A less competent oesophago-gastric junction is associated with oesophageal acid hypersensitivity even in healthy controls
Lottrup, Christian; Krarup, Anne Petas Swane; Ejstrud, Per; McMahon, Barry P.; Drewes, Asbjorn
Published in: United European gastroenterology journal
DOI (link to publication from Publisher): 10.1177/2050640617725676
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Publication date: 2017
Document Version Også kaldet Forlagets PDF
Link to publication from Aalborg University

C. A. Celikel5, D. G. Duman5 and to get idea for the regenerative capacity in the injured liver. Splenocytes were of the rats. MSCs were labeled with GFP to check the localization of stem cells and given MSCs (Healthy buffer saline (PBS) (CBDL

THE AMELIORATION OF THE LIVER FIBROSIS AFTER P0002 NATURAL KILLER CELLS MAY BE THE KEY FACTOR FOR

soids remain in a contractile state in cirrhotic livers, thereby contributing to cirrhosis revealed alterations of the NO-cGMP pathway, characterized by expression of endothelial and inducible NO synthase (eNOS and iNOS), phosphodiesterase 5 (PDE5), soluble guanylate cyclase subunit a1 and b1 (sGCa1 and sGCb1) was determined by qRT-PCR. Serum cGMP concentrations were measured by ELISA using blood samples taken from the carotid artery. Likewise liver damage was assessed by liver chemistry (i.e. alanine- and aspartate-aminotransferase (ALT, AST), alkaline phosphatase (AP), albumin and bilirubin). The degree of fibrosis was estimated by histological criteria (i.e. Desmet score). PDE5-expression was determined by immunohistochemistry. Kruskal-Wallis test was used for statistical analysis of group differences.

**Results:** 43% (6/14) of TAA-treated rats developed liver fibrosis (Desmet score of 1–3) while 57% (8/14) developed liver cirrhosis (Desmet score of 4). No major differences in ALT, ASAT, and AP serum concentrations were observed in either group. However, bilirubin was significantly elevated in TAA-treated rats, while albumin concentrations were significantly reduced. Gene expression analysis revealed significantly increased expression of eNOS (1.5fold), PDE5 (7.7fold), and sGCb1 (2.1fold) in fibrotic livers compared to controls. cGMP concentrations in fibrotic animals were slightly decreased (-34%). Significantly higher (7.7fold), and sGCb1 (2.1fold) in fibrotic livers compared to controls. cGMP levels in supernatants of cultured lymphocytes, we found that CBDL + PBS group had significantly higher IL-1a, TNF-α and IFN-γ levels than healthy MSCs. Treatment of those rats with MSCs tended to decrease IL-1a, TNF-α and IFN-γ levels compared to CBDL + PBS group. The NK distribution was evaluated both in portal and parenchymal areas of liver. We have found that in the whole liver the NK cells were depressed significantly in CBDL + PBS group compared to healthy + MSC group and furthermore in the CBDL + MSC group, NK cells were significantly increased compared to CBDL + PBS group.

**Conclusion:** Our findings suggest bone marrow MSCs may be effective in alleviating the hepatic injury by suppressing the T cell proliferation, increasing the circulating peripheral NK cell population and CD4+ CD25+ and suppressing the proinflammatory cytokines in rats. Beneficial effects of MSC treatment is accompanied with significantly alleviated hepatic fibrosis and the significant NK recruitment to liver parenchyma. Thus, MSC injection treatment may appear promising in liver injury and future clinical therapies are warranted.

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

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**P0003 SERPINB3 INVOLVEMENT IN THE STIMULATION OF MACROPHAGE ACTIVATION MARKER SCD163 IN HCV INFECTED PATIENTS**

**Introduction:** In chronic HCV infection disease progression is maintained by simultaneous neoinflammation and fibrosis in the liver. Upon macrophage activation, the soluble marker CD163 (sCD163) is released in serum and its levels correlate with fibrosis and NASH in the liver. The serin protease inhibitor SerpinB3 (or SCCA1), has been shown to be involved in liver fibrogenesis and the circulating SCCA-IgM complex has been depicted as a marker of liver disease progression and of NASH in patients with chronic hepatitis C. Preliminary data suggest that SerpinB3 activates primary monocytes through the Wnt canonical pathway. The purpose of this study was to evaluate the relationship between SCCA-IgM and sCD163 in serum and the possibility that SerpinB3 on sCD163 and on pro-inflammatory cytokines expression, in primary monocytes. Primary monocytes were isolated from healthy donors, treated with recombinant SerpinB3 (200ng/ml) and supernatants analyzed after 2 and 7 days. Expression of sCD163 secreted in the supernatant was evaluated by ELISA. In primary monocytes monocytes mRNA expression of IL-12, CXCL10- and TNF-alpha were also analyzed by PCR at different time points.

