
<td>8.0 (8.0–8.5)</td>
<td>16 (15–17)</td>
</tr>
<tr>
<td>Healthy n = 9</td>
<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>0.38</td>
<td></td>
</tr>
</tbody>
</table>

1paired t-test or 2Mann-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. Bürgel: Rebecca has received consultancy fees from Allergan. The Department of Gastroenterology, Monash University benefits financially from the sales of a digital app and booklet on the low FODMAP diet. J.S. Barrett: The Department of Gastroenterology, Monash University benefits financially from the sales of a digital app and booklet on the low FODMAP diet. J.G. Muir: The Department of Gastroenterology, Monash University benefits financially from the sales of a digital app and booklet on the low FODMAP diet. P.R. Gibson: PG has served as consultant or advisory member for AbbVie, Ferring, Norgine, Allergan, Pfizer, Takeda & Takeda; research support received from AbbVie & Janssen; speaking honoraria for his institution from AbbVie, Janssen, Ferring, Takeda, Mylan & Pfizer.

All other authors have declared no conflicts of interest.
P1613 MICROBIAL PROFILING OF NEWLY DIAGNOSED PATIENTS WITH ULCERATIVE COLITIS DIFERS WITH ETHNICITY: RESULTS OF AN INCEPTION COHORT TIME SERIES ANALYSIS

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2Centre For Computational Systems Medicine, Imperial College, London/United Kingdom
3Gastroenterology, St. Vincents Hospital, Melbourne/Australia
4Division Of Women’s Health, Kings College, London/United Kingdom
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Introduction: Ulcerative colitis (UC) phenotype in South Asian (SA) patients differs to Caucasians with a predominant pan-colonic extent. A separate study showed microbial profiles with lower bacterial diversity in the SA group. The significance of these findings is unclear due to small sample size showed different microbial profiles with lower bacterial diversity in the SA group. The significance of these findings is unclear due to small sample size showed different microbial profiles with lower bacterial diversity in the SA group. The significance of these findings is unclear due to small sample size showed different microbial profiles with lower bacterial diversity in the SA group. The significance of these findings is unclear due to small sample size showed different microbial profiles with lower bacterial diversity in the SA group. The significance of these findings is unclear due to small sample size showed different microbial profiles with lower bacterial diversity in the SA group.

Aims & Methods: In this study we aimed to investigate the role of OGR1 in IBD patients. Expression of OGR1 in surgical specimens from non-IBD (n = 5), CD (n = 10) and UC (n = 10) patients was determined by immunohistochemistry, RT-qPCR and Western blotting. Clinical disease activity was assessed by the Harvey Bradshaw Index (HBI) and the Modified Truelove and Witts activity index (MTWI) for CD and UC patients, respectively. Nonparametric Spearman’s rank correlation analysis was performed.

Results: OGR1 immunostaining of human surgical samples from non-IBD patients revealed OGR1 expression mainly in lamina propria cells, with weaker staining in epithelial cells. OGR1 staining in IBD patients was stronger compared to controls; however, in IBD patients OGR1 is highly expressed in both epithelial cells and lamina propria. Further, paired samples taken the same time, from non-inflamed and inflamed intestinal tissue from IBD patients showed stronger OGR1 staining in the inflamed mucosa compared to the non-inflamed mucosa. Accordingly, mRNA and protein expression of OGR1 was significantly increased in non-IBD compared to IBD patients. A significant positive correlation was observed between OGR1 expression and the clinical score in both the non-inflamed (rs 0.7311, p = 0.0069) and the inflamed mucosa (rs 0.7698, p = 0.0034).

Conclusion: The expression of OGR1 is significantly increased in patients with IBD. OGR1 expression correlates with IBD disease activity, suggesting an active role of OGR1 in IBD pathogenesis. OGR1 appears to be a therapeutic target among the pH-sensing receptors involved in IBD.

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

Conclusion: Increased Bifidobacteria and Lactobacillus 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 Caucasians controls. There is a trend towards lower diversity in the SA group and reduced Bacteroides which are consistent with the UC dysbiosis described in the literature. Functional analysis of this unique microbial profile through metagenomic and metabolomic techniques may explain the different disease behaviour in the SA group.

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

References:

P1614 VITAMIN D SUPPLEMENTATION REDUCES Faecal Calprotectin and Alters Intestinal Microbiota Composition in Patients with Active UC

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Introduction: There is evidence for vitamin D as an immunomodulator in patients with IBD, but results from clinical trials to date are inconclusive. It is uncertain whether vitamin D supplementation may affect the intestinal microbiota.

Aims & Methods: This study aimed to assess the effect of vitamin D replacement in deficient patients with and without ulcerative colitis (UC) on faecal calprotectin and faecal microbiota. Vitamin D was replaced over 8 weeks to patients with active UC, inactive UC, and non-IBD controls with baseline 25(OH) vitamin D < 30 nmol/L, and markers of inflammation and stool collected for microbiota analyses by next generation sequencing.

Results: Eight patients with active UC, 9 with inactive UC and 8 non-IBD controls received 40,000 units of vitamin D weekly over 8 weeks. No demographic differences were noted across the groups. Mean baseline 25(OH) vitamin D levels were 34 (range 12–49) nmol/L. Vitamin D supplementation increased mean 25(OH) vitamin D to 111 (range 71–158) nmol/L (P < 0.001), and reduced para-thyroid hormone levels from mean 4.3 to 3.3 pmol/L (p = 0.017). No change in baseline medications for UC took place in patients with UC, except for one patient with active UC who ceased his 5-aminosalicylate. Faecal calprotectin levels reduced from median 275 to 91 μg/g (p = 0.023) in patients with active colitis, but did not change in patients with inactive colitis or non-IBD controls. Similar improvements in albumin, platelet count and symptomatic disease activity indices were noted. No changes in overall bacterial diversity were noted. There was a trend towards an increase in abundance of Ruminococcus gnavus post vitamin D supplementation in active UC patients, but this did not reach statistical significance.

Conclusion: Vitamin D supplementation was associated with reduced intestinal inflammation in patients with active UC. A randomised controlled trial evaluating vitamin D in IBD is required along with further investigation of potential mechanisms by which vitamin D may alter specific microbial composition.

Disclosure of Interest: M. Garg: This work was supported by the European Crohn’s and Colitis Fellowship awarded to Dr Mayur Garg, and St Mark’s Association Grant awarded to Philippa Hart and Dr Mayur Garg. All other authors have declared no conflicts of interest.

TABLE 1: Summary of Bacterial Taxonomic Findings in South Asians (SA) and Caucasians with ulcerative colitis. 1v Increase or decrease in SA relative to Caucasians.
**P1615 SUPPRESSION OF PHOSPHOLIPASE A2 OF INTESTINAL MACROPHAGES AMELIORATES MUCOSAL INFLAMMATION IN A GENETIC MOUSE MODEL OF ULCERATIVE COLITIS**

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**Introduction:** Attack by commensal microbiota is one component for induction of inflammatory episodes in ulcerative colitis (UC). In UC, the mucus layer is intrinsically devoid of phosphatidylcholine (PC) resulting in low hydrophobicity which facilitates bacterial invasion. Colonic ectophospholipase-carrying bacterial strains are likely candidates to break the PC mucus barrier. Therefore we aimed to evaluate the effect of phospholipase A2 (PLA2) inhibitors on inflammation in a genetic UC mouse model.

**Aims & Methods:** Attack by commensal microbiota is one component for induction of inflammatory episodes in ulcerative colitis (UC). In UC, the mucus layer is intrinsically devoid of phosphatidylcholine (PC) resulting in low hydrophobicity which facilitates bacterial invasion. Colonic ectophospholipase-carrying bacterial strains are likely candidates to break the PC mucus barrier. Therefore we aimed to evaluate the effect of phospholipase A2 (PLA2) inhibitors on inflammation in a genetic UC mouse model.

**Results:** Luminal UDCA-LPE reduced the PLA2 activity in stool by 36.4%. Concomitantly no inflammatory phenotype was observed when compared to kindlin 2−/− mice not treated with UDCA-LPE. The improvement was documented in regard to stool consistency, calprotectin levels in stool, and macroscopic endoscopic as well as histologic features of the mucosa. The pattern of colonic microbiota distribution obtained in the UC phenotype mice was reversed by UDCA-LPE to the control mice pattern.

**Conclusion:** Reduction of the bacterial ectophospholipase A2 activity improves 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.

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**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. Genome-wide association studies (GWAS) identified over 240 non-overlapping single-nucleotide polymorphisms (SNP) associated with IBD. G-protein-coupled receptor 65 (GPR65) or Toll-like death associated gene 8 (TDAG8) which facilitates bacterial invasion. Colonic ectophospholipase-carrying bacterial strains are likely candidates to break the PC mucus barrier. Therefore we aimed to evaluate the effect of phospholipase A2 (PLA2) inhibitors on inflammation in a genetic UC mouse model.

**Results:** Luminal UDCA-LPE reduced the PLA2 activity in stool by 36.4%. Concomitantly no inflammatory phenotype was observed when compared to kindlin 2−/− mice not treated with UDCA-LPE. The improvement was documented in regard to stool consistency, calprotectin levels in stool, and macroscopic endoscopic as well as histologic features of the mucosa. The pattern of colonic microbiota distribution obtained in the UC phenotype mice was reversed by UDCA-LPE to the control mice pattern.

**Conclusion:** Reduction of the bacterial ectophospholipase A2 activity improves 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.

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**P1617 B2-STRUCTURING AND B3-PENETRATING PHENOTYPE IN CROHN’S DISEASE: CHANGES IN ACTIVATION 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 Wnts ligands in surgical resections from Crohns disease (CD) patients with different disease behavior. CD patients were categorized according to Montreal classification (age at diagnosis, location and behavior). mRNA was isolated form resections of patients presenting an stricturing (B2) or a penetrating (B3) behavior. The expression of macrophage markers (CD206, CD16, iNOS, Arginase), Wnt ligands (Wnt1, Wnt2, Wnt3, Wnt4, Wnt5a, Wnt5b, Wnt6, Wnt7a, Wnt7b, Wnt8a, Wnt8b, Wnt9b, Wnt10a, Wnt10b and Wnt16) and DKK1 (inhibitor of Wnt signaling) was analyzed by RT-

**Results:** B3-patients seem to present a higher infiltration of macrophages since increased expression of markers commonly used to detect pro-inflammatory (CD86) and regulatory/pro-resolving/pro-fibrotic phenotypes (CD206, ARG) was detected in this group. These patients also presented a generalized overexpression of Wnt ligands together with augmented DKK1 mRNA levels. B2-patients showed a more complex situation with ligands that present increased (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 with n ≥ 7 in all groups and analyzed by ANOVA + Kemwan-Keuls test. (*p < 0.05 vs control; **p < 0.05 vs control).

**Conclusion:** Crohn’s disease patients presenting a stricturing (B2) or a penetrating (B3) behavior undergo surgical resection differ in the pattern of macrophage infiltration and Wnt signaling.

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

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**P1618 CD16 POSITIVE CELLS EXPRESS TGFß AND MEDIATES MURINE INTESTINAL FIBROSIS**

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**Introduction:** M2 macrophages play a key role in injury repair and fibrosis. We have recently identified that STAT6-deficient macrophages mediate mucosal repair after TNBS-induced acute colitis and that, in a chronic model, STAT6-deficient animals accumulate macrophages expressing the CD16 marker that promote intestinal fibrosis.

**Aims & Methods:** We aim to analyze whether the expression of the pro-fibrotic mediator TGFß is related with this macrophage phenotype and the relevance of these cells in murine intestinal fibrosis. Murine peritoneal macrophages obtained from both WT or STAT6 (-/-) mice were treated with IL-4 (20 ng/ml), IL-10 (50 ng/ml) or vehicle and the mRNA expression of CD16 and TGFß was analyzed by RT-

**Results:** The expression of TGFß b ñ (inhibitor of Wnt signaling) was analyzed by RT-

**Conclusion:** We have identified that STAT6-deficient macrophages mediate mucosal repair after TNBS-induced acute colitis and that, in a chronic model, STAT6-deficient animals accumulate macrophages expressing the CD16 marker that promote intestinal fibrosis.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
P1619 GTS-21, A7 NICOTINIC ACETYLCHOLINE RECEPTOR AGONIST, ATTENUATE DSS-INDUCED COLITIS BY IMPROVING INTESTINAL MUCOSAL BARRIER FUNCTION

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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 can modulate innate immune responses through stimulation of α7 nicotinic acetylcholine receptors (α7nAChR). GTS-21, a selective α7nAChR agonist, has previously demonstrated to inhibit the inflammation associated with rheumatoid arthritis (RA). In this study we investigate whether GTS-21 protects against DSS-induced colitis and its potential mechanism.

Aims & Methods: Male BALB/c mice (8–10 weeks old, n = 32) were randomly divided into 4 groups: normal control group, DSS-induced group, GTS-21 treatment control group (DSS-induced mice treated with GTS-21), and α-BGT and GTS-21 (n = 8, each group). DSS group was given final concentration of 3.5% DSS drinking water, the treatment group was treated with GTS-21 (20mg/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 GTS-21 injection, and the control group received saline. Caco2 cells were randomly divided into 4 groups: normal control group, α-BGT induced group, GTS-21 treatment control group, α-BGT group. TNF-α group of Caco2 cells were exposed to 25 ng/ml TNF-α, GTS-21 group were given 100 ng/ml GTS-21 for 30 min prior to TNF-α, α-BGT group pre-treated with α-BGT (50 ng/ml) for 30 min prior to GTS-21 injection. Western blot was used to detect the tight junction protein and NF-κB associated protein expression.

Results: Compared with DSS-induced mice, ΔAI score decreased and colon length improved after administration of GTS-21 (9.1 ± 0.7 cm vs 6.8 ± 0.5 cm, p < 0.01). The α7nAChR antagonist α-BGT can eliminate those protective effects (Figure 1). The intestinal permeability improved after administration of GTS-21 compared with DSS-induced mice (49.52 ± 28.59 μg/mg vs 157.40 ± 32.40 μg/mg, p < 0.05), whereas α-BGT can block this effect (115.50 ± 10 μg/mg vs 49.52 ± 28.59 μg/mg, p < 0.05) (Figure 2, 3). The expressions and distribution of tight junction protein in DSS-induced mice were enhanced after treatment with GTS-21 (p < 0.05) (Figure 4, 5). GTS-21 attenuated the NF-κB activation (p < 0.05) (Figure 6). Inhibition reversed the inflammatory effect of GTS-21 (p < 0.05) (Figure 6). GTS-21 improves the distribution of tight junction proteins in the intestinal epithelial cells induced by TNF-α (Figure 7). GTS-21 reduces nuclear translocation of NF-κB in Caco2 cells induced by TNF-α (Figure 8).

Conclusion: Ther7 nicotinic acetylcholine receptors agonist GTS-21 can attenuate the intestinal inflammation in DSS-induced mice, which may be due to improving intestinal mucosal barrier function by enhancing the expression of tight junction protein.

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

Reference

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P1621 ANAEMIA PREVALENCE AND TREATMENT APPROACH FOR INFILMAMMATORY BOWEL DISEASE

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Introduction: For inflammatory bowel disease (IBD), anaemia is the most frequent complication. Anaemia causes fatigue, impaired performance and quality of life. This study was undertaken to determine the prevalence and type of anaemia in IBD and followed up at our hospital from January 2015 to June 2016 (male: 254, female: 211, average age: 47 ± 14.4, Crohn disease: 257, Ulcerative Colitis (UC): 254). According to World Health Organization standards, haemoglobin value is below 13g/dL in men and 12g/dL in women. Results: In our study, we determined that 50.3% of total 465 patients had anaemia, which was more frequent in women than men (64% vs. 39%, p < 0.001). Anaemia frequency was higher in CH cases (57%) than in UC cases (41%) (p = 0.001). CD involvement were as follows: 54.5% in ileal involvement, 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 colitis (E2) and 31.5% had pancolitis involvement. There was no significant relation between anaemia frequency and duration of disease (p = 0.216). We specified the following types of anaemia: IDA only 32.9% (77), ACD only 5.5% (13), IDA and ACD combination 6.8% (16), anemia stemming from B12/folic acid deficiency 6.4% (15), multiple anaemia 17.8% (41) and anaemia with no etiology 30.7% (72). 50% of patients with anaemia received treatment; 23% of IDA patients had oral iron intake and 41% of them had parenteral iron treatment while 53% of patients who were suffering from megaloblastic anaemia got B12/folic acid treatment.

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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 IDA. Almost half of these patients received anaemia treatment. We should increase the treat- ment rate in our IBD patients that have anaemia.

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

P1622 SUCINATE 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 relevant role of sucinate, an intermediate of the tricarboxylic acid cycle, in inflammation and the innate receptor, SUCNR1, has been recently been related with rheumatoid arthritis.

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 according to Wallace Score (1–10). The mRNA expression levels of iNOS, Arginase I, COX-2, TNF-α, IL-1β, IL-4, IL-10 and IL-6 were analysed by qPCR.

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 ± 0.1 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 factors, mucosal tight junction proteins (Occludin and ZO-1), and proteins related with endoplasmic reticulum stress (IRE1, XBP1, 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 I110−/− 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, mucosal tight junction proteins (Occludin and ZO-1), and proteins related with endoplasmic reticulum stress was 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 partially resumed in ZIP7 downregulated cells.

Conclusion: ZIP7 induces disruption of the intestinal barrier, which was associated 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.

References

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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 found mainly in the myenteric and submucosal plexuses of the gut. EGC express the immune contact molecule Glial Cell Line Derived Neurotrophic Factor (GDNF) and the cytokine G-CSF, whose expression is increased in response to enteric inflammation (e.g. Crohn’s disease, IBD). This suggests that EGC might promote mucosal healing. In inflammatory bowel disease (IBD) such as Crohn’s disease, IBD and Ulcerative Colitis (UC), both EGC phenotype and 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 plays a role in mucosal healing and whether EGC promote a switch from IEC to IEB. Since EGC expression is increased in IBD, we focused on IEB pathogenesis. In non-IBD conditions, EGC promote a switch from IEC to IEB. We hypothesized that EGC promote a switch from IEB to IEB and that this switch is associated with IEB pathogenesis.

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-labelled 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 (SI00) 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 interacting 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 GEG-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 cells. These contacts are favored by T cell activation but also by EGC exposure to inflammatory cytokines. Further experiments are required to characterize these neuro-immune interactions but they suggest that EGC-T cell contact may play a crucial role in case of inflammatory bowel diseases. This work is supported by the Association Français Aupepit.

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.

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**P1626 PROSTACYCLIN REVERSES COLITIS THROUGH THE DOWN REGULATION OF INTESTINAL EPITHELIAL PERMEABILITY**

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**Aims & Methods:**

The role of the lipid mediator PGI2 produced by PTGIS in IEB regulation is unknown. 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.

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**P1627 7α-HYDROXY-4-CHOLESTEN-3-ONE FOR DIAGNOSIS AND MANAGEMENT OF BILE ACID MALABSORPTION: FIRST YEAR CLINICAL EXPERIENCE**

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**Introduction:** 7α-Hydroxy-4-cholesten-3-one (7HCO) is a reliable method to diagnose bile acid malabsorption (BAM). Since 7HCO is an immediate metabolite in the bile acid synthesis, increased levels refer to bile acid production, which is the in vivo PGI2 supplementation significantly reduced IBD, and inflammation (Interferon mRNA) as well as reduced IEB permeability. DSS-induced clivage of Caspase 3 is normalized by flolan. Ex vivo measuring permeability of mouse 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 control patients, and addition of flolan reduced their permeability. In vivo PGI2 supplementation significantly reduced IBD, and inflammation (Interferon mRNA) as well as reduced IEB permeability. DSS-induced clivage of Caspase 3 is normalized by flolan. Ex vivo, staurosporine-induced permeability of mice or human mucosal explants is entirely inhibited 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.

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**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]) and IL-21 (156.51 pg/ml [15.7;367.49]) compared to controls (48.7 pg/ml [38;78;67], 2.6 pg/ml [1.7;3.2], respectively). However, differences were not statistically significant (p = 0.06, p = 0.17, respectively). Increase of described cytokines levels could be a sign of Th17 functional overactivity suggesting autoimmune type of inflammation. Statistically significant increase of IL-10 in remission (27.99 pg/ml [15.73;33.55]) compared to controls (4.36 pg/ml [3.26;15.25], p = 0.0046) was found as well. IL-10 was also higher in patients with acute stage (21.93 [3.61;33.53]) compared to controls, however differences were not statistically significant (p = 0.06). IL-10 as an anti-inflammatory cytokine characterizes the activity of regulatory T-cells which suppress autoimmune inflammation. In addition, it was revealed that the level of IL-23 which stimulates Th17 differentiation was higher both in acute stage (258.4 pg/ml [55;367.49]) and remission (244.93 pg/ml [32.06;301.93]) compared to controls (124.3 pg/ml [107.9;296.04]), however differences were not statistically significant.

**Conclusion:** Increase of IL-17A, IL-17F, IL-21, IL-22 levels could be a sign of Th17 functional overactivity suggesting autoimmune type of inflammation. IL-17A and IL-21 produced by Th17 cells might be considered as markers of active autoimmune inflammation in UC patients.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
P1629 ANP32E IS INVOLVED IN THE STEROID-REFRACTORY ULCERATIVE COLITIS
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Introduction: The steroid-refractoriness is a common complication of ulcerative colitis (UC). P32E is an unidentificated protein involved in the mRNA granules. The role of ANP32E 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. To address this, we performed a cohort 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 and immunohistochemistry analyses were performed on the rectal biopsy samples.

Results: As expected, DSS treatment resulted in severe weight loss, and even 7 days after ileo-colonic resection. In CD, colonic phenotype of the ileum was already reported at surgery, at 6 and 12 months after ileo-colonic resection (1). A clinical follow up at 5 years with clinical recurrence, both at 12 months (30 [0–40] versus 0 [0–35]; p = 0.02) and at 2 years (30 [0–40] versus 0 [0–35]; p = 0.03). 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 = 0.02). 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 [5–50]; p = 0.04). 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 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 Mann-Whitney U test.

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 ileal inflammation is usually accompanied by decreases of mucins (mucin-type). The expression of sulfomucins was significantly correlated with the CDAI score at 6 months (r = 0.57; p = 0.015) and at 2 years (r = 0.53; p = 0.02). 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 [5–50]; p = 0.04). 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 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 Mann-Whitney U test.

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Results: As expected, DSS treatment resulted in severe weight loss, and even 7 days after ileo-colonic resection (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 littermates after colitis induction, showed faster recovery (earlier weight gain, reduced histological scores, reduced levels of the infiltration marker myeloperoxidase). We observed differences in the abundances of the colon microbiota (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 MoA of FMT.

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

References
P1632 IMMUNOGENICITY OF A QUADRIVALENT INFLuenza VACCINE AMONG PATIENTS WITH INFLAMMATORY BOWEL DISEASE
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Introduction: Immunization of a quadrivalent influenza vaccine (A/California/7/2009(H1N1)pdm09, A/Switzerland/9715293/2013(NIB-88) (H3N2), B/Phuket/3073/2013, and B/Texas/2/2013) began in the 2015/2016 season. We assessed the immunogenicity and booster effect of quadrivalent influenza vaccine for adult inflammatory bowel disease patients treated with immunosuppressive drugs and/or anti-TNF-α agents.

Aims & Methods: Single vaccination group and booster group were randomly assigned to adult patients with crohn’s disease or ulcerative colitis, and quadrivalent influenza vaccine was administered subcutaneously. Serum samples were collected at 3 points (before vaccination, 4 weeks after vaccination and after the end of influenza season) in the single group and 4 points in the booster group (before vaccination, 4 weeks after the first vaccination, 4 weeks after the second vaccination and after the end of the influenza season). Antibody titer against each influenza strain was measured by inhibition of hemagglutination.

Results: A total of 132 patients with IBD were randomly assigned to single vaccination and booster groups. Eighteen patients received immunomodulatory monotherapy and 20 received anti-TNF-alpha single agent therapy. Nineteen patients received combination therapy of immunosuppressant and anti-TNF-α agents. No significant difference between the single vaccination group and booster group was observed (geometric mean titer: H1N1: p=0.81; H3N2: p=0.79; B/Phuket: p=0.82; B/Texas: p=0.84). In patients treated with infliximab, serum protection rate (SP%) and seroconversion rate (SC%) tended to be lower in influenza A strains in patients who maintained blood concentrations (P=0.15).

Conclusion: Serological response rate to influenza vaccination was low in IBD patients receiving immunosuppressant therapy, especially infliximab, even with a quadrivalent influenza vaccine. Disclosed Interest: All authors have declared no conflicts of interest.

P1633 THE INCIDENCE OF INFLAMMATORY BOWEL DISEASE IN SEVEN ETHNICALLY DIVERSE URBAN POPULATIONS IN ENGLAND: RESULTS FROM THE UK INCEPTION COHORT EPIDEMIOLOGICAL STUDY (UNITE)
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Abstract: P1633. Table 1: Incidence rates per 100 000 for inflammatory bowel disease, Crohn’s disease, ulcerative colitis and inflammatory bowel disease undclassified in England for patients aged 16 years or older in 2016/17. CD, Crohn’s disease; IBD, inflammatory bowel disease; IBDU, IBD undclassified; UC, ulcerative colitis.

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Caucasian</th>
<th>Indian</th>
<th>Pakistani</th>
<th>No. of cases</th>
<th>IBD crude</th>
<th>UC crude</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birmingham, University Hospital</td>
<td>520,986</td>
<td>52,491</td>
<td>92,047</td>
<td>31</td>
<td>13.03</td>
<td>4.46</td>
</tr>
<tr>
<td>Birmingham, Heart of England NHS Trust</td>
<td>50</td>
<td>70</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Birmingham, Sandwell</td>
<td>18</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leicester</td>
<td>137,910</td>
<td>74,098</td>
<td>5,584</td>
<td>86</td>
<td>26.11</td>
<td>5.07</td>
</tr>
<tr>
<td>London, Brent and Harrow</td>
<td>170,340</td>
<td>103,417</td>
<td>16,632</td>
<td>78</td>
<td>17.74</td>
<td>3.63</td>
</tr>
<tr>
<td>North Manchester, Pennine NHS Trust</td>
<td>445,293</td>
<td>3,475</td>
<td>37,565</td>
<td>40</td>
<td>6.81</td>
<td>3.31</td>
</tr>
<tr>
<td>Wolverhampton</td>
<td>141,044</td>
<td>25,370</td>
<td>2,719</td>
<td>28</td>
<td>14.0</td>
<td>5.0</td>
</tr>
<tr>
<td>Birmingham, University Hospital</td>
<td>1,415,773</td>
<td>258,851</td>
<td>154,747</td>
<td>351</td>
<td>15.54 (95% CI 8.42)</td>
<td>4.80 (95% CI 1±0.49)</td>
</tr>
</tbody>
</table>

Incidence by Ethnicity
Caucasian | Indian | Pakistani
210 | 62 | 26 |
14.83 | 26.22 | 14.07 |
5.58 | 5.07 | 6.44 |
8.26 | 19.45 | 7.33 |
0.99 | 1.69 | 1.69 |

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Introduction: The global incidence of inflammatory bowel disease (IBD) is increasing. Migration may influence disease epidemiology. The UK demographics are affected by sustained migration from South Asia. The incidence of UC in South Asians (SA) was previously reported as higher than the Caucasian population. These single centre studies were done over 20 years ago. The current epidemiology of IBD in the multiethnic UK is unknown.

Aims & Methods: We aimed to describe the UK incidence of IBD and distribution within ethnic groups. Census data (2011) was used for background population size, ethnic groups and to identify areas with high SA populations where Indian and Pakistani were the predominant groups. The incidence was calculated by using the number of subjects in each ethnic group in the background population as the denominator. Adult patients (>16 years) with newly diagnosed IBD (fulfilling Copenhagen diagnostic criteria) were prospective recruited over one year in 7 catchment areas with high SA population. Data including demographics, ethnic codes and disease phenotype (Montreal classification) was collected onto the Epicom database. Chi-squared test was used to detect differences in IBD incidence between ethnic groups. A p value <0.05 was considered significant.

Results: Over 1 year IBD was diagnosed in 351 cases: 219 ulcerative colitis (UC), 107 Crohn’s disease (CD) and 26 Inflammatory bowel disease unclassified (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 IBD 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 ethnic groups 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 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 Caucassians 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 6.3/100,000 and IBDU 2.4/100,000). Ethnic-adjusted incidence rates showed that Indians have higher incidence of UC than Caucasians and Pakistanis with highest observed incidence in North West London. These findings are consistent with previous data suggesting that Indians have a higher predisposition for UC. Genetic, environmental and dietary factors may be responsible for differences and further analyses are underway. Better understanding of the susceptibility of Indians to UC may lead to the underlying cause of UC.

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

References
P1634 IBD-RELATED MALIGNANCIES AND MORTALITIES: OBSERVED IN 2015–2016: RESULTS FROM THE PROSPECTIVE NATIONWIDE HUNGARIAN REGISTRY

Introduction: The increasing incidence of anal canal (AC) carcinomas in men and women requires better knowledge on Human papillomavirus (HPV) infection at this site and its risk factors. Higher incidence of AC cancers in Crohn’s disease (CD) patients is strongly suggested in the literature, without knowledge on HPV involvement. A gastroenterology population offers the opportunity to study a mixed and non-sexually at risk population and to study anal HPV infection in CD patients.

Aims & Methods: The aim of the study was to assess AC HPV infection prevalence and its risk factors in an gastroenterology population. The ‘Human Papillomavirus Anal infection’ - PAPILLAN- study took place in a French university hospital gastroenterology unit. Consecutive patients were prospectively recruited at the occasion of a colonoscopy, whatever the indication. On the colonoscopy day, under general anesthesia, AC smear was sampled with a dedicated brush for molecular analysis. HPV detection and genotyping was performed with the INNO-LiPA assay. Risk factors for any HPV, and high risk (HR) HPV infection were assessed by bivariate and multivariate analysis after logistic regression.

Results: A total of 469 consecutive patients (median age 54 years, 52% women) had suitable anal swabs for HPV DNA detection. Among them 101 had inflammatory bowel disease (IBD): 70 had CD. 112 patients had at least one immunosuppressive treatment for IBD or another condition. Overall 34% of the population had a detection of any HPV type in AC smears. HR HPV prevalence was 18%, LR HPV prevalence was 9% and HPV16 prevalence was 7%. Most prevalent HR HPV types were, by decreasing order: HPV16, HPV51, HPV52 and HPV39. Among all patients with HPV positive or HR HPV positive samples, 65.6% and 65.9% were women, respectively (p = 0.0001; 14%, p = 0.0072, compared to the rest of the study population). Eleven (12%) patients (50%) with perianal CD had an AC infection with any HPV. Multivariable analysis associated perianal 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.

Conclusion: We demonstrated that CD patients harbor more frequent AC infection with HR HPVs and that immunosuppressive treatment is an independent risk factor for HR HPV infection at this site. These findings strongly support prophylaxis with vaccination and adequate screening in our patients.

Disclosure of Interest: L. Vuitton: Speaker for AbbVie, Hospira, MSD, Ferring, Teva, Takeda. Research grants from MSD, Takeda Consulting fees from Ferring, AbbVie
S. Koch: Speaker for AbbVie, MSD, Norgine, Olympus
All other authors have declared no conflicts of interest.
L. Plastaras: Speaker for Hospira, AbbVie, MSD

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P1635 GUT COLONIZATION WITH EXTENDED SPECTRUM BETA-LACTAMASE PRODUCING ENTEROBACTERIA MAY INCREASE THE RISK OF INFECTION IN ANAL CANAL DISEASE OUTPATIENTS: PRELIMINARY STUDY RESULTS

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 producing Enterobacteria can increase 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 centers 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 patients UC patients were evaluated according to Mayo score, Montreal classification, adapted Truelove and Warren criteria and CD patients according to Crohn’s disease activity index (CDAI), suggested by ECCO IBD guidelines (2016).

Results: A total of 101 patients with UC and 47 patients with CD were tested for gut colonization with ESBL-E. We found that 12 (11.9%) of the UC patients and 5 (10.6%) of the CD patients were colonized with ESBL-E. 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;
50%) had mild to moderate to severe disease activity, according to Montreal classification diagnosis section (p = 0.037). Most of the UC patients with out ESBL-E colonization (n = 81; 91%) had mild disease activity, whereas half of the patients with ESBL-E colonization (n = 6; 50%) had moderate disease activity, according to modified Truelove and Witt’s criteria (p < 0.001). Most of the CD patients without ESBL-E colonization (n = 38; 90%) had moderate disease activity, whereas most of the patients with ESBL-E colonization (n = 3; 60%) had severe disease activity, according to CDAI (p = 0.05).

Conclusion: Gut colonization with ESBL-E might increase disease activity in out patients. Smoking could be clinically relevant and help to improve diagnostic and treatment protocols for IB patients, because eradication of ESBL producing bacteria might reduce IB disease activity.

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

Reference:

P1637 IS SMOKING CESSATION LINKED TO NEW ULCERATIVE COLITIS CASES? A RETROSPECTIVE COHORT-BASED HYPOTHESIS

M. Grueber1, L. Biedermann2, S. Vavricka1, A. Schöpfer3, A. Macpherson1, P. Juillerat4, C. Clair Willi4, N. Fournier4, P1638 THE IMPACT OF INFLAMMATORY BOWEL DISEASE ON

D. Piatek1, I. Korona-Glowniak2, A. Malm2, S. Jarmakiewicz3, P1638 THE IMPACT OF INFLAMMATORY BOWEL DISEASE ON peak was reached over 50 years old suggesting an indirect impact of smoking cally and significantly over years in UC patients compared to CD patients. A

5

Among them 52% of CD ans 24% of UC patients were smokers at diagnosis. We compared the proportion of former smokers in 10-year groups of diagnosis. November 2006 to November 2015 were asked about their smoking status at

2361 IBD patients (1366 CD, 995 UC) were included in the analysis. UC patients after 50 years old. Our aim was to confirm this hypothesis using data

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Reference:
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 IBD patients with liver abnormalities had infra-clinical PSC. A history of intestinal resection (P = 0.0357), abnormal gamma-galactamyl transferase values (P = 0.0064), and abnormal alkaline phosphatase values (P = 0.021) were significantly associated to suspected PSC.

Table 1: MRC abnormalities in cohorts 1, 2, and 3

<table>
<thead>
<tr>
<th>Results of MRC</th>
<th>Total Normal</th>
<th>Duodocenia</th>
<th>Doubt</th>
<th>PSC</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cohort 1</td>
<td>206</td>
<td>150 (72.6%)</td>
<td>28 (13.6%)</td>
<td>9 (4.4%)</td>
<td>23 (11.2%)</td>
</tr>
<tr>
<td>Cohort 2</td>
<td>28</td>
<td>27 (96.4%)</td>
<td>1 (3.6%)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Cohort 3</td>
<td>187</td>
<td>116 (62.0%)</td>
<td>0</td>
<td>13 (7.0%)</td>
<td>58 (31.0%)</td>
</tr>
</tbody>
</table>

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.
P1643 CONTRAST-ENHANCED ULTRASOUND IS HELPFUL IN THERAPEUTIC DECISION MAKING IN PATIENTS WITH STRICTURING CROHN’S DISEASE

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Introduction: The majority of Crohn’s disease (CD) patients undergoing surgery have been reported to have persistent activity despite adequate treatment. Therefore, in the current study, we aimed to evaluate the clinical outcomes of CD patients with stricture disease managed based on the CEUS findings. CD patients with stricture disease were recruited from two IBD centra between June 2015 and February 2017. Patients with penetrating disease complications were excluded. CEUS was performed with a 3.5 MHz linear transducer (SonoVue, Bracco Imaging). Patients having rapid uptake (within 20 second after injection) were indicated for therapy escalation, patients without uptake with obstructive symptoms were referred for surgery, patients without 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 of another biological; 10 pts had therapy step-up to antiTNF or immunosuppression). Three patients were referred after surgery. Ten patients (37%) had no rapid uptake at the CEUS; seven of these patients had symptomatic stricture disease 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 group had a significant improvement in their functional status and none of these patients had recurrence at the surveillance colonoscopy at 12 months. Conclusion: Contrast-enhanced ultrasound might be helpful in guiding the therapeutic decision making between surgery and therapy intensification in patients with stricture Crohn’s disease.

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

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 is also highly variable and may influence the patients’ perspectives, risks and patient management. World J Gastrointest Pharmacol Ther 2015 November 6; 64(4): 156–171


Huang YW et al.: From conception to delivery: Managing the pregnant inflammatory bowel disease patient. World J Gastroenterol 2014 April 7; 20(13): 3495–3506

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

Reference
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 ther-
apy. Seven patients (4.2%) developed tuberculosis while under anti-TNFα treat-
ment (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 three patients were under immune-
nosuppressive and one under corticosteroid treatment. 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 trea-
ted 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 previously a negative screening, two of them
with IGRA, been considered a high sensitivity and specificity screening method.
Therefore, a surveillance strategy for IBD patients with anti-TNFα therapy is
needed.

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

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P1649 EVALUATION OF MODIFIED MAYO ENDOSCOPIC SCORE AND DUBLIN SCORING SYSTEM 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. We aimed to evaluate the relation of the scores with disease activity and as predictive factors of clinical relapse. Patients with UC in clinical remission (partial Mayo score [pMS] ≤1) who underwent colonoscopy between January/2010 and December/2013 were included. MMES and DUBLIN scores were calculated. Analytical and histological activity (defined by Geboes score ≥3.1 and Nancy score ≥2–4) as well as predictive factors of relapse and relapse-free time were evaluated. Relapse was defined as pMS ≥2, therapy to induce remission, hospitalization and/or colectomy.

Results: 82 patients were selected. 51.2% (n = 42) female, mean age 49.4 ± 13.7 years. MMES ranged between 0–13.8 and DUBLIN between 0–9. MMES and DUBLIN scores presented good correlation (r = 0.945, p < 0.001). MMES was higher in patients with histological activity defined by Nancy (3.7 ± 4.0 vs. 0.8 ± 1.5; p < 0.001) and Geboes (4.0 ± 4.2 vs. 1.3 ± 2.4; p = 0.005). DUBLIN was also higher in patients with histological activity defined by Nancy (1.9 ± 2.1 vs. 0.5 ± 0.8; p = 0.001) and Geboes (2.0 ± 2.3 vs. 0.7 ± 1.2; p = 0.000). There was no significant correlation between both scores and analytical activity. Relapse occurred in 36.6% (n = 30) of patients, with a cumulative risk of 9.8, 18.4, 25.9, and 42.0% at 12, 24, 36, 48 and 60 months, respectively. Mayo Endoscopic Subscore (MES) (p = 0.001), MMES (p = 0.001), and Nancy score (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 (95% CI: 0.60–0.81), 0.75 (95% CI: 0.62–0.88) 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. MMES is an independent predictor 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 and 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 this retrospective study. 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 (4/20.20%) had involvement of small bowel on MRE confirming the CD diagnosis. Twenty-one patients with IC (21/40;52.5%) 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 treatment by prescribing immunosuppressants (IS) (n = 45), anti-TNF agents (n = 22), anti-TNF escalation (n = 8), adding IS to anti-TNF agents (n = 9) and changing anti-TNF agents (n = 5). In addition, 13 (9.2%) patients underwent “top-down” therapy due to stop IS (n = 7), anti-TNF (n = 3) or anti-TNF de-escalation (n = 3). Surgery was indicated in 62 (62/ 199;31.1%) patients after MRE. After one year of follow-up, the medical decision was maintained in 65.4% (288/440) of patients.

Conclusion: RE is a very helpful tool for the medical management of CD patients. MRE provides major information to optimize treatment in the long-term of patients with active CD.

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

References
1. Pariente et al, Gastroenterology 2015

Aims and 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 Clin. Huriez Hospital, Lille, France 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. Receiver Operating Characteristic (ROC) curves were prospectively and post-hoc 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), calculated 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 anoperineal 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 (r = -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 correlated with bowel damage assessed by the LI, while female gender, disease activity and current anoperineal 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.

References
Pariente et al, Gastroenterology 2015
Gower-Rousseau et al, Gut 2015
In UC patients, we observed higher expression of IL-8 (p = 0.005) and UC patients. 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), TLR2 (p = 0.002), CCR1 (p = 0.007), CCR2 (p = 0.037), CCR5 (p < 0.01), CD206 (p = 0.011), TNFz (p = 0.002) and IL-6 (p = 0.006) in the inflamed mucosa from sigma. In CD patients, we observed increased expression of IL-1β (p = 0.005) and IL-8 (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 NEUTROPHELIC AND ENDOTHELIAL ACTIVITY MARKERS WITH THE DISEASE ACTIVITY IN INFLAMMATORY BOWEL DISEASE

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Introduction: Disease activity in inflammatory bowel disorders and its level reflects neutrophilic activity. Endoglin is the receptor and modulator of endothelial TGF-β and it is responsible for the endothelial activation secondary to inflammation. Although the increase in endothelial expression with the inflammation in the colonic mucosa of mice was shown before, its relationship with the disease activity in inflammatory bowel disease (IBD) is not searched yet. The relationship of serum NGAL and serum and colonic endoglin levels in ulcerative colitis (UC) and Crohn’s disease (CD) patients were investigated in this study.

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 (CIA) 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 NGAL and endoglin levels. NGAL and endoglin levels were significantly higher in endoscopically active UC group (n = 59) (142.8 ± 67.8 ng/mL and 457.7 ± 28.9 ng/mL) compared to inactive UC (n = 27) (119.7 ± 26.3 ng/mL and 476.9 ± 134.2 ng/mL), to non-IBD (115.8 ± 27.2 ng/mL and 460.6 ± 103.2 ng/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 group (n = 52) (135.0 ± 28.9 ng/mL and 555.6 ± 133.6 pg/mL) compared to inactive CD (115.2 ± 35.9 ng/mL and 458.7 ± 132.8 pg/mL), to non-IBD and to controls (Figure). 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 = 0.020, 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 = 0.011). The immunohistochemical staining index of endoglin in the colonic mucosa was correlated with the serum levels of endoglin in both UC and CD patients (UC r = 0.641, p < 0.001; CD r = 0.437, p < 0.001).

Conclusion: The present study highlights significant associations between endoglin and NGAL and IBD presence and activity, and demonstrates elevated serum and colonic endoglin levels in patients with active IBD as a novel finding.

Disclosure of Interest: All authors have declared no conflicts of interest.
P1655 MONITORING OF LABORATORY PARAMETERS DURING THIOPURINE MAINTENANCE THERAPY IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE: AN UNNECESSARY BURDEN?
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Introduction: Although thiopurine-induced myelotoxicity and hepatotoxicity rarely occur during maintenance thiopurine therapy for inflammatory bowel disease (IBD), current guidelines advise laboratory monitoring every 3 months. This study was performed to assess the current laboratory monitoring regime in thiopurine maintenance therapy with regards to consequences of myelotoxicity and hepatotoxicity.

Aims & Methods: In this multicenter cohort study, we evaluated adult IBD patients with quiescent disease who were on maintenance thiopurine therapy between 2000–2016. Data collection started after 12 consecutive months of thiopurine treatment. The primary outcome was therapy adjustment, i.e. therapy cessation or dose reduction, due to myelotoxicity (leukocyte count <4.0 10^9/l, platelet count <150 10^9/l) and/or hepatotoxicity (alkaline phosphatase (AP), gamma-glutamyltransferase (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 leukopenia (leukocyte count 3.0-4.0) or mild hepatotoxicity (<2 ULN), primarily in the first years of treatment. Dose adjustments were more often associated with moderate leukopenia (leukocyte count <3.0) than with mild leukopenia (p < 0.01). In total, 2 complications were recorded; 1 patient was hospitalized because of pancreatitis and received red blood cell transfusion, and 1 patient was treated for a CMV infection. Both patients presented with symptoms in clinic with preceding normal laboratory values. No mortality due to thiopurine-induced toxicity was observed.

Conclusion: Although mild toxicity is common during maintenance thiopurine therapy, adjustments based on laboratory assessments are rare. Therefore, a less intensive regime to monitor thiopurine-induced toxicity should be considered.

Disclosure of Interest: N.K.H. de Boer: Nanne de Boer has received a research and travel grant from Takeda outside the submitted work and served as principal investigator and consultant for TEVA. C.J. van der Woude: CJW has served as a speaker and a consultant for Abbott, Abbvie, MSD and as a consultant for Shire and received funding from Janssen Biologics BV.

All other authors have declared no conflicts of interest.

References
P1657 CLINICAL CHARACTERISTICS OF RECITAL-SPARING ULCERATIVE COLITIS

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Introduction: Ulcerative colitis (UC) generally involves the entire large intestine extending from the rectum to the ileoceleal junction. However, some patients with moderate or severe UC lack any obvious rectal involvement (known as rectal sparing- (RS)-UC).

Aims & Methods: In this study, we evaluated the differences in the clinical characteristics between patients with rectal UC with or without RS. Of the 437 inpatients with rectal UC who achieved remission between April 2001 and September 2016 (follow-up period: 91.5 ± 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), endoscopic scores (Mayo and UCEIS), and relapse rates (at 100, 300, 500, 1000 days post-remission). Patients with RS were defined as those without any detectable rectal inflammation despite not receiving local treatment, such as rectal enemas, instillation or suppositories. Remission was defined as CAI ≤5.

Conclusion: Relapse was defined as the need to restart remission induction therapy, such as intensive intravenous PSL, initiation of treatment with biological agent, or readmission and dose escalation of tacrolimus to achieve a high blood trough level (>6 μg/dL).

Results: RS was observed in 57 (10.4%) patients. There were significant differences in CRP (RS-UC: 5.1 ± 6.02, S-UC: 2.3 ± 3.4 mg/L) and pretreatment endoscopic scores (Mayo: RS-UC: 2.7 ± 0.3, S-UC: 2.4 ± 0.5; UCEIS: RS-UC: 6.9 ± 1.2, S-UC: 7.3 ± 0.8). There was no significant difference in the relapse rate at 100 days after remission (RS-UC: 18%, S-UC: 15%). However, the two groups showed significant differences in the relapse rates at 300 days (RS-UC: 38%, S-UC: 17%), 500 days (RS-UC: 53%, S-UC: 48%), and 1000 days (RS-UC: 77%, S-UC: 62%) after remission.

Conclusion: Our results showed that RS is not an uncommon finding among patients with UC. Based on the higher CRP, endoscopic score, and relapse rates in the RS group, we recommend aggressive treatment in patients with RS.

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

P1658 EVALUATION OF COLONIC MUCOSA WITH FLEXIBLE SMALL-FOCUS ENDOSCOPY COLOR ENHANCEMENT (FICE) IN PATIENTS WITH LONG TERM ULCERATIVE COLITIS DURING DYSPLASIA SCREENING

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Introduction: Ulcerative colitis (UC) associated colorectal cancer risk (CRC) is related to the age of onset and duration and anatomic extent of the disease. The risk of CRC increases with the duration of the disease (1). Current guidelines recommend beginning the surveillance colonoscopy after eight to ten years of disease; random biopsies should be obtained from 4 quadrants of every 10 cm of the colon at each examination, any suspicious areas should be biopsied (2). Recent endoscopic imaging technologies provide a more detailed visualization of the superficial microstructure of the mucosa and vascularity. Thus it is possible to get targeted biopsies. The purpose of this study is to; evaluate the image patterns of dysplasias in ulcerative colitis, 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 dysplastic changes in ulcerative colitis, and their histopathological correlation, by using a virtual chromoendoscopy technique, FICE and to investigate the effectiveness of this technique.

Results: In a total of 18 patients, by evaluating 123 colonic segments, 1831 images were obtained. For the first study, the FICE images were compared with histopathological diagnosis. Normal, colitis and polypos images acquired by FICE, were evaluated by seven endoscopists and statistical analysis was performed.

Conclusion: There were no significant superiority of FICE, in dysplasia screening. Compared with the literature and the results of this study, we showed that FICE is advantageous in detecting diminutive polyps, and evaluating surface patterns without magnification. In clinical remission in patients with UC, FICE can have a role in the assessment of the severity of inflammation. For this purpose, more clinical trials are needed. Our study results are compared with FICE in UC. Channels 2 and 9 are the best image channels of FICE in UC.

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

References

P1659 DYSBIOSIS OF THE GUT MICROBIOTA IN RELATION TO DISEASE ACTIVITY IN INFLAMMATORY BOWEL DISEASE

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Introduction: The gut microbiome is thought to be relevant to the pathogenesis of inflammatory bowel disease (IBD). We aimed to explore associations between microbiota and clinical and as well as inflammatory disease activity in an inception cohort of treatment-naïve IBD patients as well as with inflammatory activity in symptomatic non-IBD patients and healthy controls. The term ‘dysbiosis’ expresses alterations in the gut microbial community.

Aims & Methods: Patients were included according to international criteria, including endoscopic and histopathological assessment. Clinical disease activity in Crohn’s Disease (CD) patients was measured by the Harvey-Bradshaw index (HBI), and in ulcerative colitis (UC) patients by the Simple Clinical Colitis Activity Index (SCCAI). Inflammatory activity was assessed by CRP and faecal calprotectin (Fcal). (FCAL® ELISA, Bithmann laboratories AG). Stool samples were collected within 60 days prior to and 14 days after the diagnosis, and stored at −80 °C. Antibiotic treatment within the last two months was an exclusion criterion. 17 fecal microbial profiles were generated by 16S rRNA analyses, using the GA-mapTM Dysbiosis Test. Dysbiosis was defined as norm, mild or severe (1). Differences in disease activity between levels of dysbiosis severity were analysed using ANOVA at a significance level of 0.05. In addition to dysbiosis activity and log-transformed microbiota profiles were analysed using ANCOVA. P-values corrected for multiple testing, using Benjamini-Hochberg correction, are presented. Microbial diversity was assessed by using Chao1 and Faith’s indices.

Results: A total of 77 UC patients (P = 0.08), 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 dysbiotic activity 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 dysbiotic activity in symptomatic non-IBD patients (P = 0.04) and in UC 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 dysbiotic activity in CD patients (P = 0.23), and between SCCAI and dysbiosis in UC patients (P = 0.32). Microbiota: Increasing disease activity in UC, CD and non-IBD patients yielded increase abundance of Faecalibacterium prausnitzii, and higher abundance of Proteobacteria, a profile typically observed in gut inflammatory conditions. In addition, the commensal bacteria Bifidobacterium yielded lower abundance with increased dysbiotic 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 lower abundance of Proteobacteria.

Conclusion: In conclusion, a relationship between faecal dysbiosis in sub-groups of IBD patients and disease activity and CRP were found. 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.

Disclosure of Interest: M. K. Karlsson: Employee of Genetic Analysis AS
L. Finny: Employee of Genetic Analysis
C. Casen: An employee of Genetic Analysis AS

All other authors have declared no conflicts of interest.
**P1660 SIMPLIFIED MR ENTEROCOLONOGRAPHY CAN BE USED ON ENDOSCOPY BENDINGS 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. We investigated the diagnostic 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 underwent MREC and ileocolonoscopy or balloon-assisted enteroscopy (BAE). MREC was evaluated for each bowel segment; rectum, sigmoid, descending, transverse, ascending colon, terminal, proximal ileum, and jejunum, according to the consensus of two observers in the derivation phase, and independently by three observers in the validation phase, using a 5-point MREC classification based on a lexicon of MR findings. The conventional MR score, or MaRIA, was evaluated simultaneously. Areas under the receiver operating characteristic curves (AUCs) were obtained to assess the accuracy of discriminating deep ulcers. Inter-observer reproducibility was assessed using weighted Kappa coefficients. 

**Results:** BAE was performed in 49 (70%) and 37 (74%) patients in the derivation and validation cohorts. The AUCs of MREC classification were 89.0% in the derivation phase and 88.5, 81.0, and 77.3% for three observers in the validation phase. The AUCs of MREC classification were statistically non-inferior to those of MaRIA (p < 0.001). The cross-validation accuracy was 81.9% in the derivation and 81.3% in the validation phase. The MREC classification showed good clinical validity.

**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.

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**P1661 RISK FACTORS FOR METABOLIC SYNDROME AND ITS COMPONENTS IN INFLAMMATORY BOWEL DISEASE**

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**Introduction:** Metabolic syndrome (MetS) is a combination of biochemical and anthropometric disturbances and a recognized risk factor for cardiovascular disease. A higher prevalence of this condition has been previously reported in IBD patients, correlating to age as in the general population.

**Aims & Methods:** The aim of this study was to assess the effect of individual disease activity-related putative risk factors for MetS in a group of IBD patients, as well as any protective effects of treatment on MetS or its components. Consecutive IBD patients and age- and sex-matched controls were included as well as any protective effects of treatment on MetS or its components. Disease activity-related putative risk factors for MetS in a group of IBD patients, and validation cohorts. The AUCs of MREC classification were 89.0% in the derivation phase. The MREC classification showed good under the receiver operating characteristic curves (AUCs) were obtained to assess the accuracy of discriminating deep ulcers. Inter-observer reproducibility was assessed using weighted Kappa coefficients. 

**Results:** BAE was performed in 49 (70%) and 37 (74%) patients in the derivation and validation cohorts. The AUCs of MREC classification were 89.0% in the derivation phase and 88.5, 81.0, and 77.3% for three observers in the validation phase. The AUCs of MREC classification were statistically non-inferior to those of MaRIA (p < 0.001). The cross-validation accuracy was 81.9% in the derivation and 81.3% in the validation phase. The MREC classification showed good clinical validity.

**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.

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**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 rescue medical therapy or colectomy. Recently, the C-reactive protein (CRP)/albumin ratio at the 3rd day of treatment, with intravenous corticosteroids, has been shown to be a predictor of early colectomy in patients with ASUC.

**Aims & Methods:** To evaluate the accuracy of CRP/albumin ratio on admission, to predict response to intravenous corticosteroids in patients with ASUC. Retrospective assessment of systematically hospitalized patients with first episode of ASUC, who required intravenous corticosteroids. Demographic, clinical, laboratory and endoscopic variables were evaluated on admission. The response to intravenous corticosteroids at week 13 was based on CRP/albumin ratio. For non-responsive patients, rescue medical therapy with infliximab or cyclosporine has been instituted. The accuracy of CRP/albumin ratio in predicting non-response to intravenous corticosteroids was assessed by the area under the ROC curve (AUC).

**Results:** 51 patients were included, 30 (58.8%) of them female, with a mean age 34.3 ± 14.5 years. Twelve patients (23.5%) required medical rescue therapy. No patient underwent colectomy. The presence of deep ulcers and a shorter evolution of the disease were associated with a lack of response to intravenous corticosteroids, < 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 to 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 higher in unresponsive patients 40.06 vs 22.14, p = 0.022, showing a good accuracy for predicting no 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 allow a better risk stratification on admission, of patients with acute severe ulcerative colitis.

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

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**P1663 INSUFFICIENT VARIATION OF MEDIUM CORPUSCULAR VOLUME (MVC) IN INFLAMMATORY BOWEL DISEASE UNDER THIOPURINES PREDICTS DIFFICULTY IN ACHIEVING COMBINED DEEP REMISSION WITH ANTI-TNF - THE OTHER SIDE OF THE MCV FLOW STUDY**

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**Introduction:** The MCV flow study confirmed the association ΔMVC ≥7fl at week 26-28 of Azathioprine monotherapy (mAzA) with favourable outcomes in a Portuguese IBD population.

**Aims & Methods:** For this work, our aims were to evaluate the need for step-up therapy in those under mAzA with ΔMVC < 7fl 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 (AzaExposed + Anti-TNF). Evaluation of patients under mAzA with ΔMVC < 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]). ΔMVC’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 key timepoint was verified. Evaluation of DeepRem in mAzA was 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 ± 15.2 years; 58 ad, 14% operated] at week 26-28 of mAzA. Identified strong association between an average ΔMVC ≥7 (n=70; 66%) with DeepRem (p < 0.05), while a ΔMVC ≥7 was associated with biological therapy need (p < 0.05). 45 patients were later started with Anti-TNF therapy.
(Aza + Infliximab 46.7%; Aza + Adalimumab 53.3%) and only 44% achieved DeepRem at the key-timepoint. A Crohn’s A3L2B3 + phenotype (p = 0.045), steroid therapy in the last year (p = 0.009) and ΔVGM < 7 (p = 0.036) were identified as the variables that best explained the difficulty reaching DeepRem. 

Conclusion: This study confirms the prognostic value of ΔVGM in our popula-
tion. ΔVGM ≥ 7 was associated with DeepRem and ΔVGM < 7 was found to be associated with biological therapy need. However, even after starting Anti-TNF, ΔVGM < 7 was identified as a predictor of the difficulty reaching DeepRem.

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

P1666 THE ROLE OF MR IMAGING IN ASSESSMENT OF LENMANN 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 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 imaging of the digestive tract was performed. The results of endoscopic examination and 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 damage was divided into 4 organs: upper digestive tract, small bowel, colon, rectum and anus. Each organ was divided into segments (3 for the upper digestive tract, 6 for the colon/rectum and 1 for anus). Strictures and penetrating lesions were assessed at each segment on 4-degree scale (0–3) according to the severity of lesions.

Results: Based on the findings of the initial radiological examination, active inflammation process was found in 76 patients and chronic process in 75 patients. The baseline study demonstrated such complications as strictures in 14 patients, fistulas in 15 and abscesses in 4 patients. For all patients the LI was calculated. The obtained values were within the range from 0 to 22.

Conclusion: Over the years, the progression of Crohn’s disease leads to an increase in the value of Lemann Index, therefore, it seems that the evaluation of the first, baseline stage might be useful in all following control MR examinations will allow for a more complete assessment of patients in terms of progressive bowel damage and modification of the therapeutic process.

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

References
be required to obtain a 2x2 contingency table. Pooled analysis was done using a random-effects model. Sub-group analysis was performed at real-time Kudo pit pattern based and real-time CLE for characterization of visible lesions. Heterogeneity was assessed using Chi squared and I² statistics.

**Results:** Our search strategy identified 172 studies of which only 20 met the inclusion criteria. The pooled results are outlined in the table.

**Conclusion:** Real-time CLE and magnification endoscopy had the best performance characteristics. However there was a lot of heterogeneity in the results. Most CLE and magnification studies were single centre, single expert user which could explain these results. CLE studies were also affected by attribution bias with some studies reporting non-interpretable mages in a significant proportion.

**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 diarrhea with few or no endoscopic abnormalities. The incidence of MC is reportedly similar to that of other inflammatory bowel diseases. The need for histological confirmation of MC frequently guides reimbursement health policies. With the advent of high-definition (HD) colonoscopes, the incidence of distinct endoscopic findings reported in MC has risen. This has the potential to improve diagnosis times, increase cost-effectiveness of MC management and diminish the workload and costs of busy modern endoscopy units. Aims & Methods: Publications on distinct endoscopic findings in MC available until 31st March 2017 were searched systematically (electronic and manual) in PubMed. The following search terms/descriptors were used: collagenous colitis(CC) OR lymphocytic colitis(LC) AND endoscopy, colonoscopy, findings, microscopic, erythema, macroscopic, vascular, score, perforations. An additional search for MC AND perforation was made. Results: Eighty (n = 80) articles, predominantly single case reports (n = 45), were retrieved. Overall, 1,582 (1,159 female; 61.6% years) patients(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 diarrhea, symptoms included abdominal pain, weight loss, bloating, flatulence and oedema. In the study group we found 616 (38.9%) pts with macroscopic lesions (%): erythema 19 (9.94%), edema 15 (7.61%), nodularity 12 (6.29%), surface ulceration 10 (5.26%), scar 9 (4.89%) and laceration 9 (4.89%). There was a positive correlation with CC (0.32) and LC (0.54). Survival analysis showed a trend towards shorter time for perforation in patients with a score above the median at diagnosis (p log rank = 0.09).

**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 recognized.

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

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**Abstract No: P1667**

**Title:** Real-time CLE, 402 47

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**Introduction:** With the advent of high-definition (HD) colonoscopes, the incidence of distinct endoscopic findings reported in MC has risen. This has the potential to improve diagnosis times, increase cost-effectiveness of MC management and diminish the workload and costs of busy modern endoscopy units.

**Aims & Methods:** Publications on distinct endoscopic findings in MC available until 31st March 2017 were searched systematically (electronic and manual) in PubMed. The following search terms/descriptors were used: collagenous colitis(CC) OR lymphocytic colitis(LC) AND endoscopy, colonoscopy, findings, microscopic, erythema, macroscopic, vascular, score, perforations. An additional search for MC AND perforation was made. Results: Eighty (n = 80) articles, predominantly single case reports (n = 45), were retrieved. Overall, 1,582 (1,159 female; 61.6% years) patients(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 diarrhea, symptoms included abdominal pain, weight loss, bloating, flatulence and oedema. In the study group we found 616 (38.9%) pts with macroscopic lesions (%): erythema 19 (9.94%), edema 15 (7.61%), nodularity 12 (6.29%), surface ulceration 10 (5.26%), scar 9 (4.89%) and laceration 9 (4.89%). There was a positive correlation with CC (0.32) and LC (0.54). Survival analysis showed a trend towards shorter time for perforation in patients with a score above the median at diagnosis (p log rank = 0.09).

**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 recognized.

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

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**Abstract No: P1668**

**Title:** 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 approach. A score that evaluates the severity of DC (Siegel 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 DC 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 A1 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 log rank = 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.
J. Amoedo  
TO SUPPORT IRRITABLE BOWEL SYNDROME DIAGNOSTICS  
P1671 INTESTINAL MICROBIOTA BIOMARKERS AS A NEW TOOL  
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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 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 of more than 20 g/day and those with coexisting viral hepatitis were excluded from analysis. Clinical characteristics and laboratory data were recorded. Hepatic steatosis was evaluated by conventional ultrasound, hepatic steatosis index (HSI) and transient elastography with CAP (Fibroscan, Echosens, Paris). Significant steatosis (S ≥ 1) was defined for a CAP value over 236 [1], and the cut-off of HSI for detecting NAFLD was set at ≥ 36 [2].

Results: Altogether 62 IBD patients (35 ulcerative colitis, UC and 27 Crohn’s disease, CD), mean age 45 ± 15 years, 50% female, were included in the analysis. The two groups (UC, CD) were similar regarding disease activity (remission/flare:48.5/31.4% in the UC group, 55.6/44.4% in the CD group), BMI (24.1 and 24.4 respectively), mean alcohol intake was 21 and 21.1 mg/dl, respectively. US identified 18/62 (29%) patients with fatty liver, HSI detected 3 more patients (21/62, 33.9%) and CAP even 2 more (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.

References
P1673 CZECH REGISTRY OF INFLAMMATORY BOWEL DISEASE PATIENTS ON BIOLOGICAL THERAPY: RESULTS FROM THE FIRST YEAR

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Introduction: Czech Registry of Inflammatory Bowel Disease (IBD) Patients on Biological Therapy (CREdIT) was launched in March, 2016 in order to collect and analyze the data from Czech centers appointed to provide biological therapy to IBD patients.

Aims & Methods: The objective is to provide information on the CREdIT registry after its first year of operation. Basic demographic data (sex, age, diagnosis, Montreal classification or disease extent) were collected together with information on disease activity, therapeutic regimen, concomitant medication and adverse events. Patients who began biologic therapy prior to enrolment into the registry as well as those who start their treatment are included, and labeled as “retrospective” and “prospective” cohort, respectively.

Results: Among 30 centers providing biological therapy to patients with Crohn's disease (CD) and ulcerative colitis (UC) in the Czech Republic, 34 participated as “retrospective” and “prospective” cohort, respectively from ourCREdIT database. All patients that were commenced on anti-TNF therapy are followed up at 3 months in the clinic and we aim to do a colonoscopy at 6 months to assess for mucosal healing. Recently we have started using a relatively new technology, called IBDoc, which allows testing the faecal calprotectin at home using a smartphone application and the results are automatically updated in our database.

Aims & Methods: We aimed to evaluate the cost effectiveness of using IBDoc faecal calprotectin post induction of biological agents in inflammatory bowel disease.

Reference

P1675 COST EFFECTIVENESS OF IBDOC FAECAL CALPROTECTIN AS A SURROGATE MARKER OF MUCOSAL HEALING POST INDUCTION OF BIOLOGICAL AGENTS IN INFLAMMATORY BOWEL DISEASE

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Introduction: Traditionally in our unit all IBD patients started on anti-TNF therapy are followed up at 3 months in the clinic and we aim to do a colonoscopy at 6 months to assess for mucosal healing. Recently we have started using a relatively new technology, called IBDoc, which allows testing the faecal calprotectin at home using a smartphone application and the results are automatically updated in our database.

Aims & Methods: We aimed to evaluate the cost effectiveness of using IBDoc faecal calprotectin post induction of biological agents. The data was collected retrospectively from ourIBDoc data base. All patients that were commenced on anti-TNF therapy for IBD and trained in using IBDoc at home were included. IBDoc faecal calprotectin was tested at 3 and 6 month post induction of biological agents.

Results: Total number included in the study was 131 patients. 40% had normal faecal calprotectin at 3 month saving 53 follow up clinic visits (cost of clinical visit 128 euro), and 75% had a normal faecal calprotectin at 6 months saving 40 routine colonoscopy (cost of colonoscopy 337 euro). 78 patients had a raised faecal calprotectin at 3 month, of which 28% had a normal faecal calprotectin at 6 month saving 22 follow-up colonoscopy. In total 53 clinical visits and 62 colonoscopies were avoided.

Conclusion: This study demonstrate a significant cost effectiveness of using IBDoc faecal calprotectin post induction of anti-TNF therapy, as well as reducing the waiting time for both clinic visits and colonoscopies.

Disclosure of Interest: G. El-Safi: Abbvie
All other authors have declared no conflicts of interest.

Reference
The intraclass correlation coefficients were 0.81 (p < 0.001). The levels measured by established ELISA (Promonitor level: mean 4.67, median 4.39; lower than 3 and higher than 7ug/ml; lower than 3 and higher than 7) with a high agreement. We estimated a simplification score to convert the "point-of-care" level into "Promonitor" level and the standard ELISA method (Promonitor® assay) determining a correlation factor that permits therapeutic management in a similar way.

**Aims & Methods:**
A total of 135 serum sample from patients with CD and UC. IFX concentration in serum samples were determined using a well established IFX-specific ELISA assay (Promonitor®) and the test assay Quantum Blue®. According to the manufacturer, the lower and upper limits of quantification are: In the Quantum Blue assay 0.04 μg/ml and 20 μg/ml respectively. In the Promonitor assay 0.035 μg/ml and 14 μg/ml, respectively. All statistics were carried out using the statistical programs IBM SPSS statistics 21 and Epidat version 4.2.

**Results:**
The IFX levels measured by the point-of-care method were higher than those measured by established ELISA (Promonitor level: mean 4.67, median 3.23; 4.39 (0.035–14.44)); Quantum Blue level mean 6.31; median 3.73; 6.27 (0.4–20). The intraclass correlation coefficients were 0.81 (p < 0.001). The standard ELISA had a high (r = 0.89) and significant (p < 0.001) correlation with the Quantum Blue® assay. A Bland-Altman analysis showed a bias of 1.88% confirming the overall excellent correlation of the two methods. The results for each method were stratified according to a commonly accepted therapeutic threshold (7ug/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.

**Conclusion:**
The simplified score is a really useful technique enabling the fast and friendly quantitative determination of IFX levels to ensure correct dosing in IB.

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

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**PI677 RISK FACTORS ASSOCIATED WITH A HIGH RISK OF COLORECTAL CANCER IN PATIENTS WITH UCLESATIVE COLITIS. PRELIMINARY RESULTS FROM THE IBSEN COHORT**

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**Introduction:** The occurrence of establishing risk factors for colorectal cancer in inflammatory bowel disease remains debated.

**Aims & Methods:** Our aim was to evaluate how individual disease variables contribute to the development of colorectal cancer. A population-based inception cohort of patients with ulcerative colitis patients diagnosed between 1990-1994 have been prospectively followed at one, five, 10 and 20 years after inclusion. In total we identified 517 patients, 266 (51.5%) were males, aged median 37.4 (min 4, max 88) years at inclusion. The following variables were analyzed; age at ulcerative colitis diagnosis, gender, presence or absence of dysplasia, use of azathioprine and 5-aminosalicylic acid, extent of mucosal inflammation, 1st-degree relative with colorectal cancer.

**Results:** We identified 10 patients diagnosed with colorectal cancer after being diagnosed with ulcerative colitis. Age at ulcerative colitis diagnosis and low grade dysplasia were significantly associated with higher risk of CRC (HR = 1.06, 95%CI [1.02–1.11], p = 0.003 and HR = 0.95 95%CI [0.17–4.03], p < 0.001 for age and low grade dysplasia respectively). Patients who were older than 40 years at diagnosis had 4 times higher risk of developing colorectal cancer as compared to patients diagnosed with ulcerative colitis at a younger age. HR = 4.08, 95%CI [2.02,16.39], p = 0.047. Male gender (HR = 1.949, use of azathioprine (HR = 2.50), use of 5-aminosalicylic acid (HR = 0.29) and extent of mucosal inflammation, were significantly associated with higher risk of CRC, however the estimations did not reach the level of statistical significance. Male diagnosed with UC when older than 40 years and with extent of inflammation had 8.4% probability of developing CRC within 20 years after their diagnosis.

**Conclusion:** Our results show that the presence of low grade dysplasia significantly increases the risk of colorectal cancer. The study was limited by the sample size.

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

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**PI678 MANAGEMENT OF COMPLEX PERIANAL FISTULAE WHEN TO SUSPECT INFLAMMATORY BOWEL DISEASE?**

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**Introduction:** Perianal fistulae are a frequent manifestation of inflammatory bowel disease (IBD) often associated with significant morbidity, which may precede or appear simultaneously with intestinal disease. The approach to patients with perianal fistulae and no intestinal symptoms is poorly defined, and it remains to elucidate if there is a subgroup of patients in whom a more extensive search for IBD is warranted.

**Aims & Methods:** Unicentric retrospective cohort study including patients evaluated for complex perianal fistulose, defined according to the American Society of Colon and Rectal Surgeons2. Patients with known IBD, malignancy or history of pelvic radiation where excluded. Patients in whom the diagnosis of IBD was established were compared to the others.

**Results:** 134 patients were included (mean age 48.2±17.8 years; 71.0% men), with a mean follow-up of 26 months. 18 patients (14.5%) were diagnosed with IBD, namely Crohn’s disease. The classification of the fistulous tracts was as follows: intersphincteric (71.8%), transphincteric (35.8%), extrasphteric (73.3%), suprasphincteric (5.6%), horseshoe (24.2%) and with an abscess (44.4%). The majority of patients with IBD presented intestinal symptoms (15/18), in 8 cases preceding the perianal disease but not motivating investigation in the past. In 3/18 (16.7%) patients diagnosed with IBD, perianal fistula was the sole clinical manifestation of the disease. Patients with IBD were younger (36.1 vs 51.4 years, p < 0.001), had a higher incidence of perianal abscesses (88.9% vs 36.8%, p < 0.001), more persistent/recurrent disease (89.9% vs 9.6%, p < 0.001) and a tendency to a higher number of fistulous tracts (38.9% had ≥3 tracts vs 17.9% in the group without IBD; p=0.059).

**Conclusion:** In this cohort of patients with complex perianal fistulose, although in the majority of cases the diagnosis of IBD was suggested by the presence of intestinal symptoms, these were absent in 16.7% patients. There should be a higher suspicion of IBD in young patients and in those who have perianal disease of greater complexity.

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

**References:**

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**PI679 THE ADDITION OF AN IMMUNOSUPPRESSANT IS AN EFFECTIVE OPTIMIZATION STRATEGY AFTER LOSS OF RESPONSE TO ANTI-TNF ALPHA MONOTHERAPY IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE: A TWO-YEAR STUDY**

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**Introduction:** In patients with inflammatory bowel disease (IBD) the addition of an immunosuppressant (IM) after loss of response to anti-TNF alpha monotherapy is recommended to lower or high emerging stabilizing therapeutic optimization. However, few clinical data have been reported to date.

**Aims & Methods:** The aim of this study was to evaluate efficacy and tolerability of an "add-on" combination therapy in patients with IBD. All consecutive patients with loss of response to anti-TNF alpha monotherapy despite an intensive dose optimization who added an IM from October 2014 to October 2016 were entered in a prospectively maintained database. The steroid-free remission and the clinical response, this latter defined as a clinical improvement (reduction of Harvey-Bradow Index ≥3 for Crohn’s disease and of Mayo Partial Score ≥2 for ulcerative colitis compared with baseline) with a concomitant reduction of steroid dosage compared with baseline and discontinuation within twelve weeks, were recorded. Adverse events leading to treatment discontinuation were reported in 8 out of 46 patients (17.4%).
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 (%)</td>
<td>4 (8.7%)</td>
</tr>
<tr>
<td>Type of Disease, n (%)</td>
<td>33 (71.7%)</td>
</tr>
<tr>
<td>Duration of disease (years), mean ± S.D.</td>
<td>12.4 ± 8.4</td>
</tr>
<tr>
<td>Localization of the disease, n (%)</td>
<td>10 (30.4%)</td>
</tr>
<tr>
<td>Disease involvement Ulcerative Colitis Proctitis Left-sided Extensive</td>
<td>3 (9.1%)</td>
</tr>
<tr>
<td>Extraintestinal manifestations, n (%)</td>
<td>21 (45.7%)</td>
</tr>
<tr>
<td>Gender (Crohn’s Disease), n (%)</td>
<td>22 (47.8%)</td>
</tr>
<tr>
<td>Contact E-mail Address:</td>
<td><a href="mailto:jackjohnkane@googlemail.com">jackjohnkane@googlemail.com</a></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. Cottoni: 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 luminal disease and lower response to conventional therapy (i.e. immunosuppressants). Drug trough levels are associated with biological drug response, while the role of Anti-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, median age 46y, range 21–72) treated either with adalimumab (ADA n = 39, 63%; 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 homogeneous mobility shift assay (HMSA; Prometheus Lab, San Diego, United States).

Results: ADA were detected in 27 (45%) patients and AAA 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.

References:

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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 luminal disease and lower response to biological 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.

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

References:
C. Painchart

ARE NOT CORRELATED TO RESPONSE TO USTEKINUMAB

P1683 TRough LEVELS AND ANToBODIES TO USTEKINUMAB AT THE Time OF USTEKINUMAB TREATMENT IN CROHN’S DISEASE PATIENTS

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Introduction: Anaemia is one of the most common extraintestinal manifestations in inflammatory bowel disease (IBD), with iron deficiency being the most frequent cause.

Aims & Methods: To characterize anaemia in a population of patients with IBD and to evaluate the efficacy of anti-TNF and carrier therapy. We retrospectively analyzed 169/1166 patients with IBD followed in a tertiary center between 2010-2016. All the patients received replacement therapy with ferric carboxymaltose, ferric saccharum or transfusional support. We analyzed the effect of immunosuppressive therapy with and without anti-TNF: group 1 and 2 respectively. Active disease was defined as C-reactive protein (CRP) ≥0.5 mg/dL, faecal calprotectin (FC) ≥50 μg/g or presence of ulcers in colonoscopy. Anaemia was defined according to ECOO criteria (iron deficiency anaemia (IDA), anaemia of chronic disease (ACD) and mixed anaemia (MA)). Multifactorial anaemia (MFA) was diagnosed when there was also vitamin B12 or folate deficiency.

Results: 169 patients were included: 111 with Crohn’s Disease (CD), 54 with Ulcerative Colitis (UC) and 4 with unclassified IBD. 44.4% were male and the mean age was 32.2 years (range 7-82). 98.2% had anaemia and 1.8% had only iron deficiency; 3.5% and 18.3% had a deficit of vitamin B12 and folate. The mean anaemia assessed in CD and UC were IDA (54.1% and 46.3%) according to MFA (19.8% and 24.1%), ACD (15.3% and 24.1%) and MA (8.1% and 5.6%). Female gender (OR 3.743 95% CI 1.554–9.018, p = 0.003), previous surgery (OR 2.845 95% CI 1.111–7.284, p = 0.02) and pene-trating perianal disease in CD (OR 8.252 95% CI 1.289—52.919, p = 0.026) were predictors of normal hemoglobin (Hb). CRP was associated with highest ferritin values (294.85 ± 302.00 vs 102.10 ± 127.75, p < 0.001). Hb and CRP had a negative correlation (p = 0.176, p = 0.022). In UC, CRP and FC normalization was associated with an improvement of transferrin saturation (13.63 ± 1.66 vs 12.47 ± 1.38, p = 0.005 and 51.33 ± 2.60 vs 27.63 ± 9.66, p = 0.048). There was no difference in the parameters evaluated comparing groups 1 and 2. There was also no significant difference in the variation of Hb and iron values after treatment with ferric carboxymaltose versus ferric saccharum.

Conclusion: In a population of patients with IBD, iron deficiency was the main cause of anaemia and the two forms of intravenous iron replacement were equally effective. In the group of patients with UC, elevated CRP was associated with higher Hb and transferrin saturation (13.63 ± 1.66 vs 12.47 ± 1.38, p = 0.005 and 51.33 ± 2.60 vs 27.63 ± 9.66, p = 0.048). There was no difference in the parameters evaluated comparing groups 1 and 2. There was also no significant difference in the variation of Hb and iron values after treatment with ferric carboxymaltose versus ferric saccharum.

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

References

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 patients treated 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 hospitalizations of patients i.e. Diagnosis-Related Group (DRG) were collected. The mean overall monthly expenditure for each case was then evaluated.

Results: We collected clinical-economical data of 142 patients in biological treatment in the selected period (52 UC, mean age 43.3 years and male 40.4%; 90 CD, mean age 38.8 years and male 56.7%). About half of CD patients (48.9%) underwent percutaneous intestinal surgery. The disease severity was higher in UC group vs CD one. In UC group Infliximab was the most prescribed biologic (51.9%), followed by Golimumab (29.9%) and Adalimumab (21.2%). While CD patients were treated with Adalimumab in 54.4% and Infliximab in 45.6%. The average cost for month of treatment was 1253.41 ± 358.38 € for UC and 1148.92 ± 337.36 € for CD. No statistically different between the two groups. In both groups expenditure due to biologics amounts for more than 80%. We analyzed costs in groups different for sex, age and disease activity (only the last one was associated with increased costs with R² = 0.84 for UC and 0.95 for CD). The cost increases in patients with more lines of therapy in UC (not in CD) but the difference wasn’t significative.

Conclusion: In our study the main cost is due to biological therapy but the subjects enrolled were the most severe in comparison to the whole IBD population under conventional therapy. No differences were found between the type of biologic administered and the way of administration (intravenous or subcutaneous) so the therapeutical choice could be driven by clinical reasons and not only economic ones.

Disclosure of Interest: All authors have declared no conflicts of interest.
Aims & Methods: We aimed to evaluate all these issues in Sicily through a web-based network of all prescribing centers. The Sicilian Network for Inflammatory Bowel Disease (SN-IBD) is composed by a super Hub coordinator centre and 20 peripheral centers. As clinical end-point, we set remission (corresponding to a Mayo Partial Score ≤ 2 for CD and Mayo Partial Score ≤ 5 for UC–12 WEEKS Naive to biologics 2.188 p = 0.001, and 79.8% vs. 47.2%, p = 0.001). At week 12, there was a higher rate of response/remission for adalimumab (ADA) compared with infliximab (IFX) and vedolizumab (VDZ) (71.8% vs. 56.6%, p = 0.002). However, IFX was superior to golimumab (GOL) (71.8% vs. 56.6%, p = 0.002). However, at week 52, IFX had a higher rate of response/remission compared to GOL (58.2% vs. 38.2%, p = 0.003) and ADA (58.2% vs. 33.9%, p = 0.002). However, IFX was superior to GOL in naïve patients only (60.2% vs. 26.7%, OR 4.165, p = 0.018). There was no significant difference between the two drugs when patients were stratified in naïve and non-naïve, while ADA was superior to IFX in patients with ileo-colic disease (68.8% vs. 48.4%, OR 2.282, p = 0.001). UC: there was a higher proportion of patients naïve to biologics among those on adalimumab (ADA) compared with infliximab (IFX) and vedolizumab (VDZ) (89.3% vs. 53.3% vs. 30.6%, p < 0.001). At week 12, there was a higher rate of response/remission for adalimumab (ADA) compared with infliximab (IFX) and vedolizumab (VDZ) (79.8% vs. 71.8%, p = 0.005, and 79.8% vs. 47.2%, p < 0.001, respectively), and a higher efficacy of IFX compared with VDZ (71.8% vs. 38.2%, p = 0.001). The superiority of ADA over IFX remained significant in naïve patients (81.5% vs. 73.7%, OR 1.581, p = 0.002), but not in non-naïve. At week 52, ADA had a higher rate of response compared to IFX (65.4% vs. 56.5%, p = 0.001), while IFX was superior to ADA in CD (58.2% vs. 44.1%, OR 1.581, p = 0.001). For both CD and UC, no significant difference in efficacy was observed between IFX originator and biosimilars. Several factors were identified as predictor of response - independently of the drug employed - at multivariable logistic regression analysis (Table 1).

Conclusion: In one of the largest “real-life” series of IBD patients on biological therapy reported to date, ADA in CD had a higher success compared to IFX at both 12 and 52 weeks; however, this results could be influenced by the preference of ADA as first-line anti-TNF drug in CD. IFX in UC was superior to GOL and ADA at 52 weeks; once again, this result could be influenced by the preference of IFX as first-line anti-TNF agent in UC; no difference was found between GOL and ADA in UC. Being naïve to biologics is a relevant predictor of response in both CD and UC at any time point. No significant difference in efficacy was observed between IFX originator and biosimilars.

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.
P1687 BENEFICIAL EFFECT OF A LOW FODMAPS DIET IN DIFFERENT GASTROINTESTINAL 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 intervention on patients with IBD compared with baseline with a concomitant reduction of steroids dosage at week 10, and complete discontinuation at week 24.

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 3 months of low FODMAPs diet in all subjects, with statistically significant difference within each group at T0 (average score in IBS: 293.3 ± 137 SD, average score in IBD: 206.6 ± 86 SD, average score in CD: 222.7 ± 65 SD, p < 0.001). Furthermore, by analysing the SF-36 questionnaire, while we did not observe any significant difference between the three groups, in terms of response to diet (p = NS), we observed a clinical improvement from T0 to T3, after the start of the diet, for most of the questionnaire’s domains.

Conclusion: A low FODMAPs diet could be a valid option to counter abdominal symptoms in patients with IBS, non-active IBD or CD on GFD, and, thus improve their quality of life and social relations.

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

P1688 EFFICACY OF VEDOLIZUMAB ON INTESTINAL AND ARTICULAR SYMPTOMS: REAL-LIFE DATA FROM THE SICILIAN NETWORK FOR INFLAMMATORY BOWEL DISEASE (SN-IBD)

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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 (SN-IBD) is a network composed by all Sicilian centres prescribing biologics. These centres continuously enter in a web based software all real-life data about prescriptions and outcomes of biological therapy in patients with inflammatory bowel disease (IBD). Herein we report data on efficacy of VDZ on intestinal activity (Mayo Endoscopic Score, 0/1/2/3 and Mayo Partial Score) and on extraintestinal manifestations (extraintestinal manifestations IBD-associated SpA, peripheral arthritis, axial arthritis) in all subjects after 10 and 24 weeks of treatment. As clinical endpoint, we set steroid-free remission (corresponding to a Mayo Partial Score < 2 for UC, and to a Harvey-Brudhaw Index < 5 for CD), and clinical response (reduction of Harvey-Brudhaw Index ≥ 3 for CD and Mayo Partial Score ≥ 2 for UC compared with baseline with a concomitant reduction of steroids dosage at week 10, and complete discontinuation at week 24).

Results: From July 2016 to April 2017, 163 patients (84 with CD and 79 with UC) were included (table 1). At week 10, a steroid-free remission was obtained in 71 patients (43.6%), while a clinical response in 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. 59.0%, respectively; p = 0.11).

At multiple logistic regression analysis, a longer duration of disease (OR 0.96, 95% CI: 0.94-0.98, p = 0.037) and to a Harvey-Bradshaw Index /C21 S.D. C-Reactive Protein, mean S.D. (n.v. < 5mg/L) 5.0 ± 1.6 5.6 ± 1.6 5.0 ± 1.6 8.2 ± 1.6 8.3 ± 1.6 8.1 ± 1.6

Conclusion: In this large cohort of Sicilian IBD patients, VDZ showed good efficacy after 10 and 24 weeks of treatment, particularly in those with a shorter duration of disease and a limited inflammatory burden. A subset of patients reported improvement also on articular symptoms, probably as a consequence of the concomitant control of gut inflammation.

Disclosure of Interest: F.S. Macaluso: Lecture grants from MSD and Takeda Pharmaceuticals; lecture grants from AbbVie, MSD, Takeda Pharmaceuticals and Sofar. M. Cottone: financial support for the organization of a second level Master degree in inflammatory bowel disease from AbbVie, MSD, Takeda Pharmaceuticals and Sofar. S. Renna: advisory board member for AbbVie and MSD; lecture grants from AbbVie, MSD, Takeda Pharmaceuticals, Zambon. N. Alberghina: financial support for the organization of a Master degree in inflammatory bowel disease from AbbVie, MSD, Takeda Pharmaceuticals and Sofar.

All other authors have declared no conflicts of interest.

Variable

Age (years), mean ± S.D. 50.6 ± 16.0
Male gender, n (%) 94 (57.7%)
Smokers, n (%) Never Current Ex 134 (82.2%) 17 (10.4%)
Type of Disease, n (%) Crohn’s Disease Ulcerative Colitis 84 (51.5%) 79 (48.5%)
Duration of disease (years), mean ± S.D. 11.7 ± 8.5
Localization of the disease, n (%) Crohn’s Disease ileal Ileocecal Colic Upper gastrointestinal tract 22 (26.2%) 50 (59.5%)
Perianal Disease Ulcerative Colitis Proctitis Left-side Extensive 9 (9.5%) 4 (4.8%)
Gender, n (%) Male female 12 (14.3%) 86 (95.7%)

Behavior (Crohn’s Disease), n (%) Immunosuppressive Sticturing Fistulizing 42 (50.0%) 6 (7.1%)
Previous resections (Crohn’s Disease), n (%) 51 (60.7%)
Disease Activity Harvey-Bradshaw Index, Crohn’s Disease - mean ± S.D. Mayo Partial score: Ulcerative Colitis - mean ± S.D. C-Resitive Protein, mean ± S.D. (n.v. < 5mg/L) 9.8 ± 15.7 8.9 ± 15.7
Endoscopy within three months of initiation of VDZ (n=) Crohn’s Disease SES-CD, mean ± S.D. Rutgeerts score, 0/1/2/3 Ulcerative Colitis Mayo Endoscopic score, 0/1/2/3 7.6 ± 7.5 1/3/4/5/13 2/4/20/4
Extraintestinal manifestations IBD-associated SpA Past history (inactive at initiation of VDZ) Peripheral arthropathy Axial arthropathy Active at initiation of VDZ Peripheral arthropathy Axial arthropathy Cutaneous Ocular Steroid-dependent, n (%) 124 (76.1%) 124 (76.1%) 7.2 (4%) 109 (66.9%) 54 (33.1%)
Systemic steroids at baseline, n (%) 103 (63.2%) 144 (88.3%)
Concurrent therapy with immunosuppressant, n (%) 13 (8.0%)
C60FAS corrects local and systemic morphofunctional changes, conditioned by the induction of acute UC. The protective properties of C60 fullerenes against bowel, hematopoetic 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 fullerenes could be used as efficient therapeutic agents at ulcerative colitis.

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

References

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Introduction: Combined immune suppression of anti-tumour necrosis factor (antiTNF) biologicals and thiopurines is superior to respective monotherapies in remission induction and maintenance of response in inflammatory bowel disease (IBD). One of the putative mechanism of this clinical benefit is mutual positive pharmacokinetic effect of thiopurines on antiTNF levels and vice versa. It has been suggested that for this synergistic effect, reduced dose of thiopurines might be sufficient but the data supporting this hypothesis are still limited.

Aims & Methods: The aim of the study was to assess the differences of infliximab trough levels according to the dose of concomitantly used thiopurines. All IBD patients treated with infliximab (Remicade®) in two IBD centres between November 2015 and April 2017 were eligible. Infliximab trough levels were routinely measured in all patients with maintenance infliximab therapy using commercially available ELISA kit (Ridascreen®, R-Biopharm). All patients in remission with stable dose regimen of 5mg/kg every 8 weeks at the time of the first assessment of infliximab trough levels were identified retrospectively from the medical records. The differences in the proportion of patients with adequate trough levels (3–12 µg/mL) between patients on infliximab monotherapy, reduced (below 2 mg/kg) azathioprine (AZA) dose vs. full (2 to 2.5 mg/kg) AZA dose were analyzed statistically.

Results: Out of a total of 214 IBT patients treated with infliximab, there were 154 in remission at the time of the first assessment of infliximab trough levels. After excluding patients with previously intensified dose regimen, 125 patients were further analyzed. Among these 125 pts, 41 (33%) were on infliximab monotherapy, 58 pts (46%) were using combined immune suppression with a reduced dose of AZA and 26 (21%) were using the full AZA dose concomitantly with infliximab. Both groups, patients with infliximab monotherapy as well as patients using the reduced AZA dose had significantly lower percentage of patients with therapeutic levels of infliximab compared with the group using the full dose of AZA co-medication (41% vs. 64% vs. 81%; infliximab monotherapy, reduced AZA dose and full AZA dose, respectively; p < 0.001 for both comparisons, infliximab monotherapy, reduced AZA dose vs. full AZA dose. Conclusion: The proportion of patients with adequate infliximab trough levels is significantly higher in patients with full dose of concomitant azathioprine compared with the patients using a reduced dose of azathioprine. Thus, in order to maintain the therapeutic benefit of infliximab maintenance treatment, the combined immune suppression should comprise full dose of azathioprine.

Disclosure of Interest: Z. Zelinkova: Speaker’s fee from Abbvie, MSD, Takeda, Janssen.

All other authors have declared no conflicts of interest.
P1692 INFLIXIMAB (IFX) IN MODERATE TO SEVERE ULCERATIVE COLITIS (UC): COMPARISON BETWEEN SCHEDULED TREATMENT STRATEGY AND BRIDGE STRATEGY

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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 effectiveness. However, clinical difficulties of economic access in IFX and the necessity to conditioned to our IBD center, to use IFX in moderate to severe UC as a bridge to thiopurines in pts with IFX induction followed by thiopurines (re-induction when available for moderate to severe relapse) vs. scheduled IFX (inpts with 0.2,6,8 and 12 weeks interval infusions maintenance). Optimization (by frequency of intervals) was allowed in both modalities. Comparisons: Kaplan Meier/Log rank test: a) Cumulative incidence of colectomy, b) survival times relapse free, c) survival times corticosteroid free. Comparisons: Kaplan Meier/Log rank test: a) Cumulative incidence of colectomy, b) survival times relapse free, c) survival times corticosteroid free. Kaplan Meier/Log rank test: a) Cumulative incidence of colectomy, b) survival times relapse free, c) survival times corticosteroid free. Kaplan Meier/Log rank test: a) Cumulative incidence of colectomy, b) survival times relapse free, c) survival times corticosteroid free.

Aims & Methods:

Aims & Methods: a) Cumulative incidence of colectomy, b) survival times relapse free, c) survival times corticosteroid free. Aims & Methods: a) Cumulative incidence of colectomy, b) survival times relapse free, c) survival times corticosteroid free. Aims & Methods: a) Cumulative incidence of colectomy, b) survival times relapse free, c) survival times corticosteroid free. Aims & Methods: a) Cumulative incidence of colectomy, b) survival times relapse free, c) survival times corticosteroid free.

Results:

Results: a) Cumulative incidence of colectomy, b) survival times relapse free, c) survival times corticosteroid free. Results: a) Cumulative incidence of colectomy, b) survival times relapse free, c) survival times corticosteroid free. Results: a) Cumulative incidence of colectomy, b) survival times relapse free, c) survival times corticosteroid free. Results: a) Cumulative incidence of colectomy, b) survival times relapse free, c) survival times corticosteroid free.

Conclusion:

Conclusion: a) Cumulative incidence of colectomy, b) survival times relapse free, c) survival times corticosteroid free. Conclusion: a) Cumulative incidence of colectomy, b) survival times relapse free, c) survival times corticosteroid free. Conclusion: a) Cumulative incidence of colectomy, b) survival times relapse free, c) survival times corticosteroid free. Conclusion: a) Cumulative incidence of colectomy, b) survival times relapse free, c) survival times corticosteroid free.

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

P1693 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: This independent study was described for CD pts, in the CU, the scheduled IFX treatment strategy regimen, after a moderate-severe outbreak, seem to be associated with better long-term outcome regarding colectomy requirement, relapses, and need for corticosteroids, compared with a bridge IFX strategy followed by thiopurines.

Results: KC per patients receiving IFX for moderate to severe UC (M 60, F 75, Age (mean ± SD) 35.9 ± 13.2, UC duration 5.8 ± 5.9 yrs,Extent: extensive 58.5%, Left-sided 41.5%, Activity: severe 78.5%, moderate 21.5%, mean Mayo score: 10.1 ± 1.8. Primary no responders at week 12 (n= 25). 10 months in maintenance treatments, which were performed in 110 out of the 135 pts. (Follow-up 37.5 ± 24.0 months) Groups: IFX bridge (n = 51) and scheduled IFX (n = 59), which were different in extent, and mean age, UC duration, Mayo score. Cumulative incidence of colectomy was significantly lower in the bridge strategy (HR 1.01; 95% CI 1.00–1.02, p = 0.034), survival times free of relapse (HR 3.1026, 95% CI 1.038 to 5.2405, p < 0.0001) and free of corticosteroids (HR 2.6057, 95% CI 1.5516 to 4.3757, p = 0.0003). A proportion of UC significantly higher within the re-induced pts (HR 1.08; 95% CI 1.04–1.12) required a shift of biological drug compared with the scheduled strategy (p = 0.016, Fisher), despite of similar rates of optimization. Infusion reactions needing definitive IFX suspension were more frequent as a trend (p < 0.006) in re-induced pts.

Conclusion: Same as described for CD pts, in the CU, the scheduled IFX treatment strategy regimen, after a moderate-severe outbreak, seem to be associated with better long-term outcome regarding colectomy requirement, relapses, and need for corticosteroids, compared with a bridge IFX strategy followed by thiopurines.

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

P1694 INFLIXIMAB BIO-SIMILAR CT-P13 THERAPY IS EFFECTIVE IN MAINTAINING ENDOSCOPIC REMISSION IN ULCEARATIVE 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. Sigmoidoscopy was performed at week 14 and week 54 to assess mucosal healing. Mucosal healing was defined as Mayo endoscopic subscore of 0 or 1. Complete mucosal healing was defined as Mayo endoscopic subscore of 0. CT-P13 trough levels, antibody positivity, serum inflammatory markers as CRP level, fecal calprotectin at weeks 14 and 54, compliance with antibiotic therapy at the time of sigmoidoscopy and at weeks 14 and 54, previous use of anti TNF drug and the need of dose intensification as possible predictive factors for mucosal healing at week 54 were evaluated. Results: Seventy-five UC patients were included in the study of which 74 patients completed the induction therapy and 54 patients had already completed the 54-month treatment period. Mucosal healing was shown in 55.4% of the patients at week 14 and 61.7% at week 54 (p = 0.033). Complete mucosal healing was patient in 24.3% at week 14, but in 17.7% at week 54. The proportion values of CRP (p = 0.017), leukocytes (p = 0.0001), thrombocytes (p < 0.0001), and albumin (p = 0.002) showed significant difference at baseline and week 54. Mean trough level of CT-P13 was 5.02µg/ml and 4.4µg/ml at week 14 and 54. Serum antibody positivity was assessed in 7.7% and 26.2% of patients at week 14 and 54, respectively. Dose escalation was necessary in one third of patients. None of the patients need surgery who completed week 54, however 4 subjects who stopped CT-P13 therapy after induction regimen required colectomy.

Conclusion: Sustained mucosal healing was achieved in one 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.

P1695 THE USE OF ANTI-TNFs IN INDUCING CLINICAL RESPONSE AND REMISSION IN ULCEARATIVE 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 golimumab (GOL), have been shown effective and safe in the treatment of moderate-to-severe ulcerative colitis

Disclosure of Interest: All authors have declared no conflicts of interest.
Introduction: Anti-TNF is used for treatment of Crohn’s disease (CD) and ulcerative colitis (UC). Lack of head-to-head RCTs makes the choice among the three anti-TNFs difficult and indirect comparisons by network metanalyses lead to discrepant results.

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 immunosuppressive 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 naive 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 and at week 16 (p = 0.08 and p = 0.02, respectively). At week 16, 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 naive to anti-TNFs. Treatment was discontinued in 2 patient in IFX group and in 6 patients in GOL group and in 6 patients with ADA because of persistent disease activity.

Conclusion: This single-center study shows that IFX is more effective than GOL both in the induction (8 weeks) and in the maintenance of response (16 weeks). ADA is more effective 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. The superiority 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

P1696 REAL WORLD SAFETY OF VEDOLIZUMAB IN INFLAMMATORY BOWEL DISEASE: A META-ANALYSIS

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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 (TNF) inhibitors.

Aims & Methods: We conducted a systematic review and meta-analysis of real-world VDZ 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-TNF 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 (5%; 95% confidence interval [CI] 3–11%), fatigue (6%; 95% CI 3–15%) and arthralgia (5%; 95% CI 3–10%) (Table 1). The most common infectious AEs were upper respiratory tract infections (7%; 95% confidence interval [CI] 5–11%), fatigue (6%; 95% CI 3–10%) and sinusitis (4%; 95% CI 1–19%) (Table 1). Infusion-related reactions occurred in 2% (95% CI 1–4%) of patients (n = 811), and maladies 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).

Table 1: Pooled real-world adverse event rates of vedolizumab in inflammatory bowel disease

<table>
<thead>
<tr>
<th>Event</th>
<th>n</th>
<th>Rate, %</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acne or acne-like lesions</td>
<td>290</td>
<td>7.2</td>
<td>4.8–10.9</td>
</tr>
<tr>
<td>Fatigue</td>
<td>569</td>
<td>6.3</td>
<td>2.6–14.6</td>
</tr>
<tr>
<td>Arthralgia</td>
<td>1356</td>
<td>5.2</td>
<td>2.7–9.9</td>
</tr>
<tr>
<td>Exacerbation of IBD symptoms</td>
<td>674</td>
<td>4.9</td>
<td>2.1–11.1</td>
</tr>
<tr>
<td>Muscle pains</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>
</tr>
<tr>
<td>Respiratory, thoracic and mediastinal-related</td>
<td>70</td>
<td>2.9</td>
<td>0.7–10.7</td>
</tr>
<tr>
<td>Hives</td>
<td>146</td>
<td>2.1</td>
<td>0.7–6.3</td>
</tr>
<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>
</tr>
<tr>
<td>Other musculoskeletal and connective tissue-related</td>
<td>498</td>
<td>2.0</td>
<td>0.3–12.5</td>
</tr>
<tr>
<td>Infectious adverse events (≥2% of patients) n Rate, % 95% CI</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper respiratory tract infection</td>
<td>960</td>
<td>6.0</td>
<td>3.2–10.8</td>
</tr>
<tr>
<td>Sinusitis</td>
<td>576</td>
<td>4.2</td>
<td>0.8–19.1</td>
</tr>
<tr>
<td>Other respiratory infections</td>
<td>328</td>
<td>3.1</td>
<td>1.7–5.7</td>
</tr>
<tr>
<td>Genitourinary tract</td>
<td>409</td>
<td>3.0</td>
<td>1.1–8.0</td>
</tr>
<tr>
<td>Flu or flu-like infection</td>
<td>450</td>
<td>2.8</td>
<td>0.8–8.8</td>
</tr>
<tr>
<td>Perianal abscess</td>
<td>284</td>
<td>2.5</td>
<td>1.1–5.6</td>
</tr>
<tr>
<td>Clostridium difficile</td>
<td>1101</td>
<td>2.1</td>
<td>1.2–3.6</td>
</tr>
<tr>
<td>Foliculitis</td>
<td>146</td>
<td>2.1</td>
<td>0.7–6.3</td>
</tr>
<tr>
<td>Any adverse events</td>
<td>n</td>
<td>Rate, %</td>
<td>95% CI</td>
</tr>
<tr>
<td>Adverse events</td>
<td>1243</td>
<td>21.3</td>
<td>13.7–31.6</td>
</tr>
<tr>
<td>Serious adverse events</td>
<td>832</td>
<td>7.7</td>
<td>6.1–9.7</td>
</tr>
<tr>
<td>Infectious</td>
<td>906</td>
<td>9.9</td>
<td>6.2–15.5</td>
</tr>
<tr>
<td>Serious infections</td>
<td>832</td>
<td>6.7</td>
<td>3.3–13.0</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 transaminis), drug-induced liver injury (not specified). "Includes severe musculoskeletal syndrome, exacerbation of pre-existing enteropathic arthritis. "Includes pneumonia, lower respiratory tract infections, respiratory tract infection (not specified).

Conclusion: Pooled analysis of AE rates across multiple studies support the favourable, long-term benefit-risk profile of VDZ in real-world clinical practice, with low rates of infusion-related reactions, serious infections and malignancies reported, and no identification of new safety signals. These results are consistent with integrated safety data reported for VDZ in six clinical trials (>4000 patient-years), despite the selection of complex patients failing previous immunosuppressive or biologic therapies. Limitations of incidental reporting in real-world studies include potential underestimates of AE rates and the reporting of AEs not regularly observed in clinical trials; for example, due to the variability in medication use and sub-optimal screening of prior infections.

Disclosure of Interest: Dr Edward Loftus has received financial support for research from AbbVie, Janssen, UCB, Takeda, Pfizer, GlaxoSmithKline, Agen, Bristol-Myers Squibb, Genentech, Roberts Clinical Trials, Gilead, Receptos; and has served as a consultant for AbbVie, Janssen, UCB, Takeda, Immune Pharmaceuticals, Celgene, MedImmune, Theraclud, Genentech, Seres Health, Sun Pharmaceuticals, Bristol-Myers Squibb, Takeda Development Centre Europe, London/United Kingdom/MN.

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P1697 COST-UTILITY ANALYSES OF BIOLOGICS FOR REFRACTORY ULCERATIVE COLITIS

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Introduction: Although many biologies (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 the Italian ones.

Aims & Methods: The objective is to evaluate cost-utility of Bs for the treatment of refractory ulcerative-to-severe UC both in Italy and in the Lombardy Region. A Markov model (considering 3 transition states: remission, clinical response, relapse) was constructed using the software R 3.3.1 markovchain-package to evaluate incremental cost-utility ratios (ICUR) of adalimumab (ADA), infliximab (IFX), infiximab biosimilar (IFX-B), golimumab (GOL) and vedolizumab (VED) treatments of patients over a 10-year time horizon from the perspective of the Italian (N) and Lombardy Region (R) healthcare system. Clinical parameters were derived from clinical trials. Costs (actualised by –1.5%) were obtained from the National database and Regional public tender. Utility was expressed as QALY (Quality Adjusted Life Years).

Results: Costs per treatment were different from 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: €130,955, R: €103,081, –23%), IFX-B (N: €110,438, R: €78,852, –28.6%), GOL (N: €118,602, R: €96,922, –18.3%), VED (N: €113,852, R: €102,932, –9.6%) with associated QALY respectively of 6.68, 6.66, 6.66, 6.70, 7.02. From a N perspective, IFX-B was dominating compared to all other treatments. The ICUR of VED/IFX-B was €9,483 for 10 years (willingness to pay €94/8 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 = €182/2 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.

P1698 ENDOSCOPIC SUBMUCOSAL DISSECTION OF ULCERATIVE COLITIS-ASSOCIATED DYSPLASIA: A SINGLE CENTER-BASED EXPERIENCE

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Introduction: Dysplasia is considered as the precursor of colitis-associated cancer in the long standing ulcerative colitis (UC). Although endoscopic submucosal dissection (ESD) has been suggested as an endoscopic resection technique for non-polyoid dysplasia, only a few studies investigated the feasibility of ESD as a treatment option of non-polyoid dysplasia.

Aims & Methods: We aimed to investigate the feasibility of ESD for the resection of ulcerative colitis dysplasia in UC. From August 2009 to February 2017, 19 UC patients with low grade dysplasia (LGD), high grade dysplasia (HGD) or early colon cancer were admitted for ESD and their medical records were retrospectively reviewed.

Results: Mean age of the 19 patients was 55.5±15.4 years and mean duration between UC diagnosis and dysplasia detection was 13.7±6.5 years. Nine were male. Five of 19 patients directly underwent colectomy without ESD trial due to non-lifting sign (n = 4) or surface ulceration (n = 1). Of these, preoperative single HGD (n = 3) or ECC (n = 1) patients showing non-lifting sign were diagnosed as invasive cancer and a single preoperative LGD case with non-lifting sign had multifocal LGDs in the colectomy specimen. As a result, ESD was performed for 14 of 19 patients. Major and minor axes of the lesion was 23.4±9.0mm and 18.1±9.1 mm, respectively. The lesions were located at the rectum (n = 9), sigmoid colon (n = 2), descending colon (n = 1), and transverse colon (n = 1). The gross morphology showed Paris IIa (n = 7), IIb (n = 4), Is (n = 1), and Iib + Is (n = 2). No lesions contained ulcerations. The borders were distinct in 6 and vague but endoscopically assumable in 8 cases. Mean UC endoscopic index of severity of the preoperative descending mucosa was 0.3±0.1. Mean resection time was 54.8±25.7 minutes. En bloc resection and R0 resection rates were 92.9% and 71.4%, respectively. There was no perforation or clinically significant bleeding. Mean hospitalization period after ESD was 1.14±0.36 days. Final histology of ESD specimens revealed 1 indefinite for dysplasia (IND), 1 sessile serrated adenoma/poly, 7 LGDs, 3 HGDs, and 1 intramusosal adenocarcinoma. Synchronous lesions were present in 5 patients. Synchronous dysplasia in 4 patients were removed endoscopically. However, colectomy was done in one patient suffering synchronous colorectal cancer and endoscopically unresizable dysplasia diagnosed by the surveillance biopsy specimens taken during ESD. Metachronous or recurrent dysplasia was identified in 2 of 9 patients who underwent follow-up colonoscopy after ESD (median follow-up period 12.3 months, range: 1.1–22.2 months). One developed metachronous LGD at 18 months after ESD and the other developed both metachronous and recurrent LGDs at 8 months after ESD.

Conclusion: According to our ESD series for dysplasia, ESD seems to be feasible for the selective resection of UC-associated dysplasia. However, meticulous surveillance colonoscopy is mandatory to monitor local recurrence and metachronous dysplasia. Non-lifting sign and surface ulceration are highly suggestive of invasive colitic cancer.

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

P1699 EVALUATION OF ADHERENCE TO INFlixIMAB THERAPY IN IBD PATIENTS

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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 efficacy of treatment and its costs. This issue has been evaluated just in a few studies.

Aims & Methods: We aim to describe the adherence to infliximab in patients with IBD and identify causes and factors associated with poor adherence. We identified all IBD patients treated with infliximab in a single center since 2009. Fulfillment of the prescribed schedule was assessed for every single infliximab infusion. For every patient, we grouped infusions in “courses of treatment” defined as the administration of infliximab at the same dose and schedule for a minimum of six months. Therefore, restarting the treatment after a holiday of more than 4 months, or changing the interval of doses were considered as a new course of treatment. We defined “infusion well administered” when it was done within seven days before or after the date prescribed.

Results: We included a total of 147 courses of treatment, administered to 100 patients. Seventy-four 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 regimes were: every 8 weeks (76.2%), every 4 weeks (10,182/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.

P1700 TNF-EXPRESSION OF MONOCYTES IS A PREDICTIVE MARKER FOR RESPONSE TO ANTI-TNF TREATMENT

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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.

Aims & 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-Bradow 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’
intraacellular TNF-expression was analysed by flow cytometry. According to a current belief, TNF is principally produced by CD14⁺ and high-producer cells. 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 <5 or a partial Mayo-Score <2 were 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 653.84 pg/ml (49.53–1154.78 pg/ml). TNF was mainly produced by CD14⁺ and monocytes. Four patients were identified as low-producers and five as high-producers. All high-producers responded well to the treatment regarding clinical scoring as compared to only half of the low-producers, but statistical significance was not reached due to the small number of patients (high: 100% vs. low: 10% clinical response, p = 0.167). However, remission rates after 6 weeks were significantly higher in high-producers compared to low-producers (high: 80% vs. low: 0% remission; p = 0.048). 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.

Disclosure of Interest: D. Lissern: Donata Lissern received a research grant from Pfizer and lecture fees from Falk and Abbvie.

B. Siegmund: Britta Siegmund received a research grant from Pfizer, served as consultant for Janssen, MSD, Abbvie, Takeda, Hospira and received lecture fees from Abbvie, Falk, Ferring, MSD, Merck, Takeda; all money went to the institution.

All other authors have declared no conflicts of interest.

P1701 EVALUATION OF CONCOMITANT CORTICOSTEROID AND VEadolizumab 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 retrieved from patient 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 (21.5%); 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 able to continue CS before 6 months. Among CD patients, CS users had higher baseline disease activity than non-users. Such difference was not observed in UC. CS users had similar disease duration in both CD and UC. There was no difference in the number of prior TNF-alpha inhibitors between CS users and non-users.

Conclusion: Use of CS at the time of initiating vedolizumab treatment was more common in UC than in CD. Vedolizumab 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. Yläsuoju-Oja: TY is owner of MedEngine Oy and consultant for Takeda Oy.

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K. Tamminen: KT is employee of Takeda Oy.

All other authors have declared no conflicts of interest.
P1703 EFFICACY, SAFETY AND LONG-TERM OUTCOME OF ENDOSCOPIC INJECTION THERAPY (ENTVIO®) IN CROHN’S DISEASE STRUCTURES OF THE UPPER GASTROINTESTINAL TRACT–AN INTERNATIONAL MULTICENTER COMBINED ANALYSIS


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Introduction: Strictures in Crohn’s disease (CD) may occur in different segments along the gastrointestinal (GI) tract. In contrast to ileocecal strictures, endoscopy demonstrates dilation (EDB) for CD-associated strictures of the upper gastrointestinal (UGI) tract is rarely reported. We therefore performed a comparison of efficacy safety and analysis of EDB for UGI CD-associated strictures in this multi-centre cohort study.

Aims & Methods: Individual patients characteristics were retrieved from electronic case report forms. Upper GI tract was defined as oesophagus, stomach and duodenum up to the ligament of Treitz. Time-to-event analysis was performed to assess symptom recurrence, re-dilation or surgery. Kaplan-Meier estimates were used to calculate event rates. For the multivariable Cox regression models, all variables that were available for at least 85% of subjects were considered for inclusion and the score method was used to choose the best model with two factors for each outcome.

Results: A total of 73 CD patients and 127 performed dilation procedures were included. Stricture locations were: duodenum n=46, stomach n=14; esophagus n=9; stomach and duodenum n=4. Technical success rate was 94.1% resulting in clinical efficacy in 88.9% of patients. Major complications, defined as perforation, bleeding or dilation-related surgery, occurred in 2.9% of all procedures. During a median follow up period of 36 months, 89.4% of patients underwent re-dilation and 29.8% required surgical intervention. The multivariable Cox regression models, all variables that were available for at least 85% of subjects were considered for inclusion and the score method was used to choose the best model with two factors for each outcome.

Conclusion: 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 life. Adherence rate has been analysed in several studies with controversial results.

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

References

P1704 POST-MARKETING SAFETY EXPERIENCE OF VEDOLIZUMAB IN PATIENTS WITH PRE-EXISTING VIRAL HEPATITIS

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Introduction: Systemic immunosuppressive treatment, such as anti-tumour necrosis factor-alpha (TNFα) therapy, can reactivate latent hepatitis virus. VDZ is a humanised monoclonal antibody, blocks gut-specific lymphocyte trafficking by binding to α4β7 integrin and is approved in moderately to severely active ulcerative colitis or Crohn’s disease. The gut selectivity of VDZ may be associated with lower risk of virus reactivation than anti-TNFα agents. The VDZ European Product Label advises caution regarding VDZ use in patients with controlled chronic severe infection or a history of recurring severe infection. As VDZ clinical trials excluded patients with chronic viral hepatitis B or hepatitis C infection, there are no clinical trial data available in this patient population.

Aims & Methods: Here, we describe the safety experience of VDZ use in patients with pre-existing hepatitis B or hepatitis C in the post-marketing setting. Adverse events (AEs) were identified from the VDZ Global Safety database (data-cut May 20, 2014 to Nov 19, 2016) and included if patients’ medical history or concurrent conditions included a Medical Dictionary for Regulatory Activities (MedDRA) preferred term suggestive of hepatitis B or hepatitis C infection.

Results: In the context of ~77,382 patient-years of VDZ exposure and a total of 36 events (event rate: 0.47 event per 100 patient-years) in the VDZ database (n=13 participants, 9 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 (NI). Eight patients received prior/concomitant anti-TNFα therapy. NI rate = 2. Events reported 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 related hepatitis macular Arnold–Cherubini syndrome, 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; NI rate = 25. VDZ treatment was continued in 10/14 (71.4%) patients and discontinued in 4/14 (28.6%); NI rate = 1.

Conclusion: In the post-marketing setting, there was no evidence of increased risk of virus reactivations in patients with hepatitis B or hepatitis C receiving VDZ. Limitations associated with post-marketing safety reporting (e.g. 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. Hilmė: No conflict of interest

S. Adsal: Employee of Takeda Pharmaceuticals (Asia Pacific)
A. Blake: Employee of Takeda Development Center Europe Ltd
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All authors have declared no conflicts of interest.

References
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 practise in all centres.

Aims & 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. A total of 230 IBD (4 IBD-U) patients starting vedolizumab were included in this retrospective study. Two hundred and fifty-seven patients were evaluated, 143 (55.6%) with CD and 114 (44.4%) by ulcerative colitis (UC). One hundred and forty-two (55.2%) were male. Median age at start was 39 (21.2–69.8) and are reported in table 1. 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. 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-market data.

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

References

P1707 SIX-YEAR EFFICACY AND SAFETY OF AZATHIOPRINE TREATMENT IN THE MAINTAINANCE OF STEROID-FREE REMISSION IN INFLAMMATORY BOWEL DISEASE PATIENTS

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Introduction: Azathioprine (AZA) and thiopurine are widely used for induction and maintenance of remission in patients steroid-resistant or dependent with inflammatory bowel disease (IBD). The treatment must be withdrawn in 5–30% of patients due to the occurrence of adverse events.

Aims & Methods: Aim of this study has been to investigate its efficacy and safety in maintaining steroid-free remission in steroid dependent IBD patients six year after the institution of treatment. Data from consecutive IBD outpatients referred in our Institution, between 1985–2015, were reviewed and all patients treated with AZA were included in this retrospective study. AZA was administered at the recommended dose of 2–2.5 mg/kg. Blood chemistry was analysed before administration of the drug, every 10–15 days for the first 3 months and then every 1–2 months following the institution of treatment.

Results: Out of 2722 consecutive IBD outpatients visited in the index period, AZA was prescribed to 415 patients, 227 (54.7%) were affected by Crohn’s disease (CD) and 188 (45.3%) by ulcerative colitis (UC). One hundred and fifty-eight patients with a follow-up <72 months were excluded from the study. Two hundred and fifty-seven patients were evaluated, 143 (55.6%) with CD and 114 (44.4%) with UC. One hundred and forty-two (55.2%) were male.

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)</td>
<td>43.7 (16.5)</td>
<td>40.3 (13.1)</td>
</tr>
<tr>
<td>Male - no. (%)</td>
<td>532 (46.6)</td>
<td>502 (62.5)</td>
<td>525 (62.5)</td>
<td>552 (65.1)</td>
</tr>
<tr>
<td>Current smoker - no. (%)</td>
<td>38 (25.9)</td>
<td>208 (26.7)</td>
<td>11 (13)</td>
<td>85 (10.6)</td>
</tr>
<tr>
<td>Disease duration-yr</td>
<td>13.6±12.5</td>
<td>9.0±7.8</td>
<td>7.6±8.9</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 (414–2127)</td>
</tr>
<tr>
<td>Beulon only</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-market data.
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%) discontinued the treatment due to side effects (29 CD vs 27 UC, 20.2% and 23.7%, respectively). Loss of response from 1st to 6th year of follow-up was low, about 20%.

Conclusion: Six years after the onset of treatment 56% of patients did not require further steroid courses. After the first year loss of response was low in five subsequent years. In the present series the maintenance of steroid-free remission was significantly higher in CD than in UC patients. The occurrence of side effects leading to the withdrawal of AZA treatment has been low.

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

**P1708 CLINICAL EFFICACY AND SAFETY OF ANTI-TNF THERAPY IN INFLAMMATORY BOWEL DISEASE IN THE ELDERLY: A UK TERTIARY REFERRAL CENTRE EXPERIENCE**

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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 biologic database 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 1:2 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 immunogenicity than the young. Further studies with more patients across multiple sites are required to clarify safety and efficacy in the elderly.

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

**P1709 TACROLIMUS IN REFRACTORY ULCERATIVE COLITIS–12 MONTH OUTCOME IN A SINGLE-CENTRE UK DISTRICT HOSPITAL**

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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 staring 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 13 (78.6%) initial responders, 12-month outcome included withdrawal of Tacrolimus in 7 patients (63.6%). Reasons for withdrawal included: n = 1 renal impairment; n = 1 started on infliximab; n = 3 referred for leucapheresis; n = 1 restarted on Azathioprine and n = 1 referred for proctocolectomy. Three patients (21.4%) remain in steroid-free clinical remission with a good quality of life and

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

**Abstract No: P1708**

<table>
<thead>
<tr>
<th></th>
<th>&lt;60 years</th>
<th>≥60 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>n = 58</td>
<td>n = 29</td>
</tr>
<tr>
<td>Week 14 steroid free remission (HBI &lt; 5, SCCAI &lt; 3)</td>
<td>28/41 (68.3%)</td>
<td>8/16 (50%)</td>
</tr>
<tr>
<td>Week 54 steroid free remission (HBI &lt; 5, SCCAI &lt; 3)</td>
<td>24/40 (60%)</td>
<td>8/15 (53.3%)</td>
</tr>
<tr>
<td>Remain on anti-TNF at week 54</td>
<td>46/58 (79.3%)</td>
<td>23/28 (82.1%)</td>
</tr>
<tr>
<td>Reasons for stopping anti-TNF before week 54</td>
<td>7 primary non-response 2 secondary loss of response with detectable anti-drug antibodies 1 infusion reaction 1 clinical &amp; endoscopic remission</td>
<td>2 primary non-response 2 secondary loss of response with detectable anti-drug antibodies 1 infusion reaction</td>
</tr>
<tr>
<td>Remain on anti-TNF at end of follow up (April 2017)</td>
<td>38/58 (65.5%)</td>
<td>12/29 (41.4%) p &lt; 0.05</td>
</tr>
<tr>
<td>Reasons for stopping biologic during study period</td>
<td>8 primary non-response 4 secondary loss of response 3 secondary loss of response with detectable anti-drug antibodies 1 infusion reaction 1 clinical and endoscopic remission 2 infections (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)</td>
<td>Range: 3–73 Median: 12</td>
<td>Range: 3–63 Median: 18</td>
</tr>
<tr>
<td>Anti-drug antibodies detectable during follow up</td>
<td>3/38 (5.2%) -3 infliximab weeks 14, 34 and 76 2 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 2 concomitant with therapeutic TGNs 2 no concomitant prior exposure</td>
</tr>
<tr>
<td>Adverse events throughout follow up</td>
<td>1 new diagnosis cancer (testicular) 1 infusion reaction 1 infection (dental abscess)</td>
<td>3 new diagnosis cancer (prostate, colorectal &amp; thyroid) 1 spontaneous ileal perforation requiring emergency surgery 1 infusion reaction 2 infections (chest infection and shingles)</td>
</tr>
</tbody>
</table>
no adverse effects on maintenance treatment with Tacrolimus. 11 patients (47% of the population) had to stop treatment due to adverse effects within 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 regular visits to the clinic, it is safe and feasible allowing patients an alternative immunosuppressant which may either avoid the need for a colectomy or, give some time to adjust to its implications.

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

**References**


**PI710 A REAL LIFE COMPARISON OF THE EFFICACY OF ADALIMUMAB VERSUS GOLIMUMAB IN MODERATE-TO-SEVERE UC: A MULTICENTER EXPERIENCE FROM THE SICILIAN NETWORK FOR INFLAMMATORY BOWEL DISEASE (SN-IBD)**


**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 were treated with ADA or GOL. The efficacy was evaluated at 8 week 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 <2 without steroids). The presence of clinical response or clinical remission was defined as “clinical benefit”.

**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-TNFα (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 = 0.089). 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 and p = 0.036). Disease 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. Moccioaro: Abbvie, MSD
F.S. Macaluso: MSD, Abbvie, Takeda.
R. Orlando: Abbvie, MSD, Takeda.
All other authors have declared no conflicts of interest.

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**PI711 REAL-LIFE STUDY (GORE-UC) EVALUATING THE EFFECTIVENESS OF GOLIMUMAB FOR THE TREATMENT OF UC: AN INTERIM ANALYSIS FROM ITALIAN GROUP FOR THE STUDY OF INFLAMMATORY BOWEL DISEASE (IG-IBD)**


**Aims & Methods:** An observational, non-interventional, retrospective, 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 on golimumab therapy because of sustained clinical benefit, and safety. Results for the first 54-week period are reported.

**Results:** 121 patients (47% female; median age of 45.7 years (IQR 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 7–9) in 66 patients (54.5%). Percentage of patients exposed 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 8, 48% of patients were still on golimumab therapy at week 54. Thirty patients (24%) were withdrawn within the first 4 weeks. Among the remaining patients, at week 54 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 therapy. Fifteen patients (12.4%) underwent surgery within the first 54 weeks, with a greater percentage among anti-TNFα exposed (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 naïve patients were more likely to avoid colonoscopy.

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 INFECTIOUS BOWEL DISEASE PATIENTS WITH GUT COLONIZATION WITH EXTENDED SPECTRUM BETA-LACTAMASE PRODUCING ENTEROBACTERIA ACCORDING TO BACTERIAL PLASMID GENES

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Introduction: Ciprofloxacin is one of the most frequently used antibiotics in hospitalized inflammatory bowel disease (IBD) patients. Also discrepancies between clinical guidelines and real clinical situations are observed in terms of antibiotics use in patients with IBD. In the last few years an emerging resistance to ciprofloxacin, ranging from 43% to 82%, has been described in extended spectrum beta-lactamase producing bacteria (ESBL-E) colonizing the gut.1,2

Aims & Methods: The objective of this study was to evaluate the gut colonization with ESBL-E in IBD patients, determine the resistance to ciprofloxacin and bacterial plasmid genes associated with that. Rectal swabs were collected from all consecutive patients with confirmed ulcerative colitis (UC) and Crohn’s disease (CD) colonized with gut ESBL-E during a 7-year period (2010–2016). Enterobacteria were cultured and analyzed for ESBL presence according to EUCAST guidelines, resistance to ciprofloxacin and bacterial plasmid genes CTX-M, TEM and SHV were detected.

Results: A total of 148 patients with confirmed IBD diagnosis were included in the study–101 (68%) with UC, 47 (32%) 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 plasmid genes associated with ESBL production in UC included CTX-M (n = 11; 92%), TEM (n = 4; 33%), SHV (n = 1; 8%), in CD–CTX-M (n = 4; 80%) and TEM (n = 3; 60%). In UC 6 (50%) and in CD 1 (20%) of the isolated ESBL producing strains from CD patients included only Escherichia coli (n = 5). In 1 case of the ciprofloxacin resistance CTX-M, TEM and SHV gene combination was observed, in 1 case 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. Colonization rate with ESBL-E in IBD patients, mostly with Es. coli, expressing CTX-M gene was found comparing with the literature. 2. Higher resistance to ciprofloxacin was found in ESBL-E isolated from UC patients, compared to UC patients. 3. CTX-M and TEM genes are associated with resistance to ciprofloxacin.

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

References

P1714 PREDICTIVE FACTORS OF RESPONSE TO ANTI-TNF TREATMENT OF COMPLEX ANO-PERINEAL FISTULAS IN CROHN’S DISEASE

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Introduction: Ano-perineal fistulas (APF) are a common location of Crohn’s disease (CD). Their treatment is still disappointing. Identifying the predictive factors of response could guide the practitioner to adapt the anti-TNF 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 APF 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 APF 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 azathioprine. After the induction phase, 53% of the patients

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

References

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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.
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 therapy. Clinical remission after the induction phase was the only independent predictive factor of long-term remission under maintenance treatment after multivariate analysis. However, presence of recto-Vaginal fistula as well as the presence of a recto-vaginal fistula and young age at diagnosis.

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

Introduction: The management of chronic inflammatory bowel disease (IBD) has experienced significant advance with the development of biologic therapy. Infliximab (IFX) was the first monoclonal antibody approved for IBD. The patent expiry of biologics and their relatively high costs that result in a significant financial burden on the healthcare system, led to the development of biosimilar agents. The biosimilar IFX has been authorised for use in all the indications as the reference IFX. The demonstration of biosimilar IFX efficacy and safety equivalence was based on two pivotal clinical trials in rheumatic diseases. As a result of the extrapolation to IBD, there is growing controversy regarding the appropriate use of biosimilar IFX. The efficacy and safety of infliximab reference in inducing and maintaining remission in IBD has been extensively proven in clinical trials. However, the role of biosimilar IFX, has not been systematically investigated in clinical practice.

Aims & Methods: We aimed to compare the safety and efficacy in inducing and maintaining remission in IBD, between the reference IFX group and biosimilar IFX group. This retrospective, multicenter study was carried out at 4 tertiary hospitals, from January 2013 to December 2016. The analysis included 2 cohorts of 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 remission. For CD, response was defined as a decrease in Harvey-Bradshaw score of 3 or more from baseline, and a Harvey-Bradshaw score of 4 or less was used to remission. We used Student’s t for independent samples and Chi-square test. Time to withdrawal due to adverse effects was estimated using Kaplan-Meier survival analysis, and the log rank test was used to test for treatment group differences.

Results: The analysis included 346 consecutive IBD patients, 104 treated with original IFX and 242 with biosimilar IFX. 103 patients were diagnosed with CU, 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 coexisting 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 (42.42, (95% CI 39.49–45.34) months versus 44.61 (95% CI 42.66–46.56) months, log-rank test p = 0.292).

Conclusion: Our clinical experience showed similar efficacy and safety profile of biosimilar IFX compared to original IFX.

Disclosure of Interest: All 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 tolerance of different medications in reference to demographic data and disease location and behaviour.
Results: 60/630 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 93.4 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). Referring to the Montreal classification, efficacy of mesalamine, prednisone and azathioprine was significantly higher in A1 group with the lowest in A2 patients (A1: 90, 56% and 14, 40%); adalimumab (n = 14, 40%), etanercept (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

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 retrospective study was to assess the efficacy of induction VDZ therapy. 41 patients with Crohn’s disease (CD) and 25 with ulcerative colitis (UC) received VDZ induction therapy between September 2016 and April 2017 in Hungary. Efficacy of induction therapy was assessed based on the changes of activity indices on week 14.
Results: Of 41 enrolled IBD patients, 24 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. Extraintestinal manifestations occurred in 19 patients, and in 13 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%) and 8 cases (19.51%) of which were steroid-free remission. In one case VDZ therapy had to be interrupted due to development of IBD 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. Between January 1996 and August 2016, data extracted included 41 IBD patients diagnosed with LTBI following a tuberculin skin test (PPD) or interferon gamma release assay (IGRA) and who received biologic therapy between January 1996 and August 2016. Data extracted included patient demographics, TB risk factors, chest x-ray findings, biologic agent used, prior and concomitant therapy used were 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, we conducted a retrospective review of all IBD patients diagnosed with LTBI following a tuberculin skin test (PPD) or interferon gamma release assay (IGRA) and who received biologic therapy between January 1996 and August 2016. Data extracted included 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 68.6% were male (Table 1). The median time from diagnosis of IBD to LTBI was 9 years (0–48 years). Prior IBD therapies included corticosteroids (86%), aminosalicylates (83%), other immunosuppressants (69%). At least 43% of patients have been previously exposed to at least 1 biologic agent. The most common LTBI treatment regimen 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
starting biologic therapy. The median time from initiation of LTBI treatment to biologic was 43 days (IQR: 23–40). The median duration of follow-up was 2.9 ± 3.3 years. The median calculated annual risk of developing active TB without treatment was 0.52% (0.08%–1.3%). Of the cohort studied, only one patient taking adalimumab monotherapy after completing 6 months of INH therapy developed reactivation of TB. The estimated TB reactivation rate in our cohort was 0.98 cases per 100 patient-years of follow up.

Table 1: Cohort Characteristics and Estimated Post-treatment Tuberculosis Reactivation Rate

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Age</td>
<td>38.3 (±14.4) years</td>
</tr>
<tr>
<td>Male Sex</td>
<td>24/35 patients</td>
</tr>
<tr>
<td>Type of Inflammatory Bowel Disease (IBD)</td>
<td>Ulcerative Colitis (23%) Crohn’s Disease (77%)</td>
</tr>
<tr>
<td>Mean Time since IBD</td>
<td>9 years (range: 0–48)</td>
</tr>
<tr>
<td>Diagnosis</td>
<td>Type of Biologic Therapy Infliximab (40%) Adalimumab (29%) Vedukizumab (20%) Certolizumab (19%)</td>
</tr>
<tr>
<td>Type of Tuberculosis Therapy</td>
<td>Isoniazid (INH) for 9-months (74%) INH for 6-months (11%) Rifampin 4-months (9%) INH + Rifampin for 3-months (3%) Of others (3%)</td>
</tr>
<tr>
<td>Median time to initiate biologic therapy</td>
<td>43 days (range: 4–3653)</td>
</tr>
<tr>
<td>Mean duration of follow-up</td>
<td>2.9 ± 3.3 years</td>
</tr>
<tr>
<td>Mean Pre-treatment Risk of Development of Tuberculosis</td>
<td>0.52%/year (range: 0.08%–1.3%/year)</td>
</tr>
<tr>
<td>Estimated Post-treatment Tuberculosis Reactivation Rate</td>
<td>0.98 cases per 100 patient-years</td>
</tr>
</tbody>
</table>

Conclusion: Treatment for LTBI in patients with IBD treated with biologics is effective, but does not eliminate the risk of reactivation, which occurred at a rate of 0.98 cases per 100 patient-years in 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.

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 in 40%–50% of cases it is not possible to remove completely the lesions of the damaged gut. The aim of our study was to describe the characteristics and management of patients with residual disease after surgery (RD) and to compare these with patients with curative surgery (CS) in post operative CD patients.

Aims & Methods: PRACTICROHN was a retrospective study that included adult patients from 26 Spanish hospitals who underwent CD-related ileocolonic resection with ileocolic or ileorectal anastomosis between January 2007 and December 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 χ2 test or Fisher’s exact test. Kaplan-Meier method was used to assess 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 [SD 13], 50% men). Of these, 27 (7.5%) had RD after surgery. Median age at diagnosis was shorter in patients with RD than CS: 23 (IQR 19–34) years vs 29 (IQR 23–40), p = 0.02. At the time of resection B1+ (p+), behavior was more frequent in RD than in CS: 6 (22%) vs 26 (8%), p = 0.05; and location was mainly L1±(±)L4 in CS (190, 57%) and L3±(±)L4 in RD (190, 70%), p = 0.02. Four (16%) patients in RD were receiving immunomodulators at the time of surgery vs 132 (41%) of CS, p = 0.002. More patients in RD vs CS presented postoperative complications (12 (44%) vs 87 (26%), p = 0.06) as well as hospitalizations the first year after surgery (30 (37%) vs 42 (12%) p = 0.001). No differences in smoking habit, perianal disease or length of resection were found between the two groups. More patients were performed an endoscopy within the first year after surgery in the RD vs CS: 16 (39%) vs 122 (36%), 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

Residual disease patients | Median time to POR | LL | UL | p-value |
<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Prophylaxis Yes</td>
<td>15</td>
<td>8</td>
<td>698</td>
<td>217 — 0.4</td>
</tr>
<tr>
<td>No</td>
<td>8</td>
<td>392</td>
<td>287</td>
<td></td>
</tr>
<tr>
<td>Curative surgery patients</td>
<td>Median time to POR</td>
<td>LL</td>
<td>UL</td>
<td>p-value</td>
</tr>
<tr>
<td>Prophylaxis Yes</td>
<td>187</td>
<td>48</td>
<td>—</td>
<td>0.04</td>
</tr>
<tr>
<td>No</td>
<td>88</td>
<td>33</td>
<td>1529</td>
<td>839</td>
</tr>
</tbody>
</table>

Conclusion: Residual disease is a rare situation after intestinal resection in CD. Patients with residual disease after surgery are more likely followed-up endoscopically within the first year. Conversely, similar proactive recurrence prevention was observed compared to curative surgery. In the case of residual disease although prophylactic treatment is useful, most of the patients will present POR. RD is a factor of poor postoperative in post-operative CD patients.

Disclosure of Interest: L. Cea-Calvo: MSD employee C. Romero: msd employee B. Juliá De Parma: MSD employee All other authors have declared no conflicts of interest.

P1722 SEVERITY OF BILE ACID MALABSORPTION CORRELATES WITH LENGTH OF ILEAL RESECTION IN CROHN’S DISEASE

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Introduction: Bile acid malabsorption (BAM) is a common cause of diarrhoea in Crohn’s disease (CD) patients with ileal resection and can lead to complications such as renal and biliary stone disease. BAM is usually diagnosed by selenium labelled homotauricolic acid test (75SeHCAT) but its availability is limited. Thus, a large proportion of resected CD patients either remain undiagnosed or subject to empirical therapy. There is a paucity of studies examining the correlation between length of ileal resection and severity of BAM which will be of particular use to clinicians with no recourse to diagnostic testing for BAM.

Aims & Methods: We identified all CD patients with a prior surgical resection who underwent 75SeHCAT testing at our institute. Testing was based on the treating clinician’s discretion. The length of resected ileum was recorded from histopathology report. We conducted a Spearman’s correlation test to check for correlation between length of resected ileum and percentage retention on 75SeHCAT. Response to treatment with bile salt sequestrant and 75SeHCAT retention values was tested using Mann-Whitney test.

Results: A total of 97 patients were identified with a mean age of 46.4 (SD 14.5). The median length of resected ileum was 22.5 cms (range 1.5–95 cms) with a median of 1 resection (range 1–4). Overall, 90 patients (92.8%) had 75SeHCAT retention values of <5%, 5 (5.2%) patients between 5–10% and only 2 patients had values of >15%. There was moderate correlation between 75SeHCAT retention and length of ileal resection (Spearman’s rho: 0.4041, P < 0.001). Data on response to treatment was available for 60 patients, of whom 41 (42%) responded and 19 (19%) failed to respond to bile salt sequestrants. The 75SeHCAT retention values was comparable among responders (median 0.02%, range 0.1–6.6) and non-responders (median 0.02%, range 0.1–6.6, Mann-Whitney test, P = 0.72).

Conclusion: There was moderate correlation between length of ileal resection and severity of BAM as defined by 75SeHCAT retention values. Response to bile salt sequestrant therapy was not dependent on 75SeHCAT retention values.

Disclosure of Interest: S. Subramaniam: Advice report member for Abbvie, Abbvie and MSD. All other authors have declared no conflicts of interest.
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whether SB enhances transformation to ‘protective’ secondary BA in human.
'pro-germination' primary BA including CA in human stools B) Describe primary BAs (cholic acid and chenodeoxycholic) into secondary (deoxycholic acid) in human.

Group 1 (n = 12) received AC for 7 days and SB for 14 days. Group 4 (n = 12) did not receive any treatment. Group 1, 2, 3 had successive stool samples at D-28, 0, 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 ± 10.1 vs 83.1 ± 7.4%, p = 0.017). In group 3 (AC plus SB), the decrease in secondary BA rate was significantly less than for AC (71.23 ± 7.4 vs 63.40 ± 8.9%, p = 0.04), and this decrease 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 BA. This transformation is a spore germination in vitro, increases in stool during antibiotic therapy. The concomitant administration of SB during AC treatment significantly reduces this CA peak. These results highlight new human data on a potential mechanism for post-antibiotic spore germination by the microbiota can encourage germination of the microbiota.

Disclosure of Interest: H. Duboc; I worked with Bioceosc 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 other authors have declared no conflicts of interest.

P1725 ASSOCIATION OF FUSOBACTERIUM NUCLEATUM IN ORAL CAVITY AND COLORECTAL CARCINOMAS
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Microbiota Signature Associated With Severity of Irritable Bowel Syndrome.
Microbiota-Gut-Brain Axis in Visceral Pain: Relevance to Irritable Bowel Syndrome.

Thirty-one patients (65%) showed psychological distress, 22 (31%) anxiety, and 10 depression (21%). Psychological variables significantly segregated gut microbial dysbiosis. Correlational analysis and comparisons in bacterial abundance among subgroups defined by thresholds in psychological variables.

Conclusion: A microbial signature accurately predicted the presence of psychological distress. Psychological variables significantly segregated gut microbial dysbiosis, underlining the role of brain-gut-microbiota axis.

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Aims & Methods: We assessed the abundance of Fusobacterium in CRC, colorectal mucosa and saliva. We extracted DNA from mucosal biopsies and measured bacterial levels by quantitative PCR of the 16S rRNA ribosomal RNA gene. We also investigated the homology of F. nucleatum in oral cavity and CRC.

Results: In 51 CRC cases, Fusobacterium positivity was significantly higher in CRC compared to controls (p < 0.05). Fusobacterium was more detected in CRC (12.9%) than in normal tissue (2.9%) 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 these patients who were F. nucleatum-positive in saliva and CRC, we next looked for the results of AP-PCR and 6 patients have shown common band patterns.

Conclusion: The results support a link between the abundance of F. nucleatum in oral cavity and CRC. Our data also indicate that there may be a route from the oral cavity to the CRC in F. nucleatum positive cases. We are now identifying DNA sequences, specific for the objective strains.

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

References

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Introduction: Saccharomyces boulardii (SB) CNMC I-745 demonstrated clinical efficacy in the secondary prevention of post-antibiotic Clostridium difficile infection (CDI), but the mechanism remains unclear. Cholic acid (CA) is a primary bile acid (BA), synthesized by the liver which triggers the germination of C. difficile spores in the intestine. Physiologically, the gut microbiota transforms primary BAs (cholic acid and chenodeoxycholic) into secondary (deoxycholic and lithocholic). CA loses its germinating properties after transformation and appears to become protective against CDI. The goals of this work in healthy volunteers (HV) were to: A) Describe the effect of CA on thresholds of distress, anxiety, depression and stress perception. 16s rRNA faecal microbial analyses (ILuminis Miseq, V1-v2 amplified from total DNA) in 48 IBS patients (Rome-III criteria, mean age 42 years, 35 female subjects, 25 diarrhoea-dominant, 5 constipation-dominant and 18 alternating-type IBS). Assessment of psychological and clinical variables with validated questionnaires, microbial analysis via QIIME. Machine learning to predict psychological distress through a composite model of bacterial features. Correlational analysis and comparisons in bacterial abundance among subgroups defined by thresholds in psychological variables.

References


4. All other authors have declared no conflicts of interest.
**P1727** HUMAN MILK OLIGOSACCHARIDES: A NEW STRATEGY AGAINST POST-ANTIBIOTIC CLOSTRIDIUM 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 diarrhoea is intestinal overgrowth of the pathogenic bacterium, *Clostridium difficile*.

**Aims & Methods:** The aim of this study is to investigate, in *in vitro* models of *C. difficile* infection, (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 metabolism and *C. difficile* infection. One model is a 48 hour batch fermentation model, 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, increase the level of beneficial bacteria in general, 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.

**Disclosure of Interest:** L.K. Vignaes: I am a Glycom A/S employee working as Preclinical Development Manager in the Business Development department.

**References**
4. Langdon et al., 2016, *Genome Medicine*, 8:39

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**P1728** CHANGES IN GUT MICROBIOTA ASSOCIATED WITH AGING IN OBESE INDIVIDUALS

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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 widely reported. It has been reported that the composition of human gut microbiota differs between obese and normal group. Some previous researches observed differences of composition 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.

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**P1729** BACTERICIN PRODUCTION BY MUCOSAL BACTERIA IN COLORRECTAL NEOPLASIA

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**Introduction:** Due to its high incidence, sporadic colorectal cancer (CRC) remains a major public health problem across the world. In many countries colorectal cancer is the second most common new cancer diagnosis, and the third most common cause of cancer death worldwide (1). 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 probiotic bacteria, and inhibit growth of other bacteria. Bacteriocins split up into single group, colicins and microcins are the most important ones. Bacteriocins possess antibacterial, antineoplastic, pro-apoptotic and probiotic effect.

**Aims & Methods:** The aim of this prospective study was to evaluate bacteriocin production by mucosal large intestinal bacteria in colorectal neoplasia. We used an original methodology reported by our group (1). Mucosal biopsies were taken in the caecum, transverse colon and rectum within the colonoscopy in patients with non-advanced colorectal adenoma, non-a-A (11 men, 10 women, mean age 65±10), advanced colorectal adenoma, a-A (which was defined as neoplasia larger than 10 mm and/or containing villous component and/or containing high grade dysplasia; 13 men, 7 women, mean age 67±10) and in the controls (average risk population with normal findings on colonoscopy and with negative history of colorectal neoplasia and/or inflammatory bowel disease; 7 men, 13 women, mean age 68±10). The study protocol was approved by the local ethical committee.

**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 colonoscopy. We presume, that mucosal large intestinal microbiota with their products including bacteriocins play an important role during the development of colorectal neoplasia.

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

**Reference**
*Br J Nutr* 2014; 111: 733.
in DNA of both probiotic strains. Sequencing of these fragments showed differ-
ences in the 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 of a bacteriocin. For Lactobacillus acidophilus D76 another bacteriocin gene fragment of 283 bp was identified (in addition to 537 bp fragment). The latter had 95% homology with the helveticin J gene of Lactobacillus helveticus R0052 (R0052_09025 gene). In NCBI BLASTX database the sequences homo-
logous to the helveticin gene of Lactobacillus helveticus DPC 4571 were found in 14 different Lactobacillus species, related to Lactobacillus acidophilus, Lactobacillus crispatus, Lactobacillus gallinarum, Lactobacillus helveticus and Lactobacillus kitasatosii. The addition of the carboxylic and amino acids mixture (Actoflor®-S) results in 2:2-5-fold enhanced antimicrobial activity of both tested probiotic strains. The test pathogens Lactobacillus helveticus O75 and Salmonella Enteritidis 209, most likely due to an increase in bacteriocin gene expression.

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.

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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 as controls receiving antibiotic treatment (AB) for the recurrent CDI and followed their recurrent CDI recurrence for an average of 3.8 yrs. All together 130 patients (55 patients in the FMT group and 75 patients in the AB group were sent in 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 malingerances. 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 diseases, incidence of colon polyps and cancer. Change of weight was neither different between groups (kg/SD): FMT = 2.5 (5.6) and AB = 1.3 (5.6), p = 0.51. The AB treated subjects recorded more frequently that their bowel function had become worse and more irregular after the treatment (Δ4,5.6%, P<0.001) compared to FMT group. 77.8% of the patients treated with FMT experienced GI symptoms related to IBS whereas 92.3% of antibiotic-treated patients recorded these symptoms (Δ=0.06). AB patients experienced more symptoms of the upper intestinal tract than the FMT patients (Δ=15.9%, P=0.001). In this cohort 97.6% of the FMT-treated patients and 60% of AB treated patients would prefer in the future that their initial treatment to be FMT instead of antibiotics.

Conclusion: FMT is a rational, durable, safe, and acceptable treatment option for patients with recurrent CDI. No severe diseases appeared after FMT and FMT seem to relieve GI symptoms better than antibiotic treatment. FMT and AB treated patients would prefer in the future that their initial treatment for recurrent CDI to be FMT instead of antibiotics.

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

References

P1732 CLOSTRIDIUM DIFFICILE–ASSOCIATED DISEASE IN A PORTUGUESE HOSPITAL CENTER

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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 (0.53%) but with a lower associated mortality rate. CDAD was mostly acquired at the hospital level (75.6%) and the mean length of hospital stay was 33 days. About 82.4% of the cases were first occurrences and the remaining (18.6%) were recurrences of CDAD. The majority of the population under study performed Proton Pump Inhibitors-IBP (52.8%) and antibiotic therapy (74.6%) (26.8% 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 Macrofides (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 Rybotypes.

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 intervention trial. The question of what is the best treatment for acute diverticular bleeding remains
The aim of this study is to clarify the efficacy of TAE for unanswered. In our institution, we gastroenterologists perform interventional radiology for the study of transmural embolization (TAE) for colonic diverticular bleeding was performed.

Aims & Methods: The aim of this study is to clarify the efficacy of TAE for colonic diverticular bleeding. 229 patients were diagnosed as diverticular bleeding from Jan 2010 to Dec 2016 in our institution. Bleeding stopped spontaneously in 126 patients. 103 patients were performed colonoscopy. Overt bleeding occurred in 8 patients after colonoscopy, and those were eligible for this study who underwent TAE. Conservative management or endoscopic procedure were not successful in all the patients. 7 patients were male and 1 was female with a median age of 62.6 years (range 39–85 years). The average opportunity for enhanced CT was 2.1, 7 patients were in shock, and all of 8 the patients were treated with blood transfusion. Those who were extravasation-positive in enhanced CT underwent angiogram from the recta near the extravasation at least 3 times. In case radiopaque clips were placed at the bleeding site via colonoscopy to mark embolization site, regardless of whether or not active extravasation was identified on angiogram, coil embolization was performed using 0.010 inch coils in vasa recta. Technical success and complications were evaluated. Technical success was defined as immediate complete cessation of bleeding confirmed by digital subtraction angiography showing no further contrast extravasation at the end of each TAE. Clinical success was defined as no recurrent bleeding in observation period.

Results: Technical success rate was 88%/7(8), and clinical success was also 88%/7(8). 6 patients were extravasation-positive in enhanced CT, and 5 patients were extravasation-positive in angiogram. Although 3 patients were extravasation-negative in angiogram, 2 patients underwent TAE. After TAE, no recurrence of bleeding was observed. Severe adverse events such as bowel infraction did not occur in all cases.

Conclusion: As the microcatheter technique has improved further, adverse events are rare. Therefore superselective coil embolization could be first choice for diverticular bleeding with extravasation-positive in enhanced CT.

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

P1734 ACCURACY OF THE NASOGASTRIC TUBE AND THE BUN/CREATININE RATIO FOR DISTINGUISHING BETWEEN UPPER AND LOWER SOURCES OF GASTROINTESTINAL BLEEDING. A SYSTEMATIC REVIEW

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Introduction: The insertion of a nasogastric tube (NGT) and assessment of the BUN/creatinine ratio were recommended as initial measures to distinguish between upper and lower gastrointestinal bleeding (American College of Gastroenterology 2016). As the nasogastric tube is one of the most bothersome interventions for the patient, we evaluated the evidence supporting these recommendations.

Aims & Methods: The aim of the study was to identify the diagnostic accuracy (sensitivity, specificity, positive predictive value, negative predictive value and likelihood ratios) of the NGT and the BUN/creatinine ratio for distinguishing between upper and lower sources of gastrointestinal (GI) bleeding. We conducted a systematic review of the literature in order to identify studies assessing the diagnostic accuracy of the NGT or BUN/creatinine in patients with melena, hematochezia or rectorrhagia without hematemesis. The search was performed in November 2016 in five data bases (PubMed, Scopus, Web of Science, Cochrane Plus Library and Open Grey).

Results: Four studies met the selection criteria (two evaluating the NGT, one BUN/creat and one both). The two methods had a low sensitivity for detecting upper GI bleeding source. Both a positive NGT aspiration and BUN/creatinine ratio above 30 markedly increased the probability of an upper GI source with a positive likelihood ratio ranging from 2 to 11. Unfortunately, the sensitivity of both tests for upper GI bleeding was very low (negative likelihood ratios around 0.6). Characteristics and results of the studies selected are shown in table 1.

Conclusion: For patients with gastrointestinal bleeding without hematemesis, BUN/creat ≥30 indicates a high probability of an upper GI source. Nasogastric tube aspiration provides little additional information and so is not indicated. Neither test reliably rules out an upper GI source of bleeding.

Table 1: Characteristics and results of the studies

<table>
<thead>
<tr>
<th>Study (year)</th>
<th>Design/Period</th>
<th>Sample size/Testee</th>
<th>Sensitivity (%)</th>
<th>Specificity (%)</th>
<th>Positive predictive value (%)</th>
<th>Negative predictive value (%)</th>
<th>Negative likelihood ratio</th>
<th>Positive likelihood ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Richards 1990</td>
<td>Retrospective 1981–1990</td>
<td>126 BUN/creat (Cut off ≥36)</td>
<td>37</td>
<td>100</td>
<td>100</td>
<td>55</td>
<td>0.63</td>
<td>+++++</td>
</tr>
<tr>
<td>Aljebreen 2004</td>
<td>Retrospective 1999–2001</td>
<td>520 NGT</td>
<td>68</td>
<td>54</td>
<td>54</td>
<td>78</td>
<td>0.61</td>
<td>1.44</td>
</tr>
<tr>
<td>Witting 2006</td>
<td>Retrospective 1997–2002</td>
<td>325 BUN/creat (Cut off ≥30) NGT</td>
<td>39</td>
<td>42</td>
<td>94</td>
<td>91</td>
<td>81</td>
<td>81</td>
</tr>
<tr>
<td>Kessel 2016</td>
<td>Retrospective 2011–2014</td>
<td>386 NGT</td>
<td>28</td>
<td>86</td>
<td>99</td>
<td>2</td>
<td>0.84</td>
<td>2</td>
</tr>
</tbody>
</table>

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.
ACUTE LOWER GASTROINTESTINAL BLEEDING IN PATIENTS TREATED WITH NON-VITAMIN K 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±9.5 vs 77.1±7.9. The bleeding site was in the small bowel in 2/43 and 6/68 respectively. Causes of bleeding were not different between two groups except for polyps/neoplasia (8/43 vs 6/68, p=0.003).

Endoscopic hemostasis was more commonly needed in patients on NOACs 17/43 (40%) vs 14/68 (20%) (p=0.049), while they required less hospitalisation days (6.1±4.2 vs 4.5±3.6, p=0.04). Blood transfusions and need for other interventions (embolization and/or surgery) were not different. Also recurrence of bleeding (4/43 vs 11/68) and mortality (3/43 vs 6/68) were low and not statistically different between the two groups.

Conclusion: ALGB in patients on NOACs although presents some differences it has a similar clinical outcome to patients with ALGB on warfarin.

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

References

NOBLADS - THE NEW RISK SCORE TO PREDICT THE SEVERITY OF ACUTE LOWER GASTROINTESTINAL BLEEDING

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Aims & Contact Method: 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, age over 75 years, female gender, hemoglobin <10 g/dl, platelet count ≥150,000 and creatinine ≥1.5 mg/dl, disease score ≥2 (Charlston 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 (endoscopic n = 27, radiological n = 2, surgical n = 4) and 36 (20.8%) repeated endoscopic intervention. 28.9% of 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 = 39) 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 transfusional 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.

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Multicenter study on hemorrhagic risk of heparin bridging therapy for perien- doscopic transbronchial biopsy ; Maismoto et al. BMC Gastroenterology (2015) 15:89

**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 asymptomatic colorectal cancer (CRC) at much earlier age are at substantially increased risk of CRC.

*Aims & Methods:* The present systematic review and meta-analysis evaluated the risk conferred by family history of CRC in FDRs according to their age of onset. We searched Ovid Medline, EMBASE and grey literature from their inception to December 2016, and included all screening studies that investigated the presence of family history of CRC in FDR and incidence/prevalence of CRC. Two reviewers independently worked on selection, assessment and data extraction of eligible articles. A random effects meta-analysis was employed to pool relative risks (RR) and odds ratios. Subgroup analyses were performed according to the age of onset of CRC in FDRs of asymptomatic subjects (<40 vs. ≥40; ≤50 vs. ≥50; <60 vs. ≥60 years). Statistical heterogeneity was assessed by the I² statistic. Publication bias was evaluated by an inverted funnel plot analysis with Begg’s regression model.

**Results:** Fifty-six case-control and seven cohort studies involving 9.28 million subjects were included in the analysis. A family history of CRC in FDRs of asymptomatic subjects conferred a significantly higher risk of CRC (RR = 1.76, 95% CI = 1.57–1.97; p < .001, 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 years 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 years vs. RR = 1.47, 95% CI = 1.28-1.69 for ≥50 years; p = 0.001). The Begg’s test did not identify any publication bias (Kendall’s tau = 0.122, p = 0.159).

**Conclusion:** A family history of CRC in FDRs whose age of onset is earlier than 40 or 50 years conferred a significantly higher risk of CRC to asymptomatic individuals, implying that age of onset could potentially enhance the discriminative 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 investigated the association between detection of CRC and family history of CRC in FDR 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 statistic. 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 = 1.53–4.53) had statistically similar risk of CRC. We did not identify any publication bias based on the Begg’s regression test (p = 0.199).

**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 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, P&SA and mammography (>40ys), LDCT in heavy smokers and all needed imaging when clinically indicated. Peripheral blood DNA was extracted from all subjects. Gilbert syndrome was determined by clinical criteria (normal liver function tests but to mild elevation in unconjugated bilirubin <3 mg/dl without any hemolysis). In the majority of the cases the diagnosis was confirmed genetically by the homozygous mutation (TA)7TA in the promoter region of UGT1A1 enzyme. Prevalence of CVD and cancer were compared between subjects with/without Gilbert syndrome.

**Results:** A total of 6258 (49%) men and 6461 (51%) women, mean age 47.0 ± 11.5 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 prevalence of gilbert disease was equal in Sephardic and Ashkenazi Jews. Malignancy and CVD were diagnosed in 678 (5.3%) and 1.837 (14.4%) subjects respectively. The prevalence of any CVD was significantly higher in the Gilbert group (OR 1.23 95% CI 1.04-1.46 p = 0.017), and incidence of hypertension (OR 1.37 95% CI 1.12–1.80 p = 0.003) and CVA (1.1% versus 0.6% p = 0.06). Higher rate of kidney and bladder cancers (2.64, 1.22–5.70, p = 0.019) was also observed in the Gilbert group. In contrast, the prevalence of breast cancer was much lower among Gilbert patients with Gilberts (OR 0.36, 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.

**Disclosure of Interest:** N. Arber: Bayer Bio-view Gi-View Micro-medic Check-up 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 polyp resection) or different biology in the development of the polyed (accelerated growth). Thus, quality endoscopic measures and Lynch syndrome were highly investigated for their association with interval cancer. However, most reports come from the Western world and not the Middle East, and differences in ethnicity or environmental factors might potentially have impact on the biology of tumor progression. In addition, patient-related factors were less investigated for their association with interval cancer. The aim of this study was thus to assess tumor and patient characteristics and predictors of interval cancer in a population from Israel.

*Aims & Methods:* This retrospective cohort study included all patients that were diagnosed with colon cancer in our institution between 2005–2014. Cases included patients with a previous colonoscopy within 1–10 years before the diagnosis of cancer, with either negative findings or benign polyps. Only full colonoscopies with at fair or good preparation were included. Interval cancer was defined on an individual basis, when cancer occurred within the recommended surveillance interval according to accepted guidelines. Cases were further stratified according to time since previous colonoscopy (<3 years, 3–7 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 1:5 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.
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 have a provincial population based colorectal cancer screening program over the past five years. Newfoundland and Labrador selects participants for colonoscopy if one of two FIT values ≥100 ng/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 participants 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. 845 patients were diagnosed with a colon cancer within the study period, 574 (68%) 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 20% of cancers on 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 significant difference in the detection of cancer, advanced adenomas or colorectal cancer as FIT cut off was increased and with a reduction in FIT kits completed from two to one. The positive predictive value for cancer increased as the quantitative cut off was increased but this was not at the expense of case detected.

Conclusion: Two FIT tests are more effective than one at screening. Participants 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 participant 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 cases detected.

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

P1746 PREVALENCE OF SERRATED POLYPSYNDROME IN AVERAGE-RISK SCREENING COLONOSCOPIES 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 (TSAs). The serrated polyp syndrome (SPS) is characterised by multiple SPs throughout the colorectum. CRC screening is based on detection of CRC risk factors, and colonoscopic pathologic findings were assessed in patients with metabolic syndrome: a multicentre cohort study.

Aims & Methods: 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 of CRC (i.e. family history of CRC, colorectal cancer, or adenomas) or those with a previous or incomplete colonoscopy (i.e. procedures not reaching the cecum) were included in colorectal cancer screening standards. SPs are: I) ≥2 SPs proximal to the sigmoid colon, of which two ≥10 mm, II) any number of SPs proximal to the sigmoid colon, individual who has a first-degree relative with SPS, or III) ≥20 SPs of any size distributed throughout the colon.

Results: A total of 3089 individuals were analyzed. 47.5% were male, median age was 62 years (interquartile range 57–67). Of all individuals with detected SPs none fullfilled the diagnostic criteria for SPS. Hence, we determined a prevalence of SPS of 0% in our cohort.

Conclusion: In our study, the prevalence of SPs in average-risk individuals undergoing screening colonoscopy was 0%. Because overall ADR was above the recommended values for screening colonoscopies, we conclude that this low prevalence might be attributed to a lack of awareness for SPS rather than to low-quality procedures. However, this was not able to be confirmed due to the lack of information on first-degree relatives of SPS from medical records of individuals with SPs to check the second diagnostic criterium for SPS. We also included only one colonoscopy per individual. It has been shown that prevalence increases when follow-up colonoscopies are included in SPS. Both facts might have caused an underestimation of the true prevalence of SPS in our cohort.

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

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Aims & Methods: Screening for 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: To identify the number of patients with colorectal neoplasia (advanced adenomas and cancers) and evaluated their impact in colorectal cancer screening. Prospective, multicenter study was performed from January 2013 to December 2015 at eight high-quality colonoscopy centers. Baseline characteristics, demographic measures, 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 those without.

Conclusion: Interval cancer tends 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 NBH for longer retrieval time) should be considered for patients with these characteristics.

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

References
P1747 CONTRIBUTION OF GERMLINE MUTATIONS TO NON FAMILIAL EARLY ONSET CANCERS
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Introduction: Early onset gastroenterological 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 2: MSH2 (clone C6 in C20), MSH6 occurring de novo, given the absence of family history; 3 variants of unknown significance (VUS) (2 MSH2 and 1 MLH1); and 7 were negative. Age-stratification revealed that, among those <35 years (n=4), 1 had MSH2 gene mutation and 3 were negative. In the 36–40 age group (n=3), 1 had MSH2 mutation, 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, 5% had a VUS and 38% were negative.

Among 2 pancreatic cancer patients (<50 yrs, 2 F), 1 tested positive and the other had a VUS on PMS2.

NGS analysis 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 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.

P1748 IMPACT OF COLIBACTIN-PRODUCING ESCHERICHIA COLI ON MICRO ENVIRONMENT AND CANCER PROGRESSION IN PRECLINICAL COLORECTAL CANCER MODEL
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Aims & Methods: Min mice were per os inoculated with a CRC-colibactin-producing E. coli strain (11G5), non pathogenic E. coli (K-12 MG1655) or PBS. Using optical in vivo imaging (IVIS spectrum), we evaluated oxidative stress induction with a bioluminescent inflammation probe in Min mice chronically infected. After 7 weeks, number and volume of polyps were evaluated and colonic samples were histologically analysed. Detection of immune cells was quantified by immunofluorescent labelling using a specific and innovative algorithm created with Tissue Studio software. Then, the density and localization of immune cells were performed in the three colon regions of interest: lymphoid follicle, mucosa and tumor.

Results: Using optical imaging, we detected a significant increase of luminescent intensity in the CRC carcinogenesis process. C57BL6/J mice carrying the ApcMin mutation developed ~24.3±3.7 adenomas and several carcinomas in the small intestine by the age of 16 weeks compared to the ~7±1.7 polyps that ApcMin/CD24 +/- (double KO) mice developed. Mice colonoscopy showed a significant reduction in the number and size of polyps upon depletion of CD24 alleles. The ApcMin mice displayed severe splenomegaly (355±68 mg) compared (141±49 mg) in double KO mice similar to WT mice. Hb level in the ApcMin was 5.8±2.5, significantly lower than in the double KO mice (8.2±0.9) and their WT littermate.

Aims & Methods: We aimed to study the cellular interactions between CD24 and beta-catenin, and effects of their interaction on intestinal tumorigenesis. CD24-inducible 293T-Rex cells previously developed in our lab (Shapira et al., 2011) and SW480 CRC cells stably transduced with CD24 (Naumov et al., 2014) were used to study this interaction in vitro. Co-immunoprecipitation and immunofluorescent staining were used to investigate the interaction between the two proteins. Far western blotting (FBW) analysis was used to confirm this direct interaction by probing the standard WB membrane with the purified CD24 protein.

Results: In vitro: Western blotting analyses showed that expression of CD24 in 293T-Rex cells induced the activation of beta-catenin, while down-regulation of CD24 in SW480 cells caused a decrease in the level of active beta-catenin. Cytoplasmic/nuclear fractionation showed that more active beta-catenin entered the nucleus in cells that expressed compared to control (clone 4). In addition, in both cell lines, TOP/FOP luciferase reporter assay showed a significant increase in Luciferase activity upon CD24 expression induction. Co-immunoprecipitation studies of CD24 and beta-catenin indicated that these two proteins might be interacting. In addition, in HEK-293T cells and SW480 cells, immunofluorescent staining of CD24 and beta-catenin showed that these two proteins co-localize on the cellular membrane. Furthermore, far western blotting analysis suggests that a direct interaction between the proteins exist.

Conclusion: 1. CD24 plays a major role in intestinal tumorigenesis. 2. CD24 interacts with the Wnt pathway by activating beta-catenin. 3. CD24 interacts directly with beta-catenin. 4. Down-regulation of CD24 may be an important aim in the therapy of CRC.

All other authors have declared no conflicts of interest.

Reference
P1750  YM155 AS AN INHIBITOR OF CANCER STEMNESS SIMULTANEOUSLY INHIBITS AUTOPHOSPHORYLATION OF EGFR AND G9A-MEDIATEDSTEMNESS 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 number of tumorsphere formation of gastric cancer cell lines, but the mechanism of YM155 activity 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 G9A-mediated stemness pathway. The chemical and genetic inhibitions of EGFR and G9a 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 blocking autophosphorylation of EGFR 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  FGFR4 IS A FUNCTIONAL TUMOR SUPPRESSOR THROUGH INHIBITION 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 Methylated 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 adjacent normal tissues by real-time PCR. CRC cells were treated with DNA demethylating agent 5-aza-2′-deoxycytidine (5-Aza). The methylated status of FGF14 in CRC cell lines and tissues were determined by real-time MSP. The biological function of FGF14 in CRC was interrogated by cell viability assay, colony formation, immunofluorescence and flow cytometry, as well as in vivo study.
Results: FGF14 was downregulated or 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. Re-expression of FGF14 in CRC cell lines inhibited colony formation, suppressed cell viability, and induced cell apoptosis via AMPK/mTOR pathway, accompanied with enhanced protein expression of cleaved caspase-3, cleaved caspase-7, cleaved caspase-9 and PARP. In xenograft mouse model, overexpression of FGF14 significantly reduced tumor growth (P < 0.001).
Conclusion: FGF14, which induces cell apoptosis via AMPK/mTOR pathway, is a novel tumor suppressor down-regulated by epigenetic inactivation.
Disclosure of Interest: All authors have declared no conflicts of interest.

References
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. Genomewide sequencing was performed on 47 inherited cancer-associated genes and 411 cancer-associated genes using next generation sequencer (Illumina HiSeq 2500). Tumors were not different by the hypermutation. Hypermutator was recognized in 6.2% (66 cases (5.8%)). Age and gender differences in the somatic DNA.

Results: The 1145 subjects included 583 colorectal cancers (CRC), 229 gastric cancers (GC), 103 metastatic liver tumors, 100 hepatocellular carcinomas (HCC), 45 pancreatic cancer, 23 GISTS, 15 esophageal cancers and 14 neuroendocrine tumors, etc. Hypermutator was recognized in 66 cases (5.8%). Age and gender were not different by the hypermutation. Hypermutator was recognized in 6.2% (36 cases) of CRCs, 11.8% (27 cases) of gastric cancers, 2% (2 cases) of HCCs, and one case of small intestinal cancer. Within the hypermutator group, multiple cancers developed in 13.9% of CRC patients and 25.9% of GC patients. Mutations were detected in 33.9% (22 cases), that of mismatch repair genes (either of MLH1, MSH2, MSH6, PMS2) in 13.6%, POLE in 9.1%, and POLD1 in 4.5%, respectively, in the hypermutator group.

Conclusion: Hypermutator was recognized in 5-10% of digestive system cancers, predominantly seen in CRCs and GCs. Cases of hypermutator sometimes develops multiple cancers, associated with a somatic mutation of mismatch repair genes. Further research must be needed to clarify the characteristic of hypermutator of the digestive organs in the therapeutic aspects.

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

Reference

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. 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) signet consensus for whole metagenome (shot gun sequencing on Illumina HiSeq2500) analysis of tumor DNA: 72 CRC (35 sporadic-S, 19 Lynch-L), 87 asymptomatic subjects (normal colonoscopy), 14 first degree healthy relatives from Lynch families. 6MOCA1 pipeline was used, library sorted (Pared quality score 20 Allintelli) and RMA was done of < 35 A, human genes or phage sequences. Quality sequences were aligned (REFMG.V13) and most abundant genes constructed (MBMA program v.0.1). The Shimab program (shaman.cbi.pasteur.fr) was used. The number of bacteria was estimated (REFMG). The linear model (GLM) was implemented in the DESeq2 R kit. Differences between Control (N = 87) and CRCs (N = 69), between L (N = 19) and S CRCs(N = 50), and between LCRC (N = 19) and Healthy Lynch relatives were obtained after interaction of age, BMI and gender was considered (GLM model). The p value was retention by correction (Benjamini and Hochberg). The specific taxonomic composition of the control and CRC groups was subjected to random analysis (Caret’s R package) with two optimization parameters (precision and kappa) in the model.

Results: There was no difference for gender, age (p = 0.08) and BMI (p = 0.187) in the L and S CRCs. Significant differences were observed between Normal and CRCs, C-CRC and L-CRC, L-CRC and first degree relatives based on the common component (similarity of sequences): 13 species differentiated Normal and CRCs, two were more prevalent in L-CRCs. The panels of bacteria linked with location, MSI, Ras mutations, methylation phenotypes and survival were identified. No significant link was observed with TNM Staging: I (N = 17, 2L and 15S), II (N = 12, 5L and 7S), III (N = 20, 10L, 10S), IV (N = 21, 2L and 2S), DFS might be dysbiosis dependent. Conclusion: CRC dysbiosis is location-dependent. Several bacteria are associated with Ras mutation, MSI, and methylation status. They may directly or through their metabolites contribute to the prognosis. Microbiota signature should be taken in consideration in trials.

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

Reference

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.

Conclusion: Using an unbiased transcriptomics approach we identified transcription factors that are lost on protein level upon ER stress. Furthermore, our data suggests that the significant loss of the transcriptional regulator CtBP2 contributes to intestinal epithelial stem cell differentiation.

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

References
Aims & Methods: We aimed to identify epigenetic alterations associated with the development of TSAs and to clarify the associations between clinical, pathological and molecular characteristics in colorectal lesions. The genome-wide DNA methylation status in TSAs consisting of protruding and flat components was analyzed using an Infinium HumanMethylation450 BeadChip, and changes in DNA methylation during the development of TSAs were identified. Methylation of identified genes and CIMP markers (MINT1, 2, 12, 31, p16 and MLH1) and BRAF/KRAS mutations were analyzed in 847 colorectal lesions and 61 samples of normal colonic tissue. Effects of epictotic expression on CRC cell growth in a population study 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 normal colon and SSA/Ps, but is 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. The expression of SMOC1 was associated with proliferative activity and cell cycle progression, 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.

P1759 DEVELOPMENT AND VALIDATION OF PREDICTIVE MODEL FOR PARTICIPATION IN COLORRECTAL CANCER SCREENING IN KOREA

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Introduction: The number of individuals partaking in colorectal cancer (CRC) screening still remains to be low even after the implementation of the Korean Government’s National Cancer Screening Program for CRC. The aim of this study is to identify factors associated with partaking in CRC screening.

Aims & Methods: The Korean National Health and Nutrition Examination Survey (KNHANES) 2007 ~ 2010 datasets were used to develop a CRC screening participation screening score. 10,527 individuals aged ≥20 who completed the survey and not previously diagnosed with CRC were selected. Both logistic regression (LR) analysis and artificial neural network (ANN) were used to develop predictive models. Multilayer perception ANN was constructed based on 16 clinical variables. We then validated the models using the KNHANES 2011 and 2012 (n = 9968) datasets and compared them with each other.

Results: Out of 10,527 individuals selected, 57.0% (n = 6005) responded unscreened for CRC. Among various demographic and socioeconomic factors, factors influencing CRC screening, including age, household income, education level, private health insurance, self-reported depression, self-reported health status, and residence were found to be independently associated with CRC screening. LR analysis produced screening score (range 0–10.3), and a cutoff point of ≥5.5 defined 49% as unscreened for CRC and yielded area under the curve (AUC) of 0.626. When validated with KNHANES 2011 and 2012 datasets, the AUC of the defined LR model was 0.663, meanwhile the AUC of ANN based predictive model was 0.743.

Conclusion: The ANN produced better performing model than LR analysis based model in identifying population with low CRC screening participation. Sensible and 2012 datasets, the AUC of the defined LR model was 0.663, meanwhile the LR analysis produced screening score (range 0–10.3), and a cutoff point of ≥5.5 defined 49% as unscreened for CRC and yielded area under the curve (AUC) of 0.626. When validated with KNHANES 2011 and 2012 datasets, the AUC of the defined LR model was 0.663, meanwhile the AUC of ANN based predictive model was 0.743.

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

P1760 CD24 PREDICTIVE LEVELS- A SIMPLE NOVEL BLOOD TEST FOR DETECTION OF VARIOUS CANCER ALLEGIANCES

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Introduction: Background: CD24, a mucin-like cell surface molecule, highly expressed in solid tumors and hematological malignancies (HM) (Gastro 2006, Clin Can Res 2007, Can Res. 2008). mAb CD24 were found to inhibit the growth CD24 cancer cells (Gastro 2009). We have shown that a simple non-invasive blood test evaluating CD24 levels on PBL had good sensitivity and specificity for detecting colorectal neoplasia in subjects undergoing screening colonoscopy (Kraus et al., 2009).

Aims & Methods: We aimed to improve a simple, noninvasive blood test that could simultaneously 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 history. Age, gender and ethnic matched healthy individuals served as controls. Hemoglobin levels were measured. They underwent a thorough and extensive workout at the Integrated Cancer prevention center at Tel Aviv Medical Center (Ear J Intern Med. 2013) All samples were collected and processed identically. For each sample, 20,000 leukocytes were analyzed by flow cytometry for the expression of SMOC1 and CD24. An initial template 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 include compensation adjustment, which is uniformly applied to all the data collected in order to minimize fluorescence overlap between detection channels.

Results: The novel assay was improved significantly, distinguished healthy from CRC (Fig 1a) (P < 0.013), PC (Fig 1b) (P < 0.018), biliary tract (P < 6.4E-12), Gastric Cancer (GC) (P < 0.003), Lung (P < 0.003), 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 79.2% and 74.7%, and for PC 70.0% and 75.9%, respectively.

Conclusion: 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.

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

P1761 FACTORS ASSOCIATED WITH OPTIMIZING PREPARATION FOR COLONOSCOPY USING SPLIT DOSE PICOLAX

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Introduction: Colonoscopy is considered the gold standard for prevention and early detection of colorectal cancer (CRC), however its effectiveness is directly related to quality of bowel preparation. Two of the quality measures of colonoscopy, cecal intubation rate and adenoma detection rate, are both associated with adequate bowel preparation. Data on factors associated with quality of preparation using Picolax® are limited.

Aims & Methods: We aimed to evaluate factors associated with a good bowel preparation using Picolax® (Sodium picosulfate/magnesium citrate) in the Israeli heterogeneous population. Consecutive outpatient referred for colonoscopy were prospectively assessed by a nurse practitioner filling out a questionnaire. Hemoglobin levels were measured. The time between sachets of Picolax was prospectively assessed by a nurse practitioner filling out a questionnaire.

Results: Out of 452 patients included in the study (M = 54%, mean age 56.5 ± 16.3 yrs), 366452 (81%) achieved a “good” bowel preparation, and 86 (19%) were classified as “not good.” No significant difference was observed between genders and in terms of achieving a good bowel preparation (p = 0.77, p = 0.054). There was a significant difference among diabetics (n = 93, 20.6%) and non-diabetics (n = 359, 79.4%) in quality of the bowel prep. While 69.9% of diabetics achieved a good bowel preparation only 83.8% of non diabetics achieved a good bowel preparation (p = 0.004). In the univariant analysis, Bisacodyl had no effect on bowel preparation (p = 0.83) except in the diabetics, where those who took an average of 1.3 ± 1.9 (median = 6) vs. 4.3 ± 1.5 (median = 4) tablets fared better (p = 0.018). Other chronic diseases had no effect on bowel preparation. Drinking 3–7 vs 8–15 glasses of water achieved good preparation in 72.7% vs 83.8% of cases, respectively (p = 0.01). Time from end of preparation to colonoscopy -75% achieved significantly better prep vs >8 hrs (p = 0.002). In the multivariant model for prediction of quality of bowel preparation that included the time between sachets of picolax, number of water cups consumed, diabetes, gender, and age we found that all, excluding age, were good predictors of bowel preparation. Women had a higher chance of achieving a good adequate bowel preparation (OR1.68, p = 0.045, 95%CI = 1.01–2.79). Patients without diabetes had a higher chance of achieving an adequate bowel preparation (OR = 2.05, p = 0.014, 95%CI = 1.16–3.69). Patients who had 5–9 hours between the 2 sachets of picolax had a lower chance of achieving an adequate bowel preparation as compared to those who had 9 to 24 hours between the 2 sachets (OR = 0.375, p = 0.009, 95%CI = 0.180–0.785). Lastly, drinking fewer than 8 cups lowers the chance of achieving an adequate bowel preparation (OR = 0.461, p = 0.003, 95%CI = 0.278–0.775).

Disclosure of Interest: N. Arber: Bayer Bio-view Gi-View Micro-medic Check-cap
All other authors have declared no conflicts of interest.
**P1762 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 advanced colonoscopic 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, older 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 with Fujinon LF-7000 processor and with either the conventional high-definition Fujinon EC902 or a new EC7602 VS Eluxeo colonoscope. All of the colonoscopic procedures were made under Propofol deep sedation guided by an anesthesiologist. The minimum withdrawal time was defined as more than 6 minutes. All colonoscopies were routinely assisted with pure CO2 insufflation. The primary outcome parameter of our study was to assess and compare the polyp and adenoma detection rate with the two endoscopic techniques.

Results: A total of 247 patients were randomized (mean age 58.7 years). 101 patients were 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 colonic polyps and adenomas were detected more frequently in the LCI group than in the control group: 60.9% and 43.3% 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. 75 (p < 0.001) respectively (p = 0.008).

Conclusion: The LCI enhancement of the Fujinon Eluxeo colonoscopy system was superior to the conventional HD-WLC in detecting patients with colonic adenomas, which was mainly due to the ability of the more sensitive detection of minute (less than 5 mm) adenomas. (Study was supported by ECT grant GINOP-2.1.1.-15.-2015-00128.)

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

**P1764 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 peptidases (KLKs) are involved in proteolytic cascades of different tissues. KLK14, acting via PAR-2, represents an auto- crine/paracrine regulator of colon tumorigenesis and alpha1-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 AI-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 these, there were 101 colorectal carcinoma tissues, for 70 of which paired normal mucosa was also examined. A total of 74 colorectal adenomas were examined. Quantitative real time PCR was used to measure AAT expression. Clinical evaluation of AAT levels was demonstrated in terms of disease-free survival (DFS) and overall survival (OS).

Results: Alpha-antitrypsin expression was found to be significantly associated with categorical to advanced stages of disease (p = 0.028). In univariate analysis revealed that high status alpha-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 demonstrated that low alpha-antitrypsin expression is significantly associated with longer DFS (p = 0.001) as well as OS (p = 0.021).

Conclusion: Our data suggests that alpha-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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**P1765 DIFFERENTIATION BETWEEN NEOPLASTIC AND NON-NEOPLASTIC DIMINUTIVE COLORECTAL POLyps WITH FUlJIN ELUXED-BL Versus FRC ELECTRONIC CHROMOENDOSCOPY WITH AND WITHOUT OPTICAL 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 compared to normals. 42% of lncRNAs upregulated in CRC samples showed elevated expression in adenomas (p < 0.05). A total of 10 lncRNAs were upregulated and 8 lncRNAs (e.g. LINC00350) were underexpressed compared to adenomas (p < 0.05). In CRC samples 8 lncRNAs (e.g. AC12032.1) were overexpressed and 9 lncRNAs (e.g. RP1-3497K6.1) were downregulated
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 subcentimetric hyperplastic and adenomatous polyps based on Fujinon FICE versus Eluxeo BLI electronic chromoendoscopic technology with high-definition colonoscopy with and without optical amplification.

Aims & Methods: In order to create a video and digital picture library of polyps, patients undergoing screening or diagnostic colonoscopy were considered for inclusion. Patients with at least one histologically verified <10mm polyp were included. A video-capture module was added to the Fujinon EC480Z and EC760Z endoscopes and stored in an anonymized database. Once the video-library was constructed, each of our 5 colorectal experts (ML, SZM, OL, DZS, and SZA) independently and randomly reviewed all of the cases with a standardized electronic questionnaire. In each case, all of the observers had to assess the color, the vascularization and the surface of the polyps, and the pit pattern was also assessed. Kudo classification. Finally, with the definition of confidence (low/medium/high on VAS), the histological prediction and the final decision has been clarified on each lesion as neoplastic or non-neoplastic (hyperplastic).

Results: Up till now 115 polyps were enrolled and recorded into our digital web-based library, 59 were assigned into the FICE and 56 into the BLI group. Of the all detected 115 polyps were endoscopically removed and histologically analyzed and this was regarded as gold standard. The overall accuracy with WLI versus FICE versus BLI technology of the 5 experts without zoom and with 50x times magnification to differentiate between hyperplastic and adenomatous lesions were 77.62% and 84.51%, vs. 74.58% and 83.90% and 88.84%, 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 histopathologic prediction as compared to non-zoom, WLI or FICE endoscopic polyp assessment.

Conclusion: The new electronic chromoendoscopic technology with Eluxeo BLI significantly improved the reliability of the histology prediction as compared to Fujinon EC480Z. Furthermore, Fujinon 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 restect and discharge strategy. (Study was supported by ECT grant GINOP 2015-015-2.1.1.-15-2015-00128)

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

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P1767 ENDOCYTOSCOPIC VASCULAR PATTERN FOR COLORECTAL LESION IS HELPFUL IN PREDICTING PATHOLOGICAL DIAGNOSIS
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Introduction: Till now, narrow-band imaging (NBI) could make it possible to analyze the surface microvessels of colorectal lesions for differentiating neoplasms from non-neoplasms and for predicting the histopathological diagnosis. Endocytoscopy (EC) is the next generation of ultramagnification endoscopy that allow visualization of the glanular structure and cellular atypia. EC has visualized living tumor cells in vivo and obtained a ultra-magnification pathological image simply by applying the scope to the target mucosa during an endoscopic examination. However, in colorectal, the impression of the microvessel (i.e. morphology and volume) is always required. Since dyne staining complications the procedure, new endocytoscopic way of use without of dye has been strongly desired. On the other hand, EC with NBI (EC-NBI) allows ultra-magnified microvesel observation without using any dye solution.

Aims & Methods: The aim of this study was to validate the evidence whether the observation of surface microvessels using EC-NBI was useful in predicting the histopathology of colorectal lesions. The study included 438 patients who underwent complete colonoscopy and endoscopic or surgical treatment between April 2006 and June 2015. A total of 576 lesions (45 Non-neoplastic polyps, 304 adenomas, 71 intramuscular cancer, 21 slightly invasive submucosal cancer (SMCs) and 135 massively invasive submucosal cancer) were retrospectively evaluated. We used the Kudo classification for the degree of submucosal invasion and classified cancers accordingly. SM cancer without vessel permeation does not metastasize. In contrast, SMM lesions show a substantial proportion (~10%) of lymph node metastasis. We named the ultra-magnified microvesel findings as endocytoscopic vascular feature (ECV) pattern and classified into the following 3 groups: ECV-1, the surface microvessels were very fine obscure; ECV-2, the surface microvessels were more clearly seen and showed regular vessels network, and their caliber and arrangement were uniform; and ECV-3, the surface microvesel were thick, and their caliber and arrangement were heterogeneous.

Results: The sensitivity, specificity and accuracy of ECV-1 diagnosis of hyperplastic polyp were 85.9%, 98.5% and 97.7%, respectively. As regards the sensitivity, specificity and accuracy of ECV-3 for diagnosis of SMM were 82.2%, 98.0% and 94.3%, respectively.

Conclusion: Endocytoscopic vascular pattern was helpful in predicting the histopathology of colorectal lesions.

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

Reference

P1768 CONSIDERATION OF RECTAL NEUROENDOCRINE TUMORS IN OUR HOSPITAL
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Introduction: The diagnostic criteria and treatment indications for rectal neuroendocrine tumours (NETs) are recommended to undergo endoscopic therapy, those with a tumour diameter of >10 mm and up to the deep submucosal layer. However, no clear guideline has been established on the radical criteria and early surgical treatment. Furthermore, colorectal investigations have the potential to miss the diagnosis of bowel cancer screening. However not all patients are eligible for this.

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Results: The mean age of the patients was 65.2 years (range, 49–88 years); male-to-female ratio, 15:7; diagnosis opportunity, 21 asymptomatic cases and 1...
symptomatic condition (lumbago); lesion site (Rs/Ra/Rb), 1/2/19 cases; mean tumor diameter of 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 years.

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

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 signaling (AP-2) 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 the control of the RAS pathway in cancer cells, while sparing normal cells by expressing the anti-toxin under the control of RAS in non-malignant cells. Adenoviral vectors carrying the toxin (P4-MafF-acc) and the anti-toxin (INS-acc-AP-2) were used. Humanized Anti-CD24 antibody fragment (scFv) was engineered and fused to the lentivirus envelope. Cell death was measured qualitatively by using fluorescent microscopy and was quantified by the enzymatic MTT assay.

Results: We found that 40% of pancreatic cancer cells, 60% of colorectal cancer cells, and 75% of breast cancer cells harboring mutated Ras after co-infection with the toxin and the anti-toxin genes. The antitoxin was able to protect ~70% of the cells that were affected by background low level expression of the toxin construct, due to promoter leakage [Fig.1]. Similar results were obtained in a colony formation assay and FACS analysis of co-infected LC cells. A549 harboring mutated Ras showed greater sensitivity (~82% early apoptotic cells) compared to H1650 cells harboring WT Ras (~27% early apoptotic cells) [Fig.2]. These results indicate that the antitoxin indeed actively protects cells with WT p53.

Conclusion: Exploiting the activated RAS pathway and mutation in p53 holds promise for specific and effective therapy that could specifically target tumor cells while sparing normal tissues.

Disclosure of Interest: N. Arber: Bayer Bio-view Gi-View Micro-medic Check-
card. All other authors have declared no conflicts of interest.

P1770  USE OF A COMBINATION OF LENTIVIRUS PARTICLES AND A SPECIFIC PEPTIDE FOR ERADICATION OF CD24-
EXPRESSING

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Introduction: Lentiviral replication is driven by a molecular motor consisting of two viral motor proteins, such as the reverse transcriptase, protease and integrase (IN). The genomic RNA of the virus is used to produce a copy of viral DNA by reverse transcription, and the integrase catalyses the covalent insertion of this DNA into the chromosomes of the infected cells. Integration of the viral DNA—which is driven by the RIGOR SgnLTR sequences—results in a combination of cleavage and ligation resulting in the appearance of double-stranded breaks in the host genome that eventually leads to apoptosis. CD24 is a heavily glycosylated cell-surface GPI-anchored protein. We have previously shown that CD24 is an important player in the multistep process of GI carcinogenesis (Gastro 2006, Clin Can Res 2007, Can Res 2008) as well as in many other human malignancies (Cervical, Bladder, Epithelial squamous cell carcinoma, Glioma, Breast etc.).

Aims & Methods: We designed and developed specifically directed lentiviruses expressing a C24-specific therapeutic (engineered Anti-CD24) and a control peptide. Humanized Anti-CD24 antibody fragment (scFv) was engineered and fused to the lentivirus envelope. Cell death was measured qualitatively by using fluorescent microscopy and was quantified by the enzymatic MTT assay. Human colorectal, pancreatic, lung and triple negative breast cancer cells were used for testing the potency of the lentiviral-based system.

Results: INS was able to stimulate the viral Integrase enzyme in test tubes and in vivo infected cells. The anti-CD24 antibody fragment has a high affinity and specificity toward CD24, allowing targeted precision of viral transduction (Figure 1). These Lentivirus particles contain DNA molecules with flanked LTRs allowing their integration into the CD24-expressing target cells DNA and formation of double-stranded breaks into the DNA of the target cells irrespective of the activation status of their gene which was stimulated by the INS derived peptides. Massive cell death was induced upon exposure of the infected cells to the INS peptide compared to the control peptide.

Conclusion: The use of INS derived peptides together with the CD24-targeted lentiviruses is a novel strategy to specifically promote death of CD24-expressing cancer cells.

Disclosure of Interest: N. Arber: Bayer Bio-view Gi-View Micro-medic Check-
card. All other authors have declared no conflicts of interest.

P1771  ILF3 STABILIZES AND ACTIVATES EGFR-MEDIATED G9A PATHWAY FOR MAINTAINING CANCER STEMNESS PROPERTY IN EGFR-POSITIVE CANCERS

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Introduction: A specific inhibitor of interleukin enhancer binding factor 3 (ILF3), YM155, suppresses EGFR phosphorylation and significantly reduces the formation of cancer stemness tumorspheres in vitro, suggesting that ILF3 as an oncogene participates in the maintenance of cancer stem cell property through stabilizes EGFR-mediated stemness pathway. Since cancer stemness cells is the leading reason for tumor recurrence in the tumor repressive treatments, and EGFR enhances the formation of cancer stemness, it is worthy of investigating the function of ILF3 for maintaining the cancer stemness property in the EGFR-positive cancers.

Aims & Methods: The tumorspheres derived from EGFR-wild-type and KRAS-mutant colorectal HCT116 and lung A549 cells expressing higher cancer stemness markers, CD133, were used as cancer stemness models in this study. ILF3 was utilized to select the putative growth in the formation of tumorspheres as the cancer stemness markers. Meanwhile, the differentiating stemness markers were also compared between ILF3-knockdowned and the control shLuc cells. Then, the protein level and phosphorylation of EGFR were investigated in the YM155-treated and ILF3 inhibited ILF3-knockdowned cells. ILF3-knockdowned cells were also transplanted into SCID mice for evaluating the function of ILF3 in vivo.

Results: We found that higher EGFR autophosphorylation (Y1068) in HCC116- and A549-derived tumorspheres compared to the parental cells. The results of RNAseq evaluated that CD133 was a positive stemness marker, whereas MARCH4 as a negative marker. Knockdown of ILF3 reduced the cell proliferation in A549 cells in vitro and in vivo, demonstrating that ILF3 was an oncogene involving in cancer cell survival. Moreover, inhibition of ILF3 by YM155 blocked the autophosphorylation of EGFR and inhibited the EGFR-downstream G9a activation, leading to a reduction of stemness property. Moreover, Knockdown of G9a reduced the ILF3 expression and increased MARCH4 expression, revealing that G9a was essential for maintaining for cancer stemness property in the EGFR-positive cancers.

Conclusion: In conclusion, this study demonstrated that ILF3 played an important role in maintaining the EGFR-positive cancer stemness property in HCC116- and A549-EGFR-positive cancer cells. We demonstrated that ILF3 stabilized and phosphorylated EGFR to enhance the activation of G9a, leading to increasing CD133 and decrease MARCH4 expressions. Therefore, we suggested that the ILF3 inhibitor, YM155, was potential for utilization in cancer therapy against the EGFR-positive cancers.

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

References
P1772 EFFICACY AND SAFETY OF TWELVE CHEMOPREVENTIVE REGIMENS FOR THE RECURRENTNESS 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 unknown. We conducted both direct and indirect comparisons of twelve chemopreventive agents for recurrent colorectal adenomas.

Aims & Methods: MEDLINE, EMBASE, Scopus, Web of Science, and Cochrane Central Register of Controlled Trials, and ClinicalTrials.gov were searched up to May 1, 2016. RCTs were assessed by a random-effects model within a Bayesian framework. Agents for each outcomes were ranked by surface under the cumulative ranking area (SURCA). This study is registered with PROSPERO, number CRD42016041923.

Results: 33 RCTs were eligible, enrolling 44,447 participants treated by twelve regimens: 9 aspirin and other NSAIDs, 11 antioxidants, 4 dietary supplements, 3 NSAIDs (SUCRA = 65.9%), but none reached statistically significance when compared with placebo. We measured EPA in CRC patients and other novel agents (e.g.metformin) in the chemoprevention of CRC.

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

References

P1774 PROGNOSTIC ROLE OF GLASGOW PROGNOSTIC SCORE IN PATIENTS WITH COLORECTAL CANCER: EVIDENCE FROM RETROSPECTIVE STUDIES
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Introduction: Colorectal cancer (CRC) is the third most common cancer world-wide. The Glasgow Prognostic Score (GPS) system was also widely studied, but the results were controversial. 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 malignant cancers. For patients with CRC, the GPS system was also widely studied, but the results were controversial.

Aims & Methods: To investigate the correlation between GPS and prognosis of patients with CRC to further clarify its clinical significance. A comprehensive literature search was performed. Embase, Web of Science, and Chinese National Knowledge Infrastructure was performed to identify eligible studies, from which the risk of overall survival (OS) and cancer-specific survival (CSS) were extracted. A random-effect model was adopted to combine hazard ratio (HR) and 95% confidence interval (CI).Heterogeneity and publication bias among studies were assessed.

Results: 25 articles with a total of 5660 participants were included. The pooled results indicated that elevated GPS was associated with poor OS (HR = 2.33, 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 ≥10mm, 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 analysis, a bivariate analysis and logistic regression were performed.

Results: 638 cases were identified, with mean age of 64 years. 342 were men (62.6%). 23.8% required more than one colonoscopy for the complete removal of the 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 hyperthermia, 15% from diabetes mellitus, 46.5% from dysplasia and 12.3% from chronic obstructive pulmonary disease. 45.8% of individuals were overweight (BMI ≥ 25) and 34.7% were obese (BMI ≥ 30). Surveillance colonoscopy was normal or with low-risk polyps in 420 cases (80.1%); and advanced polyps or multiplicity were identified in 98 cases (18.3%) 73 advanced adenoma in 59 cases (11.4%), ≥3 adenomas in 62 cases (11.5%), at least one adenoma and/or serrated polypla in 71 cases (13.7%). The presence of ≥3 adenomas and/or serrated polyps was the only variable that was associated with increased risk of the diagnosis of advanced adenomatous or serrated lesions in surveillance colonoscopy (p < 0.001)

Conclusion: Identifying 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 in 3 years in the cases with multiplicity in the basal colonoscopy.

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

References

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 79/56, mean age 67.6 ± 11.5). Lesions were located in the rectum (64.3%), left colon (9.7%), transverse (11.9%) and ascending colon (14%). Mean size was 39.3 ± 24.4 mm. In 94 lesions (49.7%) local recurrence was observed. Ligation was performed in 27 cases (14.1%). 205 ESD were performed, 58 were ended with a near-total closure of the lesion (28%). 91 ESD were performed with a total closure of the lesion. Recurrence rates (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.

Main aim was to assess the impact of the first 30 months of the organized non-population based National Colorectal Cancer Screening Program in the Czech Republic–FIRST RESULTS OF THE NEW PROGRAM SETTINGS

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Introduction: The organized non-population based National Colorectal Cancer (CRC) Screening Program in the Czech Republic has been running since year 2000. In January 2014, the transition to population based settings has been implemented. Currently, the annual immunochromochromic FIT (FIT) is offered at the age 50-54, followed by FIT+ colonoscopy, if positive. In age of 55, there is a choice of either FIT biannually or screening colonoscopy in 10 years’ interval.

Main aim was to assess the impact of the first 30 months of the population-based CRC screening program on the target population participation and colorectal neoplasia detection. The data from National Reference Center (health insurance companies database) and Preventive Colonoscopies Registry in years 2013 (non-population based settings) and 2014–2015 (population-based settings) were evaluated and compared. Participation in the target population participation at 33.1%. This has influenced the increase of number of detected adenomas (by 42%) and cancers (by 20%) detection in year 2014. In year 2015, all the results remained stable (detailed results in the table).

Disclosure of Interest: All authors have declared no conflicts of interest.
Conclusion: The transition to population-based program resulted in the improve-
ment of target population participation followed by increase in colorectal neo-
plasia detection.
Disclosure of Interest: All authors have declared no conflicts of interest.
Supported by the projects MO1012 and PRVOUK-P271LF1/1

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 dys- plasia. We aimed to evaluate the efficacy and safety of ESD for early cancer and high grade dysplasia in colorectum and evaluated the long-term outcomes, including local recurrence and metastasis.
Aims & Methods: We performed a retrospective analysis of data collected from 5 consecutive patients with 520 colorectal early cancer and high-grade dyspla-
tasia 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 mood disorder and psychological illness. Meta-analyses of randomised con-
trolled trials consistently demonstrate that psychological therapies, such as cog-
nitive behavioural therapy (CBT) and hypnotherapy, are effective treatments for IBS. In the UK the National Institute for Health and Care Excellence (NICE) recommends considering the use of these in patients with no response to pharma-
cological therapies, and for refractory symptoms.
Aims & Methods: We performed a cross-sectional survey to examine willingness of patients with IBS to engage with psychological therapies. We collected com-
plete symptom data from consecutive, unselected referrals to secondary care seen in a specialist IBS clinic. All participants completed the validated Rome IV questionnaire for IBS, the IBS severity scoring system (IBS-SSS), the hospital anxiety and depression scale (HADS) to assess mood, and the patient health questionnaire-12 (PHQ-12) to examine somatof orm-type behaviour. They also provided their opinion on possible treatment options, and were asked to rank medical therapies, dietitian input, psychological therapies, including CBT and hypnotherapy, and explanation of the condition and/or reassurance in order of preference.
Results: Among 93 adults with confirmed IBS (74 (79.6%) female, mean age 36.0 years (range 16 to 77 years), 35 (37.7%) had high levels of anxiety, 22 (23.7%) had high levels of depression, and 23 (24.7%) had severe levels of somatof orm-type behaviour. Despite this, only 10 (10.8%) of 93 patients ranked psychological therapies as their first-choice treatment option. In total, 8.8% of patients with high levels of anxiety ranked psychological therapies as their first-choice treat-
ment option, versus 13.2% without (P = 0.64), 9.5% of those with high levels of depression, versus 12.1% of those without (P = 0.91), and 17.4% of patients with severe somatoform behaviour, versus 9.2% of those without (P = 0.26). Those with severe symptoms according to the IBS-SSS were no more likely to select psychological therapies as their first-choice treatment option than those with mild or moderate symptoms (7.7% versus 21.7%, P = 0.10).
Conclusion: Despite high levels of psychological comorbidity and NICE recom-
mandations, 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 NOT ÜBIQUITOUS: 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 mus-
cles from the oropharynx to the anorectum, and the autonomic and enteric nervous system are often involved, resulting in secondary bowel dysmotility.
Aims & Methods: The objectives of this study were to evaluate a technology measuring the spectrum of gut dysfunction, the Wireless Motility Capsule (WMC), in Parkinson’s disease. We also wanted to correlate transit measures with gastrointestinal symptoms. Fifteen PD patients and 7 controls (table1) were included. PD severity were scored with the modified Hoehn and Yahr (H&Y) staging score. GI symptom severity were scored with the Wexner constipation score and Gastroparesis Cardiographic Symptom Index (GCSI). Acidity, motility and transit data were obtained, as standard, by WMC. All medications affecting pH and motility, including L-dopa, were discontinued for 5 days before and for the duration of the study. 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 com-
pleting the study, 8 reported GI symptoms. Compared to non-symptomatic patients, those with GI symptoms showed significant delayed transit in the stom-
mach, 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 correla-
tion between the Wexner constellation 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 gastro-
intestinal disorders (FGID). Recent studies demonstrated that an impairment in

<table>
<thead>
<tr>
<th>Year</th>
<th>Colonoscopy (numbers)</th>
<th>Adenomas (numbers)</th>
<th>Ratio</th>
<th>Cancers (numbers)</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>26 940</td>
<td>10 126</td>
<td>37.6%</td>
<td>867</td>
<td>3.2%</td>
</tr>
<tr>
<td>2014</td>
<td>38 128</td>
<td>14 416</td>
<td>37.8%</td>
<td>1 042</td>
<td>2.7%</td>
</tr>
<tr>
<td>2015</td>
<td>37 330</td>
<td>14 081</td>
<td>37.7%</td>
<td>969</td>
<td>2.6%</td>
</tr>
</tbody>
</table>
the handling of gas is a relevant underlining mechanism in FGID patients with bowel incontinence. 

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 and without obvious obstructive or dysmotility signs.

We performed 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. Comorbid FGID were grouped according to 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 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, the severity of bloating and the abdominal girth changes (r= .53 and .52, p < .0001, respectively).

Results: 76 patients (66 female, 39.6 ± 12.2 mean age, 6 IBS-D, 6 IBS-M, 30 IBS-C, 9 IBS-U, 6 FC, 16 FB, 3 FD) completed the 2-week run-in period. A significant negative correlation was found between adequate relief and both bloating and abdominal girth changes (r = .53 and .52, p < .0001, respectively). 53 / 76 (70%) patients reported inadequate relief (worse or no improvement). Among the non-responders the vast majority (68%) failed the BET. Multiple regression analysis showed that BET (successful or failed) was a dependent variable related significantly to bloating severity. No relationship was demonstrated for abdominal girth changes, FGID diagnosis and straining questionnaire.

Conclusion: In this prospective, multichannel trial simple diet advise was of benefit in approximately 30% of FGID patients consulting for severe bloating. In the non-responders outlet dysfunctio 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: S. Gallotta, S. Gallotta received funding research from Fonadione Torselli Premio Irene Habib All other Authors have declared no conflicts of interest.

References

P1782 PATHOPHYSIOLOGY ASSESSMENT OF FECAL INCONTINENCE AND RISK FACTORS ASSOCIATED. RESULTS OF A TEN YEARS RETROSPECTIVE STUDY

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Introduction: Fecal 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 diagnosis, and abdominal sphincters and rectum.

Aims & Methods: To evaluate symptoms and anorectal function of patients affected by FI, we included 358 patients with FI (77% female) and 23% men (M), mean age 63 (range 22–92 year) referring to the outpatient unit of Digestive Pharmacothy of S. Giovanni-Addolorata Hospital, Rome from January 2006 to December 2016. Clinical presentation (history, symptom profile and severity) and anorectal physiological evaluation (digital examination, manometry, rectal sensory testing, bulon evacuation test) were analyzed. The manometric parameters included with conventional and HR-ARM were: resting pressure, squeeze pressure, rectal compliance, rectal sensibility and the anorectal pattern during the defecatory maneuvers.

Results: 114 out of 358 patients (32%) reported both FI and difficulty evacuating stools and also urinary incontinence (2%); Proctological surgery (n=12, 34%), pelvic surgery (n=7, 21%) and traumatic anial or vaginal history (n=4, 11%) were statistically associated with FI (p<0.05). Normal manometric parameters were found in 16 patients (4%). Manometric alterations observed were: internal anal sphincter (IAS) dysfunction: 228 (64%); isolated external anal sphincter (EAS) dysfunction: 274 (76%); combined sphincter dysfunction IAS and EAS: 198 (55%); isolated dysynergic defecation: 100 (28%); rectal hypersensibility: 130 (36%).

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 dyssynergic-type constipation, the FI may be confused with an encopresis. Finally we observed these prevalent manometric alterations: combined dysfunction IAS and EAS, and rectal hypersensivity. Manometric findings could help physicians to identify approprate 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

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Introduction: Bile acid malabsorption (MAB) 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 Selenium hexalinum acid taumine (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 MAB. We retrospectively reviewed all patients who had SeHCAT scan between June 2014 and October 2016 in a University Hospital. BAM was defined as SeHCAT 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 24.0–27.00), 70.4% of patients met IBS-D Rome III criteria, median duration of diarrhea 48 months (95% CI 43.10–59.24). Background of co-morbid gastrointestinal conditions 45.3% (62/136), other co morbid conditions 55.3% (75/136). History of previous positive stool culture (30.1%) and parasitosis (20.8% of stool specimens). Percentage of positive HLA-DQ2 and DQ8 haplotypes were 27.8% (35/126) and 10.2% (13/127), respectively. SeHCAT test was positive for BMA in 48.9% (67/137); 25.4% (mild 10–15%); 31.3% (moderate 5–10%), and 43.3% (severe < 5%). Patient characteristics between positive and negative SeHCAT test were similar (Table 1). Interestingly, patients with SeHCAT test exhibited longer periods of diarrhea.

Table 1

<table>
<thead>
<tr>
<th>Variable</th>
<th>Positive SeHCAT (%)</th>
<th>Negative SeHCAT (%)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex (M/F)</td>
<td>30.37</td>
<td>12.58</td>
<td></td>
</tr>
<tr>
<td>Age (median; 95% C.I)</td>
<td>48.00 (44.52–53.34)</td>
<td>40.50 (40.69–49.4)</td>
<td></td>
</tr>
<tr>
<td>BMI (median; 95% C.I)</td>
<td>26.45 (24.56–28.78)</td>
<td>23.42 (23.31–25.98)</td>
<td></td>
</tr>
<tr>
<td>Duration of diarrhea (months; median; 95% C.I)</td>
<td>60.00 (42.51–66.95)</td>
<td>24.00 (35.55–3.38)</td>
<td></td>
</tr>
<tr>
<td>IBS-D Rome III criteria (%)</td>
<td>67.2% (45/67)</td>
<td>71.4% (50/70)</td>
<td></td>
</tr>
<tr>
<td>Abdominal surgery (%)</td>
<td>34.3% (23/67)</td>
<td>14.3% (10/70)</td>
<td></td>
</tr>
<tr>
<td>Cholecystectomy (%)</td>
<td>14.9% (10/67)</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Gastrointestinal conditions (%)</td>
<td>41.8% (28/67)</td>
<td>48.6% (34/70)</td>
<td></td>
</tr>
<tr>
<td>Other co morbid conditions (%)</td>
<td>57.1% (36/63)</td>
<td>53.6% (37/69)</td>
<td></td>
</tr>
</tbody>
</table>

(continued)
Table 1 Continued

<table>
<thead>
<tr>
<th>Positive SeHCAT test</th>
<th>Negative SeHCAT test</th>
</tr>
</thead>
<tbody>
<tr>
<td>HLA-DQ2 Haplotype (%)</td>
<td>23.8% (15/63)</td>
</tr>
<tr>
<td></td>
<td>31.7% (20/63)</td>
</tr>
<tr>
<td>HLA-DQ8 Haplotype (%)</td>
<td>14.1% (9/64)</td>
</tr>
<tr>
<td></td>
<td>6.3% (4/63)</td>
</tr>
</tbody>
</table>

Patients who exhibited MAB (confirmed by SeHCAT test) were treated with colestyramine. 27.1% (23/85) exhibited partial response, 33.9% (21/62) exhibited total response, 3.2% (2/67) exhibited no good tolerance, we had no information in 21% (13/67).

Conclusion: SeHCAT scanning must be considered as a diagnostic tool for the diagnosis of chronic diarrhoea, 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 attended a university hospital-based outpatient clinic specialized in functional GI disorders between 2005 and 2015. The patients underwent examinations to investigate oro-anal transit time (OATT) and visceral sensitivity (rectal balloon distension and a lactulose challenge test), and they also completed questionnaires to assess anxiety and depression (HAD), overall IBS 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. 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.

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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**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 assess anxiety and depression (HAD), overall IBS 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 (≥5), anxiety and depression were present in 55% and 26% of the IBS patients, respectively. More women were anxious (p = 0.001), but for depression no gender differences were detected (p = 0.76). IBS patients with anxiety or depression were younger (p < 0.001), and more commonly reported sexual and/or physical abuse (p < 0.001) than IBS patients without anxiety or depression. The presence of anxiety or depression did not differ between IBS subgroups based on the predominant bowel habit (p = 0.41, p = 0.18). For an overview of comparisons of data from questionnaires and pathophysiological examinations, see table 1. Both the presence of anxiety and of depression were associated with reports of more severe GI and extraintestinal symptoms, GI-specific anxiety, fatigue, and lower sense of coherence. Regarding pathophysiological examinations, the findings were more inconsistent. OATT was similar between groups, as was AATT. No differences were found in the 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>PsyDisease</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</td>
<td>5.1</td>
<td>356 (94.9) 1.0</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>23</td>
<td>6.8</td>
<td>315 (93.2) 1.2 (0.6–2.4) 0.530</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>14</td>
<td>3.5</td>
<td>383 (96.5) 0.6 (0.3–1.3) 0.213</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>16</td>
<td>4.5</td>
<td>342 (95.5) 0.9 (0.5–1.9) 0.886</td>
</tr>
<tr>
<td>Yes</td>
<td>Low</td>
<td>9</td>
<td>7.6</td>
<td>109 (92.4) 1.6 (0.7–3.8) 0.274</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>16</td>
<td>9.5</td>
<td>152 (90.5) 1.9 (0.9–3.9) 0.094</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>5</td>
<td>4.9</td>
<td>97 (95.1) 1.0 (0.4–2.9) 0.932</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>15</td>
<td>10.5</td>
<td>128 (89.5) 2.3 (1.1–4.8) 0.029</td>
</tr>
</tbody>
</table>

*Adjusted variables: age, sex, marital status, education, job, income, smoking, drinking, and medical history.
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 Yes</td>
<td>283.33</td>
<td>&lt;0.001</td>
<td>No Yes</td>
<td>298.30</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>VAS</td>
<td>No Yes</td>
<td>35.32</td>
<td>&lt;0.001</td>
<td>No Yes</td>
<td>39.56</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>SOC</td>
<td>No Yes</td>
<td>153.12</td>
<td>&lt;0.001</td>
<td>No Yes</td>
<td>146.11</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>PHQ-12</td>
<td>No Yes</td>
<td>6.9</td>
<td>&lt;0.001</td>
<td>No Yes</td>
<td>7</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>MFI</td>
<td>No Yes</td>
<td>14</td>
<td>&lt;0.001</td>
<td>No Yes</td>
<td>15.19</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>OATT (days)</td>
<td>No Yes</td>
<td>1.34</td>
<td>0.67</td>
<td>No Yes</td>
<td>1.34</td>
<td>0.52</td>
</tr>
<tr>
<td>Stool form (BSF)</td>
<td>No Yes</td>
<td>4.4</td>
<td>0.93</td>
<td>No Yes</td>
<td>4.07</td>
<td>0.49</td>
</tr>
<tr>
<td>Stool frequency (vul)</td>
<td>No Yes</td>
<td>1.71</td>
<td>0.03</td>
<td>No Yes</td>
<td>1.78</td>
<td>0.36</td>
</tr>
<tr>
<td>Lactulose challenge</td>
<td>No Yes</td>
<td>776.833</td>
<td>0.06</td>
<td>No Yes</td>
<td>705.170</td>
<td>0.01</td>
</tr>
<tr>
<td>pain threshold (mmHg)</td>
<td>No Yes</td>
<td>28.24</td>
<td>0.01</td>
<td>No Yes</td>
<td>24.28</td>
<td>0.53</td>
</tr>
</tbody>
</table>

P1786 THE ASSOCIATION BETWEEN IRRITABLE 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 aims to examine the incidence of lactose intolerance in healthy controls and in subjects diagnosed with IBS based on Rome III criteria, as an effort to investigate the association between IBS and lactose intolerance. The patient population consisted of individuals between 18 and 80 years of age who attended between June-December 2013. Patients diagnosed with IBS based on Rome III criteria comprised the IBS group, and subtypes of IBS. Control subjects were healthy volunteers over 18 years of age with no IBS-like symptoms. All participants ingested 25 g of lactose dissolved in 250 ml of water within 5 minutes after 8 hours of fasting, in order to evaluate the lactose intolerance 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 153 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 lactose 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 lactase 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


P1788 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 (2000 each in 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 FGIDs 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 gastroesophageal reflux (n = 627, 10.6%), anorectal disease (n = 440, 7%), oesophageal diseases (n = 241, 7%), and gallbladder disorders (n = 104, 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 fulfills diagnostic criteria for a Rome IV FGID. Roughly a third of this subset have FGIDs in multiple 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.

P1789 WITHIN-PERSON CORRELATIONS BETWEEN GASTROINTESTINAL AND PSYCHOLOGICAL FEATURES OF THE IRRITABLE BOWEL SYNDROME

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Disclosure of Interest: Support: The Rome Foundation

References


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: 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, Alibiero, Glycom and Shire, and as. All other authors have declared no conflicts of interest.

Conclusion: Of the total 200 participants, 100 (50%) were in IBS and 100 (50.0%) were in control group. Patients with IBS had worse somatisation and quality of life scores than organic GI disease controls.

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Conclusion: Roughly a third of the general adult population fulfills diagnostic criteria for a Rome IV FGID. Roughly a third of this subset have FGIDs in multiple 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) 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 online questionnaires once annually over five years. On the following features: gastrointestinal (GI) symptom severity (GSS), quality of life (QOL), GI specific anxiety (VSI), general anxiety and depression (HADS), coping resources (CRI), and sense of coherence (KASAM). For each participant, scores were centered on their own mean, and within-person correlations were computed for all pairs of features.

**Results:** Aggregate within-person correlations are shown in figure 1. Within-person correlations were strong for the triad GI symptom severity, GI specific anxiety, and QOL (r: 0.47 to 0.64). Another set of features was comprised of general anxiety, depression, coping resources, and sense of coherence (r: 0.39 to 0.57). Within-person correlations between the two sets were weak (r: 0.00 to 0.37). However, within-person correlations tended towards bimodal distributions across the population, especially for GI symptom severity and depression (r = -0.6 for half of participants, and r = -0.4 for the other half).

**Conclusion:** Here we show that, within individual IBS patients, GI symptom severity is strongly associated 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:** A. 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, Schering-Plough and Shire and Almirall. L. Van Oudenhove: Lukas Van Oudenhove has received grant support from Albe Therapeutics and Nestle and has given scientific advice to Grand Pharmaceuticals. 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, Albino, Glycom and Shire, and as a.

All other authors have declared no conflicts of interest.

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**P1790 Irritable Bowel Syndrome with Constipation: Impact of Symptom Severity on Quality of Life: A Post hoc Analysis of Data from Two Phase 3 Trials of Linacotide**

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**Introduction:** Irritable bowel syndrome with constipation (IBS-C) is a chronic gastrointestinal disorder associated with significant impairment in health-related quality of life (HRQoL). However, information on the impact of IBS-C symptom severity on patients’ HRQoL is lacking.

**Aims & Methods:** This post hoc analysis assessed the burden of IBS-C on HRQoL according to symptom severity among adult patients meeting the modified Rome III criteria for IBS-C based on baseline data from the two Phase 3 clinical trials of linacotide. These randomized, double-blind, placebo-controlled, parallel-group, placebo-dose-matched trials were Sienna-1 and Sienna-2. The clinical trials were conducted in the United States, Canada, and Europe. Patients were recruited from community practices and located across 33 countries (United States (n = 610), Canada (n = 608), and Europe (n = 763)). Participants who were 18 to 75 and met criteria for IBS-C according to Rome III were included. Assessments included validated quality of life instruments: IBS-QOL for IBS-C patients and EQ-5D for all patients. The primary endpoint was differences in mean total IBS-QOL score compared to those with GSS ≤ 3. Differences in overall and subscale scores between patients aged <65 and ≥65 years, and between sexes, were compared.

**Results:** A total of 1602 IBS-C patients were included for analysis. Compared to placebo, patients treated with linacotide had a lower HRQoL as indicated by lower mean IBS-QOL overall and subscale scores, with the greatest differences seen for body image (15-point difference), dysphoria and health worry (both 13-point difference) subscales (Table). Patients with GSS ≥ 3 also had a lower EQ-5D index score compared to those with GSS < 3 (0.67 vs 0.72) (Table). Women reported a slightly lower mean total IBS-QOL score compared to men, but had a notably lower score (14-point difference) on the body image subscale (Table). No difference in mean EQ-5D score was observed between sexes. IBS-QOL total and EQ-5D index scores were similar between patients aged <65 and ≥65 years, though the younger subgroup generally had lower scores on the IBS-QOL, including on the food avoidance and sexual subscales (Table).

**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 HRQoL.

**Disclosure of Interest:** A. Marciniak: Anne Marciniak is an employee of Allergan plc and shareholder in Pfizer, Amgen, and Allergan plc. Y. Mo: Yifan Mo is an employee of Allergan plc. J. Ma: Julia Ma is an employee of Allergan plc. J.L. Abel: Jessica L. Abel is an employee of Allergan plc and shareholder in Allergan plc. R.T. Carson: Robyn T. Carson is an employee of Allergan plc and shareholder in Allergan plc.
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>PT</td>
<td>14.3 (13.7–15.7)</td>
<td>13.1 (12.3–13.9)</td>
<td>9.0–14.0</td>
<td>sec</td>
<td>.0005</td>
</tr>
<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>.0005</td>
<td></td>
</tr>
<tr>
<td>aPTT</td>
<td>28.7 (26.7–31.7)</td>
<td>26.4 (24.9–28.6)</td>
<td>25.0–35.0</td>
<td>sec</td>
<td>.0005</td>
</tr>
<tr>
<td>LA</td>
<td>1.05 (0.97–1.13)</td>
<td>1.04 (1.03–1.10)</td>
<td>0.8–1.22</td>
<td>.948</td>
<td></td>
</tr>
</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 IC 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), 12.2% 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 pathophysiologcal mechanisms of IC.

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

References
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 predictors of the classification of disease severity proposed by American College of Gastroenterology (ACG) guidelines (2015), created to provide a management algorithm for these patients and select the level of care.

Aims & Methods: A retrospective multicenter study was conducted on adult patients with definite IC (clinical, colonoscopic, pathologic and culture criteria), between 2013 and 2016. Data was collected on clinical presentation, comorbidities, organ failure, management and outcome. Each case was classified according to ACG guidelines after assessment of the number of risk factors (gender, systolic blood pressure <90 mm Hg, heart rate >100 beats per min, abdominal pain without rectal bleeding, BUN > 20 mg/dl, Hbg < 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 RF), and severe (3 RF or more) predictors of the following: perforation signs, pneumatosus or portal venous gas, gangrene on colonoscopic examination and pan-colonic or isolated right-colon ischemia involvement on imaging by colonoscopy or computed tomography.

Results: 349 cases with the clinical diagnosis of IC were analyzed. 193 patients met the inclusion criteria of definitive diagnosis of IC (62.7% females; mean age 72 years ±13). ACG classification of mild, moderate and severe disease was attributed respectively to 21% of patients (0 intra-hospital deaths), 45% (2 deaths) and 34% (12 deaths). The number of ACG RF was: 40% with 0 RF, 8% with 1, 9% with 2, 15% with 3, 16% with 4, 8% with 5, 4% with 6 and 1% with 7. No patient with 0 or 1 RF died. Only 1 patient with 2 RF died. The remaining 13 deaths were verified RF less than 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 0.78 (95% CI: 0.71–0.85), respectively. For a cutoff of 2 ACG RF, the sensitivity (SE) for death was 100%, specificity (SP) 52%, with a positive predictive value (PPV) of 14% and negative predictive value (NPV) of 100%. For 3 ACG RF the results were: SE 93%, SP 61%, PPV 16% and 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 IRRITABLE 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 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 physician 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. Depending on WTP, a 12-62% price reduction (USD $18.46-$26.34/pill) would enable the first-line TCA followed by second-line rifaximin to be more cost-effective than a TCA-only strategy (Table 1). An 84-88% price reduction (USD $3.53-$4.71/pill) would enable first-line rifaximin followed by second-line TCA to be more cost-effective than TCA-only, though first-line TCA followed by second-line rifaximin would remain the more cost-effective strategy. Our model was robust to 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.

P1797 PREDICTIVE FACTORS FOR BETTER OUTCOMES IN COLONOSCOPY-ASSOCIATED PERFORATION
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Introduction: Colonoscopy has been widely used for diagnostic and therapeutic purposes. Although the incidence is very low, perforation is one of the most serious complications. It is important to decide whether to try endoscopic clipping or to perform prompt surgical management.

Aims & Methods: We retrospectively reviewed charts of all patients who experienced colonoscopy-associated perforation in a single center between May 2009 and July 2015, and totally 45 patients were enrolled.

Table: The risk factors surgical treatment in colonoscopy-associated perforation

<table>
<thead>
<tr>
<th>variable</th>
<th>Surgery group (N = 18)</th>
<th>Conservative group (N = 27)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age(year)</td>
<td>66</td>
<td>67</td>
<td>.688</td>
</tr>
<tr>
<td>Sex(M/F)</td>
<td>10/8</td>
<td>14/13</td>
<td>.807</td>
</tr>
<tr>
<td>Purpose of colonoscopy</td>
<td></td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>Therapeutic</td>
<td>9</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td>Diagnostic</td>
<td>9</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Location of perforation</td>
<td></td>
<td>.002</td>
<td></td>
</tr>
<tr>
<td>Rectum</td>
<td>2</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Sigmoid</td>
<td>14</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Descending</td>
<td>0</td>
<td>1</td>
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</tr>
<tr>
<td>Transverse</td>
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<td>3</td>
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</tr>
<tr>
<td>Ascending</td>
<td>0</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Endoscopic clipping</td>
<td>Yes</td>
<td>8</td>
<td>.007</td>
</tr>
<tr>
<td>No</td>
<td>10</td>
<td>4</td>
<td></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 antibiotic: 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.
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

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Introduction: Despite diagnostic criteria and effective management options for functional gastrointestinal disorders (FGID), confidence in managing these disorders in primary care is low, and long waiting lists for specialist care are common. New models which efficiently transfer specialist-held expertise to primary care practitioners is needed.

Aims & Methods: We aimed to explore and describe the patient and primary healthcare provider (PHCP) experience of a novel non-specialist-dependent algorithm-based approach to the diagnosis and management of FGID (ADAM-FGID). Consecutive patients triaged to the ‘routine waitlist’ of an Australian public hospital Gastroenterology Department over 2 years, with non-specific gastrointestinal symptoms (no alarms) were randomised to waitlist control or the algorithm (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 others 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.

Results: 89 participants were screened (42 years [SD 14], 62% female). 35 had clinical alarms or abnormal tests, data were reviewed by a gastroenterologist and, if appropriate, prompt gastroenterologist appointment offered. All others were classified using Rome III criteria. and received a letter explaining their FGID diagnosis. As a result, 45 were diagnosed with functional gastrointestinal disorders (FGIDs), in primary care is warranted. New models which efficiently transfer specialist-held expertise to primary care practitioners is needed.

P1799 ANNUAL FECAL IMMUNOLOGY TESTING IS LESS COSTLY THAN COLONOSCOPY EVERY 5 YEARS AND REDUCES MORTALITY IN FAMILIAL COLONORECTAL CANCER SCREENING

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Introduction: Colonoscopy every 5 years, starting at the age of 40 years, is considered the first-choice screening strategy in first degree relatives (FDR) of patients with colorectal cancer CRC, as these individuals are considered at higher risk of developing CRC than average-risk individuals. However, this practice has a low adherence and remains opportunistic. Recently, it has been suggested that annual fecal immunochemical testing (FIT) might be a valid alternative to colonoscopy in this setting. However, there are scarce data regarding cost-effectiveness of these strategies from the perspective of healthcare services.

Aims & Methods: This study was aimed to compare the cost-effectiveness of annual FIT and colonoscopy every 5 years, to reduce CRC mortality, in FDR of patients with CRC. A Markov model was constructed to simulate the efficacy and cost of annual FIT (cut-off 10 µg Hb/g feces) or colonoscopy every 5 years of
previously unscreened FDR, starting at age 40 years and ending at age 75. A 5 g Hemoccult test was used for each strategy as was assumed. The model was adjusted to the incidence of CRC in Spain and real prevalence of advanced adenoma and CRC in the familial-risk population (http://dx.doi.org/10.1371/journal.pmed.1002080.g001). The main outcomes were quality-life-year (QALY) gained compared to baseline, lifetime burden of colorectal cancer, lifetime costs, relative risks 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 baseline, the ICER for annual FIT 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 assumed to be the 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

P1800 COMBINATION OF FOBT AND FECAL CALPROTECTIN MAY BE USEFUL FOR REDUCING UNNECESSARY COLONOSCOPY IN ASYMPTOMATIC PATIENTS
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Introduction: Faecal occult blood test (FOBT) is a non-invasive and easily performed test which has demonstrated to reduce CRC incidence and mortality in the populations. Faecal calprotectin (FCP) has good evidence for detecting inflammatory bowel disease but its value in CRC and adenoma detection remains unassessed. This study was aimed to evaluate the diagnostic accuracy of the combination of FOBT plus FCP versus each test alone in asymptomatic patients referred for diagnostic colonoscopy. A total of 171 patients who completed colonoscopic investigations and returned stool samples were prospectively recruited and included in the final analysis. FOBT was performed by SENTRY FIT 270 test (Sentinel Diagnostics, Milan, Italy) and FCP by the ELISA Calprotectin immunoassay (Thermo Fisher Scientific, Waltham, United States). Reference cutoff levels were 117 ng/ml for FOBT and 90 μg/g for FCP respectively. The diagnostic accuracy of FOBT and FCP were evaluated by logistic regression model. CRC, advanced adenoma, IBD and angiodyplasia were considered as relevant pathology. Positive and negative predictive values, sensitivity and specificity were calculated. MedCalc was used for the ROC curve analysis.

Results: 171 patients (42.7% female; median age 62 years, IQR: 51–68) were included. 37 (21.6%) had relevantcolonic pathology. The most frequent indications for colonoscopy were previous episode of rectal bleeding in 71 (42%) patients, change of bowel habits in 28 (16%) and anaemia in 22 (13%). Diagnostic accuracy of FOBT, FCP and combination of both are summarized in table 1.
P1802 PERFORMANCE OF THE MOTUS PURE-VU SYSTEM - A NOVEL DEVICE FOR ACHIEVING ADEQUATE BOWEL PREP IN POORLY PREPPED PATIENTS

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Introduction: The success of colonoscopy depends on the quality of the bowel preparation, which is estimated to occur in as many as 25% of colonoscopy procedures. The MOTUS G Pure-Vu system (Tirat Carmel, Israel) is an FDA cleared device designed to improve visualization in an inadequately prepared colon by facilitating intra-procedural cleaning.

Aims & Methods: This study aims to evaluate the performance of the Pure-Vu System in cleaning a poorly prepared colon, assess the system’s usability, patient satisfaction and safety. Forty-seven cases were planned to be enrolled at three clinical sites, of which 32 had completed the study so far. Pure-Vu was used in subjects with a partially prepped colon after 2x10 mg Bisacodyl, diet restrictions (no dried fruit, seeds or nuts) starting 2 days before the procedure and a 24-hour fast. Subjects with a partially prepped colon after 2x10 mg Bisacodyl, diet restrictions and a 24-hour fast were included in the analysis. Indications for colonoscopy included family history of CRC (56%) and poly surveillance (44%). No serious adverse events were reported. The Pure-Vu significantly increased the number of subjects with an adequate cleansing degree (BBPS > ≥ 2 for all 3 colon segments) from 25% to 67.2% (CI 95% [11%, 43%]) at baseline to 100%; CI 95% [89%, 100%] after Pure-Vu and the colon was reached and visualized in all study cases (i.e., 100%; CI 95% [89%, 100%]). Mean post-treatment BBPS score was 8.5 ± 0.8 vs. 3.38 ± 2.3 prior to Pure-Vu use. Physicians were satisfied with the device’s general use of ease and found it in most cases acceptable to good or excellent to insert and to angulate the colonoscope. No major difficulties were experienced when performing polypectomy. Thirty of 32 (94%) patients reported that they would recommend Pure-Vu to their friends and family members who need a colonoscopy. Thirty (94%) of the patients found the overall bowel preparation as very tolerable (55%) or acceptable (39%). 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

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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 Gastronet 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). Gastronet 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 care (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 scales: patients were blind to the F-PAR result. Standard clinic assessment was undertaken to identify efficacy of the current management as the gold standard.

Results: Of the 403 consultations, clinical assessment identified inadequate relief with current therapy was identified in 200. Neither duration nor type of treatment were correlated with relief. The table stratifies, by clinical gold standard, each item of the F-PAR and in the lower panel the total number of F-PAR items replied to positively.

Table: Positive F-PAR items correlated to clinical assessment of relief

<table>
<thead>
<tr>
<th>Adequate relief (Clinical)</th>
<th>Inadequate relief (Clinical)</th>
</tr>
</thead>
<tbody>
<tr>
<td>n = 203</td>
<td>n = 200</td>
</tr>
</tbody>
</table>

Bowel frequency inadequate | 5 | 71
Strain most occasions | 6 | 89
Stool hardness | 3 | 21
Onset other symptom | 2 | 57
Current therapy poor tolerable | 8 | 80
0 FPAR replies | 187 | 1
1 FPAR replies | 10 | 41
2 FPAR replies | 4 | 67
3 FPAR replies | 2 | 22
4 FPAR replies | 0 | 8
5 FPAR replies | 0 | 9

Conclusion: Our findings showed that the F-PAR with only five questions can be considered sufficient to provide clinical evidence of treatment failure. The use of standardized process to investigate the efficacy of treatment may reduce the time and improve the quality of managing for the chronic constipation patients.

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

References

P1806 ADHERENCE WITH TRANSANAL IRRIGATION USING THE NAVINA™ 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 fecal incontinence. Such neurogenic bowel dysfunction (NBD) complicates over three quarters of patients with spinal cord injury (SCI) and multiple sclerosis (MS). Approximately 60% of patients who start TAI continue with long-term treatment. A common cause of treatment cessation is impaired hand function [1]. Training of the patient is a key aspect of TAI therapy and requires patients to be willing to manage their health themselves: self-efficacy.

Aims & Methods: We wished to study whether use of a novel TAI system, Navina™ Smart, which has an electronic pump component allows patients with impaired levels of hand function to adhere to TAI therapy, to be able to self-administer the device. 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 Cohn Hand Function Questionnaire (HFQ) indicating they 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 (6.0 ± 3.9 vs 5.9 ± 2.9; p = 0.37) or HAD-depression (8.6 ± 3.9 vs 8.8 ± 4.2; 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 = 0.0008). There was no difference in any of the anorectal parameters between those who did or did not adhere with TAI.

Conclusion: Navina Smart TAI is an effective therapy in 57% of NBD patients with significant hand dysfunction. Anorectal physiology, anxiety and depression scores do not predict likelihood of treatment adherence. An external locus of control, reflecting a belief that health events occur because of outside forces (such as fate, chance, or powerful others), is associated with reduced treatment success. The results suggest that future studies of TAI should consider locus of control as an important potential predictor of outcome.

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

References

WEDNESDAY, NOVEMBER 01, 201709:00-14:00

OESOPHAGEAL, GASTRIC AND DUODENAL DISORDERS III - HALL 7

P1807 THE DUODENAL MUCOSA RETAINS A DIVERSE MICROBIOTA FOLLOWING BOWEL PREPARATION

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Introduction: The microbiota inhabiting the gastrointestinal (GI) tract plays an essential role in gut health. Although mucosal biopsies are increasingly used for microbiota studies, these are subject to variations introduced through sampling technique and patient preparation. The impact of bowel preparation on the microbiota-associated microbiota (MAM) is of particular interest given it results in complete emptying of bowel contents via laxative ingestion. Although bowel preparation does not appear to induce long term changes to stool microbiota [1], it can induce short-term changes to the colonic MAM [2]. While improvements in clarity of the small intestine after bowel preparation have been reported [3], the impact on the upper GI microbiota is currently unknown. Given patients may undergo both upper GI endoscopy and colonoscopy consecutively, a subset of endoscopy patients will have consumed bowel preparation prior to their procedure, representing a potential bias in MAM analyses. Therefore, this study aimed to assess the impact of bowel preparation on the duodenal MAM.

Aims & Methods: Individuals undergoing upper GI endoscopy, with or without concurrent colonoscopy, were recruited consecutively with ethical approval. Individuals who underwent upper GI endoscopy following overnight fast (n = 58), or both upper endoscopy and colonoscopy following polyethylene glycol bowel preparation (n = 48). Participants were undergoing screening for iron deficiency anaemia or GI symptoms with no evidence of mucosal disease/inflammation (n = 58), or with diagnosed Crohn’s disease (n = 18). Duodenal biopsies were obtained and gDNA extracted. Amplicon libraries of the 16s rRNA gene were sequenced (Illumina MiSeq). Sequencing of reagent controls enabled exclusion of
non-duodenal sequences. Bioinformatics and statistics were performed in QIIME and Calfyso.

**Results:** A diverse microbeota was observed in duodenal mucosal samples from all subjects, following overnight fasting or bowel preparation. Overall the duodenal microbeota was dominated by the genus Streptococcus, followed by Prevotella, Veillonella and Neisseria. Microbial diversity within samples was not significantly different with and without bowel preparation (Chao1 metric). Principal coordinates analysis (weighted UniFrac) revealed substantial overlap between the two groups, and no significant clustering was observed (ADONIS) based on whether patients had undergone overnight fasting or bowel preparation. Similar findings were obtained when these analyses were repeated with exclusion of the Cronh’s disease population.

**Conclusion:** This study reveals a diverse duodenal MAM is retained following bowel preparation. The comparison of overnight fasting and bowel preparation indicates these differences in patient preparation do not substantially alter the duodenal MAM. Thus patients undergoing concurrent upper GI endoscopy and colonoscopy can be included in study cohorts investigating the upper GI MAM without risk of a substantial confounding effect.

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

**References**

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**P1808 PERFORMANCE OF GLASGOW-BLATCHFORD, ROCKALL, AND AIMS65 SCORES TO PREDICT OUTCOMES AND TO IDENTIFY THE HIGH-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.1 Currently available prognostic scoring systems for UGIB for the general population have produced variable accuracy in their validation studies.2 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 of 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) significantly better predicted ICU admission than GBS (AUC 0.79; p = 0.04), both the total and clinical RS (AUC 0.71 and 0.66; p < 0.001 for both). The GBS best predicted the need for blood transfusion (AUC 0.82, sensitivity 71% and specificity 80% for GBS ≥ 12) compared with the other prognostic scores. All scores performed poorly in predicting the need for hemostatic therapy and risk of rebleeding. The AIMS65 score best predicted in-hospital mortality (AUC 0.84) compared to the GBS (AUC 0.75; p = 0.004), both the total and clinical RS (AUC 0.70 and 0.69; p < 0.001 for both). Among patients bleeding at EGD, there was no difference in 30-day mortality if the etiology of bleeding was tumoral or non-tumoral disease (38.1% vs 31.9%; p = 0.46). Identifying low-risk group: With GBS score of 0 as the cut-off value, its specificity was 100% with sensitivity of 5.8%. When GBS ≥ 2, its specificity was maintained at 100%, while sensitivity increased to 23.5%. This change increased the proportion of the patients from 1% to 5% without erroneously discharging high-risk patients. In comparison, when an AIMS65 value of 0 was chosen as definition for low-risk, this tool misclassified 20 patients who needed hospital interventions (specificity of 53% and sensitivity of 89.5%). Finally, head-to-head comparison between GBS vs. RS, and GBS vs. AIMS65 scoring system revealed GBS to be superior to both the clinical RS (p < 0.001) and AIMS65 (p = 0.001) in correctly identifying low-risk patients.

**Table 1: Demographic and Clinical Characteristics**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Total (n = 243)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>60.6 ± 13.6</td>
</tr>
<tr>
<td>Female/Male</td>
<td>71 (29.2%)/172 (70.8%)</td>
</tr>
<tr>
<td>Outpatient/Inpatient</td>
<td>178 (73.3%)/85 (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.

**References**

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**P1809 THE EFFECTS OF ANTICOAGULANTS ON THE CLINICAL OUTCOME OF ENDOCYTHERAPY**

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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 (PERB) rate in patients on anticoagulants.

**Aims & Methods:** This study aimed to evaluate the effect of anticoagulants on PERB rate in patients. This was a retrospective study based on medical records from three leading Japanese ER centers. PERB was defined as bleeding that occurred 6 h to 10 days after ER, which required endoscopic hemostasis. We reviewed 108 gastric tumors including adenoma and early cancer in 97 patients on anticoagulant therapy who underwent endoscopic submucosal dissection (ESD) in our hospitals between June 2008 and February 2016. Further, we reviewed 69 colorectal polyps including adenoma and early cancer in 69 patients on anticoagulant therapy who underwent ER in our hospitals between October 2013 and September 2016. ER included polypectomy, endoscopic mucosal resection (EMR), and ESD. Patients were divided into two groups: those prescribed warfarin and patients prescribed DOAC. The management of antithrombotics was based on the Japanese Gastroenterological Endoscopy Society guidelines published in 2005 and 2012. The anticoagulants used during the study period were warfarin, dabigatran, rivaroxaban, apixaban, and edoxaban. Warfarin was discontinued 4–5 days before ER, whereas the others were stopped 24–48 h prior to the procedure. For patients at a high thrombotic risk, intravenous unfractionated heparin was administered after ceasing anticoagulants.

**Results:** Warfarin and DOAC were prescribed to 73 (75%) and 24 (25%) patients, respectively. Apixaban was administered to 1 (1%), dabigatran to 12 (12%), rivaroxaban to 11 (11%) patients. There were no significant differences between the DOAC and warfarin groups in terms of clinical characteristics or...
P1811 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 in high-risk and low-risk patients. High-risk patients were defined as patients who underwent ESD for gastric neoplasms in Osaka General Medical Center between January 2009 and December 2016 were retrospectively investigated. Independent risk factors of delayed bleeding were analyzed by using a multivariate analysis by logistic regression model, and three predictors of delayed bleeding were selected. Patients were categorized into a high-risk group or low-risk group for bleeding, and the clinical features of post-procedural bleeding in each group were investigated.

Results: A total of 717 patients with 781 gastric neoplasms were identified. Mean age was 74.6, and 71.6% was male. With regard to comorbidity, the proportion of hypertension, diabetes, chronic liver disease, and hemodialysis was 50.2%, 19.2%, 2.7%, and 6.1%, respectively. Total 188 patients have taken oral antithrombotic drugs, and of them, 50 patients treated by gastric ESD under heparin bridge therapy. Two-thirds lesions were located in gastric body and median tumor size (range) was 15 (3–80) mm. En-bloc resection was achieved in 751 lesions (96.2%), and no uncontrollable bleeding occurred. Forty-nine patients (6.8%) experienced delayed bleeding after gastric ESD. Hospital stay was significantly longer in bleeding cases than in non-bleeding cases [median hospital stay (range) 11 (3–20) vs. 9 (2–25), p<0.007]. Multivariate analysis of delayed bleeding included age (>75 years), number of bleeding episodes (without heparin bridge therapy) and antithrombotic treatments as independent risk factors for delayed bleeding.

Conclusion: Blending high-risk patients with heparin bridge therapy, antithrombotic therapy, and hemodialysis should be carefully observed after gastric ESD while early hospital discharge is acceptable for bleeding low-risk patients.

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

Reference

P1810 ENDOSCOPIC ALLPICATION 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 Biomédical, 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 contactal barrier when this powder immediately forms mucoadhesive hydrogel after contacting blood or water. It shows high adhesiveness and persistency of gel on ulcer base. And new powder delivering device shows low contact clogging rate of catheter during spraying powder. The endoscopic application of NEXPOWDER® depending on the location and severity of hemorrhage.

Aims & Methods: The aims of this study were to confirm 1) success rate of hemostasis using NEXPOWDER® for 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.

Conclusion: Patients on HBT, rivaroxaban, and antiplatelet agents plus antithrombotic therapy at an increased PEB risk after ESD for gastric tumors. We suggested that the PEB rate differs among DOACs because each drug has its own blood concentration and metabolization. Most clinicians have a limited knowledge on PEB during DOAC treatment because these are relatively new drugs, and because PEB has a low prevalence. Therefore, comparative data on larger patient series are needed to address this issue.

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

References

P1812 EFFICACY AND SAFETY OF FERR CARBOXYMALTOLose 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 anemia 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 haemodynamic instability) treated with FCM as part of our hospital’s habitual clinical practice.

Results: Analysis of 84 patients admitted with acute GIB (69.0% male, mean age 68.0 years [SD 6.9]), with a Charlson index ≥3 in 67.1% of cases (≥5 in 31.6%). 15.5% had previously suffered acute GIB due to peptic ulcer. There were 86 hospital admissions for acute GIB; 93.8% were upper GIB (above the angle of Treitz). The most frequent clinical presentation was melena, in 76.7% of cases. 25.6% presented hemodynamic instability at admission. The mean Glasgow-Blatchford index score was 16.1 (SD 2.7) and the mean Rockall score post-endoscopy was 4.2 (SD 1.7). The most common causes of bleeding were: 36.0% duodenal ulcer, 29% gastric ulcer, 9.3% gastritis/erosions, and 7.3% angiodysplasia of the colon. The mean Hb at admission was 9.0 g/dL (SD 2.2)
and the mean of the lowest Hb during admission was 7.6 g/dL (SD 1.3). The most common total dose of FCM administered was 1000 mg. During admission, a mean Hb increase of 8.9 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 < 0.0001) in patients ≥75 years (2.12 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.

**Disclosure of Interest:** In patients with acute GI bleeding the administration of ferric carboxymaltose improves Hb levels promptly and safely, especially in patients of advanced age and with associated comorbidities.

**References**


P1815 PREDICTIVE FACTORS FOR IN-HOSPITAL MORTALITY IN PATIENTS WITH PEP TIC ULCER BLEEDING

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**Introduction:** Peptic ulcers are the most frequent cause of upper gastrointestinal bleeding. In different population based surveys regarding all-cause UGIB, mortality ranges between 3% and 14%.

**Aims & Methods:** The aim of this study was to assess in-hospital mortality in patients with peptic ulcer bleeding and to evaluate the risk factors associated with mortality. In this prospective study we enrolled all patients diagnosed with peptic ulcer bleeding in a tertiary care center over a period of 24 months (January 2015–December 2016). Patients were divided into two groups - those who died and those who survived - and the following parameters were compared: age, signs of hemodynamic instability (hypotension, tachycardia), presence of comorbidity, details provided by Charlson score, presence of risk factors (age >75 years vs ≤75 years; male vs female; diabetes vs no diabetes; hypertension vs no hypertension; hypercholesterolemia vs no hypercholesterolemia). The study included 431 patients. In-hospital mortality rate was 7.9%.

**Results:** The following differences have been observed by comparing patients who died and those who survived: age ≥75 years 41.2% vs 23.4% (p = 0.036); hypotension 17.6% vs 2.3% (p < 0.001); tachycardia 47.1% vs 21.4% (p = 0.001); one or more comorbidities 94.1% vs 63.5% (p = 0.001); high risk endoscopic stigmata 79.4% vs 62.2% (p = 0.070); multiple ulcers 41.2% vs 33.5% (p = 0.473); Rockall score ≥5 points 94.1% vs 46.9% (p = 0.001); Blatchford score ≥10 points 91.2% vs 66.2% (p = 0.005); hemoglobin <9.5 g/dl 70.6% vs 41.1% (p = 0.002); INR ≥2.5 17.6% vs 5.8% (p = 0.022); creatinine ≥1.5 mg/dl 38.2% vs 10.8% (p = 0.001); INR >2.5 20.6% vs 10.3% (p = 0.123); need for blood transfusion 82.4% vs 56.4% (p = 0.006); need for surgery 11.8% vs 3.5% (p = 0.063). In most cases (88.2%), the cause of death was other than hemorrhagic shock. Using multivariate analysis, three of these factors were identified as representing 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:1.27–3.47, 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 or in-hospital 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**


P1816 ANAEMIA AND UPPER GI BLEEDING: A LOCAL EXPERIENCE
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Introduction: There has been significant research recently on the use of blood transfusions in upper GI bleeding (UGIB) [1] with recent evidence advocating a restrictive approach to blood transfusions as well as the use of iron therapy[2] for anemia management. We conducted a local retrospective analysis of patients admitted with UGIB over a six month period and analysed the use of blood transfusions at our trust which consists of two District General Hospitals.
Patient data over a period of up to 12 months post discharge was collected to monitor their anaemia.
Aims & Methods: Our aim was to monitor the appropriateness of transfusions in Upper GI Bleeding as well as monitoring the response to iron therapy following discharge. All inpatients that had an Upper GI endoscopy for UGIB were analysed. Electronic patient records were obtained from our endoscopy software and hospital database. Patients were selected over a time period of six months from 1/6/2015 to 31/12/2015. A Student’s T Test was used to compare the average hospital database. Patients were selected over a time period of six months from 1/6/2015 to 31/12/2015. A Student’s T-Test was used to compare the average hospital database. Patients were selected over a time period of six months from 1/6/2015 to 31/12/2015. A Student’s T Test was used to compare the average hospital database. Patients were selected over a time period of six months from 1/6/2015 to 31/12/2015. A Student’s T Test was used to compare the average hospital database.
Results: There were 148 patients, 81 male and 67 female. The mean age was 69.3, minimum 20 and maximum 98. The average Hb on admission was 103 g/L (min – 32 g/L, max – 178 g/L). 78 out of 148 (52.7%) patients presenting with UGIB received a blood transfusion. The mean amount of blood received for those transfused was 3.7 units. 48 out of 78 (61.5%) of blood transfusions were given when Hb was below 70 g/L. 30 of 78 (38.5%) were transfused as an emergency. 37 patients with Hb above 70 had cardiac risk factors. The mortality rate in those transfused above Hb of 70 was 13.3% (n = 4) vs 10.4% (n = 5) 41.5% (n = 44) patients who were anemic post-UGIB were discharged with iron therapy. The average rise in Hb was 15 g/L. This equated to 7.5% for those who did not take iron. There was a statistically significant rise in Hb for those discharged with iron therapy (p < 0.005) on follow-up versus those who did not receive it (n = 62). The anaemia related readmission rates were similar for patients discharged on iron or not (91.9% vs 9 vs 9.7% n = 6).
Conclusion: The data obtained supports a restrictive transfusion policy (mortality rate of 13.3% vs 10.4%). 58.5% of patients who were anaemic on discharge did not receive any iron therapy. On follow up, there was a statistically significant rise in Hb in those who received iron for those who did not. There was a statistically significant rise in Hb for those discharged with iron therapy (p < 0.005) on follow-up versus those who did not receive it (n = 62). The anaemia related readmission rates were similar for patients discharged on iron or not (91.9% vs 9 vs 9.7% n = 6).
Discourse of Interest: All authors have declared no conflicts of interest.
References

P1817 THE RELATIONS AMONG SERUM GHELIN, MOTILIN, CIRCULATING ANTIMYENTERIC ANTIBODIES AND GASTRIC EMPTYING 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 nervous system dysfunction leading upper gastrointestinal symptoms. Delayed gastric emptying leading upper gastrointestinal symptoms.
Aims & Methods: The aim of this study was to: (i) compare serum levels of ghrelin and motilin in patients with delayed gastric emptying and (ii) investigate whether circulating antimyenteric antibodies, serum levels of ghrelin and motilin and gastric emptying are related. Fourty-one patients with AIG were included into this study. Autoimmune gastritis was diagnosed depending upon histopathological findings in gastric biopsy specimens.
Results: Forty-one patients (27 women), mean age 56.61 ± 11.79 years with AIG were included into the study. Overall, 22 (53.6%) patients showed delayed GE and 19 patients showed normal GE (GET ½: 241.19 ± 190 ± 19 mins, p < 0.05). 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 (36.5%) 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 delayed autonomic nervous system function were significantly decreased compared to patients with normal autonomic nervous system function (140.88 ± 49.50 vs 280.73 ± 48.63 pg/mL, p < 0.0001 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 (r = 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 delayed autonomic nerve function were significantly decreased. Novel finding was the presence of 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 autoimmune gastritis patients. We believe that these new observations supply more insight into the pathophysiology of autoimmune gastritis.
Disclosure of Interest: All authors have declared no conflicts of interest.
Reference

P1818 EFFECTS OF FAECAL MICROBIOTA TRANSPLANTATION ON NEUROGENIN 3, MUSASHI 1 AND ENTEROENDOCRINE CELLS IN THE DUODENUM OF PATIENTS WITH IRREGULAR BOWEL SYNDROME
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Introduction: The interaction between gut microbiota and enteroidendocrine 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 enteroendocrine 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 pastscopies 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 enteroidendocrine 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 ± 33.6) 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 were 326.6 ± 27.8 and 210.4 ± 41, respectively (P = 0.025), and for idiopathic IBS are 352.5 ± 34 and 270.3 ± 54, respectively (P = 0.034). The densities of neurogenin 3, Musashi 1 and enteroidendocrine cells in the duodenum of IBS patients before and 3 weeks after receiving FMT are presented in Table 1.
Conclusion: Faecal microbiota transplantation improved the symptoms in IBS patients, both PI and idiopathic. This improvement was associated with a change in the enteroendocrine cell 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.
The effect of esophageal acid exposure on NMDAR 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 7–15P7–P15, and most rats underwent acute acid or saline exposure again as adult time (P60). All rats were randomly distributed to 5 groups, including P5S, P7H, P7H + P60H, P7S + 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), c-fos, and serine racemase in PFC, dorsal hippocampus(DH) and ventral hippocampus(VH). We also determined the D-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 P7S 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 serine racemase (P = 0.022, P = 0.017) significantly. In ventral hippocampus, compared with adult treatment absence, adult acid exposure caused increasing expression of NR1 (P = 0.012) and NR1 (P = 0.024) significantly. In PFC, the expression of serine racemase in the P7S + P60H group was obviously higher than that of other groups (P = 0.008). See Table1. In dorsal hippocampus, there was statistical significance on the level of c-fos between the P7S + P60H group and other groups (P = 0.008). Table1. In PFC, the LC-MS analysis results that D-serine (AH vs A-: P = 0.000, AS vs A-: P = 0.042, AH vs AS: P = 0.081) and serine racemase(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 (mean ± SD)</th>
<th>P value (vs P7S + P60H)</th>
<th>VH c-fos (mean ± SD)</th>
<th>P value (vs P7S + P60H)</th>
</tr>
</thead>
<tbody>
<tr>
<td>P7S</td>
<td>0.139 ± 0.131</td>
<td>0.003</td>
<td>0.035 ± 0.008</td>
<td>0.021</td>
</tr>
</tbody>
</table>

Conclusion: Acute esophageal acid exposure may increase the expression of NMDAR in PFC and ventral hippocampus. We also found the first acid exposure at adult stage may enhance the expression of serine racemase in PFC and c-fos in ventral hippocampus, but this phenomenon may be absent in those rats having the experience of acid exposure in early life. Those long-term and intrinsic 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 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 3. Antidepressants are used in the treatment of functional gastrointestinal disorders (FGIDs) and showed a promising efficacy. Our study manifested that low-dose amitriptyline is well tolerated and effective for general globus pharyngeus patients 2. Our anterior study had ever speculated that AMT could modify brain-gut axis function, up-regulating brain-gut peptides, reducing the visceral sensitivity and regulating the secretory and motor functions of the gastrointestinal tract 1, so that gastrointestinal symptoms as well as emotional well-being could be significantly improved. As we known, serotonin (5-hydroxytryptamine, 5-HT) is an important factor in gut function, playing key role in intestinal peristalsis, secretion, and sensory signaling in the brain-gut axis 4. Several studies have investigated the association between SLCOA4 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 (SLCO4A4), 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 FGIDs, the researches about globus are rare. The pathogenesis of globus pharyngeus is still unknown.

Abstract No: P1818

Table 1: Densities of stem cells and enteroeンドocrine cells in the duodenum of total IBS group, PI-IBS and idiopathic IBS patients before and after receiving FMT

<table>
<thead>
<tr>
<th>Immune reactive cells densities</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>
</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>
</tr>
<tr>
<td>Masu1 1</td>
<td>5.7 ± 0.4</td>
<td>5 ± 0.5</td>
<td>5.3 ± 0.7</td>
<td>5.2 ± 0.8</td>
<td>4.8 ± 0.7</td>
<td>6 ± 0.4</td>
<td>0.42</td>
</tr>
<tr>
<td>Chromogranin A</td>
<td>370.3 ± 21</td>
<td>269.8 ± 22</td>
<td>340.8 ± 34</td>
<td>422.7 ± 31</td>
<td>399.8 ± 20.9</td>
<td>316.8 ± 10.2</td>
<td>0.9</td>
</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>
</tr>
<tr>
<td>Somatostatin</td>
<td>58.6 ± 4.4</td>
<td>66.2 ± 6.3</td>
<td>53 ± 1.2</td>
<td>78.5 ± 8.1</td>
<td>64.8 ± 7</td>
<td>53.8 ± 6.8</td>
<td>0.3</td>
</tr>
<tr>
<td>Cholecystokinin</td>
<td>122.8 ± 6.7</td>
<td>110.7 ± 8.1</td>
<td>113 ± 10.4</td>
<td>126.5 ± 0.5</td>
<td>132.5 ± 7.2</td>
<td>94.8 ± 9.2</td>
<td>0.5</td>
</tr>
<tr>
<td>Secretin</td>
<td>83.8 ± 4.9</td>
<td>86.7 ± 5.9</td>
<td>80.5 ± 8.8</td>
<td>89.7 ± 10.7</td>
<td>87.2 ± 4.8</td>
<td>83.7 ± 5.9</td>
<td>0.5</td>
</tr>
<tr>
<td>Gastric inhibitory peptide</td>
<td>65.1 ± 3.8</td>
<td>70.3 ± 6.2</td>
<td>60 ± 3 ± 3.7</td>
<td>84 ± 7.1</td>
<td>69.8 ± 6.3</td>
<td>57.2 ± 7</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Reference
To the best of our knowledge, our findings are the first to establish an association between SLC6A4 polymorphism and globus pharyngeus.

Aims & Methods: 84 patients diagnosed with globus according to Rome III and 160 healthy controls were genotyped for 5-HTTLPR polymorphism by PCR amplification and agarose gel electrophoresis. All globus patients were studied with high-resolution manometry. Globus patients were randomized into paroxetine group; amitriptyline group for 6-week treatment, and were asked to complete the following questionnaires pre- and post-treatment: Glasgow Edinburgh Throat Scale (GETS), Pittsburgh Sleep Quality Index, Hamilton Rating Scale Anxiety/Depression. Treatment response was defined as a > 50% reduction in GETS scores.

Results: The significant difference was shown in globus performed S/S genotype with anxiety when compared to without (X² = 14.579, P = 0.006). The S genotype was associated with higher pressure between high upper esophageal sphincter pressure (>104 mmHg) and non-high upper esophageal sphincter pressure patients (X² = 14.433, P = 0.006). There was significant association between the S/S genotype and the response to antidepressants treatment, while patients with sleep disorders or depression not.

Conclusion: A significant association was observed between S/S genotype of SLC6A4 polymorphism and globus pharyngeus, suggesting that SLC6A4 is a potential candidate gene involved in the pathogenesis of globus pharyngeus.

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

References
5. was noted in 16 (9.8%) on MRS, 8 (4.9%) on RDC (p

P1821 DIAGNOSTIC YIELD OF PROVOCATIVE TESTS ON ESOPHAGEAL 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 evaluated for a 2-month period and provocative testing with MRS and RDC in addition to standard manometric protocol. Integrated relaxation pressure >15 mmHg identified outflow obstruction; those without outflow obstruction were further analyzed using software tools (IRP, distal contractile integral, DDI, 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 (Savo Dysphagia Questionnaire), and globus 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, 68.8% F) fulfilled inclusion criteria and had no outflow obstruction on HRM. Of these, 91 (61%) had peristaltic reserve on MRS, 19 (12.6%) 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 ineffective 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.

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 (per 100,000 population)</th>
<th>95% CI</th>
<th>Incidence rate (per 100,000 person years)</th>
<th>95% CI</th>
<th>Prevalence (per 100,000 population)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>1.733</td>
<td>1.62-1.85</td>
<td>1.409</td>
<td>1.08-1.81</td>
<td>21.14</td>
</tr>
<tr>
<td>2007</td>
<td>1.798</td>
<td>1.69-1.92</td>
<td>1.568</td>
<td>1.39-2.08</td>
<td>21.72</td>
</tr>
<tr>
<td>2008</td>
<td>1.789</td>
<td>1.68-1.91</td>
<td>1.550</td>
<td>1.21-1.96</td>
<td>22.49</td>
</tr>
<tr>
<td>2009</td>
<td>1.853</td>
<td>1.74-1.97</td>
<td>1.696</td>
<td>1.34-2.12</td>
<td>23.16</td>
</tr>
<tr>
<td>2010</td>
<td>2.015</td>
<td>1.90-2.14</td>
<td>1.663</td>
<td>1.31-2.09</td>
<td>23.66</td>
</tr>
<tr>
<td>2011</td>
<td>1.781</td>
<td>1.67-1.90</td>
<td>1.424</td>
<td>1.09-1.82</td>
<td>24.62</td>
</tr>
<tr>
<td>2012</td>
<td>2.032</td>
<td>1.91-2.16</td>
<td>1.549</td>
<td>1.20-1.96</td>
<td>25.23</td>
</tr>
<tr>
<td>2013</td>
<td>2.179</td>
<td>2.06-2.31</td>
<td>1.618</td>
<td>1.26-2.05</td>
<td>26.06</td>
</tr>
<tr>
<td>2014</td>
<td>2.421</td>
<td>2.29-2.56</td>
<td>1.476</td>
<td>1.12-1.91</td>
<td>26.34</td>
</tr>
<tr>
<td>2015</td>
<td>2.236</td>
<td>2.11-2.36</td>
<td>1.342</td>
<td>0.96-1.80</td>
<td>27.10</td>
</tr>
</tbody>
</table>

Conclusion: The incidence of oesophageal achalasia was approximately 15 to 20 per 1 million population. There were approximately 17,500 patients with achalasia in UK in 2015. The above data represents the largest published epidemiological investigation of achalasia. The variation of findings between the databases likely results from differences in coding practice and marginally different population structures.

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

P1823 ACHALASIA DESPITE NORMAL INTEGRATED RELAXATION PRESSURE WITH SMIL WATER SWALLows
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Introduction: The resistance to bolus flow across the lower oesophageal sphincter (LES) is a hallmark of achalasia. Presently the gold standard of diagnosis is by high-resolution manometry (HRM) demonstration of raised integrated relaxation pressure (IRP) following ten 5 mL water swallows; however, this does not negate 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-oesophageal presurization (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 (E5).
Results: 14 patients (9 male) fulfilled inclusion criteria. 7 were treatment-naïve and 7 were treatment-experienced (3 myotomy, 3 pneumatic dilatations). Mean resting LES pressure was 14.6 ± 7.4 mmHg. In all patients, and mean median IRP values for ten 5 mL water swallows were non-raised (mean 9.1 ± 4.3 and 8.7 ± 4.5 mmHg respectively). Of the 7 treatment-naïve patients, 5 demonstrated PEP on MWS, 3 on solid swallows and 6 had a positive TBE at 5 minutes. In treatment-experienced patients, 5 had PEP on MWS, 1 on solid swallows and all had a positive TBE. Of the 13 who had resistance to flow on TBE, 10 (77%) also had resistance demonstrated during MWS and/or solid swallows. Mean height of the 5-minute column in treatment-naïve patients was 16.5 ± 8.9 cm. In treatment-naïve patients, 8 had (so far) undergone therapy based on these findings: one per oral endoscopic myotomy and 7 pneumatic dilations. 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 0–3; 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/swallowing during HRM or the TBE can identify pathology that might have been missed with standard 5 mL water swallows alone as normal, clinically relevant swallowing behavior is reproduced. Patients treated based on this algorithm exhibit excellent treatment outcomes, validating this approach. Further, the close correlation of HRM adjunctive testing with TBE supports its routine inclusion in clinical practice.

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

Introduction: The timed barium esophagram (TBE) is an objective measurement of oesophageal transit treated during the assessment of achalasia. Post-therapy correlation 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 size of the surface area (SA) of the barium column may be more accurate than height, firstly, because the observed 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 correlation of TBE outcome measures of height and SA with symptom improvement post-therapy.

Aims & Methods: Inclusion criteria were achalasia patients who underwent therapy between August 2015–6 and had TBE and Eckardt score (ES) performed at pre- and post-therapy. With TBE upright single images were acquired at 1.2 and 5 minutes following ingestion of 100–200 mL of low-density barium sulfate. Barium height was measured between the gastro-esophageal junction and the superior extent of any residual barium column. After manually defining the column boundaries, software was used to calculate SA (AGFA IMPAX surface area tool (Figure)). Adequate symptom relief was defined as reduction in ES ≤ 3. On TBE, metrics of adequate emptying evaluated were i) post-therapy column height <5cm, ii) >50% reduction in column height from pre to post-therapy and iii) >50% reduction in column SA from pre to post-therapy. Associations between symptom improvement and TBE measures of emptying were assessed using Pearson’s correlation (R). Paired t-tests compared TBE measures before and after therapy.

Results: 18 patients (9 male; 6 Type I, 11 Type II, 1 Type III) were included. 11 had dilatation and 7 endoscopic myotomy. Reductions with therapy of both mean 5-minute barium column height (14.7 ± 8.7 to 7.9 ± 6.0 cm; P = 0.01) and mean ES (5.27 ± 4.35 to 24.5 ± 26.28 cm²; P = 0.02) were noted. Symptoms also improved with treatment; median baseline ES of 7 (IQR 5.25–8) improved to 0 (IQR 0–1) post-therapy. Only 2 patients had inadequate symptom relief and are awaiting further treatment. However there was poor concordance between post-therapy barium column height and symptomatic relief (i.e. post-therapy column height >5 cm despite ES ≤ 3 or vice versa), and the correlation (R) between these two variables was poor (Table). Similar poor concordance was seen when adequate emptying was defined by >50% reduction in column height, but >50% reduction in SA paralleled symptom improvement.

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

Introduction: Measuring the effect of naso-gastric (NG) feeding on oesophageal motility in patients with dysphagia and achalasia is challenging. To overcome this, we aimed to compare NG feeding with a comparison group of patients with achalasia swallowing water.

Methods: In patients with symptoms of oesophageal outflow obstruction and no evidence of underlying motility disorder, NG feeding was performed at the same time as a 10 minute barium swallow study. 17 dysphagic patients (9 male; 11 Type I, 4 Type II) were included. Baseline and NG feeding studies were performed as described above. The barium swallow study was reviewed by an independent radiologist (DS) and standardised to assess the effect of NG feeding on oesophageal motility.

Results: Addition of NG feeding altered oesophageal motility in dysphagic patients in all areas measured. NG feeding resulted in significant improvement in oesophageal motility (p ≤ 0.04 cf. baseline).

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

Introduction: Gastric nutrients may influence the GEA, making NEC more effective at an earlier stage, increasing the likelihood of successful NEC and reducing the risk of NEC complications. We aimed to assess the effect of NG feeding on the GEA in patients with dysphagia and achalasia.

Results: NG feeding improved the GEA in all patients with dysphagia and achalasia, including those with a normal GEA at baseline.

Disclosure of Interest: All authors have declared no conflicts of interest.
stop. Gastric nutrients reduced significantly rectal gas evacuation (45% vs saline, increased the number of defecation (3.3 ± 1.3 belches; p = 0.018 vs saline), and increased greater epigastric perception (score 2.7 ± 0.6; p = 0.030) that decreased during the 30 min following infusion stop (score 1.6 ± 0.7; p = 0.042 vs infusion stop). By contrast to epigastric perception, abdominal perception was only somewhat higher during gas infusion with nutrients (score 2.6 ± 0.5) than during saline (score 2.1 ± 0.5; p = 0.100 vs nutrients).

Conclusion: Gastric nutrients modulate transit of gastric gas, by reducing gas perception to the distal gut, and enhancing retrograde gas evacuation via belching.

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

**P1827 MODIFICATIONS OF THE ECKARDT SCORE PARAMETERS AFTER PERORAL ENDOSCOPIC MYOTOMY**

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Introduction: Peroral endoscopic myotomy (POEM) is a recently developed technique or the treatment of lower esophageal sphincter achalasia. POEM could be as efficient as surgical Heller myotomy, while associated with lower morbidity. Currently, the Eckardt score is the clinical score that is the most widely used to assess outcome after POEM. Although a number of studies have been performed on this matter, a uniform evaluation was possible. The full analysis set (FAS) score (GIS) [1], as well as the therapeutic dose (37%,47%/32% of cases, and esophagectomy in one case. Median Eckardt score varied from 7 (6–8) MMHg. At last follow-up visit, 86% of patients had bleeding complications despite only 3 having had variceal eradication. This reports 13 patients from international centres who have had gular intrahepatic portosystemic shunt (TIPSS) before endoscopic dilation. All 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, 7 had 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, was sought through the International Manometry Working Group.

Disclosure of Interest: J. Müller: Employee, Steigerwald Arzneimittelwerk GmbH, Darmstadt, Germany
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K. Kraft: Travel grants and honorary from Steigerwald Arzneimittelwerk GmbH, Darmstadt, Germany
M. A. Storl: Travel grants and honorary from Steigerwald Arzneimittelwerk GmbH, Darmstadt, Germany

Reference

**P1828 SUBGROUP ANALYSES OF CLINICAL OUTCOMES ON A HERNAL MEDICINE IN FD, STW 5**

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Introduction: Well-proven therapeutic options for the therapy of functional gastrointestinal diseases are rare and therefore gain high attention. One of these is STW 5 (Iberogast), for which more than five decades of therapeutic experience in more than 73 Mio patients are available. For determining whether its efficacy in functional dyspepsia proven by meta-analyses is comparable in male and female as well as patients of different age groups, sub-group analyses were conducted. Aims & Methods: Data-analyses of patient placebo-controlled double blind trials with STW 5 have proven compliance to modern standards for a proof of efficacy, now sub-group analyses were conducted. The analyses (ANCOVA) were based on the original single patient data from the trials, including demo-graphic data and primary 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 (44 ± 11 years) was the same (both groups 168.7 cm), between body weight (72.0 resp. 72.2 kg), the BMI (25.35 resp. 25.54), the gender distribution (67.3% resp. 69.5% females), the duration of the disease at the time of inclusion and the baseline of the GIS (11.6 resp. 11.5 points) were very comparable between both groups. For the primary variable GIS the difference between placebo and verum after 28 days of treatment showed a highly significant (p < 0.0001) difference between placebo and verum (5.6 resp. 4.7 points). The analyses in different age groups (up to 30, 30–40, 40–50, 50–60, above 60) in male and female patients did show a comparable efficacy in all these groups.

Conclusion: These meta-analyses therefore clearly show the efficacy of STW 5 (Iberogast) and its therapeutic usefulness irrespective of age and gender. Given also its good tolerability, POEM could be the treatment of lower esophageal sphincter achalasia. POEM could be as efficient as surgical Heller myotomy, while associated with lower morbidity. These meta-analyses therefore clearly show the efficacy of STW 5 (Iberogast) and its therapeutic usefulness irrespective of age and gender. Given also its good tolerability, POEM could be the treatment of lower esophageal sphincter achalasia. POEM could be as efficient as surgical Heller myotomy, while associated with lower morbidity.

**P1829 THE TREATMENT OF ACHALASIA IN PATIENTS WITH GASTROEPHAGEAL 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 dilatation and Per-Oral Endoscopic Myotomy (POEM). Treatments carry risks of bleeding and perforation. Concomitant portal hypertension with varices is very rare and achalasia treatment in this context has only been described in single case reports.

Aims & Method: Experience from physicians/surgeons treating these disorders was sought through the International Manometry Working Group.

Results: 13 patients with portal hypertension from 6 international centres have been collected; mean age 61 ± 9 years. The median pre- treatment 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 oesophageo-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, 7 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 transjugal intrahepatic portosystemic shunt (TIPSS) before endoscopic dilation. All patients had symptomatic improvement with median Eckardt score post intervention = 1 (IQR 0–2) p < 0.0001 compared to baseline. A matched group of 20 patients who underwent treatment for achalasia (all subtypes) but without varices had median Eckardt score post intervention = 1 (IQR 0–2) p < 0.0001 compared to baseline. None of these patients had complications of bleeding or perforation; however both patients who had TIPSS had temporary hepatic decompensation.

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 undergo standard achalasia therapy,
PI830 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 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 = 283:228) represented the study population. Based on their manometric findings, 231 patients (45.2%) were classified as having pattern I, 241 (47.2%) had pattern II, and 39 (7.6%) had pattern III. Demographic and clinical data showed that pattern 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 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 prooperative manometric pattern (p<0.001). 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 prooperatively 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 opposite trend (Table 1). Five patients showed signs of a partial recovery of peristalsis (all patients had a pattern II before LHD).

Table 1: Changing manometric patterns after LHD. *5 patients had a recovery of peristalsis (all patients had a pattern II before LHD).

<table>
<thead>
<tr>
<th>Pattern</th>
<th>1 post</th>
<th>2 post</th>
<th>3 post</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pattern 1</td>
<td>159(100%)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Pattern 2</td>
<td>65 (29.5%)</td>
<td>149 (67.7%)</td>
<td>0</td>
</tr>
<tr>
<td>Pattern 3</td>
<td>7 (24.1%)</td>
<td>8 (27.6%)</td>
<td>8 (48.3%)</td>
</tr>
</tbody>
</table>

Conclusion: The data of this study strongly support the hypothesis/theory that the different manometric patterns of achalasia could represent different 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.

Abstract No: P1831

PI831 ROLE OF A SERUM BIOMARKERS PANEL (GASTROPEAN) IN NON-INVASIVE DIAGNOSIS OF UPPER GI DISEASE: DATA BY 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, have reduced the need for diagnostic endoscopy in asymptomatic individuals. However, it is not known whether the use of non-invasive diagnostic methods is effective in dyspeptic 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 56%, 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), imidazol gastrin-17 (G-I7), and HP IgG (Biost, 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 categories: healthy stomach (H), GER, HP, HP+CAG, and HP+PPI therapy.

Conclusion: The combination of data on the levels of PG-I, PG-II, G-I7 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.

Table 1: Serum biomarker panel results in dyspeptic patients

<table>
<thead>
<tr>
<th></th>
<th>HP (ug/L)</th>
<th>G17 (pmol/L)</th>
<th>IGE (EUI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>2.4 ± 0.4</td>
<td>14.0 ± 4.0</td>
<td>8.9 ± 2.7</td>
</tr>
<tr>
<td>GER</td>
<td>28.5 ± 72.3</td>
<td>14.0 ± 40.3</td>
<td>11.9 ± 45.0</td>
</tr>
<tr>
<td>HP</td>
<td>4.2 ± 12.3</td>
<td>3.7b ± 17.8</td>
<td>23.7b ± 47.8</td>
</tr>
<tr>
<td>HP+CAG</td>
<td>2.5a ± 11.8</td>
<td>3.9a ± 9.3</td>
<td>3.7b ± 17.8</td>
</tr>
<tr>
<td>HP+PPI</td>
<td>6.8 a ± 85.2</td>
<td>2.5 a ± 11.8</td>
<td>23.7b ± 47.8</td>
</tr>
</tbody>
</table>

*H vs GER *p = 0.0001
*HP vs G17 *p = 0.0001
*HP vs IGE *p = 0.0001

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 categories: healthy stomach (H), GER, HP, HP+CAG, and HP+PPI therapy.

Conclusion: The combination of data on the levels of PG-I, PG-II, G-I7 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.

Abstract No: P1832

PI832 SUSTAINED TREATMENT EFFECTS OF MENTHACARIN ON SYMPTOMS AND QUALITY OF LIFE IN PATIENTS WITH FUNCTIONAL DYSPEPSIA: 8 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 without structural or biochemical abnormalities that can be identified in the routine clinical setting. Thus, treatment targets symptoms. Very little is known about prolonged treatment for more than 4 weeks.

Aims & Methods: The aim of the additional data analysis of a previous randomized placebo-controlled trial was to explore post-treatment effects that occurred after continuation of therapy for a 4-week randomized placebo controlled treatment with Menthacarin1 with regard to disease-specific symptoms and QoL in FD patients. After the 4-week randomised placebo-controlled treatment period, patients were allowed to continue the treatment. The treatment was given in a double-blind fashion and allocation of treatment followed the original randomization. The results of these 54 patients are reported here. Outcomes were assessed utilising the 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
PI833 IMPROVEMENT OF APPROPRIATENESS OF PROTON PUMP INHIBITOR (PPI)-THERAPY PRESCRIPTION WITH USE OF SEROLOGICAL MARKERS (GASTROPEANL) 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); the values of PG-I and G-17 values according to the response to PPI therapy. 68 (6.7%) presented HP infection. Table 1 shows the values of PG-I and G-17 and IgG HP (Biohit, Finland). 38 patients under PPIs therapy (3.7%) were confirmed histologically). 68 (6.7%) presented HP infection. Table 1 shows the values of PG-I and G-17 values according to the response to PPI therapy.

Results: After the initial 4 weeks, 54/114 patients opted for an extension of therapy. Interestingly, 34 out of 52 patients had been on active therapy while only 20 had received placebo. Until week 4, the ND1 sub-score for pain had decreased by 7.5±3.9 points during Menthacarin treatment as compared to 5.1±3.8 points during placebo treatment (p = 0.0371). After the follow-up, over-all reduction for Menthacarin (8.7±4.9 points) was also significantly better as compared to placebo (5.1±4.9 points, p = 0.005). The ND1 sub-score for discomfort had decreased until week 4 by 3.5±2.1 points during active therapy as compared to 1.2±2.1 points during placebo treatment (p = 0.0003). For the 12-week therapy, the score had declined by 3.7±2.5 points and 1.3±2.6 for 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 randomized double-blind, placebo-controlled treatment with either Menthacarin 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. Menthacarin® is a proprietary combination of essential oils of specified quality from Mentha x piperita L. (90mg Peppermint oil WSN® 1340) and Carum carvi (50mg Caraway oil WSN® 1520).

Disclosure of Interest: G.J. Holtmann: Financial support for research and lecture fees from Dr. Willmar Schwabe GmbH & Co. KG B. Stracke: Employee of Dr. Willmar Schwabe GmbH & Co. KG

PI835 APPROPRIATE USE OF PPI IN THE ELDERLY: EVALUATION OF ACID SECRETION AND ATROPHIC GASTRITIS ON DUODENAL BIOPSY SPECIMENS OF A NON-HEPANE TEST

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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 unknown. This study aimed to evaluate the role of GastroPanel in relation to the appropriateness of PPI-therapy prescription. It was performed.

Results: IGP was significantly lower during acid perfusion compared with saline perfusion (p = 0.003). Acidification also resulted in decreased TEER (p = 0.005), increased passage (p = 0.001) and lower protein expression of claudin 3 (p = 0.0006). No difference in mast cell (p = 0.34) and eosinophil (p = 0.34) counts were detected, but an increased protein expression of tryptase (p = 0.0008) was found after acid perfusion. In the placebo and the DSCG group, acidification induced a similar drop in IGP (p = 0.68). There was also no difference in TEER (p = 0.70) and passage (p = 0.21) after acid perfusion between both pretreatments.

Conclusion: Duodenal acid perfusion in healthy volunteers disrupts epithelial integrity and activates an inhibitory duodenogastric reflex. Although this effect seems to be independent from increased duodenal acid exposure in functional dyspepsia is a potential pathophysiological mechanism contributing to abnormalities in duodenal and gastric structure and function observed in patients with functional dyspepsia.

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

Abstract No: P1833

N Therapy Excess PPI n. % Gastric Function status

<table>
<thead>
<tr>
<th></th>
<th>All</th>
<th>Good response G17</th>
<th>Low response G17</th>
<th>No response G17</th>
<th>CAG</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>1015</td>
<td>294</td>
<td>351</td>
<td>421</td>
<td>38</td>
</tr>
<tr>
<td>PPI</td>
<td>12</td>
<td>9.2 (2.6)</td>
<td>59 (23.8)</td>
<td>279 (66.3)</td>
<td>31 (88.3)</td>
</tr>
<tr>
<td></td>
<td>137.0+/--84.7</td>
<td>194.5+/--121.1</td>
<td>21.1+/--17.9</td>
<td>3.1+/--1.76</td>
<td>30.3+/--55.2</td>
</tr>
</tbody>
</table>

PI834 DUODENAL ACID PERFUSION INCREASES DUODENAL TISSUE PERMEABILITY AND ACTIVATES THE DUODENOGASTRIC REFLEX, INDEPENDENTLY FROM MAST CELL ACTIVATION

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2Fall d’Hebron Institut Recerca Gastroenterology, Barcelona/Spain

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Introduction: We recently reported that functional dyspepsia patients show impaired duodenal integrity, associated with low-grade inflammation (Vanheel, Gut 2014). A potential cause underlying this phenomenon may be the increased duodenal acid exposure that has been demonstrated in some of these patients. Aims & Methods: Our aim was to evaluate the effect of duodenal acid perfusion on duodenal permeability in healthy volunteers and to investigate whether mast cell activation is required for acid-induced impairment of mucosal integrity. As it has already been shown that duodenal acid activates duodenogastric reflex pathways, we also assessed intragastric pressure (IGP). This study consisted of 2 parts, each including 10 healthy volunteers. 1) An infusion tube was positioned in the second part of the duodenum and a high resolution manometry probe was positioned in the stomach to measure IGP. HCI 0.1N or saline was infused in the duodenum during 30 min (5mL/min) in a randomised, double-blind manner. Duodenal biopsy specimens were obtained after infusion to measure transepithelial electrical resistance (TEER) and paracellular passage (fluorescein-labeled dextran, 4KDa) in Ussing chambers. Expression of cell-to-cell adhesion proteins (claudin 1–4, occludin, zonula occludens 1-3, β-catenin, E-cadherin, desmocollin-2, desmoglein-2) in biopsies was evaluated by PCR, western blot and/or immunofluorescence. The number of mast cells and eosinophils was counted using immunohistochemistry for tryptase and eosinophilic major basic protein respectively, and by evaluating the expression of these proteins using PCR and Western blot. 2) The participants were orally treated with placebo or with the mast cell stabilizer disodiumcromoglycate (DSCG) 200mg qid for 2 weeks. After treatment, the study design was as described above (although only acid perfusion was performed).

Results: IGP was significantly lower during acid perfusion compared with saline perfusion (p = 0.003). Acidification also resulted in decreased TEER (p = 0.005), increased passage (p = 0.001) and lower protein expression of claudin 3 (p = 0.0006). No difference in mast cell (p = 0.34) and eosinophil (p = 0.34) counts were detected, but an increased protein expression of tryptase (p = 0.0008) was found after acid perfusion. In the placebo and the DSCG group, acidification induced a similar drop in IGP (p = 0.68). There was also no difference in TEER (p = 0.70) and passage (p = 0.21) after acid perfusion between both pretreatments.

Conclusion: Duodenal acid perfusion in healthy volunteers disrupts epithelial integrity and activates an inhibitory duodenogastric reflex. Although this effect seems to be independent from increased duodenal acid exposure in functional dyspepsia is a potential pathophysiological mechanism contributing to abnormalities in duodenal and gastric structure and function observed in patients with functional dyspepsia.

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

Abstract No: P1834
increasing. Pepsinogen I (PGI) <30μg/L, PGI/PGII <3 and gastrin-17 (G17) >10 pmol/L are non-invasive serological markers to explore gastric function, with a negative predictive value for chronic atrophic gastritis (CAG) of 96%.

Aims & Methods: Aim of the study was to evaluate gastric function by means of serology (PGI, PGII, G17-1 and IgG-antibodies against Helicobacter pylori) in very elderly patients, including centenarians. A total of 379 patients were prospectively enrolled (M = 126, F = 253, mean age = 83.6 ± 6.7, range 70–106). They were divided in four groups: 132 subjects with an age between 70 and 79 years old (first group), 146 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 samples 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 pmol/L; H2: IgG: < 30 EU).

Results: In the first group (age 70–79), 18.2% of the subjects showed H. pylori infection (PGI > 10 μg/L, G17 against H.p. > 30 EU), 22.7% had CAG (PGI > 30 μg/L and PGII < 35%) 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 REFLEX HYPERSENSITIVITY-A PILOT STUDY BASED ON SCL-90 QUESTIONNAIRE AND 24 HOUR PH-IMPEDANCE MONITORING

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Introduction: Reflux hypersensitivity (RH) was lately defined as a functional esophageal disorder based on the HP-24h study. The clinical and psychological characteristics are still unknown.

Aims & Methods: The aim of this study was to assess the reflux and psychological characteristics of RH. Patients who underwent 24h pH-impedance monitoring were selected from January 1st 2011 to November 30th 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 gastric diseases and underwent HRM test to exclude motility disorders. The patients for normal esophageal mucosal but overload acid, weakly acid or non-acid reflux were diagnosed as non-erosive reflux disease (NERD). The patients with normal esophageal mucosal and normal reflux but positive symptom index (SI) or symptom association probability (SAP) were diagnosed as RH. The patients with normal mucosal, normal reflux, normal SI or SAP and negative PPI test results were enrolled in functional heartburn (FH) group. The reflux and psychological characteristics were compared among NERD, RH and FH.

Results: Total 231 patients were enrolled. 107 were NERD (48.25±1.27yrs, M:F=58:49), 92 were RH (48.30±1.27yrs, M:F=9:83), 32 were RH (48.41±2.63yrs, M:F=42:28). 28 HVs (47.21±2.27, M:F:8:20) were enrolled as controls. NERD presented significantly higher acid exposure time (pH < 4.2) than those of FH, RH and HV (6.55±0.71, 12.5±0.1209, 0.33, 2.9±0.53, respectively, p<0.005). The acid reflux and weakly acid reflux were both higher in NERD than that in FH, RH and HV (p<0.01). The total scores of SCL-90 of the fourth group of patients were significantly higher than HV (NERD/HV, 58.1±5.1; RH/HV, 111±7.6; FH/HV, 142±1.5; M:F=58:49).

Conclusion: Significant differences were recorded in most of the considered parameters obtained by the two RH systems. This is particularly relevant in the evaluation of the LES relaxation, the cardinal point in the hierarchical approach of the Chicago Classification, probably due to different analysis used by the two systems (the lowest residual pressure vs IRP). Furthermore, the differences found in the measurement of the LES resting pressure and abdominal length may rely either on the different technology (3-D vs linear transducers) or on the different algorithms and thresholds used. The latter may probably also apply to the differences found with the two systems in the duration of the esophageal contractions and in the new contractile parameters (i.e.: DCI and DL) introduced by the Chicago Classification. This study emphasizes the need for a careful validation of any new motility disorderful manometry. The acquisition of new sets of normal values, to be used to compare the data measured in patients, is therefore mandatory. The results of our study may represent the reference normal values for other esophageal laboratories that are using the HRM systems and devices we tested here.

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

Abstract No: P1837

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 became the gold standard for the evaluation of esophageal motility. A new classification of esophageal motility disorders (Chicago Classification, v. 3.0) has been developed, based on the findings from a given hardware and software. Different systems for HRM and new features of the existing ones have recently been developed.

Aims & Methods: In this study we aimed to evaluate a new solid-state HRM system and a new 3-D catheter and system for the study of lower esophageal sphincter (LES). Fifteen healthy volunteers (7m, 8f, 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.: DCI and DL) introduced by the Chicago Classification. This study emphasizes the need for a careful validation of any new motility disorderful 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.
P1838 PROTON PUMP INHIBITOR THERAPY IMPROVES ESOPHAGEAL SYMPTOMS BY RESTORING A NORMAL ESOPHAGEAL PERISTALSIS IN PATIENTS WITH PROTON PUMP INHIBITOR-RESPONSE ESOPHAGEAL EOSINOPHILIA

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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 hypertensive esophaegogastric junction (EGJ). Data on the effect of PPIs in improving these motor abnormalities are lacking.

Aims & Methods: The aim was to retrospectively compare HRM features of patients with PPI-REE before and after a course of PPI therapy. Consecutive patients with symptoms suggestive of EoE underwent upper endoscopy to assess the presence of at least 15 eos/hpf on esophageal biopsies at mid/proximal esophagus and, therefore, were treated with twice-daily PPIs 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 secretory therapy, most of the patients reported complete resolution of esophageal symptoms directly linked to esophageal infiltration (p < 0.001), namely dysphagia, bolus impaction and chest pain. Compared to HRM features at baseline, HRM after PPI therapy showed that patients with PPI-REE had higher median EGJ resting pressure [baseline 11 (1–34) vs. post-PPI 17 (1–34); p < 0.05], greater mean distal contraction integral [1094 (483–5281) vs. 2634 (495–6450); p < 0.01], and less frequent panesophageal pressurization [6 (21%) vs. 0 (0%); p < 0.02]. No differences were observed in terms of distal latency and rate of different EGJ subtypes (p > 0.05). As to the manometric diagnoses, after PPI therapy patients with PPI-REE showed a reduced rate of ineffective motility or fragmented peristalsis [16 (57%) vs. 7 (25%); p = 0.02] and increased frequency of normal peristalsis [9 (32%) vs. 18 (64%); p = 0.03]. No differences were observed in terms of frequency of distal esophageal spasm and outflow obstruction diagnoses (p > 0.05).

Conclusion: In most PPI-REE patients, PPI therapy restores the impairment of esophageal motility expressed by ineffective and fragmented peristalsis, thus favouring the return to a normal motility pattern. This finding, paralleled with symptoms improvement in the same subjects, seems to emphasize the important role of inflammation linked to the eosinophilic infiltration of the esophageal wall in inducing motor dysfunction and related symptoms.

Disclosure of Interest: V. Savino: Consulting fee from Malesci, Reckitt, AlfaWasserman, Abbvie
E. Savino: Consulting fee from Medtronic, Sofar, Takeda, Abbvie, MSD
All other authors have declared no conflicts of interest.

References

P1839 EOSINOPHILIC ESOPHAGITIS: MANAGEMENT IN THE DAILY CLINICAL DUTCH PRACTICE

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Introduction: In recent years, new guidelines and recommendations have been published regarding the diagnostic criteria and therapeutic management of eosinophilic esophagitis (EoE). Aims & Methods: The aim of this study was to assess the diagnostic and therapeutic management of patients diagnosed with EoE in daily clinical Dutch 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, n (%)</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>
</tr>
</thead>
<tbody>
<tr>
<td>TCS</td>
<td>36 (30.3)</td>
<td>17 (34.7)</td>
<td>5 (18.5)</td>
<td>11 (44.0)</td>
<td>3 (16.7)</td>
</tr>
<tr>
<td>PPI</td>
<td>35 (29.4)</td>
<td>16 (32.7)</td>
<td>8 (29.6)</td>
<td>4 (16.0)</td>
<td>7 (38.9)</td>
</tr>
<tr>
<td>PPI + TCS</td>
<td>12 (10.1)</td>
<td>5 (10.2)</td>
<td>3 (3.7)</td>
<td>4 (16.0)</td>
<td>2 (11.1)</td>
</tr>
<tr>
<td>Dilation</td>
<td>3 (2.5)</td>
<td>0</td>
<td>2 (7.4)</td>
<td>0</td>
<td>1 (5.6)</td>
</tr>
<tr>
<td>Prednisone</td>
<td>2 (1.7)</td>
<td>0</td>
<td>1 (3.7)</td>
<td>1 (4.0)</td>
<td>0</td>
</tr>
<tr>
<td>TCS + dilation</td>
<td>1 (0.8)</td>
<td>0</td>
<td>2 (2.0)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Diet</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</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>
</tr>
<tr>
<td>Missing</td>
<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 median delay in diagnosis between first contact in the hospital and diagnosis was 1.0 year (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 the two (10.1%). A follow-up interview to prospectively compare HRM features of patients with PPI-REE before and after a course of PPI therapy revealed the importance of inflammation linked to the eosinophilic infiltration on esophageal biopsies responding to PPI therapy. 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, therapeutic strategies were not always utilized in the participating centers. Our results show that apart from developing guidelines, efforts should be undertaken to implement them in daily clinical practice.

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

P1840 IgE 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 esophagus characterized by a histologically characterized by a predominant eosinophilic infiltration. 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 topical steroid therapy, correlated them to esophageal IgG4-positive plasma cells and compared them to GERD patients.

References
Aims & Methods: Serum levels of IgG4 and IgE of 19 EoE 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 GERD without histological proof of eosinophilic granulocyte infiltration were taken as a control group. Serum levels of IgG4 and IgE of 19 EoE patients were measured before and 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 GERD without histological proof of eosinophilic granulocyte infiltration were taken as a control group.

Results: Serum IgG4 levels of EoE 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 IgE levels in EoE and GERD patients was observed. In EoE patients, the number of eosinophiles/hpf in histology was decreased at a significant level after topic steroid therapy (mean: 51.9 eosinophiles/high power field (hpf) vs. 6.4 eosinophiles/hpf, p < 0.001). After therapy lower levels of IgG4-serum-levels could be measured (mean: 121.0 mg/dL vs. 104.2 mg/dL; p = 0.034). In contrast, no significant difference was determined in the number and severity of symptoms, which manifests in the normal development of their daily activities, their physical health state. An up-to-date systematic review will provide a useful resource for practice and research of EoE. Further validation studies in several languages and populations are required to support the use of disease-specific HRQoL measures.

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

References:
1. Villarreal, F. A. et al. Serum IgG4 levels of EoE 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 IgE levels in EoE and GERD patients was observed. In EoE patients, the number of eosinophiles/hpf in histology was decreased at a significant level after topic steroid therapy (mean: 51.9 eosinophiles/high power field (hpf) vs. 6.4 eosinophiles/hpf, p < 0.001). After therapy lower levels of IgG4-serum-levels could be measured (mean: 121.0 mg/dL vs. 104.2 mg/dL; p = 0.034). In contrast, no significant difference was determined in the number and severity of symptoms, which manifests in the normal development of their daily activities, their physical health state. An up-to-date systematic review will provide a useful resource for practice and research of EoE. Further validation studies in several languages and populations are required to support the use of disease-specific HRQoL measures.

Disclosure of Interest: All authors have declared no conflicts of interest.
Aims & Methods: In this study, we aimed to systematically assess the nature of subepithelial histologic alterations, analyze their relationship with epithelial histologic findings, endoscopic features, and symptoms, and evaluate the diagnostic impact of subepithelial 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 the subepithelial layer in 62.5%, 7%, and 30.5% of patients, respectively. Subepithelial histologic activity correlated with epithelial histologic activity (rho 0.32, 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 eosinophilic 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 REFLUX DISEASE PATIENTS REFUXATE TYPE INFLUENCE ON MACROPHAGE PHENOTYPE

Aims & Methods: We aimed to assess the influence of refluxate type on macrophage phenotype programming and paradigm of Th1/Th2 cytokines due to the recurrent exposure to acidic and nonacidic refluxate of gastric contents in GERD patients. Macrophage phenotype was assessed in vitro by adding acidic and nonacidic refluxates of patients with GERD and Barrett’s esophagus were included in the study. Macrophage phenotype was assessed by adding acidic and nonacidic refluxates of patients with GERD and Barrett’s esophagus were included in the study. Macrophage phenotype was assessed by adding acidic and nonacidic refluxates of patients with GERD and Barrett’s esophagus were included in the study. Macrophage phenotype was assessed by adding acidic and nonacidic refluxates of patients with GERD and Barrett’s esophagus were included in the study. Macrophage phenotype was assessed by adding acidic and nonacidic refluxates of patients with GERD and Barrett’s esophagus were included in the study.

Results: We included 100 GERD patients (mean age 43.5 ± 15.7 years, 74% males) with a median peak count of 36 intraepithelial eosinophils/hpf [IQR 14–84]. Analysis of cytokine macrophage production revealed the prevalence of Th1 and Th1/Th2 bivalent (IL-2, IL-6) cytokines as compared to Th2. The most significant changes due to the influence of refluxate pH were observed in Th1 cytokine IL-8, TNFα and TNFβ. In the acidic refluxate increased production of IL10: 3.13 pg/ml in group I vs 27.7 ± 8.65 pg/ml in group II (p < 0.005). The expression of surface M1/M2 macrophage CD markers significantly varied depending on the acidity of refluxate. Mild-alkaline pH (III group) resulted in increasing expression of M2 markers CD163/CD206 as compared to M1-CD80/CD25, but changing M1/M2 index of CD80/CD163 ratios significantly changed in different refluxate pH conditions.

Conclusion: Pooled analysis of GERD patients refluxate type influence on macrophage phenotype showed the prevalence of M1 phenotype activity activated macrophages (Th1) with increased expression of M1 surface markers and predominantly increased production of Th1 cytokines (IL-8, TNFα, TNFβ). The changes were more expressed in macrophages exposed to acidic refluxate. The effect of the different refluxate on the macrophage phenotype was more significant in the acidic refluxate.

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

P1845 THE LOCATION OF OESOPHAGEAL MUCOSAL AFFERENT NERVES IS MORE SUPERFICIAL IN PATIENTS WITH NERD THAN IN HEALTHY VOLUNTEERS AND PATIENTS WITH BARRETT’S OESOPHAGUS

Aims & Methods: To test the hypothesis that differences in peripheral esophageal nerve fiber innervation may be related to the distribution of mucosal nerve fibers in patients with NERD and BE and compared the results with that of healthy subjects. 13 patients with NERD undergoing reflux testing and 16 patients with BE undergoing endoscopic surveillance were prospectively recruited. Biopsies were obtained from the proximal and distal esophageal mucosa in NERD patients and the distalmost squamous epithelium in BE patients, then examined immunohistochemically for presence and localization of calcitonin gene-related peptide (CGRP)-immunoreactive nerve fiber. The results were compared with those from 10 healthy volunteers (HV) previously studied by our group.

Results: The distribution of mucosal CGRP-immunoreactive nerve fibers 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 = 0.055). Mucosal innervation is significantly more superficial in NERD both distally (9.5 cell layers to surface [IQR 21.4–28.8] vs 21.5 [16.1–27.5] respectively, p = 0.0098 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 refluxate. Conversely, the relative acid hyporesponsiveness in BE may be attributed to the deeper location of mucosal afferents.

Disclosure of Interest: All authors have declared no conflicts of interest.
Belching is a commonly occurring symptom in patients with gastroesophageal reflux disease (GERD). Belching may elicit reflux. It is unknown whether GERD patients with isolated pathological upright reflux (UP) have belching patterns that are different from GERD patients with pathological biphasic reflux (BIP).

**Aims & Methods:** Aim of this study was to therefore 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 18–78)) were examined. Results of 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 (17.8 ± 2.4% vs. 7.3 ± 0.6%, p < 0.001) and higher number of total reflux episodes (121 ± 9 vs. 97 ± 8, p = 0.05) than UP patients. Notably, both the proportion of reflux episodes with belches of any type and the proportion of belches preceding liquid reflux were higher in UP patients than in BIP patients (51.7 ± 3.6% vs. 32.1 ± 3.7%, p < 0.001 and 27.3 ± 3.1% vs. 17 ± 2.9%, p = 0.03, respectively). No difference was found in the proportion of both supragastric and gastric belches between groups. During 24-h pH-impedance monitoring UP patients reported more symptoms (21 ± 6 vs. 12 ± 3, p = 0.16) and had more positive symptoms with belches (60.2 ± 7.1% vs. 39.0 ± 6.6%, p = 0.03) than BIP patients. Of the total number of belches that were detected using 24-h pH-impedance, more belches were detected in UP patients than in BIP patients (24.8 ± 6.4% vs. 11.1 ± 2.5%, p = 0.06).

**Conclusion:** In our study, GERD patients with isolated pathological upright reflux had more often (symptomatic) belches than GERD patients with pathological biphasic 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**


Aims & Methods: The aim of the study was to evaluate the effect of the menthol infusion into the esophagus on the esophageal peristalsis and lower esophageal sphincter pressure in healthy volunteers. High-resolution manometry and the parameters of esophageal pressure topography were used to quantitatively evaluate the certain components of esophageal motility. 13 healthy volunteers without out esophageal symptoms were enrolled. High-resolution manometry, whether with a thin silicon tube attached or placed transnasally so that the distal end of the tube was 5 cm above the LES. After a 5 min. adaptation period the measurement was performed in the supine position according to the protocol as follows: after the baseline recording 10 water swallows of 5 ml and 3 s with water swallows of 10 and 15 ml after. At 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 5ml, 10 ml and 15 ml swallows were obtained. These were compared before and after the menthol infusion.

Results: None of the subjects had any motility disorder defined by the Chicago Classification v3.0. Few volunteers reported only mild cold sensation during infusion presumed to be of the esophageal origin. The nadir LES pressure before and after menthol infusion was 7.5 ± 0.5 mmHg vs. 7.3 ± 0.7 mmHg, respectively (p = 0.7). IRP of 5 ml swallows was 2.8 ± 0.6 mmHg vs.2.1 ± 0.5 mmHg showed significance (p = 0.01). However, difference of IRP of 10 ml and 15 ml swallows was not significant (p > 0.1, p > 0.5, respectively). Average DCI pressure (5 ml swallows) was 11.3 ± 1.8 mmHg before and after menthol infusion, respectively (p > 0.5).

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 24h channel pH/impedance. Other factors, e.g. visceral hypersensitivity might play a role in the development of symptoms, even in patients with objectively established LPR.

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

Reference

P1851 GASTRIN-17 AS A NON-INVASIVE MARKER FOR GERD: A PROSPECTIVE STUDY ON SAMPLE OF 777 CONSECUTIVE PATIENTS

Aims & Methods: The aim of the study was to evaluate the effect of the menthol infusion into the esophagus on the esophageal peristalsis and lower esophageal sphincter pressure in healthy volunteers. High-resolution manometry and the parameters of esophageal pressure topography were used to quantitatively evaluate the certain components of esophageal motility. 13 healthy volunteers without out esophageal symptoms were enrolled. High-resolution manometry, whether with a thin silicon tube attached or placed transnasally so that the distal end of the tube was 5 cm above the LES. After a 5 min. adaptation period the measurement was performed in the supine position according to the protocol as follows: after the baseline recording 10 water swallows of 5 ml and 3 s with water swallows of 10 and 15 ml after. At 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 5ml, 10 ml and 15 ml swallows were obtained. These were compared before and after the menthol infusion.

Results: None of the subjects had any motility disorder defined by the Chicago Classification v3.0. Few volunteers reported only mild cold sensation during infusion presumed to be of the esophageal origin. The nadir LES pressure before and after menthol infusion was 7.5 ± 0.5 mmHg vs. 7.3 ± 0.7 mmHg, respectively (p = 0.7). IRP of 5 ml swallows was 2.8 ± 0.6 mmHg vs.2.1 ± 0.5 mmHg showed significance (p = 0.01). However, difference of IRP of 10 ml and 15 ml swallows was not significant (p > 0.1, p > 0.5, respectively). Average DCI pressure (5 ml swallows) was 11.3 ± 1.8 mmHg before and after menthol infusion, respectively (p > 0.5).

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 24h channel pH/impedance. Other factors, e.g. visceral hypersensitivity might play a role in the development of 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 GLOBS PERCEPTION AND ACIDIC LARYNGOPHARYNGEAL REFLUX BY DUAL PHARYNGEAL AND ESOPHAGEAL 24-HOUR PH/IMPEDANCE MONITORING

Aims & Methods: The aim of the study was to evaluate the effect of the menthol infusion into the esophagus on the esophageal peristalsis and lower esophageal sphincter pressure in healthy volunteers. High-resolution manometry and the parameters of esophageal pressure topography were used to quantitatively evaluate the certain components of esophageal motility. 13 healthy volunteers without out esophageal symptoms were enrolled. High-resolution manometry, whether with a thin silicon tube attached or placed transnasally so that the distal end of the tube was 5 cm above the LES. After a 5 min. adaptation period the measurement was performed in the supine position according to the protocol as follows: after the baseline recording 10 water swallows of 5 ml and 3 s with water swallows of 10 and 15 ml after. At 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 5ml, 10 ml and 15 ml swallows were obtained. These were compared before and after the menthol infusion.

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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 24h channel pH/impedance. Other factors, e.g. visceral hypersensitivity might play a role in the development of symptoms, even in patients with objectively established LPR.

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

Reference

P1849 EFFECT OF L-MENTHOL ON ESOPHAGEAL PERISTALTIS AND LOWER ESOPHAGEAL SPHINCTOR IN HEALTHY VOLUNTEERS

Aims & Methods: The aim of the study was to evaluate the effect of the menthol infusion into the esophagus on the esophageal peristalsis and lower esophageal sphincter pressure in healthy volunteers. High-resolution manometry and the parameters of esophageal pressure topography were used to quantitatively evaluate the certain components of esophageal motility. 13 healthy volunteers without out esophageal symptoms were enrolled. High-resolution manometry, whether with a thin silicon tube attached or placed transnasally so that the distal end of the tube was 5 cm above the LES. After a 5 min. adaptation period the measurement was performed in the supine position according to the protocol as follows: after the baseline recording 10 water swallows of 5 ml and 3 s with water swallows of 10 and 15 ml after. At 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 5ml, 10 ml and 15 ml swallows were obtained. These were compared before and after the menthol infusion.

Results: None of the subjects had any motility disorder defined by the Chicago Classification v3.0. Few volunteers reported only mild cold sensation during infusion presumed to be of the esophageal origin. The nadir LES pressure before and after menthol infusion was 7.5 ± 0.5 mmHg vs. 7.3 ± 0.7 mmHg, respectively (p = 0.7). IRP of 5 ml swallows was 2.8 ± 0.6 mmHg vs.2.1 ± 0.5 mmHg showed significance (p = 0.01). However, difference of IRP of 10 ml and 15 ml swallows was not significant (p > 0.1, p > 0.5, respectively). Average DCI pressure (5 ml swallows) was 11.3 ± 1.8 mmHg before and after menthol infusion, respectively (p > 0.5).

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 24h channel pH/impedance. Other factors, e.g. visceral hypersensitivity might play a role in the development of symptoms, even in patients with objectively established LPR.

Disclosure of Interest: All authors have declared no conflicts of interest.
**P1852 HIGH RESOLUTION MANOMETRY SHOULD BE CONSIDERED THE BEST TEST TO DIAGNOSE SLIDING HIATAL HERNIA**

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Introduction: Sliding hiatal hernia (HH) is a frequent diagnosis during upper endoscopy performed in patients with GERD-related symptoms. Recently, high resolution manometry (HRM) allowed an accurate evaluation of the esophageal-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 proton pump inhibitors. Erosive esophagitis (ER) was diagnosed according to Los Angeles Classification, and HH was diagnosed when the separation between the squamo-columnar junction and the diaphragmatic impression was greater than 2 cm. Patients with achalasia or major disorders of peristalsis or previous surgery were excluded. MII-pH monitoring allowed to subgroup patients with non-erosive GERD in: NERD (normal AET), AET (%) 7.7.

**Table I: Characteristic of the enrolled population stratified for GERD diagnosis**

<table>
<thead>
<tr>
<th>ERD (34)</th>
<th>NERD (48)</th>
<th>FH (43)</th>
<th>HH (50)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>EGJ pressure (mean)</td>
<td>25.8±6.1</td>
<td>30.3±11.2</td>
<td>31.4±12.6</td>
<td>33.1±13.7</td>
</tr>
<tr>
<td>DCI</td>
<td>1001.6±683</td>
<td>1431±1632</td>
<td>1577±1365</td>
<td>1799±1453</td>
</tr>
<tr>
<td>IRP</td>
<td>11.8±5.1</td>
<td>12.6±7.2</td>
<td>13.7±8.1</td>
<td>11.4±7.1</td>
</tr>
<tr>
<td>DL</td>
<td>6.8±1.6</td>
<td>6.8±1.1</td>
<td>6.6±1.4</td>
<td>6.9±1.5</td>
</tr>
<tr>
<td>AET (%)</td>
<td>7.7±2.9</td>
<td>5.1±2.3</td>
<td>2.7±1.4</td>
<td>1.1±0.9</td>
</tr>
<tr>
<td>Reflux number</td>
<td>77.8±23.7</td>
<td>66.9±31.4</td>
<td>24.6±9.1</td>
<td>17.9±7.3</td>
</tr>
<tr>
<td>Hiatal hernia (HH)</td>
<td>33 (97.1%)</td>
<td>34 (70.8%)</td>
<td>16 (37.2%)</td>
<td>0</td>
</tr>
<tr>
<td>Hiatal hernia (X-ray)</td>
<td>34 (100%)</td>
<td>36 (75%)</td>
<td>17 (39.5%)</td>
<td>1.3 (8.8%)</td>
</tr>
</tbody>
</table>

**Conclusion:** HRM and barium X-ray showed similar diagnostic accuracy to detect HH. Thus, HRM might be considered the best test of choice during pre-surgical evaluation for laparoscopic anti-reflux surgery.

Disclosed 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: In patients with symptoms suggestive of gastroesophageal reflux disease (GERD) candidate to anti-reflux surgery or in those refractory to medical therapy, it is recommended to perform function tests in order to objectively diagnose GERD. Esophageal manometry is currently considered the gold standard method to assess esophageal motility. However, it has been shown limited capability to diagnose GERD. With the advent of high-resolution manometry (HRM), new metrics have been developed to investigate esophageal motor function, esophagogastric junction (EGJ) morphology and their function. In particular, the antireflux barrier function of EGJ can now be assessed evaluating the contraction integral of the EGJ.

Aims & Methods: Our aim was to assess the differences in terms of HRM characteristics between patients with typical reflux symptoms with GERD and those with functional heartburn (FH), classified by means of upper GI endoscopy and impedance-pH (MII-pH) monitoring off-medication. We also aimed to develop a predictive model for distinguishing FH from GERD by using the prevalence of these HRM features. Consecutive patients with heartburn and/or regurgitation and a recent endoscopic assessment were enrolled. All patients underwent HRM to assess the EGJ and 10 single water swallows to evaluate esophageal peristalsis and EGJ function and one multiphase swallow (MRS). The tracings were analyzed according to the Chicago Classification 3.0. EGJ pressure, EGJ contractile integral (EGJ-CI), EGJ morphology, mean and peak distal contractile integral (DCI). MRS DCI/mean DCI ratio and motility pattern were measured. Moreover, all patients underwent MII-pH off-thrapy. We measured the esophageal acid exposure time (AET), number of total impedance reflux episodes and symptoms association analysis using both symptom association probability (SAP if >95%) and symptom index (SI if <50%). GERD was diagnosed in case of one or more abnormal parameters at MII-pH. To analyze the differences between patients with MII-pH positive and negative for GERD, Mann-Whitney’s U test for continuous variables was used and significance was set at P < 0.05. A multivariate logistic regression analysis was then carried out to identify factors independently associated with MII-pH positivity for GERD, significance settled at P < 0.05. According to Hosmer’s purposeful selection of covariates on automated predictive model, based on HRM variables was built by logistic regression analysis. The model was tested for discriminative performance by computing the area under ROC curve (AUROC), and calibration was assessed by Hosmer-Lemeshow goodness-of-fit test. The bootstrap re-sampling method was used to evaluate the internal validity of the model and to correct for over-fitting.

Results: Overall, 68 patients (39 F/29 M, median age 42.3) underwent HRM and MII-pH. HRM findings stratified according to MII-pH positivity for GERD are provided in Table 1. At univariate analysis, statistical differences were found in EGJ pressure, EGJ-CI, mean DCI and MRS DCI/mean DCI ratio between GERD and FH. Based on logistic regression analysis and according to Hosmer’s purposeful selection of covariates, we developed a predictive model which ultimately encompassed five HRM variables, the EGJ pressure (OR 1.614, 95% CI 0.993–2.895) and EGJ-CI (OR 0.952, 95% CI 0.913–0.985). The model had a fair discriminative performance (AUROC = 0.798, 95% CI 0.650–0.934) between MII-pH positivity and negativity for GERD and was well calibrated according to Hosmer-Lemeshow goodness-of-fit test (p = 0.769). The internal validation of the model by bootstrap method showed AUROC = 0.779. Considering that the predicted cut-off of MII-pH for GERD was 0.5, the model, which maximized sensitivity and specificity (i.e. 67.4%), sensitivity and specificity of the predictive model in predicting GERD against FH were 80.8% and 76.2%, respectively.

<table>
<thead>
<tr>
<th>HRM variable</th>
<th>GERD group (n = 47)</th>
<th>No GERD group (n = 21)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>EGJ resting pressure, mmHg (median, IQR)</td>
<td>17.6 (16.9)</td>
<td>22.7 (19.1)</td>
<td>0.028</td>
</tr>
<tr>
<td>Peak DCI, mmHg * cm * sec (median, IQR)</td>
<td>991 (1887)</td>
<td>1632 (2160)</td>
<td>0.018</td>
</tr>
<tr>
<td>Mean DCI, mmHg * cm * sec (median, IQR)</td>
<td>590 (1299.5)</td>
<td>1191 (1166)</td>
<td>0.004</td>
</tr>
<tr>
<td>DCI MRS, mmHg * cm * sec (median, IQR)</td>
<td>1039 (1983)</td>
<td>842 (1764)</td>
<td>0.465</td>
</tr>
<tr>
<td>DCI MRS/mean DCI, mmHg * cm * sec (median, IQR)</td>
<td>1.723 (2.299)</td>
<td>1.113 (1.212)</td>
<td>0.012</td>
</tr>
<tr>
<td>EGJ CI, mmHg * cm * sec (median, IQR)</td>
<td>7 (18)</td>
<td>22 (17.6)</td>
<td>0.004</td>
</tr>
<tr>
<td>EGJ morphology (type II and III vs. type I), n (%)</td>
<td>14 (29.8)</td>
<td>3 (14.3)</td>
<td>0.232</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 TREATMENT (IDENTIFYING 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) Study of 333 GORD patients seen in general practice revealed 46% of patients experienced heartburn or regurgitation symptoms at least twice per week despite PPI. A total of 20% were dissatisfied with their treatment. Few patients had received specific GORD diagnostics or recommended other options (<10%).

Aims & Methods: The LOPA II study is a prospective, multicenter, observational study conducted in 17 general practice clinics. Patients with chronic GORD, taking PPI therapy for at least 1 year, and not satisfied with their treatment were asked to complete a questionnaire. Patients were asked the duration of their PPI therapy, satisfaction with their current condition, frequency of symptoms in the last week, whether they had previously received diagnostic evaluation or surgical consult related to GORD, whether they plan to consult a reflux specialist, all common anti-reflux medications, and reasons for dissatisfaction with their current medication treatment. “Lost Patients” were defined as those with a satisfaction score of 1 or 2 on a 5-point Likert scale (1: very dissatisfied; 2: dissatisfied; 3: neutral; 4: satisfied; 5: very satisfied). GerdQ score at least 8, and have not received specialized GORD diagnostics.

Results: 310 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. 78% were dissatisfied or very dissatisfied on the GerdQ score at the last visit (score of 1 or 2). 83% reported heartburn or regurgitation at least 2 days in the prior week (53% 4-7 days). 94% reported 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 (31% cited heartburn). 31% cited concerns with long-term use of drugs and 27% the need for daily medication. 92% of patients had an upper endoscopy, 12% had a pH-metry, 7% manometry, and 9% received prior surgical consult for GORD. Of patients who never received surgery, 48% were not aware of any surgical anti-reflux methods, 25% were concerned about possible complications, 18% felt their condition is not serious enough, 6% were recommended against anti-reflux procedure or therapy by their doctors.

Conclusion: Chronic GORD patients who are dissatisfied with their PPI therapy are rarely offered specialized GORD diagnostic procedures or treatment alternatives. Half of the patients took medication in addition to PPI to control their symptoms. 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 overlapping with several functional or allergic immunological disorders, 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 ISPIC-San Martino di Genua 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 calorie needs of patients was assessed by means of a validated questionnaire (RDQ administered at baseline, after antacids course (1 month) and after diet (1 month)). A treatment was considered effective if a 50% improvement in the symptomatic score was recorded.

Results: After investigations 261 patients out of 500 (52.2%) were included 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; 132F/107M; no erosive reflux disease) and were included in our interventional prospective study. At the end of elimination diet on the RDQ score, patients achieved a 50% improvement in their symptoms, based on their calories need. Efficacy of the two treatments was evaluated by means of a validated symptom questionnaire (RDQ administered at baseline, after antacids course (1 month) and after diet (1 month)). A treatment was considered effective if a 50% improvement in the symptomatic score was recorded.

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

P1857 INTERIM RESULTS OF A PROSPECTIVE MULTICENTER REGISTRY OF LOWER OESOPHAGEAL SPHINCTER STIMULATION FOR GORD: THE LESS-GORD REGISTRY

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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 confirm these preliminary data.

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

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P1858 ANTI-REFLUX MUCOSECTOMY (ARMS) FOR REFRAC'TORY GERD—INITIAL CLINICAL EXPERIENCE

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Introduction: It 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 temporary palliation of refractory 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—

- Duration of disease > 3 years
- Prior PPI usage > 6 months

- Presence of hiatus hernia > 3 cm on EGD and normal esophageal body motility on high-resolution manometry (HRM). Exclusions—hiatus hernia > 3 cm, poor or absent esophageal body motility, poor-risk candidates for anesthesia or invasive procedure.

- Pre-ARM mucosal healing (EYD) to assess Hill's grade of flap valve, esophageal mucosectomy, 24-hour ambulatory esophageal pH studies, PPI requirement and GERD-HRQL questionnaire.

Results: N = 15, duration—12 months. Mean age 40.8 years (Range 22-69): M: F = 11: 4. HI: RM-normal esophageal body motility in all. Mean GERD-HRQL score improved significantly from pre-ARMS 4.04 to post-ARMS 7.6 (p < 0.05). Mean Deemester score decreased from 85.8 pre-ARMS to 5.9 post-ARMS (p < 0.001). Mean Hill's valve grade decreased from pre-ARMS 2.8: post-ARMS 1.6 (p < 0.05). Three AE's—mucosal injury—2 (treated by endocylps), 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; K. S. Bapaye: Germany. All other authors have declared no conflicts of interest.

P1859 EFFECTIVENESS OF SELECTIVE SEROTONIN REUPTAKE INHIBITORS IN PATIENTS WITH NON-EROSIVE REFUX DISEASE: A RANDOMIZED TRIAL

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Introduction: To date a large quantity of 5-HT1 receptors were found in esophageal mucosa that on an important role of this neuromediator in pathogenesis of non-erosive reflux disease (NERD) and gastroesophageal reflux disease (GERD). Antidepressants seems to be effective, as they have central and psychologic effect and show a placebo response. Objective: To compare the antidepressant effect with placebo in patients suffering from NERD. Material and Methods: 156 patients were randomized into two groups: patients of the first group 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 group received only PPI 40 mg once a day. Data were collected at visits at baseline, 6, 12, and 24 months. In addition, patients were divided into two subgroups: patients of the first group received PPI (pantoprazole) 40 mg once a day plus antipsychotic drug with 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 “red flag” signs and other comorbidities that could explain the symptoms. Patients were assessed in clinically and psychologic way. Psychologic testing was done using validated short-form version of the depression anxiety stress scales (DASS-21) and Toronto alexithymia scale (TAS). All the patients 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 lasting decrease 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 REFUX 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. The aim of the current study is to evaluate the quality of histologic healing in patients with lower gastro intestinal motility.

Aims & Methods: We conducted double-blinded comparative study to assess histologic, 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. In addition, follow up endoscopy was 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 89.7%, 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:** Adjunctive therapy of rehampidie 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 Esophagitis Through a Cytokine-Mediated Mechanism Rather Than Caustic Acid Injury, Souza RF et al. Hepatology - Gastroenterology & Hepatology, University, Nijmegen/Netherlands


**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 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>
<tbody>
<tr>
<td>1</td>
<td>85</td>
<td>Male</td>
<td>25.8</td>
<td>High grade dysplasia</td>
<td>None</td>
<td>C16M16</td>
<td>317.38 [9.96, 65]</td>
<td>286.85 [8.96, 65]</td>
</tr>
</tbody>
</table>

**Abstract No:** P1862

**References**

Mediated Mechanism Rather Than Caustic Acid Injury, Souza RF et al. Hepatology - Gastroenterology & Hepatology, University, Nijmegen/Netherlands

All other authors have declared no conflicts of interest.

**Disclosure of Interest:**


3. VLE, as a biomarker to guide to treatment choice.

4. P1861 Long-term results of radiofrequency ablation (RFA) in patients with Barrett’s esophagus related neoplasia

**Disclosure of Interest:**

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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 since 2009. Of those, 87 patients (75 men, 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 (35%), 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). At treatment, the patients have undergone regular endoscopic surveillance with multiple biopsies. Remission: Complete remission of IM (CR-IM) and complete remission of neoplasia (CR-N) were achieved in 54 patients (54.3%, 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 macroscopic normal neo-Z-line without visible abnormality. A complete remission of neo-Z-line was achieved in one patient where microscopic eradication of BE was not possible due to giant hiatal hernia and who was referred for anti-reflux surgery. During the follow-up, 18 patients (13.3%, 18/54 pts) experienced a recurrence of IM and 3 patients (2.5%, 3/120 pts) had a recurrence of neoplasia (LGD 2x, HGD 1x). We did not encounter any patient with a subsquamous 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 esoph agen plasma coagulation (APC) and 1x ER. After retreatment, we achieved 100% CR-N and 54% (7/13 pts) CR-IM. Treatment-related adverse events occurred in 22 patients (25%) vs 12 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.

**References**


P1863 SEVEN-YEAR PROSPECTIVE FOLLOW-UP RESULTS OF RADIOFREQUENCY ABLATION FOR BARRETT’S ESOPHAGUS WITH HIGH-GRADE DysPLASia AND EARLY CANCER

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Introduction: Radiofrequency ablation (RFA) of Barrett’s oesophagus (BE), with or without prior endoscopic resection (ER) of focal lesions, results in complete eradication of intestinal metaplasia (CE-IM) and complete eradication of neoplasia in 96–100% respectively.

Aims & 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 Barrett’s oesophagus, for BE with histologically proven 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: Burden Barrett’s glands, IM in biopsies obtained distant to a normal appearing neo squamous-columnar junction (neo-SCJ); need for retreatment; sustained CE-IM and CE-neo 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 = 34), HGD (n = 19), EC (n = 9), LGD and HGD (n = 2)). Worst pathology pre-RFA (after ER) was: non-dysplastic IM (n = 9), LGD (n = 27), HGD (n = 32). Median FU was 58 months (IQR 58–96) with a median of 7 FU endoscopies per patient. Recurrence of HGD-EC was found in 2 patients (3%): one patient with a T1m2 EAC 3 cm above the neo-SCJ after 44 months and one patient had a visible lesion at the neo-SCJ with HGD after 22 months, both were treated successfully with ER. Recurrence of endoscopically visible Barrett’s mucosa was seen in 22 patients (32%) after a median of 20 months: small Barrett island (n = 10), BE tongue (n = 6), CE neo (n = 5), circumferential BE ≤2 cm (n = 2). In 3 patients Buried Barrett’s glands were detected (overall 3/448 FU endoscopies, 0.7%). IM in a normal appearing neo-SCJ was found in 19 patients (28%), and this was not reproduced in 84%. In 2 patients LGD without IM was found in the neo-SCJ. Eleven patients required retreatment: APEC for small areas of visible Barrett’s mucosa (n = 5), six patients had additional ER (ex 1x T1m2, 1x HGD, 2x LGD, 2x visible Barrett’s islands), RFA for LGD without IM in the neo-SCJ (n = 1). CE-neo and CE-IM (excluding IM in the neo-z-line) at the last FU examination was found in 23% 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.


All other 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 is likely to be amenable to curative therapy. There is debate as to whether 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 who are understandably anxious about their diagnosis. Further efforts need to be made to address this and help empower a group of patients who are understandably anxious about their diagnosis.

Aims & Methods: We aimed to study the association between circulating inflammatory and metabolic biomarkers and Barrett’s esophagus (BE) are scant and conflicting.

Table 1: A 14-point based questionnaire which was used to check the understanding amongst patients with Barrett’s Oesophagus (BE–Barrett’s Oesophagus, OAC–Oesophageal adenocarcinoma PPI: Proton pump inhibitor).

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes (%)</th>
<th>No (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Did you receive a letter or see someone in clinic to discuss your diagnosis and plans for future follow-up?</td>
<td>32 (31)</td>
<td>72 (69)</td>
</tr>
<tr>
<td>2. If yes, did you understand this?</td>
<td>15 (47)</td>
<td>17 (53)</td>
</tr>
<tr>
<td>3. Briefly speaking, do you understand what BE is?</td>
<td>43 (41)</td>
<td>61 (59)</td>
</tr>
<tr>
<td>4. Do you understand that chronic acid reflux into the lower oesophagus is the most likely cause of BE?</td>
<td>50 (48)</td>
<td>54 (52)</td>
</tr>
<tr>
<td>5. Are you on a regular PPI?</td>
<td>96 (92)</td>
<td>8 (8)</td>
</tr>
<tr>
<td>6. Do you know what the overall risk of progression to cancer is?</td>
<td>11 (11)</td>
<td>93 (89)</td>
</tr>
<tr>
<td>7. Are you aware of the term ‘dysplasia’ and how this helps to stratify your condition and interval length for surveillance endoscopy?</td>
<td>6 (6)</td>
<td>98 (94)</td>
</tr>
<tr>
<td>8. Do you understand what the rationale for endoscopic surveillance in BE is?</td>
<td>46 (54)</td>
<td>58 (56)</td>
</tr>
<tr>
<td>9. Have you ever been told if you have a short or long segment of BE and the importance of this?</td>
<td>7 (7)</td>
<td>97 (93)</td>
</tr>
<tr>
<td>10. Are you aware of any treatment options for BE?</td>
<td>11 (11)</td>
<td>89 (89)</td>
</tr>
<tr>
<td>11. If yes, do you know when this indicated?</td>
<td>4 (57)</td>
<td>3 (43)</td>
</tr>
<tr>
<td>12. Do you or has anyone in your family suffered with BE or OAC?</td>
<td>36 (35)</td>
<td>68 (65)</td>
</tr>
<tr>
<td>13. Do you feel or have you ever felt anxious about your diagnosis of BE?</td>
<td>53 (51)</td>
<td>51 (49)</td>
</tr>
<tr>
<td>14. Do you think it would be useful for your understanding or reduce your anxiety if you either sat down with someone in clinic or spoke to someone over the phone regarding your BE?</td>
<td>82 (79)</td>
<td>22 (21)</td>
</tr>
</tbody>
</table>

Conclusion: We have demonstrated that patients with BE have a relatively poor understanding of their diagnosis and the treatment options that are available to them. Further efforts need to be made to address this and help empower a group of patients who are understandably anxious about their diagnosis.

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

P1865 BARRETT’S ESOPHAGUS IS ASSOCIATED WITH TOTAL SERUM ADIPOPOtIN 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 esophagus (BE) are scant and conflicting.

Aims & Methods: We aimed to study the association between circulating inflammatory biomarkers (interleukin-6 [IL-6], high-resolution C-reactive protein [hCRP], 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 growth factor binding proteins -1, -2, and -3 [IGFBP1, -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 completed 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 participants to reference, and assessed linear trend across exposure categories using the median of each quintile as a continuous variable.

Results: In women, plasma adiponectin was significantly associated with BE (p<0.001). When compared to the lowest quintile (Q1), the multivariate odds ratio (OR) for the highest quintile (Q5) of adiponectin was 0.39 (95%CI 0.17, 0.88). This association was not materially altered after further adjustment.
P1866 OUTCOMES OF TREATMENT OF PATIENTS WITH EARLY-STAGE ADENOCARCINOMA OF THE ESOPHAGUS WITH INCIDENTAL 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. The goal is to improve the survival of patients with BO, in whom the EMR’s histologic assessment identifies early-stage adenocarcinoma of the oesophagus with incident 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 incident 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 EMRs 7 (28%) patients had a single piece, 7 (28%) patients had a piece 2, 7 (28%) patients piece 3 and 4 (16%) patients 4 piece EMR. The median length of the circumferential and maximum extent of the BO segments were 2 and 5 cm respectively (interquartile range (IQR) 2–4). We observed 6 (24%) intra-proce-dural 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 dilatation. Histology showed lymphovascular invasion in 6 (25%) 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 7 (28%) cases, radial resection margins were reported with dysplasia in 3 (12%) cases and with cancer in 15 (60%) cases, but this included the multiple piece EMRs. The deep margin was reported as being clear in 18 (72%) cases, with dysplasia in 1 (4%) case and with cancer in 6 (24%) cases. There were 14 (50%) patients with carcinoma on the radial and/or deep margin of the EMR specimen, of these patients 9 (60%) had oesophagectomy and in the histologic assessment of these specimens, lymph node involvement was observed in 2 cases (22.2% of all oesophagectomies and 9.5% of all surviving and currently cancer-free patients). There was no residual cancer in 3 (33.3%) of the surgical specimens. Radical radio-chemotherapy was given in 1 (6.7%) patient and 3 (33.3%) patients did not have radical treatment for clinical reasons. There were 10 (40%) patients without cancer invasion of the EMR resection margins, of these 4 (40%) had oesophagectomy and 1 (10%) radical radio-chemotherapy. The histologic assessment of these surgical specimens showed residual cancer in 3 (30%) cases and high-grade dysplasia in 1 (10%) case. Of the 25 patients 5 (20%) met the criteria and had radio frequency ablation of the residual Barrett’s oesophagus. Of the 13 (52%) patients who have had oesophagectomy 1 (7.7%) patient died of the deterioration precipitated by the oesophagectomy, and sadly in this case the oesophagectomy specimen did not show residual cancer. Of the 12 (48%) patients who had not had oesophagectomy 3 (25%) died since their EMR, 1 (8.3%) of cardiac arrest, 1 (8.3%) of chronic obstructive pulmonary disease and 1 (8.3%) of advanced oesophageal cancer, 18 months after the EMR, and the 9 (75%) surviving patient are all cancer free on follow up investigations, one after radical chemo/radiotherapy. The median survival of all 21 (84%) patients currently alive is 25 months (range: 2–68 months; SD: 22.2).

Conclusion: In this retrospective analysis we have found that the clinical outcomes are very difficult to predict for patients with early adenocarcinoma and incident invasion of the submucosa. Clinical decision making remains very challenging and has to be individualised for all patient, until further in depth studies gives us more useful prognostic factors.

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

P1867 THE USE OF ENDOCYSTOSCOPY FOR THE EARLY DETECTION OF ESOPHAGEAL NEOPLASMS

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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 statistic 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 specificity for esophageal malignancy. Its diagnostic accuracy was comparable with 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 airway aspiration use. We aim to evaluate clinicopathological findings and outcomes of endoscopic resection for 10 achalasia-associated superficial esophageal cancer. This is a case series study at our hospital. Between August 2010 and February 2017, 10 achalasia patients with superficial esophageal cancer underwent endoscopic resection. We performed in all cases upper gastrointestinal endoscopy, using lugeo’s solution and narrow band imaging, and we included all patients that had early cancers that were eligible for endoscopic resection in this series. At 2 and 12 months after treatment, we performed follow-up endo-scopy in all cases. After this, we performed long-term endoscopic follow-up every year. In the case that the tumor invasion depth is to the muscularis mucosa(MM), 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. 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. We performed a retrospective analysis of 19 cases from a tertiary referral center in the UK.

Results: There were 6 men and 4 women and their average age was 61.7 years. 8 patients were diagnosed with lesions before POEM. We performed endoscopic submucosal dissection (ESD) and EMR in all cases after POEM. None of the patients had a severe adverse event. The mean tumor diameter was 30mm (range: 5–80mm). The pathological diagnosis was 8 SCC, 2 high grade intraepithelial neoplasia. Out of the SCC cases, 7 were found with superficial lesion with depth of Tis-EP to T1a-LPM, and 1 with depth of T1a-MM, without lymphatic invasion(T0) or venous invasion(V0). Follow-up surveillance mean term was 32 months (range: 1–
P1869 USEFULNESS OF TRIAMCINOLONE INJECTION TO PREVENT STRicture AFTER SEMIFORMALIN ISOLAR DISSECTION (ESD) FOR PHARYNGEAL SCC

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Introduction: ESD is a standard treatment for superficial esophageal cancer in Japan. Stricture is one of important complications of esophageal ESD, and it makes quality of life of the patient worse. Usefulness of Triamcinolone (TA) injection to prevent stricture after semi-circumferential ESD has been reported. However, usefulness of TA injection after circumferential esophageal ESD is still unclear.

Aims & Methods: The aim of this study is to clarify the usefulness of triamcinolone injection to prevent stricture after circumferential ESD. A total of forty-four patients treated by circumferential esophageal ESD from 2004 to 2016 in Saku Central Hospital Advanced Care Center were enrolled in this retrospective study. The patients treated from 2004 to 2009 were followed up without TA injection (Non-TA group). TA injection was performed for the patients after 2009 (TA group). The number of patient in Non-TA and TA group was 16 and 28, respectively. Age of both groups was 65 (30–83) and 61 (42–82) years old. The length of circumferential resection was 75 (50–100) and 76 (55–111) 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-weeks interval. Fifteen mm endoscopic balloon dilatation (EBD) was performed when the scope couldn’t pass the ESD ulcer. The primary endpoint was the number of balloon dilatation. The secondary endpoints were duration from ESD to ulcer healing, and the difference between Barrett’s esophagus adenocarcinoma (EAC) and squamous cell carcinoma (SCC).

Results: 1. Number of EBD in Non-TA and TA group were 20 (13–33) and 5.1 (0–23), respectively (p = 0.01). Duration from ESD to ulcer healing were 10 (3–25) days, and 11 days (p = 0.07). Complications, (p = 0.047) 3. Mortality rate due to ESD 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 (5–11) and 4.4 (3–11), respectively. Duration of ulcer healing were 10 (6–14) and 6.5 (5–24), 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.

P1871 SHOULD ANTIITHROMBOTIC AGENTS BE DISCONTINUED PRIOR TO ESOPHAGEAL ENDOSCOPIC SUBMUCOSAL DISSECTION?

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Introduction: Endoscopic submucosal dissection (ESD) has been widely performed as a minimally invasive treatment for superficial esophageal squamous cell neoplasms (ESCs) in Japan and Asian countries. According to the current guidelines[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 should be discontinued before ESD. A forensic pathological review was conducted for 413 patients who underwent ESD at our hospital from January 2013 to October 2016 were analyzed in this retrospective study. ESD was performed using an IT knife (Olympus, Tokyo, Japan). Hemostatic forceps (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 secs required 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 extent (<1/3 or ≥1/3), 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 forceps were used for 116 lesions (25%), median forceps use time was 73 secs (range: 8–120 secs), and the median number of forceps application during procedures was 2 (range: 1–9 times). Of these, 41 lesions (9%) met our definition for longer hemostatic time. Univariate analysis revealed that lesion size (≥2 cm), lesion circumference (≥3/4), and the endoscopist’s experience (≥60) were strongly associated with longer hemostasis time. Multivariate logistic regression analysis revealed that a lesion size ≥2 cm (OR 2.4 [95% CI 1.1–5.1], P = 0.02) was an independent risk factor for longer hemostatic time. Postoperative bleeding occurred 20 days after ESD in one patient (0.2%) receiving the continuous administration of warfarin and aspirin.

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

P1872 EXPLORATORY STUDY OF PREDICTIVE BIOMARKER FOR POSTMORTEM CHEMOTHERAPY EFFICACY: DETERMINATION OF SPECIMENS OF PATIENTS WITH ESOPHAGEAL SQUAMOUS CELL CARCINOMA

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Disclosure of Interest: All authors have declared no conflicts of interest.
Introduction: While definitive chemoradiotherapy (CRT) showed high efficacy for esophageal cancer (EEC), the potential contribution of curative endoscopic treatment of early EEC underwent endoscopic resection (ER) or endoscopic submucosal dissection (ESD). Based on histopathological staging, patients with ‘high-risk’ EEC have been referred for endoscopic treatment. Complete local remission in continued 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: 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 (sm1: 15, sm2: 9, sm3: 11); 45 patients had adenocarcinoma (EAC), 11 patients had squamous carcinoma (SCC); 19 (34%) were referred for endoscopic treatment (all patients were treated with endoscopic submucosal dissection). 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 endoscopic relapsed 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 endoscopy, one patient presented with tumor generalization revealed during the operation. The remaining patients underwent esophagectomy; local residual 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.

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PI874 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 submucosal glandular wall will culminate in a single duct. The esophageal submucosal gland ducts (ESMGDs) can traverse the subepithelial connective tissue and muscularis mucosa, and deliver the acinar secretions to the esophageal lumen. However, the clinicopathological features of the esophageal submucosal gland duct involvement (ESMGDI) 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. Compared with the 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 more useful modality could be applied to this lesion. In our study, we considered that the ESMGDDI had a correlation with early esophageal cancer, and we noted that the ESMGD DI 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 DI accompanied by early esophageal cancer, which were suggested by clinicopathological endoscopy or histology, 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 2016. The clinical data of 519 patients were included in this study, and all of them had already underwent EUS combined with Endoscopic Submucosal Dissection(ESED). The EUS preoperative diagnosis were compared with the results of postoperative pathology from ESD.

Results: According to the pathological results, all patients (371 males and 148 females, with a mean age of 67.5 ± 4.5 years) had been diagnosed with early esophageal cancer with different invasive depth. Out of 519 patients, about 478 patients were not found ESMGD DI by both examinations. Besides, postoperative pathology confirmed that 40 patients were identified with ESMGD DI, 34 patients of which were completely consistent with the preoperative diagnosis of EUS. Approximately 98.7% (512/519) of ESMGD DI were diagnosed exactly by EUS. Another six cases were estimated as false negative inaccurately, including two squamous cell carcinoma and four high-grade intraepithelial neoplasia. One case was considered as ESMGD DI. The pathological confirmation confirmed not by pathology, the EUS values for sensitivity and specificity for the diagnosis of ESMGD DI were 85.0% (34/40) and 99.8% (478/477) respectively. Furthermore, the positive predictive value was 97.1% (34/35), and the negative predictive value was 98.8% (478/480).

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 DI as well as its histological sensitivity and specificity.

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

PI837 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 cancer (especially grading or invasion of blood/lymphatic vessels) and in patients with any submucosal (sm) invasion (Tib), surgery is recommended as a standard of care. However, recent data suggest, that endoscopic treatment might be curative in selected patients with ‘high-risk’ EEC.

Aims & Methods: The aim of this study was to assess outcomes of endoscopic treatment in patients with ‘high-risk’ EEC. ‘High-risk’ cancer was defined as any cancer with sm invasion or mucosal cancer with at least one of following: poor differentiation (G3/G4), invasion to blood (A+) or lymphatic vessels (L+), 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 have been referred for endoscopic treatment. Complete local remission in continued 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: 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 (sm1: 15, sm2: 9, sm3: 11); 45 patients had adenocarcinoma (EAC), 11 patients had squamous carcinoma (SCC); 19 (34%) were referred for endoscopic treatment (all patients were treated with endoscopic submucosal dissection). 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 endoscopic relapsed 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 endoscopy, one patient presented with tumor generalization revealed during the operation. The remaining 18 patients underwent esophagectomy; local residual 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.

References
PRETREATMENT NEUTROPHIL TO LYMPHOCYTE RATIO IS NOT A PREDICTOR OF RESPONSE TO NSAID OR ASPIRIN 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 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 databases 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 predictor 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 stratifying variable. The heterogeneity of treatments, the comorbidity 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.

References

ACCELERATION OF HEALING OF PREEXISTING GASTRIC ULCERS BY CARBON MONOXIDE RELEASING MOLECULE -2 (CORM-2), INVOLVEMENT OF HEME OXGENASE, 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 antioxidant, anti-inflammatory and immunomodulatory properties. In newly discovered class of compounds, named CO-releasing molecules (CORMs), is capable of liberating CO gaseous molecule that can be useful as pharmacological tool to assay 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 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 aerosol 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.g., C) the HO-1 inducer, hemin (5 mg/kg i.p.), D) the HO-1 activity inhibitor, zinc protoporphrin IX (ZnPPIX) (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 TNFα and IL-1β levels were measured by ELISA and ZnPP IX significantly reduced the area of gastric ulcers and raised GBF at ulcer margin but the treatment with ZnPPIX IX significantly increased the area of gastric ulcers and significantly decreased the GBF at ulcer margin. The decrease in gastric ulcer healing by

P1875 CONTROLLED CLUSTER TRIAL IN GENERAL PRACTICE TREATED WITH NSAID OR ASPIRIN? A RANDOMISED STUDY

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Introduction: A retrospective review of two prospective esophageal cancer databases 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 predictor 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 stratifying variable. The heterogeneity of treatments, the comorbidity 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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CORM-2 was accompanied by a significant decrease in plasma levels of IL-1β and TNF-α receptor 1 (R1), comparing to vehicle-control group. The expression of EL-10, TNF-α, COX-2 and iNOS mRNA was strongly upregulated in vehicle-treated gastric mucosa but expression of these factors was significantly attenuated in CORM-treated animals. The increased mucosal expression of mRNA for HO-1 but not HO-2 was detected in vehicle control group and these effects were ameliorated by treatment with CORM-2. The gastric mucosal MPO activity and thernocural content of MDA + 4HNE in gastric mucosa were elevated in vehicle-control group and these effects were significantly inhibited by CORM-2. Contact: E-mail Address: Faculty of Medicine Masaryk's University, Brno/Czech Republic

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

P1877 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-hospital 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, cardiac, psychiatric, obstetrics and day clinic admission were excluded) during three consecutive on-call days of the hospital in March 2017 regarding PPIs utilization before admission, during hospitalization and at discharge. We calculated average daily cost per hospital cost per 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 pre-served and 67.5% were admitted due to hospitalization and 22.8% 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 under-utilization was detected in 10.2%, 8.1% and 9.5% of them, respectively. Admission at internal medicine and orthopedics clinics was associated with the highest underutilized 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 (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 1480 PPI doses 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 annually, the cost of each PPI dose is 3.435 and 0.235 euros for iv and per os preparations and assuming a similar to that of our sample case distribution the number of attempts, and in the absence of recurrence. All patients under went 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 24.6 mm (range 5–80) for ACA, 34.9 mm (CI 12.4–49.9) and 42.2 (CI 15.7–113.1) mm for LSA. Endoscopic resection of an ampullary lesion were retrospectively identified. Cases were selected by using ENDOBASE and we provided a search in the our local PALGA database. We included patients with a histological diagnosis of adenoma. Endoscopic resection was performed by 5 experienced endoscopists. Endoscopic success was defined as complete excision of the adenoma, irrespective of the number of attempts, and in the absence of recurrence. All patients underwent endoscopic follow-up. Early and late complications were registered.

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

Reference

P1880 ENDOSCOPIC RESECTION OF ADVANCED AMPULLARY ADENOMAS: A SINGLE-CENTER 14-YEAR RETROSPECTIVE COHORT STUDY

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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 have been reported 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. Methods: The aim of our study was to evaluate the technical success, complications and recurrence of endoscopic resection for treating patients with ampullary adenomas with intraductal extension (AIE), and patients with lateral spreading adenomas (LSA). Between January 2002 and November 2016, all patients referred to the Erasmus Medical Center, Rotterdam, for endoscopic resection of an ampullary lesion were retrospectively identified. Cases were selected by using ENDOBASE and we provided a search in the our local PALGA database. We included patients with a histological diagnosis of adenoma. Endoscopic resection was performed by 5 experienced endoscopists. Endoscopic success was defined as complete excision of the adenoma, irrespective of the number of attempts, and in the absence of recurrence. All patients underwent endoscopic follow-up. Early and late complications were registered.

Results: We included 84 patients, 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 24.6 mm (range 5–80) for patients with ACA, 34.9 mm (range 23–50) for LSA and 16.3 mm (range 10–47) for patients with an AIE (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 0–37) for IAE (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 spread adenoma and 1 patient with an intraductal extended adenoma (P = 0.875).

Conclusion: Endoscopic ampullectomy is a safe and successful treatment in patients with an adenoma with or without a lateral spreading growth pattern. In case of an intraductal extended adenoma endoscopic success rates are significantly lower.

Disclosure of Interest: All authors have declared no conflicts of interest.
P1881 FACTORS ASSOCIATED WITH TECHNICAL DIFFICULTY OF ENDOSCOPIC FULL-THICKNESS RESECTION FOR EARLY GASTRIC CANCER WHICH MET EXPANDED INDICATION CRITERIA; POST HOC ANALYSIS USING DATA OF MULTIPLE INSTITUTIONAL PROSPECTIVE CONCLUSIVE TRIAL

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Introduction: There are few reports about the technical difficulty of gastric endoscopic submucosal dissection (ESD) which were investigated through the prospective trial.

Aims & Methods: The aim of this study was to evaluate the factors associated with the technical difficulty of ESD for early gastric cancer (GC) which met expanded indication criteria using data from JCOG0607. The major inclusion criteria of JCOG 0607 were as follows: 1) histologically proven intramuscular adenocarcinoma; 2) cT1aN0M0; 3) lesion without finding of ulcer (UL negative) and >2 cm in size, or UL positive and ≤3 cm in size; 4) age > 75. ESD were performed by certified endoscopists or under the supervision of certified endoscopists who had experienced 100 cases or more. The difficult case was defined as the ratio between the number of significant findings detected by EUS tissue aspiration, EUS-FNA 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 (35 patients were followed). 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% [9/12] vs. [44% [4/12], P = 0.04). Among the different indications for ESD, 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 number of tissue pieces of 5 ± 75% of the total tissue procured (determined as the percent of the surface are occupied by lesion over the surface area of the entire tissue on one side). No complications occurred during the study period.

Conclusions: FNB using a novel core needle system is effective for diagnosis of gastric 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. Yano: Consultant for Medtronic
D. Pleskow: Consultant for Medtronic
All other authors have declared no conflicts of interest.

Reference

P1882 COMPARATIVE EFFECTIVENESS OF NOVEL FINE-NEEDLE BIOPSY DEVICE VS CONVENTIONAL FINE-NEEDLE ASPIRATION FOR ENDOSCOPIC ULTRASOUND DIAGNOSTIC 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 aspiration and the total number of EUS examinations performed for a given indication.

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 noted in the submucosal tunneling endoscopic and endoscopic full-thickness resection groups during a mean follow-up of 12.1 and 22.8 months, respectively.

Comparison of clinical characteristics and therapeutic outcomes between STER and EFR

<table>
<thead>
<tr>
<th>Sex</th>
<th>M/F</th>
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<th>13/15</th>
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<tr>
<td>Age</td>
<td>48.4±11.2</td>
<td>53.4±9.7</td>
<td>0.136</td>
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<tr>
<td>Comitant disease, %</td>
<td>20% (3/15)</td>
<td>21.4% (6/28)</td>
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<tr>
<td>Tumor size, mm</td>
<td>19.0±8.3</td>
<td>15.3±7.0</td>
<td>0.126</td>
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</tr>
<tr>
<td>Operation time, min</td>
<td>76.7±38.0</td>
<td>63.3±24.4</td>
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<tr>
<td>Suture time, sec</td>
<td>296.7±97.0</td>
<td>383.4±104.0</td>
<td>0.011</td>
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</tbody>
</table>

(continued)
Comparison of clinical characteristics and therapeutic outcomes between STER and EFTR

STER (n=15)  EFTR (n=28)  P
No. of clips for suture  5.8 ± 1.4  7.6 ± 1.6  0.001
Complications, %  6.7% (1/15)  14.3% (4/28)  0.643
En bloc resection, %  6.7% (1/15)  3.6% (1/28)  1.000
GIST/Leiomyoma/ Schwannoma  11/4.0  25/2.1  0.173
Length of stay, d  6.1 ± 1.5  6.2 ± 2.0  0.856
Cost, USD  615.8 ± 168.3  3237.5 ± 615.8  0.906
Follow-up time, mon  12.1 ± 12.2  22.8 ± 18.4  0.052

Conclusion: The treatment efficacy between submucosal tunneling endoscopic resection and endoscopic full-thickness resection for treating gastric fundus submucosal tumors was comparable, but submucosal tunneling endoscopic resection offers advantages over endoscopic full-thickness resection in terms of shorter suture time and smaller number of clips needed to close the gastric wall defect.

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

References

P1884 COMPARISON OF THE DIAGNOSTIC YIELDS OF ENDOSCOPIC ULTRASOUND-GUIDED FINE NEEDLE ASPIRATION FOR DUODENAL AND GASTRIC SUBEPITHELIAL LESIONS
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Introduction: The propagation of diagnosis and treatment for gastrointestinal subepithelial lesions (SELs) have been remarkable by the wide use of Endoscopic Ultrasound-Guided Fine Needle Aspiration (EUS-FNA) and the development of Laparoscopy and Endoscopy Cooperative Surgery. EUS is used widely for SELs that occur in the digestive tract. There are many reports on gastric SELs, but there are no studies on a large group of patients focusing on duodenal SELs.

Aims & Methods: The aim of this study was to investigate the usefulness and safety of EUS-FNA for duodenal SELs, comparing them with gastric SELs. Cross-sectional study was conducted using 41 patients who underwent EUS-FNA at tertiary medical center in Tokyo between April, 2012 and February, 2017. We divided into 2 groups: 6 patients with duodenal SELs (group D) and 35 patients with gastric SELs (group G), who were diagnosed as SELs located on the 4th layer by pre-operative EUS and were performed EUS-FNA consecutively. We retrospectively evaluated the patient characteristics and outcome of the technique on the subjects.

Results: Age (median, range): D: 61 (42–63), G: 60 (32–85); male:female ratio: D: 1/5, G: 18/17; tumor size (median, range)(mm): D: 16, [14–45], G: 24, [13–67]; type of needle (22-gauge/19-gauge): D: 5/1, G: 30/6 (One case was used two type of needles); number of needle passes: D: 5, [4–5], G: 4, [7–]); procedure time (median, range)(min): D: 34, [22–52], G: 42, [20–67]; diagnostic yield: D: 100%, G: 91.4%; complication: D: 0%, G: 2.9%. There were no significant differences into 2 groups, but the size of duodenal SELs tended to be smaller than gastric SELs. Histological diagnosis of EUS-FNA using immunohistochemical analysis showed duodenal SELs were 5 GIST, 1 neuroinflammatory, and gastric SELs were 25 GIST, 4 ectopic pancreas, 3 neuroinflammatory, 3 indeterminate. Two of the indeterminate were followed up by CT, one was SEL like cancer diagnosed by conventional biopsy.

Conclusion: Although five of the six cases of duodenal SELs were small lesions of less than 20 mm, immunohistochemical staining was performed for all the cases, and diagnosis was made. EUS-FNA for duodenal SELs was as useful and safe as gastric SELs.

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

References
published guidelines regarding appropriate surveillance of patients with GIM and how this is wide disparity in the management of this premalignant condition.

**Aims & Methods:** This study aimed to analyze surveillance practice and characterize the natural history of this premalignant condition by identifying all patients with GIM on an upper GI surveillance programme and reviewing follow-up data. This is a retrospective study of patients with GIM who are currently enrolled in an upper GI surveillance programme. Patients with a history of GIM identified at any time during an 18 year surveillance period (from 1998 to 2016) were included in the study. Patient characteristics, endoscopy data including histology, rates of Helicobacter pylori infection, Barrett’s oesophagus association and outcomes were reviewed.

**Results:** 160 patients (including those with Barrett’s oesophagus, GIM and family history of gastric cancer) were enrolled on the surveillance programme. 42 patients with GIM were identified—20 females (47.6%) and 22 males (52.3%). The mean age at which GIM was first diagnosed was 60.6 years (range from 17.9 to 71.5 years). 15/42 patients (35.7%) had co-existent Barrett’s oesophagus and Helicobacter pylori was identified in 6/42 (14.3%). The follow-up period ranged from 5.7 to 17.3 years. 27 patients had repeated gastroscopies following initial diagnosis. 15 patients are still awaiting a repeat gastroscopy. A large degree of variability in the number and frequency of follow-up gastroscopies was observed. The average interval of follow-up gastroscopies was 3.3 years per person. 14/27 patients (51.8%) had no evidence of GIM on most recent gastroscopy. 7/27 patients (26%) had repeat findings of persistent focal GIM, 5/27 patients (18.5%) progressed to extensive GIM. No cases of dysplasia were recorded but 1 patient (3.7%) developed gastric cancer.

**Conclusion:** This study suggests a low apparent risk of progression of gastric intestinal metaplasia in a small western cohort. Further studies may be necessary to address if the applicability of published surveillance guidelines can be generalized to regions with low gastric cancer prevalence.

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

**References**


P1887 DIFFERENT RELATIONSHIP BETWEEN STAGE OF GASTRIC CANCER AND GENOTYPE OF TGFBI BASED ON FIRST-DEGREE RELATIVE OF GASTRIC CANCER

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**Introduction:** Previously we reported that direct family history of gastric cancer (GC) as a risk factor of and genetic polymorphisms of TGFBI (transforming growth factor-β) was associated with the development of GC in the first-degree relative of GC. The aim of this study is to investigate relationship between stage of gastric cancer and genetic polymorphism of TGFBI regarding first-degree relative of GC.

**Aims & Methods:** From January 2006 to March 2017, 1090 gastric cancer patients were enrolled at Seoul National University Bundang Hospital in whom stage of GC was obtained from surgery, endoscopic submucosal dissection (ESD), endoscopic mucosal resection (EMR), and computed tomography (CT) and positron emission tomography (PET-CT) images. 203 patients (18.6%) had direct family history GC and 887 (81.4%) did not have. Genotype of TGFBI-S409 was measured by the polymerase chain-restriction fragment length polymorphism (PCR-RFLP). Relationship between TGFBI polymorphism and stage of GC or familial history in GC was analyzed.

**Results:** Proportion of stage 1 & 2 was statistically higher in the group with direct family history GC (170, 83.7%) than without direct family history (600, 74.4%). (P=0.005). When GC stage was analyzed regarding direct family history and TGFBI genetic polymorphism the ratio of gastric cancer stage I to TGFBI-S409 T carrier was significantly higher than that of stage II or higher (P=0.008), only in male. However, this difference was not found in female. In addition no significant difference was found in GC patients without direct family history. Lauren classification and TGFBI 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 TGFBI-S409 could be underlying mechanism in case of male. Survival analysis is undergoing.

**Table:** Differences of gastric cancer stage according to TGFBI-S409 polymorphism and family history (Hx) of gastric cancer

<table>
<thead>
<tr>
<th>TGFBI-S409</th>
<th>Stage 1 N (%)</th>
<th>Stage 2 N (%)</th>
<th>Total N (%)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Hx (+)</td>
<td>Female</td>
<td>C/C</td>
<td>18 (78.3)</td>
<td>5 (21.7)</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>C/C</td>
<td>27 (64.3)</td>
<td>15 (35.7)</td>
</tr>
<tr>
<td></td>
<td>Family Hx (-)</td>
<td>Female</td>
<td>C/C</td>
<td>46 (61.3)</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>C/C</td>
<td>91 (61.9)</td>
<td>56 (38.1)</td>
</tr>
</tbody>
</table>

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

P1888 GASTRIC ADENOCARCINOMA AND PROXIMAL POLYPOSIS 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 to been described recently only in a few families worldwide (only one in Europe so far). Three different point mutations in promoter 1B of the APC gene were identified as causal (c.-191T>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 anaemia. Polyposis slowly progressed with the intestinal differentiated low-grade dysplasia in polypectomy specimens 10 years after the diagnosis. As the GAPPS criteria were fulfilled (ref. 2), he and his family under went genetic testing and b-directional Sanger sequencing of promoter 1B revealed a point mutation (c.-191 T>C). The same type of mutation was described in his father (63 years old), sister (41 years old), nephew (son of his sister, 6 years old), uncle (father’s brother, 51 years old) and 2 cousins (uncle’s daughters, 23 and 27 years old), all have been asymptomatic. No gastric cancer in the family history was mentioned. The Proband underwent preventive total gastrectomy, histology of the surgical specimen confirmed severe involvement of gastric body with fundic gland polyposis, low-grade and focal high-grade dysplasia. The microcytic anaemia improved rapidly after surgery. The rest of family is scheduled for gastroscopy. The fundic-gland polyposis of similar distribution (with significantly lower number of polyps, without any dysplastic changes) was recently diagnosed in the 23-year-old cousin.

**Conclusion:** The second European family with GAPPS is presented. The recently described mutations in promoter 1B of the APC gene does not automatically mean a faster progression of the disease as suggested earlier. GAPPS can be presented with various phenotypes with a different course of disease, the prevalence can be higher than previously reported. Acknowledgement: The study was supported by the Research Project PROGRES Q40–15.

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


P1889 ENDOSCOPIC 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 (non-muscle invasive) esophageal squamous cell carcinoma (ESCC). Lymph node metastasis is not high. However, endoscopic diagnosis is difficult compared to the stomach or colon. The aim of this study is to evaluate the clinical value of EUS for diagnosing and treating ESCC.

Aims & Methods: All 60 cases were resected by surgery or ESD. The EUS preoperative diagnosis was compared with the results of postoperative pathology from ESD. The EUS values for sensitivity and specificity for the diagnosis of ESMGDI were 98.7% (42/43) and 99.5% (278/280) respectively. Furthermore, the positive predictive value was 97.1% (34/35), and the negative predictive value was 98.8% (478/484).

Conclusion: The actual LN metastasis in the EUS preoperative diagnosis is low compared to other cancers. The EUS predictive accuracies of ESMGDI and ESCC are high. The EUS should be accepted. G-17 does not seem to provide any additional benefit.

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

P1891 PEPNSOGENS AND GASTRIN-17 FOR IDENTIFICATION OF GASTRIC CANCER PRECURSOR LESIONS: THE RESULTS FROM THE GISTAR PILOT STUDY

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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 discussed as an alternative biomarker for atrophic gastritis and precancerous lesions in Japan and Asia. Recommendations from the European Commission expert group consider the need for additional studies before any screening with biomarkers can be recommended for implementation.

Aims & Methods: Generally healthy 40-65 years aged participants of the GISTAR pilot study referred for upper endoscopy according to the pilot study protocol were enrolled. Pepsinogen (Pg) I and II were assessed from plasma samples by two methods-ELISA (Biohit Plc.) and latex-agglutination (Eiken Chemical Co.) test systems. G-17 and IgG group antibodies to H. pylori infection were assessed by Biohit Plc. ELISA test systems. The following cutoff values were considered characteristic for atrophy: Pg I/II < 1 mg/l or 3 for ELISA, Pg I/II < 1 and Pg I < 0.7 for latex-agglutination, and G-17 < 1 pmol/l (in a plasma sample obtained in fasting condition). Biopsies were sampled and read by two independent pathologists according to the updated Sydney system. OLGA and OLGIM scoring systems were also applied. Cancer, dysplasia, OLGA/OLGIM III-IV taken together were considered high-risk lesions.

Results: Altogether 1044 subjects (55% females, mean age 52, 67.7% with positive H. pylori antibodies) were included to the study. The sensitivity and specificity for detecting moderate to severe atrophy in the corpus for Biohit ELISA test was 47.2% and 92.3%, but for Eiken latex-agglutination test 81.1% and 62.1%, respectively. The corresponding values for G-17 to detect atrophy in the antrum were 29.2% and 58.9%. High-risk lesions were detected by Biohit ELISA pepsinogen test system with 22.8% sensitivity and 91.6% specificity, but with Eiken latex-agglutination test with 67.4% and 62.5% sensitivity and specificity.

Conclusion: Due to the high specificity, pepsinogens (e.g. ELISA) could be potentially used for screening of precancerous lesions if relatively low sensitivity could be accepted. G-17 does not seem to provide any additional benefit.

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

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References


miR-211-5p could suppress melanoma proliferation, migration, and invasion [4]. Growing evidence show that miRNAs can act as either tumour onco-genes or suppressors in different types of cancers. Previous studies revealed that miR-211-5p could suppress gastric cancer cell lines by targeting FoxC1 in gastric cancer and miR-211-5p might be a potential target for the treatment of gastric cancer. We demonstrate that miR-211-5p acted as a tumour suppressor by downregulation of FoxC1. Bioinformatics and quantitative analysis revealed that FoxC1 might be a target of miR-211-5p. Downregulation of FoxC1 inhibited proliferation, migration and induced apoptosis in 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.

Aims & Methods: We aimed to investigate and characterize the biological role of miR-211 in the development of gastric cancer. The expression level of miR-211-5p was measured in paired primary gastric cancer with corresponding adjacent gastric mucosa by RT-PCR. Furthermore, we investigated the biological role of miR-211-5p in proliferation, apoptosis, migration of gastric cancer cell lines in vitro.

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 EPITHELIAL ORIGIN
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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 target in endoscopy and surgery of children and adults. Its congenital versus metaplastic origin still needs to be clarified. The endoscopic CE defined by the presence of circular pattern with NBI in the neo-junction was evaluated with white light and Narrow band imaging (NBI); under endoscopic diagnosis of CMET and CE confirmed in 18/20 patients; additionally identified oxyntocardiac epithelium (OC) and cardia-type metaplasia arising in the remnant esophagus after fundoplication. Gastrointest Endosc. 2004 Jun; 59(7):810–7.

Results: The mean size was 14.4 mm and 28.9 mm for lesions resected en-bloc and piecemeal, respectively. Histopathological findings were: low-grade dysplasia (n = 27, 36%), high-grade dysplasia (n = 34, 45.4%), high-grade dysplasia with focal adenocarcinoma (n = 12, 16%), intramuscular adenocarcinoma (n = 2, 2.6%). Pre-EMR biopsy tended to downgrade the lesion in 25% (n = 34, 45.4%), high- grade dysplasia (n = 12) or percutaneous (n = 1). There was no procedure-related mortality. Follow-up was scheduled after 3, 6 and 12 months for the first year, and then yearly for up to 5 years.

Conclusions: Endoscopic mucosal resection (EMR) of non-ampullary sporadic duodenal adenomas: long term results
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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 not presented 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 adenoma of the major or minor duodenal papilla were excluded. Preoperative biopsy was performed at operator discretion, considering that the majority of the patients were referred from other centers. In case of doubt for a possible involvement of the ampulla of Vater, duodenoscopy with a side-viewing scope was also performed. EUUS 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 resec-tion, 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%), intramuscular adenocarcinoma (n = 2, 2.6%). Pre-EMR biopsy tended to downgrade the lesion in 44.4% (16/36). Retropertioneal 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 17/75 (23%) resections and was successfully managed in 12/17 (71%). Two (2%) patients had a 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 fully retreated 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 recent results. 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 adverse events after EMR for NASDA requires the availability of interventional radiologists and surgeons with experience in percutaneous surgery. In our experience colorectal adenomas was correlated to NASDA (33.3%), colonoscopy is considered part of the pre-EMR assessment when NASDA is diagnosed. A recalled 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.

References

Introduction: NSAIIDs have demonstrated chemopreventive activity against gastric adenocarcinomas and limit their use in the prevention. Oxaliplatin is a 5-fluorouracil (5-FU) and folinic acid (5-FU/L) antineoplastic drug infusional. Treatment with 5-FU/L antineoplastic drug and infusional oxaliplatin in CRC is a standard treatment. We have now postulated as possible adjuvants to surgery chemotherapy in order to prevent the formation of new lesions and reduce disease progression. Cancer cells enhance their resistance to the cytotoxic action of antineoplastic drugs by activating autophagy, which is a catabolic process that degrades superfluous and damaged organelles in the lysosome. We previously showed that indomethacin inhibits autophagy in gastric cancer cells by acting at a late stage in this catabolic process.

Aims & Methods: The aim of this study is to analyze whether indomethacin modulates lysosomal function and oxaliplatin-induced cell death in these cells. Gastric AGS cells were treated with increasing concentrations of indomethacin for 2, 6 and 20 hours. Lysosomal pH was assessed by using Lysotracker Red and Acridine orange fluorescent probes (static cytometry). Cathepsin activity was determined by using Omnicathepsin fluorescence substrate. In cells treated with indomethacin for 2 hours LAMP2 immunostaining was also carried out. In another set of experiments AGS cells were treated with increasing doses of the antineoplastic drug oxaliplatin. Cell viability was measured using an MTT assay, the rate of apoptosis/necrosis was analyzed by means of the Apoptosis Detection Kit, and autophagy by p62 immunoblotting.

Results: Treatment of AGS cells with indomethacin decreased Lysotracker fluorescence in AGS cells after 2, 6 and 20 hours. Indomethacin also produced an acute reduction in lysosome-derived fluorescence of acridine orange after 2 and 6 hours of treatment. In addition, we observed a significant reduction of cathepsin enzymatic activity in cells treated with indomethacin for 6 or 20 hours. Furthermore, we observed an increased expression of LAMP-2 positive dots from the perinuclear position observed in control cells to a peripheral position in cells treated with indomethacin. Taken together, these data suggest that indomethacin inhibits the activity of lysosomal acidic enzymes by increasing lysosomal pH. On the other hand, oxaliplatin decreased cell viability in a dose-dependent manner after 48 hours of treatment, and treatment of cells with indomethacin during the last 24 hours further decreased cell viability. In addition, indomethacin also increased the rate of apoptosis and necrosis in AGS cells treated with oxaliplatin. Finally, indomethacin blocked the autophagic degradation of p62 protein induced by oxaliplatin.

Conclusion: Indomethacin inhibits lysosomal function in gastric cancer cells. This could explain the inhibitory action on autophagy and the resultant increase in susceptibility to cytotoxic drugs.

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

References
Results suggest that ENS may be a new actor in gastric carcinogenesis. The expression of CSC markers (CD44, ALDH) and EMT markers (Snail, Zeb1) in gastric cancer cells is associated with the inhibition of ACh effects. Therefore, the study of ENS modulation may contribute to the understanding of gastric cancer and to its potential therapeutic approach.

Aims & Methods: Our aim was to study the effect of ACh on gastric cancer cells, and in particular its capacity to induce the stem cell phenotype, and to study the mechanisms involved. Adenocarcinoma gastric epithelial 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 quantifying 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 expression of L-NMMA (NO donor) and L-NAME (nitric oxide synthesis inhibitor). Finally, the effect of ACh on the expression of CSC and epithelial-mesenchymal transition (EMT) markers was studied by immunofluorescence, RT-qPCR and flow cytometry. Statistical analysis was performed using a metric ANOVA test, Kruskal-Wallis test, or two-way non-parametric ANOVA test using SPSS16.0 F 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 formation of T. Conversely, SNAP (NO donor) and L-NAME (nitric oxide synthesis inhibitor) significantly inhibited the stimulatory effect of ACh on T (p < 0.001 as compared to ACh-stimulated cells). Importantly, L-NAME significantly inhibited the effects of ACh on the number of T. Conversely, SNAP, at 0.1 and 1 μM, increased the number and size of T. Finally, ACh induced the expression of CSC markers (CD44, ALDH) and EMT markers (Snail, Zeb1) and Vimentin) on gastric cancer cells.

Conclusion: This study shows that ACh induces CSC properties of gastric cancer cells of diffuse type via activation of muscarinic and nicotinic pathways. It also shows that ACh effects are, at least in part, mediated by nitric pathway. These results suggest that ENS may be a new actor in gastric carcinogenesis.

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

References

P1901 MACHINE-LEARNING-BASED AUTOMATIC DIAGNOSIS SYSTEM FOR HELICOBACTER PYLORI INFECTION USING LINKED COLOR IMAGING

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Introduction: Linked color imaging (LCI), a recently developed endoscopic tech-nique, emphasizes diffuse redness, which is a characteristic of Helicobacter pylori (Hp) infection. However, the diagnosis of Hp infection does not have objective indicators; it depends on medical doctors’ experience. Therefore, it is necessary to construct objective indicators to diagnose Hp infection.

Aims & Methods: The aims of this study are to determine objective indicators for the presence or absence of Hp infection to support medical doctors’ diagnoses by constructing an automatic diagnostic system. In the proposed system, first, a region with a high hue in LCI images is defined as a region of interest (ROI). Images with a wide ROI and images with a narrow ROI are classified as high and low hue images, respectively. As a result, LCI images are classified into two types in which inflammation due to Hp infection presents as red and purple. Then, the presence or absence of Hp infection is learned by machine learning for each type of LCI image. The feature values used in the learning process are the ratio of the ROI, the average and median hue values in high hue images, and the mode saturation value and the median and variance of the hue in low hue images. Then, the trained classifiers diagnose the presence or absence of Hp infection automatically. In this paper, the constructed system was evaluated using 128 images (32 patients) in which endoscopic examination (LCI observation) and Hp infection diagnosis were performed at Murakami Memorial Hospital of Asahi University. Furthermore, support vector machines were used as classify learners for diagnosis.

Results: In the previous system [1], 29 out of 32 cases were automatically diagnosed correctly. In contrast, all cases were automatically diagnosed correctly with the proposed system. This result demonstrates that classifying LCI images into two types based on color improves the accuracy of this system.

Conclusion: The proposed system can automatically diagnose the presence or absence of Hp infection with the same precision as medical doctors with sufficient experience. Therefore, the proposed system can support the diagnosis of medical doctors with less experience.

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

Reference

P1902 HELICOBACTER PYLORI DETECTION BY γ-GLUTAMYLTRANSPEPTIDASE-ACTIVATED FLUORESCENT PROBE

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Introduction: γ-glutamyltranspeptidase (GGT) is a cell surface-associated enzyme that is not highly expressed in normal cell. However GGT is overexpressed in various type of human cancers. It is known that Helicobacter pylori (H. pylori) also produce GGT. Urano et al have developed an enzymatically activatable fluorescent probe, γ-glutamyl hydroxymethyl rhodamine green (γGlu-HMRG), which is fluorescent under a pH of 7.4 and normal cellular environ-ment, but turns to be highly fluorescent upon reaction with GGT [1]. Aim of this study is to consider if γGlu-HMRG can be useful for diagnosing infection H. pylori.

Aims & Methods: In this study, we investigated whether activation of γGlu-HMRG fluorescence detects a wild-type of H. pylori (WT) and a ggt gene-disrupted mutant of H. pylori (ggt mutant). In addition, we investigated whether activation of γGlu-HMRG fluorescence was suppressed in H. pylori culture solution which was co-incubated with an inhibitor of GGT (GGsTop). Furthermore, we applied γGlu-HMRG to biopsy specimens which were taken from antrum and corpus of stomach in H. pylori positive patients (n = 13) and H. pylori negative patients (n = 14). We then observed the increase of fluorescence intensity over time (1 min, 5 min, 10 min, 15 min). Fluorescence intensity was quantified by Image J2 software (National Institutes of Health, Rockville, Maryland).2

Results: Activation of γGlu-HMRG fluorescence was detected in WT strain, but was not in ggt mutant strain. Activation of γGlu-HMRG fluorescence was inhibited by GGsTop. There was significant difference of the increase of fluorescence intensity between H. pylori positive and negative both in antrum corpus of stom-ach (antrum p = 0.0008, corpus p = 0.047).

Conclusion: GGT-activated fluorescent probe can be useful for H. pylori infection diagnosis.

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

References

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 (H. pylori) 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 H. pylori serology test finding. Of the 98 followed-up subjects, 59 (59.2%) showed sero-positive 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: An equivocal H. 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 H. pylori. Therefore, equivocal subjects with increased serum PG levels should be consid-ered as a potential seropositive subjects.

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

References

P1904 WE CAN JUDGE THE EXISTENCE OF PRESENT OR PAST *H. PYLORI* INFECTION WITH ONLY ONE ENDOSCOPIC CARDIAC IMAGES (SHARK WHALE SIGN: WSS)

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**Introduction**: Several *H. pylori* (HP) infection related cardiac 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 cardia 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 Whole 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 profiles. We have judged the presence of HP infection with serum HP antibody titers on each case. The 3,233 cases their serum HP antibody titers were measured 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 titers 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 HP related gastritis.

**Conclusion**: We have been able to judge the presence of HP infection with only cardiac endoscopic images (WSS), we should take care of seeing the presence of WSS sign. Since this sign is very easy and simple, everyone will be able to judge the presence of HP infection as a gastric cancer risk.

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

**Abstract No**: P1903. **Table**: Different characteristics of the subjects with an equivocal *H. pylori* test finding according to the repeated *H. pylori* serology test findings

<table>
<thead>
<tr>
<th>Variables</th>
<th>Seropositive finding on the follow-up test (n=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>0.385</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</td>
<td>1.7±1.0</td>
<td>1.5±1.1</td>
<td>0.987</td>
</tr>
<tr>
<td>Comorbidity Hypertension</td>
<td>5.5±1.5</td>
<td>5.5±1.4</td>
<td>0.987</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>13.0±11.0</td>
<td>10 (25.0%)</td>
<td>0.516</td>
</tr>
<tr>
<td>Alcohol drinking</td>
<td>14 (24.2%)</td>
<td>8 (20.0%)</td>
<td>0.629</td>
</tr>
</tbody>
</table>

Statistically significant values are highlighted in bold. Continuous variables are shown as mean value ± standard deviation using the Student's t-test. Categorical variables are shown in frequency (%) using the Chi-square test or Fisher’s exact test. *Critical 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.*
P1906 CAN THE UREA BREATH TEST PREDICT HELICOBACTER PYLORI 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 naive adult patients undergoing UBT were included. Patients were deemed to be H. pylori positive if a Delta Over Baseline (DOB) value of > 40% 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 4 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 43.3 ± 15.2 years, 39% male), 283 patients were positive (mean age 43.1 ± 14.9 years). 41.9% 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 groups (p=0.06 for age, p=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 (20.6% ± 9.7%) compared to unsuccessful (29.8% ± 10.7%) (p=0.03). The DOB value could be a useful value in stratifying patients with H. pylori infection; especially as histology and antimicrobial resistance information is unavailable in patients undergoing non-invasive testing for H. pylori infection.

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

P1908 COMPARISON OF THE EFFICACY BETWEEN BISMUTH AND ALTERNATING RIFAXIMIN ON SECOND-LINE QUADRUPLE REGIMEN OF HELICOBACTER PYLORI ERADICATION

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Introduction: Bismuth is a heavy metal which has antimicrobial activity through binding to bacterial proteins. 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 Soochunhyang 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 31th 2015, six thousand and five hundred ninety-five patients were treated their H. pylori infection in Soochunhyang University Hospital, Seoul. And their prescriptions and result of eradication were retrospectively reviewed on the medical records. The patients who had clari-drug-resistant HP infection, were then excluded. The average success rate of RIF regimen was 97.2% (789/851). On the other hand, the average success rate of RAC regimens (330/443=74.5%) (p<0.001). These results suggest that using rifaxime in APB (P-CAB) plus AMX regimen might be the strongest H. pylori eradication triple therapy regimen to overcome CAM resistance.

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

P1909 HIGH-DOSE CAM WITH VONOPRANAZ (P-CAB) PLUS AMX TRIPLE THERAPY REGIMEN IS THE STRONGEST H. PYLORI ERADICATION THERAPY EVEN IF CAM RESISTANCE

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Introduction: Success or failure of Amoxicillin (AMX) and Clarithromycin (CAM)-based H. pylori (HP) eradication therapy mainly depends on sensitivity of CAM for HP. In Japan, we are permitted to prescribe AMX and CAM as antibiotics of 1st eradication. So far now, several proton pomp inhibitors (PPIs) have been used in HP eradication therapy. Most of reports said that the success rate of eradication approximately from 70 to 80% on AMX and CAM-based triple therapy regardless of CAM dose (400 or 800 mg/day) in Japan. Recently the ratio of CAM resistance in Japan comes up to over 30%, we have to overcome this problem.CAM resistance is considered that the stability of continuous gastric acid suppression is one of most important factors. At the point of gastric acid suppression, we expect stronger acid suppressive drug rather than PPIs. Since Feb. 2015 we have used P-CAB (Potassium-Competitive Acid Pump Inhibitor) and CAM-based triple therapy regimens (VAC, RAC). This study is a multicenter clinic (7 hospitals), prospective case study from Jan. 2012 to Oct. 2016. A total of 1,310 patients (HP positive) were enrolled. Mean age of patients was 52.4 years old. Fisher’s exact test was used in all statistical analyses. Regimen of VAC (400 or 800) was VPZ (400 mg bid, PPI bid (Rabeprazole 20 mg/ day) b.i.d.), AMX (1,500 mg/day) b.i.d. plus CAM (400 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 800 mg/day) b.i.d. for 7 days. The judgement of success or failure on eradication was done with the HP breath test on 3 months later after eradication therapy to avoid false negative results.

Results: Success rate of VAC 800 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 89.7% (789/851). On the other hand, the average success rate of CAM dose (P-CAB) regimen was PPS) (p=0.125). The average success rate of CAM regimen was 74.5% (330/443, PPS). The average success rate of RAC regimens was 97.2% (789/851, PPS). The success rate of RAC regimen was 97.7% (789/851, PPS). 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.

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

P1909 COMPARISON OF 10-DAY STANDARD TRIPLE THERAPY AND LEVOFLOXACIN BASED THERAPY FOR HELICOBACTER PYLORI ERADICATION: RANDOMIZED CONTROLLED TRIAL

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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, Levofloxacin-based therapy (LBT) has been evaluated to overcome the low eradication rate of standard triple therapy and reported eradication rate over 80%. Aims & Methods: We compared the efficacy and safety of SST group and LBT group for Koreans. Between April 2014 and April 2016, 49 patients in the SST group (amoxicillin 1 g bid, clarithromycin 500 mg bid and omeprazole 20 mg bid for 10 days) and 48 in the LBT group(levofloxacin 500 mg bid, amoxicillin 1 g
**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:** The aim of this study was to compare eradication rates of standard clarithromycin-based triple therapy with those of tailored therapy based on antimicrobial susceptibility as a first-line treatment for *H. pylori* infection. Treatment-naïve 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 Helicobacter assay (Hain). Patients randomly received either clarithromycin-based standard triple therapy or tailored therapy based on antibiotic sensitivities, for 7-14 days. A follow-up breath test was performed at least 8 weeks post-treatment.

**Results:** To date 889 patients have undergone endoscopy and 186 (21%) were *H. pylori* positive. Infected patients were significantly younger (mean age 53 vs 49 years, p = 0.002) and tended to be male (43% vs 53%, p = 0.02). Of 186 *H. pylori*-positive patients, 112 (60%) were treatment naïve. Culture of *H. pylori* was successful in 57% (64/112) of samples and primary clarithromycin resistance was 47% (30/64) by E-test. Genotypic resistance data was available for 93% (92/99) of primary resistant strains. Of 71/140 patients who completed the study, 27 (49%) patients have received levofloxacin triple therapy; 14 (26%) a PPI and 2 antibiotics based on their sensitivities; 10 (18%) bismuth quadruple and 4 (7%) clarithromycin triple therapy. The efficacy of first-line treatment by intention-to-treat and per protocol analysis was poor, at 47.3% (26/55) and 59.1% (24/41) respectively. Patients who received one previous treatment were significantly more likely to achieve eradication than those who received >1 previous treatment (76.2% vs 43.5%, p = 0.004).

**Conclusion:** Eradicating *H. pylori* infection for the first time round, before more virulent or antimicrobial resistant strains are selected for.

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

Reference


**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 in 10-45%. The addition of probiotics has been considered because of potential benefit in the improvement of efficacy and reduction of side effects during HpET.

**Aims & Methods:** We aimed to evaluate the effect of probiotics, as adjuvant to sequential HpET on treatment efficacy, side effects and patient compliance. The effect of probiotics was also assessed in HpET failure cases.

**Methods:** Of 265 HpET (22.9%) patients recruited in this study (47%). Those in which were sensitive to clarithromycin, prescribed a regimen based on antibiotic susceptibilities. The eradication rates for standard triple therapy and tailored therapy according to clarithromycin resistance status are as follows:

- **Standard Arm (n = 45)**
  - Resistant (n = 23):
    - Susceptible strains (n = 21)
    - Resistant strains (n = 2)

- **Tailored Arm (n = 54)**
  - Resistant (n = 26):
    - Susceptible strains (n = 24)
    - Resistant strains (n = 2)

**Eradication Rate**

**ITT (n = 12)**

- **Standard Arm:** 55% (23/42) vs 77% (32/42) for standard therapy (p = 0.03)
- **Tailored Arm:** 62% (31/50) vs 78% (39/51) for tailored therapy (p = 0.02)

**Conclusion:** In those who are sensitive to clarithromycin, standard clarithromycin-based triple therapy achieves an acceptable eradication rate of approximately 81%. However, a high primary clarithromycin resistant strain was observed in this study (47%). In those who are resistant to clarithromycin, prescribing a regimen based on antibiotic susceptibilities increases eradication rates to 83%, compared to those treated with standard triple therapy (57%, p = 0.09).

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

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were assigned to one of the following groups: a control group receiving the from May 2013 to May 2016, on a single center, prospective, controlled and infection documented on a histological study of gastric biopsies were enrolled.

One hundred ninety nine patients with

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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 treated in Japan, triple 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 VPZþAMPCþCAM 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 these therapy.

Aims & Methods: The aim of this study is to investigate the effect of probiotics, CLOSTRIDIUM BUTYRICUM Miyairi-588 (MBM) on PPI-based triple ther-

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Introduction: The objective of this study is to compare, in 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-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, residence, presence or not of ulcer or non-ulcer dyspepsia and BMI. The concomitant therapy group showed a significantly higher eradication rate of H. pylori (99.5% for the concomitant therapy group and 96.2% for the sequential therapy group, p=0.067). 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 high dose quadruple concomitant 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 CAPSULES


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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

standard sequential therapy, and an experimental group receiving in addition to the standard therapy, 500mg of Ultralevures Saccharomyces boulardii, orally and daily during the ten days of regimen. All the patients were reviewed in the end of the therapy to evaluate the adherence to treatment and the incidence and severity of side effects. The eradication of Helicobacter pylori was evaluated by C-urea breath test 4 to 6 weeks after the end of the protocol. Statistical analysis was performed by the software SPSS 20.0. A model of logistic regression was performed to analyse the effects of Saccharomyces boulardii supplementation on eradication rate and side effects.

Results: There was no significant difference between the two groups on age (middle age = 44.3±13.8years vs 43±13.2years), gender (Sex ratio M/F = 1.15 vs 1.05), medical antecedents, smoking, endoscopic and histological datas. In Intention To Treat ITT and Per Protocol PP analysis, the eradication rate was significantly higher in the experimental group (86.6% ITT, 87.5% PP), compared to the control group (78.2% ITT 74.7% PP), p=0.02. Moreover, the Saccharomyces boulardii supplementation allowed a significant reduction of the incidence of overall side effects (RR =0.26, IC95%[0.14–0.47], p<0.001), and the incidence of antibiotic-associated diarrehea (RR =0.07, IC95%[0.02–0.26], p<0.001). The incidence of nausea and vomiting, dizziness, asthenia and metal-

We aimed to investigate the effects of the Saccharomyces boulardii supplementation to the sequential therapy on Helicobacter pylori eradication rate and associated therapy side effects.

Aims & Methods: One hundred ninety nine patients with Helicobacter pylori infection documented on a histological study of gastric biopsies were enrolled from May 2013 to May 2016, on a single center, prospective, controlled and randomized study, performed in the Gastro EnteroLOGY II department on the military hospital of Rabat. Using a permuted block randomization, our patients were assigned to one of the following groups: a control group receiving the

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Introduction: The eradication of Helicobacter Pylori remains crucial because of constantly evolving data. The recent recommendations of Maastricht V stipulate that the concomitant quadritherapy and the bismuth quadruple therapy are more efficient than the sequential therapy because of a higher rate of eradication (90% vs 82%), but with more important side effects. The aim of our study is to investigate the effects of the Saccharomyces boulardii supplementation to the sequential therapy on Helicobacter pylori eradication rate and associated therapy side effects.

Aims & Methods: One hundred ninety nine patients with Helicobacter pylori infection documented on a histological study of gastric biopsies were enrolled from May 2013 to May 2016, on a single center, prospective, controlled and randomized study, performed in the Gastro EnteroLOGY II department on the military hospital of Rabat. Using a permuted block randomization, our patients were assigned to one of the following groups: a control group receiving the
area, and in clinical practice. A prospective study was performed in a Spanish center recruiting consecutive naive adult patients, candidates to *H. pylori* eradication. Omepraizole 40mg, Clarithromycin 500mg. Amoxicillin 1g and Metronidazole 500mg. all drugs b.i.d, for 14 days (OCAM); or Omepraizole 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; age mean ±SD: 51.53 ± 3.41 years) were included. OCAM were prescribed in 103 and 3–1-OBMT in 113. No differences in age, sex and functional dyspepsia as indication to eradicate were observed. OCAM and 3–1-OBMT regimens achieve high and similar compliance and efficacy rates, but the rest were indicated after previous eradication treatment. Inappropriate indication to PCP compared to GS (36.4% vs 7.2%; p = 0.001). A significant increase in the adherence to appropriate treatment regimens (71% vs 35%; p = 0.001) and eradication rates (78% vs 57%; p < 0.0001) was observed in the PCP group after the implementation of specific counselling based on national guidelines.

Conclusion: Hp infection management at primary care level is appropriate with high 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

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

Introduction: Radiation-induced gastrointestinal syndrome (RIGS) stems from the clonogenic loss of crypt cells and vill depopulation and results in mucosal barrier disruption, bacterial inflammation, and sepsis. Valproate (VPA) is the one of the popular anti-consulants, recently its Notch signal modulatory effect has been reported. Notch signalling pathway is known to maintain intestinal stem cells and to differentiate to secretory cells such as goblet cells. Moreover, it has been reported that combination of VPA and CHIR 99021 (GSK3ß inhibitor) has powerful proliferatory 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 C57BL/6 mice. Crypts were isolated by EDTA chelation, suspended in Matrigel and grown in culture media containing epidermal growth factor, noggin, R-spondin 1. After 1 day in culture, the enteroids were treated (or not) with 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 MIT assay, budding efficiency of enteroid, and EdU staining. On post-irradiation Day 2 and Day 7, RT-PCR was performed.

Results: Enteroid from mouse had multiple crypts (‘budding’) with well-differen- tiated goblet, Paneth cells, + stem cells (quencia stem cells, BMII is expressed), Lgr5+ stem cells. In the response of radiation, irradiated enteroid decreased proliferation rate in a dose dependent manner, as measured by MIT assay, budding efficiency of enteroids. Irradiated enteroids with VPA +CHIR 99021 could maintain their + stem cells even in 10 Gy of irradiation, lethal dose of mouse intestinal epithelium, and they were able to proliferation. Combination of VPA + CHIR 99021 did not have an effect on paneth cells, enteroendocrine cells and goblet cells.

Conclusion: VPA and CHIR 99021 may ameliorate RIGS in ex-vivo mouse enteroid, through + reservoir stem cell preservation 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 IN ALGERIA
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Introduction: Celiac disease (CD) is an important health problem worldwide. It is characterized by a high prevalence (1%), specific morbidity, long-term complications and epidemiological progression. However, mass screening is not recommended. Currently, the strategy of 'Targeted screening,' defined as screening of high-risk groups, is widely practiced and recommended by learned Societies, in contrast to the relatives of CD patients. In the world, targeted screening studies related to CD showed prevalence ranging from 4.2 to 10.3%.

Aims & Methods: The main aim of our study is to determine the prevalence of CD in the first degree relatives in Algerian population. This was a descriptive-transversal study with prospective recruiting. This is a screening of first-degree relatives of patients known and treated for CD. Relatives are screened by using anti-transglutaminase (tTG) antibodies in the serum. Upper digestive endoscopy and duodenal biopsy are performed in all sero-positive relatives and graded as per Marshall modified by Obertuber classification to confirm the diagnosis. The prevalence of CD in first-degree relatives of patients included in our study.

Results: Among the 546 first-degree relatives, we have 18.5% of parents, 57.5% of brothers and 23 sisters (9). The average age of screening cases is 31.8 years with CI at 95% [25.7–38.1]. The prevalence of CD in first-degree relatives with positive serology and positive duodenal biopsy is 7.3% with CI at 95% [5.2–9.4]. The age of screening cases is 31.8 years with CI at 95% [27.2 to 36.4] and extremes of [3–71] years. The mean duration of symptoms before diagnosis is 3.4 years, with CI at 95% [2.8 to 4.0] years. Among the 44 new cases detected by targeted screening, 14.4% are asymptomatic, 88.6% are symptomatic. This is a classical form in one case and atypical form in 86.4% of cases.

Conclusion: The present work entitled “Prevalence of celiac disease in relatives” is the first screening study of CD in the first-degree relatives carried out in Algeria. Among first-degree relatives, it is characterized by high prevalence which corresponds to the prevalence of CD in first-degree relatives of patients known and treated for CD. Our investigation supports the idea that the development of an extensive screening approach is needed to promote early diagnosis and to prevent complications of CD in first-degree relatives.

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

P1920 LONG-TERM HEALTH AND LIFESTYLE OUTCOMES IN ADULT CELIAC DISEASE PATIENTS DIAGNOSED IN CHILDHOOD BECAUSE OF CLINICAL SUSPICION OR BY SCREENING
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Introduction: Starting a gluten-free diet (GFD) and follow-up of celiac disease was sent to 564 adults with a 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 less symptoms (44% vs 85%, p < 0.001) than clinically detected patients (n = 186). They also had a trend to have less often total villous atrophy (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 27.1 yr, p = 0.64) and were similar in the number of lifetime symptoms related to CD. A trend was noted among the group who experienced health concerns about health, clinical symptoms, strict GFD (74% vs 80%, p = 0.161), 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.

P1921 REVIEW OF SERVICE PROVISION OF NATIONAL INSTITUTE OF HEALTH AND CARE EXCELLENCE (NICE) RECOMMENDED QUALITY STANDARDS FOR COELIAC DISEASE AT A BIG DISTRICT GENERAL HOSPITAL
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Introduction: In the UK, 1 in 100 people are affected with coeliac disease. NICE published quality standards (QS134) for coeliac disease in October 2016 based on NICE guidelines NG20 (September 2015). This quality standard covers the recognition, assessment and management of coeliac disease in children, young people and adults. The quality standard is expected to contribute to improvements in the diagnosis of coeliac disease, growth in children and young people, health-related quality of life, incidence of osteoporosis, intestinal lymphoma, vitamin D deficiency, and iron deficiency.

Aims & Methods: We audited our departmental practices against NICE quality standards for coeliac disease. It is a retrospective data analysis of patients, 16 years and above, with probable coeliac serology from April 2016 to September 2018. The adverse events were by referral, value of issue transglutaminase (tTG) antibodies, type of referral (new or follow up), timing of OGD (less than or more than 6 weeks), whether or not seen by dietician, offer of annual review, and DEXA scan.

Results: Out of 24 patients, 6 patients had new referrals (26%). 5 patients had follow-up (21%). New referrals, 3 (13%) had follow-up and 2 (9%) had screening. 2 (8%) patients had OGD in more than 6 weeks. 4 (17%) patients had DEXA scan.

Conclusion: The incidence and prevalence of coeliac disease in our study are 30.28 per 100,000 persons-years and 8 per 100,000 population respectively. The data demonstrates that Mid Yorkshire NHS Trust is not providing required service standards for optimum care of coeliac patients in the Mid Yorkshire region. We need to keep in mind that some gastroscopies would have been performed in the primary care sector, the records of which were not available on our system. This factor could have potentially affected our results. Due to several constraints in our service provision, time frames stipulated in the NICE guidance are challenging as evidenced by the audit results. In spite of our unique local access to endoscopy units in primary care, we are still not able to deliver the required standards of care. Given the potential disease sequelae of coeliac disease, such as osteoporosis and lymphoma, it is important that these issues are addressed by the development of local referral and management pathways to ensure that all coeliacs are captured, investigated, and followed up appropriately.

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)

P1922 SERUM MICROBIAL MARKERS IN NONRESPONSIVE CELIAC DISEASE
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Introduction: In nonresponsive celiac disease (NRCD) the symptoms and duodenal mucosal changes persist despite gluten-free diet (GFD). Recently, knowledge about dysbiotic microbiota is increasing (1). Furthermore, serum microbial antibodies to Saccharomyces cerevisiae (ASCA), Pseudomonas fluorescens-associated sequence (I2) and Bacteroides caccae TonB-linked outer membrane protein (OmpW) were found to be gluten-sensitive (2) and present already at early stages of CD development (3). We hypothesized that increased seroactivity to microbial antibodies is associated also with NRCD.

Aims & Methods: Serum ASCA, I2 and OmpW were measured in 20 CD patients with persistent villous atrophy and mucosal inflammation despite strict GFD and negative celiac serology (NRCD group). Corresponding GFD responsive patients served as CD controls (58 samples at diagnosis and 55 on GFD) and...
80 healthy blood donors as non-CD controls. Kruskal-Wallis test was used to compare antibody titers and Dunn-Bonferroni for post hoc pairwise comparisons.

**Results:** At least one serum microbial marker was positive in 80% of NRCD patients, in 97% of untreated and 87% of treated CD patients and in 44% of non-CD controls. NRCD patients had the highest frequency of ASCA positivity (64% vs 52%, 20% and 0%, respectively) and also significantly higher ASCA IgA (median 14.5 U/ml) and IgG (32.5 U/ml) titers than treated CD patients (7.0 U/ml, 13.0 U/ml) and non-CD controls (4.5 U/ml, 5.8 U/ml). There was no difference in ASCA between NRCD and untreated CD. The frequencies of 12 (65%) and OmpW (45%) were lower in NRCD than in untreated CD (86%, 59%, respectively), while 12 titers were higher in NRCD (median absorbance 0.76) and untreated (1.0) and treated (0.83) CD than non-CD controls (0.32). OmpW was elevated in untreated (1.1) and treated (0.94) patients compared with non-CD controls (0.79).

**Conclusion:** Seropositivity and high titers of ASCA were associated with NRCD and might thus serve as additional follow-up tool for histological recovery in CD.

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

**References**


**P1924 CIRCULATING EXTRACELLULAR VESICLES, A NOVEL MECHANISM OF ENDOCRINE 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 pathological 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 EVs subpopulations. Data are expressed as mean ± SD and statistical differences were evaluated by means of T-test.

**Results:** We evaluated 12 age- and sex-matched controls (mean age 42 ± 19.1 vs. 40.8 ± 15.9 years, F/M = 4:1) at diagnosis and 12 age- and sex-matched healthy controls. Histology was considered positive for lesions of grade ≥B1 according to the Corazza-Villanacci classification. Mean anti-tTG levels at diagnosis were 6.9 ± 3 units/L. Mean number of total circulating EVs was significantly higher in CD than in controls (5985 ± 72482 vs 14383 ± 10018 EV/microL, p < 0.035). Subgroup analysis showed that EpCAM + EVs, of epithelial origin, and CD44 + platelet-derived EVs were not significantly different between CD and controls (894 ± 1004 vs. 548 ± 1237 and 3052 ± 1563 vs. 1734 ± 1610 respectively, p > 0.05). On the contrary, CD45 + EVs, of leucocyte origin, showed a significantly higher number on CD 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.
Conclusion: Celiac disease patients at diagnosis show higher numbers of circulating cell-free DNA in peripheral blood when compared with matched controls. Phenotypical assessment suggests that this increase is not primarily driven by epifelial or endothelial damage. On the contrary, the increased numbers of leukocyte-derived EVs, suggest their potential implication in systemic signaling.

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

P1925 COELIAC DISEASE AND REPRODUCTIVE DISTURBANCES: IS THERE ANY CORRELATION

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Introduction: The coeliac disease is an autoimmune enteropathy induced by the ingestion of gluten in genetically predisposed individuals. The clinical phenotypes ranges varieted manifestations including reproductive disorders. The aim of our study is to evaluate the frequency of these disorders in the coeliac disease and their evolution under gluten-free diet.

Aims & Methods: It's a single-center, retrospective and descriptive study including 241 patients with coeliac disease enrolled within period of 17 years from 1995 to 2016 in the department of Gastroenterology « Medecine C » in Ibn Sina University Hospital. Results: About 241 patients suffering from coeliac disease,58 patients presented reproductive disorders, either 28.9%. Recruiting 53 women and 5 men, with a sex ratio M/F of 10/6. The mean age was 32.25years ranging from 13 to 59years old. The diagnosis of coeliac disease was based on: History (severe or partial Villous atrophy with intraepithelial lymphocytosis exceeding 30%), the antinomous 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 mostly among puberty in 11 cases (19%), secondary amenorrea in 13 cases (22.4%), Metrorrhagia in 12 cases (20.6%), absence of development of secondary sexual characters in 8 cases (12.5%), spontaneous abortion in 7 cases (10.9%), menometrorrhagia in 4 cases (13.8%), primary sterility in 5 cases (8.6%), precocious menopause in 6 cases (10.3%), premature labour and/or IUGR in 3 cases (5%), primary amenorrea in 2 cases (3.4%), and intrauterine Fetal death IUFD in one case (1.7%). All our patients benefited from a gluten-free diet. 15 patients were excluded from the study, 2 patients died, and 12 patients were lost to follow-up. Of the 29 patients stayed, the evolution of the reproductive disorders under gluten-free diet was good in 26 cases (90%), with normalization of the cycles in 15 cases, The cycle was returned in 6 cases, development of secondary sexual characters in 2 cases, fertility was returned in one case. The 15 patients leveled her cycle after primary amenorrea, 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 amenorrea 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. 15 patients were excluded from the study, 2 patients died, and 12 patients were lost to follow-up. Of the 29 patients stayed, the evolution of the reproductive disorders under gluten-free diet was good in 26 cases (90%), with normalization of the cycles in 15 cases, The cycle was returned in 6 cases, development of secondary sexual characters in 2 cases, fertility was returned in one case. The 15 patients leveled her cycle after primary amenorrea, 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 amenorrea continued in 2 cases.

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: Design: retrospective retrieval of information prospectively entered into a structured database including 81 adult patients diagnosed with CD hospitalized at the Institute of Gastroenterology and Hepatology, “St. Spiridon” Hospital, Iasi between January, 2012- December, 2016 admitted with symptoms of abdominal disturbances (diarrhoea, heartburn, nausea, vomiting, reurgitation, abdominal pain). Demographic, clinical, serological, and histological characteristics of individuals with CD were reviewed.

Results: The study group included 81 adult patients with a female: male ratio of 3: 1. 60 (71.1%) female patients, mean age 40.02 ± 12.14 years. A total of 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 vs 47yrs). Marhl-Obreuber 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- TGt) antibody (61.45±7.458 u/mL vs 162.02±106.179 u/mL, P = 0.001) and IgA anti-gliadin antibodies (IgA-AGA) levels (61.83±69.41 u/mL vs 77.15±71.02 u/mL, P = 0.001) correlated with intestinal villous atrophy (Marsh 3a and 3c) in CD patients by Spearman rank correlation. Among 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 = 0.0084). 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 3 b lesions (P = 0.008) and elevated IgT-IgA titers (r = -0.384; P = 0.001). Coeliac disease 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.

P1927 ASSOCIATION OF CELIAC DISEASE AND PATENT FORAMEN OVALE

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Introduction: Celiac disease is an immunologically-mediated enteropathy that triggered by the intake of gluten-containing foods in genetically predisposed individuals. It causes intestinal and extraintestinal manifestations. Extranintestinal findings are observed in many systems. The prevalence of extraintestinal findings in CD patients is 30%, 10–25% higher than in the general population. We performed an echocardiography study to determine the frequency of accompanying cardiac findings in our patients with celiac disease. In this article, we aimed to share the frequency of the PFO detected in celiac patients with high results.

Aims and Methods: Between May-June 2015, 65 patients who applied to the gastroenterology clinic of Derince Education and Research Hospital and followed up with celiac disease were identified. The sociodemographic characteristics, celiac disease diagnosis duration, symptoms and complaints, accompanying diseases, drug use histories, hemogram and biochemical parameters of these patients were recorded. The patients underwent saline contrast transthoracic echocardiography in the cardiology clinic. Patients’ data were recorded. The obtained data were evaluated with appropriate statistical methods.

Results: Sixty-five celiac patients were included in the study, 21 (32.3%) male and 44 (67.7%) female. The mean age was 41.3 ± 14.1 years. PFO was detected in 39 (60%) of the patients. There was no difference in the incidence of PFO in between male and female patients. (61.9% and 59.1% respectively, p=0.829). Compared with the frequency of PFO in the general population, the incidence of PFO in patients with CD is even higher. (25% and 66% respectively, P<0.004). Conclusion: As a result, the incidence of PFO is more prevalent in celiac patients than in the general population. For this reason, the evaluation and treatment of the PFO, which may be the cause of cerebrovascular disorders in clinical follow-up of patients, are required. In addition, the high incidence of PFO in celiac patients suggests that celiac disease is a factor affecting the development of patients from intrauterine period. Because our patients did not undergo transesophageal echocardiography, this rate may be less than real exist. For this reason, further evaluation is required with a wider patient group and by transesophageal echocardiography.

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

P1928 USEFULNESS OF BULB BIOPSY SAMPLES IN CELIAC DISEASE DIAGNOSIS IN ADULTS

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Introduction: Celiac disease diagnosis (CD) guidelines recommend sampling of both the bulb and distal duodenum for diagnostics. This has been reinforced by the recent data on ultra-short CD [1]. However, it has been previously shown in pediatric CD that bulb samples are frequently of poor quality [2]. However, the bulb and the duodenal bulb in non-celiac patients also, and it can lead to false-positive diagnoses [2]. Our aim was to address the same issue in adult CD, using the same validated morphometric methods [3].

Aims and Methods: We prospectively recruited cases of clinically recommended upper GI endoscopy; all patients also had signs and symptoms of CD and were checked for CD serology (serum tissue transglutaminase 2 antibodies and endomysial antibodies) and biopsy sampled according with current
recommendations. Paraffin embedded biopsy samples were assessed for villous height (VH) and crypt depth (CD) and VH/CD ratio revealed a critically reduced sensitivity, due to a sensitivity problem with this serology in the pediatric population or secondary to a suboptimal IgA band expression of the POCT.

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

P1929 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 Excellence. These specify a new 6-week target for the time from referral to endoscopy, which was previously covered by the 18-week referral to treatment (RTT) pathway. They also state that all newly-diagnosed patients should discuss a gluten-free diet with a specialist diettian. We retrospectively evaluated practice in the Oxford University Hospitals NHS Foundation Trust coeliac clinic against these criteria, and against national guidelines (duodenal bulb sampling at endoscopy and screening for nutritional deficiency).

Aims & Methods: The medical records of 110 patients referred to our clinic between September 2015 and September 2016 were examined. The date of referral and endoscopy were recorded, along with relevant demographic, clinical and laboratory data. Information was collected and analysed in Microsoft Excel.

Results: Eighty-five patients (68% female, median age 34) were seen within the waiting time of the 18-week referral to treatment (RTT) pathway. Six patients declined or delayed endoscopy, and endoscopy or referral information were not available for 4 patients. For the remaining 66 patients, mean time from referral to endoscopy was 12 weeks (SD 37 days), with 59 patients (89%) referred 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 diettitian. Haematocrits (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%) and vitamin D2 deficiency in 5 patients (8%) and vitamin D3 deficiency in 23 patients (38%). Osteoporosis was diagnosed in 5 patients (10%) and osteopenia in 10 patients (20%).

Conclusion: Appropriate dietitian referral, specialist follow-up and screening for nutritional deficiency and bone disease occur within the Oxford coeliac disease service. Compliance with recommended biopsy protocols was only 44%. Whilst most referrals met the previous 18-week RTT pathway, few would have met the new quality standards.

Disclosure of Interest: M. FitzPatrick: Michael FitzPatrick is supported by an Oxford-Celgene Research Fellowship funded by Celgene Corporation. All other authors have declared no conflicts of interest.

References

P1931 MANAGEMENT OF OCCULT OBSCURE GASTROINTESTINAL BLEEDING PATIENTS BASED ON LONG-TERM OUTCOMES
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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 Res 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.

References

P1929 PROSPECTIVE MULTI-CENTER-STUDY TO EVALUATE A FINGER PRICK-BASED POINT-OF-CARE-TEST (POCT) FOR DIAGNOSIS OF COELIAC DISEASE
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Introduction: Celiac disease (CD) is a chronic inflammatory disorder triggered by the genetically susceptible people. The prevalence varies in between European countries and averages at 1% within whole Europe. It is anticipated that the number of undetected and therefore untreated cases is high. Since untreated CD is associated with a high morbidity, further diagnostic modalities to uncover undiagnosed coeliacs are currently explored. In this setting, we evaluated Simtossmax™, a POCT detecting deamidated gliadin peptide antibodies, with the goal to identify patients that need for duodenal biopsies prior to gastroscopy. Thus, the goal was to establish a test allowing to guide the endoscopist in his decision to collect duodenal biopsies.

Aims & Methods: Prospective investigator-initiated multi-center study in six adult gastroscopy and two pediatric gastroscopy centers in Berlin and Brandenburg, Germany, approved by the local ethical committees. Finger prick blood of patients registered for gastroscopy and eligible for the study (exclusion: defective coagulation, established celiac disease or on gluten-free diet) was analyzed by the POCT (IgA and IgG for deamidated gliadin peptides; Simtossmax™ test, Tillotts, Switzerland). Test results were compared with duodenal histology (Marsh classification). In POCT-positive individuals transglutaminase-IgA serology was performed.

Results: Analysis was performed in n=721 adult patients (average age: 48 yrs) and n=108 pediatric patients (average age: 11 yrs). In the adult cohort 45 POCT were judged as “positive”. Within the POCT positives, 6 Marsh III cases were detected. None of the 676 POCT-negative individuals revealed CD. Therefore, the prevalence of CD in this population was 0.8%. The POCT-specificity in this group was 94% (5%-CI 92-96%), the sensitivity was 100% (95%-CI 51-100%). In the pediatric cases 21 POCTs were judged as “positive” with 13 being true-positive. Of the 87 negative POCTs, 68 were true-negative, but 4 were false-negatives. Thus, the prevalence of CD in the pediatric gastroscopy was 16%. However, sensitivity in this group was only 76% (50-93%) and specificity 91% (91-93%). Examiners at various centers suggested, that “faint” bands in the POCT analysis might contribute to interpretation failures.

Conclusion: A screening test like a POCT in CD-needs to perform optimally especially in sensitivity. In the adult population all CDs were detected by the

POCT. However, the CD prevalence in this group was low. In the pediatric group the POCT revealed a critically reduced sensitivity, due to a sensitivity problem with this serology in the pediatric population or secondary to a suboptimal IgA band expression of the POCT.

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

References
bleeding rate with or without treatment, the rate of anaemia exacerbation (hemo-
globin levels decreased 45 ng/ml, p value 0.05 95% C.I 0.22–1.03 O.R. 0.05.

Results: The positive CE findings rate was 44% (157/357) and the decte-
tion rate of bleeding source lesions was 27% (98/357). All of the treated bleeding source lesions (Group A) were as follows: angioectasia 61 patients (Yano-
Yamamoto classification Type 1a 37 patients, Type Ib 24 patients), non-specific ulcer, diverticular anti-inflammatory drugs-induced ulcer, 6 patients, hemangiomia 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 without treatment (Group B) were as follows: angioectasia 25 patients (Type 1a without oozing 25 patients), erythema 31 patients, others 3 patients. There were no patients with overt bleeding
in Group B. Although 6 patients (10%) had anaemia exacerbation in Group B (Type 1a) that were not a bleeding source lesion. OR in both Group A and Group B was 90%. DSS in Group A was 99% and in Group B 100%. One patient in Group A died of a primary small-bowel cancer.

Conclusion: Conclusion: Long-term outcomes with occult OGB patients were good except malignant tumor, because overt bleeding and/or anaemia exacerbation did not occur within the follow-up period. Thus, occult OGB patients without bleeding source lesions, including Type 1a angioectasia without oozing, and erythema, are unnecessary to follow-up with CE in occult OGB patients.

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

P1932 A PILOT STUDY EXPLORING THE VALUE OF FAECAL IMMUNOCHEMICAL TEST (FIT) WHEN INVESTIGATING ANAEMIA OR OCCULT GASTROINTESTINAL BLEEDING WITH SMALL BOWEL CAPSULE ENDOSCOPY
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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 identify the causes of anaemia or bleeding, such as angiodysplasia, small bowel Crohn’s disease, polyposis, 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 immunochromat test (FIT) has an established role, in investigating large bowel bleeding, and is incorporated into a number of bowel cancer screening programmes.

Aims & Methods: The aim of our study was to investigate whether FIT could help predict likelihood of small bowel bleeding or other significant pathology at time of small bowel capsule endoscopy. This was a prospective pilot study, performed at our centre from September 2016-April 2017. Indications for enrolment were patients referred for SBCE with the indication of anaemia or occult GI bleeding. Baseline patient characteristics were obtained including age, gender, history of recent or distant diagnosis, and use of anti-platelet/anti-coagulants.

Patient haemoglobin (Hb) level was checked on the day of SBCE where possible. Patients were asked to return one completed FIT for further analysis. A cut of 50 ng/ml was chosen as this is the standard cut-off used, in the Irish National Bowel Cancer Screening programme.

Results: A total of 40 patients were enrolled, mean age 55.4 years (range 18–77), 64% were female. A total of 27.6% of patients were on anti-platelet agents or anti-coagulants. 34% of patients had a blood transfusion within the last year. Mean Hb for the cohort was 12.8 g/dL (range 7.8–15.9 g/dL). The average FIT reading was 459 ng/mL (range 0–4246 ng/mL). 30% of patients had a FIT level >50 ng/mL. 46% of patients, had positive findings at SBCE. 9/12 (75%) of patients with a FIT level >50 ng/mL had positive findings at capsule endoscopy, compared to 5/28 (17.8%) for FIT <50 ng/mL. p value = 0.002, 95% C.I. 0.29–0.86 O.R. 0.16. These included 4/12 (33%) cases of Crohns, 3/12 (25%) angiodysplasia, 3/12 (33%) non-HBD enteritis, 1/12 (16.7%) small bowel tumour and 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 >30 ng/mL were anaemic (Hb <11.5 g/dL), compared to 17% with FIT <30 ng/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 0.22–0.33 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. 56.9%–95%).

Platelet 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.

Number & (%)

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<td>Cryptogenic</td>
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<tr>
<td>HCV</td>
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<tr>
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</tr>
<tr>
<td>NASH</td>
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<tr>
<td>PSC</td>
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<tr>
<td>PBC</td>
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<tr>
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<tr>
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<tr>
<td>African-American</td>
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<tr>
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<td>18(18%)</td>
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<tr>
<td>No Portal hypertension enteropathy</td>
<td>35(35%)</td>
</tr>
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Table 1B
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


Aim of this meta-analysis was to examine the differences in re-bleeding rates in patients with OGB after index VCE, as measured in Western and Eastern studies. A comprehensive literature search in MEDLINE was conducted to identify all studies examining re-bleeding rate after VCE for OGB. Meta-analysis assessed the pooled proportion of re-bleeding events after VCE for OGB according to study’s origin (Western vs. Eastern) as the primary end point. Possible ratios for re-bleeding after positive vs. negative index VCE and after long (>24 months) vs. short (<24 months) follow-up in the two studies origins, comprised the secondary endpoints. Study outcomes effect sizes were calculated using RevMan 5.3 software random effect model and they are presented as rate(95% CI) or OR(95% CI). Heterogeneity was measured using the I² statistics and publication bias risk was examined with Funnel plots inspection.

Results: Thirty-eight (14 Eastern and 24 Western) studies were included in the analysis with 5197 patients followed from 6 to 52 months. We detected significant heterogeneity with no evidence for publication bias in the meta-analyzed studies. While the overall, pooled rate of re-bleeding after VCE was 25%(21–29%), I² = 93%, similar re-bleeding rates were detected among Eastern and Western populations [22%(16–28%), I² = 93% vs. 28%(22–35%), I² = 95%]. The re-bleeding risk after positive compared to negative VCE index examination was higher [1.89(1.01–3.24), I² = 72%] in Eastern population studies, while a similar difference was not detected in the Western studies [1.46(0.72–2.94), I² = 88%]. When only studies with short-term follow-up were analyzed, the OR of re-bleeding after positive vs. negative VCE was 1.23(0.58–2.61), I² = 77% and 1.93(0.90–4.13), I² = 71% in Western and Eastern studies, respectively. For studies with long-term follow-up, no significant difference in the OR of re-bleeding after positive vs. negative index VCs was detected either in the East [2.03(0.96–4.29), I² = 71%] or in the West [2.04(0.82–5.08), I² = 99%].

Conclusion: Our analysis shows that patients undergoing VCE for OGB have similar re-bleeding rates in the East and in the West, regardless of the length of the follow-up. An increased re-bleeding risk after positive vs. negative index VCE was noted only in studies originating from the East.

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

P1935 MULTICENTER PROSPECTIVE CASE-CROSSOVER STUDY ON THE ASSOCIATION BETWEEN OVERT SMALL-BOWEL BLEEDING AND DRUGS USING CAPSULE ENDOSCOPY

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Introduction: Small-bowel capsule endoscopy (SBCE) have been useful in managing obscure gastrointestinal bleeding. We previously reported that the use of oxicams and diclofenac was associated with an increased risk of nonsteroidal anti-inflammatory drug (NSAID)-induced small-bowel injury (Aliment Pharmacol Ther 2014). However, the etiology and temporal development of drug injuries have been useful in managing obscure gastrointestinal bleeding. We previously reported that the use of aspirin-induced injuries, angiodysplasias, Meckel’s diverticula, and polyps. Loxoprofen-associated SBB was caused by mostly loxoprofen-induced injuries.

Conclusion: Enteric-coated aspirin, clopidogrel, and loxoprofen were identified as drugs causing overt SBB during the relatively short period after administration.

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

Reference


P1936 LONG-TERM OUTCOMES AFTER NEGATIVE DOUBLE-BALLOON ENTEROSCOPY (OVERT SMALL BOWEL BLEEDING (OBSCURE-OVERT GASTROINTESTINAL BLEEDING)

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Introduction: There are very few reports about long-term outcomes in patients with negative balloon assisted enteroscopy for suspected overt small bowel bleeding (obscure-overt gastrointestinal bleeding).

Aims & Methods: The aim of this study is to evaluate long-term outcomes and risk factors of re-bleeding after negative double balloon enteroscopy (DBE) for suspected overt small bowel bleeding. We investigated 297 patients undergoing DBE for suspected overt small bowel bleeding between December 2004 and April 2016 at Sendai Kosei Hospital. Prospectively collected data were reviewed, and 83 patients (27.9%) showed negative results in the first antegrade and/or retrograde DBE. For these patients, letter and telephone interviews were conducted in April 2017. As a result, a cohort of 64 patients could be followed. The primary outcome measurement is overt rebleeding and necessity for clinical assessment after negative DBE.

Results: Overt rebleeding was observed in 19 of 64 patients (29.7%) with 76 months follow-up period. The mean period during the first DBE and the first rebleeding episode was 11.6 months(2day-48months). Three patients showed rebleeding after more than three years of the first DBE. At the time of rebleeding, emergent endoscopy including DBE (within less than 48 hours) and/or contrast-enhanced computed tomography (CCT) was performed in all patients. The bleeding source was identified in 17 of 19 patients (89.4%). The bleeding source were duodenum (n = 8), jejunum (n = 7) and colon (n = 2), respectively. One

Disclosure of Interest: All authors have declared no conflicts of interest.
patient died due to uncontrollable duodenal bleeding. Blood transfusion before the
first DBE was associated with rebleeding (odds ratio 22.5, 95% confidence interval
1.97–198). 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 accuracy of PillCam SB 3.

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

References

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Introduction: Capsule endoscopy allows high-quality imaging of the small bowel. Newer capsule with a panoramic viewing mode is available and might increase the detection rate of bleeding lesions in patients with obscure gastrointestinal bleeding. Furthermore, an improved patient acceptance rate is expected.

Aims & Methods: In a randomized prospective comparative multi-center study, patients with obscure gastrointestinal bleeding were included and examined either with Capsocam SV-1 versus PillCam SB 3.

Results: One hundred eighty-one patients with obscure gastrointestinal bleeding were recruited into the study. After exclusion of 28 patients 153 patients were randomized and Capsocam SV-1 (n = 78) or PillCam SB 3 (n = 75) was administrated. Capsocam SV-1 detected more cases of bleeding (31/79, diagnostic yield 39.7%) compared to PillCam SB 3 (26/75, diagnostic yield 34.6%, n.s.). Transit time of both capsules was not different. Evaluation time with PillCam SB was reviewed. 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 RB 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).

Gastroscopy 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.

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

References
3 was superior to CapsoCam SV-1 (27 min. vs. 40 min, p=0.01). 95% of the physicians were satisfied with each capsule system and evaluation software. The acceptance rate of the patients to retrieve the CapsoCam SV-1 was high. Adverse events/SAEs were 17.9%/1.3% with CapsoCam SV-1 and 16%/0% with PillCam SB 3. Re-bleeding rate was 28.75% within 3 months.

Conclusion: Both capsules allow high-quality imaging of the small bowel. CapsoCam SV-1 detected more lesions, however, relevant bleeding sources were visualized by both capsules. Physician's satisfaction was high with both capsule systems and evaluation software. Patient's acceptance with CapsoCam SV-1 was unexpectedly high. SAEs were 0% with PillCam SB 3 and 1.3% with CapsoCam SV-1.

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

PI940 VALIDATION OF A SCORE CHART TO PREDICT THE RISK OF CHRONIC MESENTERIC ISCHEMIA: A DISCRIMINATIVE AND USEFUL TOOL IN CLINICAL DECISION-MAKING

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Introduction: Chronic mesenteric ischemia (CMI) is the result of insufficient mucosal perfusion of the gastrointestinal tract, mostly caused by atherosclerotic stenosis of the mesenteric arteries. Other causes of CMI are vasculitis, median arcurate ligament syndrome or non-occlusive ischemia (NOMI) due to decreased cardiac output or hypoxia-oxygenation. The diagnosis of CMI remains challenging as chronic abdominal pain is common and mesenteric artery stenoses are frequently observed in the general population but not necessarily related. Harki et al.(1) designed a score chart to predict the risk of CMI based on a cohort of CMI suspected patients. This score chart consists of patient characteristics (female 1 pt, weight loss 1 pt, cardio-vascular disease 1 pt) and radiologic evaluation (50-70% celiac artery (CA) stenosis 1 pt, >70% CA stenosis 4 pts, 50-70% superior mesenteric artery (SMA) stenosis 1 pt and >70% SMA stenosis 3 pts). A total score of 0-2 pts predicts an absolute risk of CMI of 0-21%, 3-6 pts a 22-70% risk and ≥7 pts a risk of ≥79%. We aimed to validate this prediction model in a prospective large multicenter patient cohort.

Aims & Methods: Patients suspected of CMI referred to our Dutch specialized CMI referral centers were included consecutively from January 2014 to August 2016. After diagnostic work-up of medical history taking, mesenteric CT-angiography and/or conventional catheter angiography, and a functional test for detecting mucosal ischemia using either tonometry or visible light spectroscopy. All cases were discussed in a multidisciplinary meeting attended by a radiologist, an intestinal surgeon and vascular surgeon. The primary outcome was clinical response to revascularization, defined as relief of presenting symptoms as experienced by the patient. The score chart for CMI based on patient characteristics and anatomy is a reliable tool to discriminate the risk of CMI and useful for clinical decision-making, for example to adopt a wait-and-see policy in patients with a low risk and immediate vascular intervention in patients with high risk of CMI.

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

Reference

PI941 LONG-TERM SYMPTOM RELIEF AFTER REVASCULARIZATION IN PATIENTS WITH SINGLE ARTERY CHRONIC MESENTERIC ISCHEMIA

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Introduction: Isolated stenosis of the celiac artery (CA) or the superior mesenteric artery (SMA) is frequently observed in patients with abdominal complaints. These patients may suffer from chronic mesenteric ischemia (CMI) causing nonspecific abdominal complaints as postprandial pain, nausea or diarrhea. However, the exact cause of single arterial mesenteric ischemia is a topic of continuous clinical debate and reports on the effectiveness of single mesenteric artery revascularization are scarce. We evaluated the long-term clinical success rates for single CA or SMA revascularization in patients with gastrointestinal symptoms and confirmed mucosal ischemia.

Aims & Methods: Data were collected from all 97 consecutive patients with gastrointestinal symptoms and a single mesenteric artery stenosis referred to the outpatient clinic of our tertiary care institution for analysis of CMI between January 2006 and October 2010. All patients underwent a standardized diagnostic work-up for CMI at baseline consisting of medical history taking and physical examination, imaging of the gastrointestinal arteries with either CT- or MR-angiography and/or conventional catheter angiography, and a functional test for detecting mucosal ischemia using either tonometry or visible light spectroscopy. All cases were discussed in a multidisciplinary meeting attended by a vascular surgeon, interventional radiologist and gastroenterologist, all specialized in CMI, leading to an expert based consensus diagnosis. Patients with consensus diagnosis of CMI underwent surgical or endovascular revascularization. The primary outcome was clinical response to revascularization, defined as relief of presenting symptoms as experienced by the patient.

Results: Consensus diagnosis of CMI was obtained in 62/97 patients and all consensus patients were revascularized. Isolated CA stenosis was present in 55/62 patients (89%) (31 vascular disease; 24 median arcuate ligament syndrome, MALS) and isolated atherosclerotic SMA stenosis in 7 patients. After a mean follow-up of 5.5 ± 3.0 years, 42/62 patients (68%) experienced sustained symptom relief. Responders to revascularization had a BMI increase during follow-up in contrast to the non-responders (+0.43 ± 2.5 versus −1.06 ± 2.4 kg/m², p = 0.033). Response to revascularization was not related to lesion localization (CA 67% versus SMA 71%, p = 0.825) or lesion etiology (MALS 63% versus vascular disease 71%, p = 0.483). See table.
CA = celiac artery; SMA = superior mesenteric artery; MALS = median arcuate ligament syndrome

Symptom relief No symptom relief
All patients 42/62 (68%) 20/62 (32%)
Vascular lesion
CA stenosis 37/55 (67%) 18/55 (33%)
SMA stenosis 5/7 (71%) 2/7 (29%)
Etiology
MALS 15/24 (63%) 9/24 (38%)
Vascular disease 27/38 (71%) 11/38 (29%)

Conclusion: Revascularization of the CA or SMA provides long-term symptom relief in 68% of patients with chronic gastrointestinal symptoms and confirmed mucosal ischemia due to single mesenteric artery stenosis. This provides the opportunity to help patients with otherwise unexplained, refractory abdominal complaints.

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

P1942 UNDERUTILIZATION OF ENDOCOSCOPIC ARGON PLASMA COAGULATION FOR TREATMENT OF BLEEDING GASTROINTESTINAL ANGIODYPLASIAS: AN INTERNATIONAL MULTICENTRE COHORT STUDY

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Introduction: Endoscopic argon plasma coagulation (APC) is the first-line treatment in patients with iron deficiency anaemia or overt bleeding resulting from gastrointestinal angiodyplasias. In the minority of patients active bleeding angiodyplasias are seen during endoscopy, but in contrast non-bleeding angiodyplasias can be an incidental finding. This can make the decision whether to treat endoscopically detected angiodyplasias with APC difficult.

Aims & Methods: The aim of this study is to investigate the need for repeat endoscopies with APC in patients with angiodyplasias who were left untreated during the index endoscopy performed for iron deficiency anaemia or overt bleeding. We initiated an international, multicentre cohort study to collect clinical, laboratory and endoscopic data from angiodyplasia patients. Cases were identified through a systematic search in endoscopy reports from 2010–2015 with follow-up until July 2016. Inclusion criteria was endoscopic detection of angiodyplasia in the context of overt bleeding or iron deficiency anaemia. Exclusion criteria were other vascular anomalies and angiodyplasias as incidental finding. The primary outcome was repeat endoscopy with APC.

Results: A total of 197 patients with proven angiodyplasia as cause for anaemia or bleeding were included (mean age= 68 years; 58% male). Median follow-up was 37 months (range 18–57). In 52% of the cases (n = 103) APC treatment for bleeding angiodyplasia(s) was performed at the index endoscopy. Repeat endoscopy with APC was necessary in 17 patients (18%) in whom angiodyplasia were detected but left untreated during the index endoscopy. Median time between index and repeat endoscopy was 21 weeks. A total of 48 patients (51%) who received a purely diagnostic index endoscopy were in need of other treatment modalities (e.g. iron supplementation, blood transfusion, stop anti-coagulants). Anemia and/or overt bleeding resolved spontaneously in 24 patients (26%).

Conclusion: A substantial proportion of patients with clinical symptomatic angiodyplasia bleeding do not receive APC at the index endoscopy and continue to be dependent on iron supplementation, blood transfusion or undergo repeat endoscopy with APC.

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

P1943 DIGESTIVE INVOLVEMENT IN SYSTEMIC DISEASES: A UNIVERSITY HOSPITAL EXPERIENCE

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Introduction: Digestive manifestations in systemic diseases including vasculitis and granulomatosis is broad and can affect any segment of the digestive tract and related organs. The clinical symptoms are not specific and it can be challenging for diagnosis. The other difficulty remains the interference of digestive side effects of medication used.

Aims & Methods: We aimed to review various digestive manifestations of systemic diseases. This was a retrospective study from Feb 2009 to Sep 2016 in internal medicine and gastroenterology departments. The exclusion criteria was incomplete data or regarding the diagnosis of the systemic disease.

Results: patients were included, sex ratio 0.38 (101 F/39 M), mean age at inclusion was 40 years old [13,79]. The following chart summarize the% of digestive manifestations by disease:

- Systemic Lupus erythematos 49 (10.36%)
- Systemic sclerosis 27 (8.33%)
- Behcet’s disease 27 (4.39%)
- Celiac disease 14 (7.37%)
- Wegener’s granulomatosis 2 (21.60%)
- Antiphospholid Anti body Syndrome 3 (22.58%)
- Amyloidosis 1 (45.16%)
- Churg-Strauss syndrome 2 (20.96%)
- Dermatomyositis 2 (25.80%)
- Microscopic Polyangiitis 1 (0%)
- Horton’s disease 1 (2.96%)
- Takayasu arteritis 3 (3.22%)
- Cryoglobulinaemic vasculitis 2 (0%)
- Henoch-Schönlein purpura 3 (30.10%)
- Leucocytoclastic vasculitis 2 (12.9%)
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.

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**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 weight reduction 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 an initial body mass index (BMI) between 27 and 34 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 the changes in the levels of 25(OH)D in our study.

**Conclusion:** Bariatric surgery is established as an excellent therapy for obesity, All other authors have declared no conflicts of interest.

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**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 removals due to intolerance and greater weight loss when compared to traditional IGBs.

**Aims & Methods:** We aimed to analyze the initial 25 months results regarding weight loss and complications with Spatz3® adjustable 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 (%TBWL) 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 them 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 (9 to 20 kg), the range of upward volume was 281.73 ± 66.58 ml (100-420 ml) and the moment of the procedure was 7.06 ± 1.64 months. The group of patients that did the upward adjustment don’t have a higher %TBWL, %EWL or a a higher BMI reduction when compared to the group that did not (p = 0.4413, p = 0.9245, p = 0.2729, respectively).

**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 and BMI reduction, percent total body weight loss (%TBWL) 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.

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

**Table:**

<table>
<thead>
<tr>
<th>Total group (n = 717)</th>
<th>Overweight (n = 131)</th>
<th>Grade I Obesity (n = 586)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Body weight (kg)</strong></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>
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<tr>
<td>Reduction</td>
<td>15.35 ± 6.49</td>
<td>12.16 ± 4.76</td>
</tr>
<tr>
<td>% TBWL</td>
<td>17.36 ± 7.08</td>
<td>15.51 ± 6.11</td>
</tr>
<tr>
<td>BMI (kg/m²)</td>
<td>32.05 ± 2.94</td>
<td>28.73 ± 9.94</td>
</tr>
<tr>
<td>Baseline</td>
<td>26.46 ± 2.43</td>
<td>24.26 ± 1.85</td>
</tr>
<tr>
<td>Final</td>
<td>5.59 ± 2.36</td>
<td>4.46 ± 1.86</td>
</tr>
<tr>
<td>Reduction</td>
<td></td>
<td>5.83 ± 2.37</td>
</tr>
<tr>
<td><strong>Excess weight (kg)</strong></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>% TBWL</td>
<td>&lt;10%</td>
<td>106.14 (17.8%)</td>
</tr>
<tr>
<td></td>
<td>≥10%</td>
<td>109.85 (22.2%)</td>
</tr>
<tr>
<td>% EWL (m²)</td>
<td>&lt;25%</td>
<td>324.46 (%)</td>
</tr>
<tr>
<td></td>
<td>≥25%</td>
<td>683.95 (5.94%)</td>
</tr>
<tr>
<td>BMI (kg²/m²)</td>
<td>&lt;25% kg/m²</td>
<td>231.29 (7.21%)</td>
</tr>
<tr>
<td></td>
<td>≥25% kg/m²</td>
<td>96 (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; TBWL = total body weight loss; EWL = excess weight loss. Success rates (criteria: ≥10% TBWL 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.
Patients' body mass distribution had a clear improvement, with a significant increase in the percentage of Fat-Free Mass. A significant reduction of the basal metabolic rate of 1893.24 to 1694.67 was noted. Endoscopic approach with gastric balloon provides a significant weight loss and helps patients acquiring healthy habits.

Disclosure of Interest: M. Galvao Neto: Apollo endosurgery consultant. All other authors have declared no conflicts of interest.
Disclosure of Interest: M. Galvao Neto: I received personal fees from FRACTYL Life. L. Lu: I received fees 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: Many factors contribute to the development of irritable bowel syndrome (IBS) including 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) stress in 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 oral gavage of saline or FOS solution containing saline (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 transcription, and gas chromatography were used to estimate mucosal mast cell, levels of cytokines (IL-6, IL-23, TNF-α) and IL-1β and SCFA, respectively.

Results: Colonic mucosal hyperalgesia and low-grade inflammation in WAS mice as a model of IBS. In WAS condition, increased visceral sensitivity and mucosal mast cell (12.3 ± 2.61 vs. 8.33 ± 3.55, P < 0.01) were observed in FOS-administered mice compared with saline-administered mice. In WAS condition, cytokine expression 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 acetate (2.48 ± 0.62 vs. 1.04 ± 1.0, P < 0.01), propionate (0.48 ± 0.09 vs. 0.33 ± 0.09, P < 0.05), butyrate (0.10 ± 0.003 vs. 0.05 ± 0.003, P < 0.05) and total SCFA (3.61 ± 0.89 vs. 1.79 ± 0.17, P < 0.001) significantly increased in FOS-administered mice compared with saline-administered mice in WAS condition. Basal condition, no difference of visceral sensitivity, intestinal inflammation and SCFA were observed between mice treated with FOS or saline.

Conclusion: Oral gavage of FOS leads to both an increase in visceral sensitivity and gut inflammation in stress induced IBS mice. These effects are link with the production of SCFA in the gut which involved in the regulation of sensitivity and intestinal immune activation. These findings support the hypothesis that visceral hypersensitivity and intestinal inflammation aggravated by certain FODMAPs may be responsible for IBS symptom generation, and indicate an alternative mechanism of the efficacy of the low-FODMAP diet for IBS patients.

Disclosure of Interest: All authors 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 lactobacillus acid bacteria, including bifidobacteria, are marketed as probiotic products. However, these products are often defined and thought into three main groups: ham- pers 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, Tygart et al 2016). The multispecies probiotic VSL#3 is marketed globally for treating colitis ulcerosa, pouchitis, and irritable bowel syndrome. To provide a rational basis for understanding the function of VSL#3 and generate a baseline for future studies, the genomes of all 8 strains that make up this multispecies product were determined and used to predict their function. The strains were provided by the facility which is currently producing both the single strains and the blend mix (CSL-SACCO System, Zelo Buon Persico - Lodi-ITALY).

Aims & Methods: The individual strains of multispecies product VSL#3 were grown and total DNA was extracted using established methods. The DNA was subject to paired-end Illumina sequencing using a HiSeq2000 platform, assembled and annotated as previously described (Douillard et al 2013).

Results: The next generation sequencing provided high quality genomes of all 8 strains that are components of the multispecies product VSL#3. Detailed phylo- genetic and genomic analysis confirmed the species composition to be as indicated in the VSL#3 product specification and showed the 8 strains of this multispecies product to be the species Lactobacillus rhamnosus, Lactobacillus acidophilus, Lactobacillus casei, Lactobacillus plantarum, Lactobacillus helveticus, Bifidobacterium breve and B. animalis subsp. lactis (this species included two strains). The species L. paracasei and L. casei are 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 adherence pili were observed in the Bifidobacterium spp. and are known to produce biofilms that we recently proved to mediate microbial adhesion to mucosal surfaces 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 sortase-dependent pili proteins that we showed to interact with the mucosal surfaces and dendritic cells (Konstantinov et al 2008; Kankainen et al 2008; Tygart et al 2016).

Conclusion: The genomic analysis of the VSL#3 strains confirmed the product specifications, defined the baseline genetic coding capacity, and predicted a number of probiotic mechanisms that could explain the efficacy of this multi- species product.

Disclosure of Interest: All authors 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 high public awareness are fundamental to reduce morbidity, mortality and health-related costs. Extensive research led to identification of causes of gastrointestinal (GI) diseases, which remain 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 endoscopic 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: multidisci- plinary team, scientific rigor but simple words, people attraction, curiosity induc- ing communication, in Parma and neighbouring Cities. Specialists in Gastroenterology, Anatomic Pathology, Radiology, Surgery, Biochemistry, Nutrition, together with pre- and post-graduate Students, discussed various aspects of diagnostic and therapeutic strategies. Selected people were examined by ultrasonography, Municipal and civil society were also involved to ensure organiza- tional efficiency. The most discussed topics regarded dyspepsia, gastritis, helicobacter pylori infection, gastroesophageal reflux disease, alcohol abuse, cir- rhosis, hepatitis, intestinal bacterial dysbiosis, cancer, food allergy and intolerance, optimal nutrition in health and disease. The event performed in the main square of Parma lasted two full consecutive days and was attended by about 3,000 people, most of which also filled a 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 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.

References

P1955 LONG-TERM TRENDS IN HEMATOLOGICAL AND NUTRITIONAL STATUS AFTER GASTRECTOMY FOR GASTRIC CANCER

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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 albumin, 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 evaluation 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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Aims & Methods: Descriptive retrospective study of 173 patients with celiac disease followed in the department of digestive tract medicine of the Ibn Sina Hospital in Rabat, over a period of 18 years.

Results: In 173 patient with celiac disease, 58 patients had reproductive disorders. 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 digestive tract medicine of the Ibn Sina Hospital in Rabat, over a period of 18 years. Results: In 173 patient with celiac disease, 58 patients had reproductive disorders. There are 53 women and 5 men. The average age was 32.25 years; the diagnosis of celiac disease followed in the departement of diseases of the digestive tract medecine 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.

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

References

P1957 ROLE OF VAGAL AFFERENTS ON HIGH FAT DIET INDUCED ALTERATIONS IN RAT BEHAVIOUR AND GUT MOTILITY

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OF RANDOMIZED CONTROLLED TRIALS
P1958 OPTIMAL NUTRITIONAL ROUTE FOLLOWING TOTAL GASTRECTOMY

Introduction: Total gastrectomy can profoundly influence patients’ nutritional status and recovery. Our objective was to evaluate the various nutritional options available postoperatively, namely total parenteral nutrition (TPN), or enteral nutrition (EN) either via the nasojejunal (NJ) or jejunal (JEJ) route. The aim of this review was to determine the optimal nutritional route after total gastrectomy for gastric cancer.

Methods: In a systematic review and meta-analysis of randomized controlled trials involving 353 patients (median age 62 years, 217 males, 170 females), patient characteristics were compared.

Results: VAD increased body weight significantly (p < 0.05) during feeding period irrespective of fat content of the diet. Fat content and VAD had no effect on 1 hr food intake after food deprivation. VAD decreased water intake (p < 0.001) but VAD blunted decreased faeces weight significantly (p = 0.0001 and p < 0.05 respectively) but there was no change in intestinal transit, HFD impaired short -term memory (p < 0.02), whereas VAD compromised spatial learning (p < 0.04). HFD rats were more anxious in OFT (p < 0.01).

Conclusion: HFD-induced alterations in memory and anxiety were not affected by VAD but VAD blunted effect of HFD on water intake and faeces weight, suggesting that their operating mechanisms are different. VAD by itself impaired spatial memory that requires further investigation.

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

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P1959 TAUROLIDINE PREVENTS CATHERER-RELATED BLOODSTREAM INFECTIONS IN PATIENTS ON HOME PARENTERAL NUTRITION–A RANDOMIZED CONTROLLED TRIAL

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 taurolidine 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 taurolidine as CLS is superior to saline in preventing CRBSI in HPN patients.

Methods: We hypothesized that taurolidine 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 taurolidine 2% or saline 0.9% solution to prevent CRBSI. The optimal catheter and patient survival. Both taurolidine 2% and saline 0.9% solution were enrolled for this study.

Results: Of 105 randomized patients, 81 were used in the final analysis and were compared to the opening data. The primary outcome measure was the proportion of CRBSI-free patients after one year. The number of catheter removals due to CRBSI, number of catheter removals due to CRBSI, exit-site infections, catheter occlusions, and (serious) adverse events.

Conclusion: Taurolidine 2% was not superior to saline in preventing CRBSI in HPN patients. However, a trend towards greater mortality in patients who received TPN compared with NJ (odds ratio (OR) 1.95, 95% Confidence Interval (CI) 1.16-3.28, p = 0.01). 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-ana lyzed according to NJ or JEJ, morbidity was significantly greater in patients who received TPN compared with EN (p < 0.002 but not in patients who received NJ feeding (OR 1.23, 95%CI 0.64-2.36, p = 0.53). Conclusion: Enteral nutrition in the form of feeding jejunostomy was associated with lower morbidity compared with TPN following total gastrectomy for cancer.

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

References

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P1960 REPAIR OF DAMAGED CENTRAL VENOUS CATHETERS SUBSTANTIALLY EXTENDS DEVICE SURVIVAL IN PATIENTS ON HOME PARENTERAL NUTRITION
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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 at the Radboud University Medical Center between January 2000 and May 2017. Primary endpoint was the difference in catheter survival in the presence or absence of catheter repair. To this end, a non-parametric survival analysis was performed. Secondary outcomes included localization of catheter damage and frequency of repair-related complications within 1 month after catheter repair.

Results: A total of 50 repairs in 38 CVCs of 32 HPN patients were included in the analysis. 16 CVCs (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 tip of the catheter. The mean time to catheter repair after placement was 2.2 years (95% CI = 1.5–2.9 years). The mean catheter survival after repair was extended by 1.4 years to 3.6 years (95% CI = 2.69–4.46; p = 0.01). No repair-related complications occurred within 1 month after catheter repair.

Conclusion: Repair of damaged CVCs significantly extends catheter life in HPN patients with access to non-surgical repair of catheter is a safe procedure.

Disclosure of Interest: Y. Wouters: Previous financial support for prospective study from Geistlich Pharma AG.

All other authors have declared no conflicts of interest.

P1961 LONG-TERM CLINICAL OUTCOMES OF PATIENTS ON HOME PARENTERAL NUTRITION USING TAUROLIDINE CATHETER LOCKS
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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 an effective agent for the prevention of catheter-related bloodstream infections (CRBSI).

Aims & Methods: The aim of this retrospective study was to evaluate long-term clinical outcomes of our HPN patient cohort that uses the CLS taurolidine. Between 2008 and 2016, all adult HPN patients requiring a central venous catheter (CVC) for home parenteral nutrition were included in this study. CRBSI and CRC rates were recorded. A total of 364 patients were included, who received taurolidine as CLS. CRBSI and CRC incidence rates were recorded and compared. 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 90 (29–406) days, respectively. In 47% and 32% of patients, at least one CRBSI and CRC occurred, respectively. Median time to first CRBSI or CRC was 246 (58–817) and 215 catheter days (5–2070). Numerically, but not significantly, CRBSI and CRC rates decreased over time. The sole use of intravenous fluids was associated with a significantly lower risk for CRBSI (RR 0.32). Meanwhile, use of an overtube while guiding the catheter into the stomach in pull technique succeeded the reduction of the bacterial implantation. It is still unclear if the modified introducer technique or the overtube assisted pull technique would reduce risks of adverse events.

Aims & Methods: In this study, we retrospectively investigated risks of adverse events associated with the modified introducer technique and the overtube assisted pull method. Outcomes of patients who underwent the PEG placement from Jan 2013 to Oct 2016 at Jikei University Hospital were analyzed. The following data were collected from clinical records: age, gender, technique of PEG, reasons for PEG, lab tests and prognostic nutritional index (PNI).

Results: During the study period, 236 PEG placements were done in 234 patients. The average age was 69.3 ± 12.5. The modified introducer technique was applied in 167 procedures (70.8%) and the overtube assisted technique was applied in 69 procedures (29.2%). The overtube assisted technique was placed aiming for the gastrostomy tube placement. Results supported for cancer patients in 132 procedures, cerebrovascular accident in 51 procedures, aspiration pneumonia in 32 procedures, and others such as infection and disuse atrophy in 21 procedures. Age (the overtube assisted pull technique > the modified introducer group), Gender and preoperative serum C-reactive protein level were significantly different between the two groups (p < 0.05). Overall, adverse events were observed in 19 (8.1%) procedures, although there was no procedure related mortality in the both groups. The risks of clinically significant adverse events were not different between the two groups. There was no significant difference in the types and the rate of adverse events between the two groups. However, severe peristomal bleedings were observed only in the modified introducer technique group. Four patients required suture placements and 3
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>&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>&lt; 0.05</td>
</tr>
<tr>
<td>Lab tests (mean ± SD)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ChE (U/L)</td>
<td>184.9 ± 60.8</td>
<td>214.9 ± 78.9</td>
<td>n.s.</td>
</tr>
</tbody>
</table>

(continued)