**Results:** In patients with chronic hepatitis C sCD163 was found correlated with inflammatory and metabolic alterations (AST, ALT, GGT, HOMA-IR, triglycerides), and was significantly elevated in patients with cirrhosis. Advanced histological fibrosis stage (F1-F2 vs. F3-F4 nec. Metavir: p < 0.04). Patients with levels of SCCA-IgM > 200 AU/ml had the highest serum levels of sCD163 (p < 0.05). In primary monocytes stimulated with recombinant SerpinB3 “in vitro”, sCD163 expression increased of 2.5 times and this finding was parallel to an up-regulation of the inflammatory cytokines IL-12, CXCL10- and TNF-alpha.
Conclusion: In chronic hepatitis C SerpinB3 is involved in monocyte activation, leading to the release of cD163. These results support the role of these two molecules in serum of patients with more severe liver fibrosis and metabolic alterations.

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

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

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

Aims & Methods: The study was designed to explore the functions of ILC3s and the relationships between ILC3s and Th17 cells in liver fibrosis. Peripheral blood samples were collected from 60 patients with chronic hepatitis B (CHB), and 50 patients with HBV related liver cirrhosis (LC) as well as 30 healthy controls (HC). The percentages and cytokines secretion of ILC3s (Lin^-CD127^-CD117^-CD274^) and Th17 cells (CD4^IL-17^) were detected by flow cytometry. Peripheral blood mononuclear cells (PBMCs) and PBMCs without ILC3s co-cultured with hepatic stellate cells (HSCs)-LX2 in contact and non-contact manners. Then Th17 cells, which were induced from 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-α, IFN-γ 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 CCL4 related liver fibrosis made the ILC3s in spleens and livers decreased significantly, and the degree of mice liver fibrosis become more severe than control. Furthermore, ILC3s depletion correlated with reduced expression of IL-22 and more severe liver fibrosis. Transferring purified liver ILC3s into recipients further decreased liver inflammation and reverse liver fibrosis.

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

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

P0005 EFFECTS OF INTERNAL AND EXTERNAL BILIARY DRAINAGE ON THE EXPRESSION OF INTESTINAL BILE ACID RECEPTOR AND TLR4/NOD2 IN MICE WITH OBSTRUCTIVE JAUNDICE

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Introduction: Internal biliary drainage has been proved better than external biliary drainage in alleviating the damage of intestinal mucosa barrier caused by obstruction, but the relevant mechanisms are still unclear. The expression of intestinal FXR and TLR4, TGR5 and NOD2. Sixty male adult Kunming mice were randomly assigned to four groups: SH (sham operation), OJ (obstructive jaundice), ID (internal drainage), ED (external drainage) (n = 15 in each group). On the 7th day from the first operation, the OJ and SH mice were executed and specimens of blood and ileal tissue of groups were collected. ED and ID were operated on day 8 for biliary drainage procedure. Blood was drawn from heart for liver function test. The expression of FXR and TLR4, TGR5 and NOD2 in intestinal mucosa.

Results: We have successfully established the animal models. The histopathological examination revealed notable inflammatory infiltration and hyperplasia disruption at terminal ileum in OJ mice; significant alleviation of above injuries by ID while little improvement by ED. FXR and TLR4. After biliary obstruction, the expression of protein and mRNA of FXR were significantly increased, while the mRNA of both FXR and TLR4 were increased. After ID, the expression of protein and mRNA of FXR were significantly decreased compared with OJ group’s but were still higher than that in SH group and were better than ED group’s. And the expression of protein and mRNA of TLR4 were significantly increased compared with OJ group’s (P < 0.001), but were still lower than that in SH group and were better than ED group’s. The trend of TLR4 expression was almost the same between vehicle group and no gavage group. After gavage with FXR agonist, the differences of TLR4 expression of four groups disappeared (P > 0.05). TGR5-NOD2: IHC and WB suggested that after OJ surgery, the protein expression of both TGR5 and NOD2 increased obviously compared to that of SH mice; then the level of TGR5 and NOD2 protein fell down remarkably after ID surgery close to SH level while in ED group there was only a slightly reduction form OJ level and still with a high expression of TGR5 and NOD2 protein. Detection of RT-PCR found that TGR5 mRNA and NOD2 mRNA level in OJ group increased several times as that of SH group; after ID surgery, the expression of TGR5 mRNA significantly reduced, NOD2 mRNA level also fell down consistently, but the effect was not observed in ED mice.

Conclusion: The expression of intestinal FXR and TLR4, TGR5 and NOD2 could be one of the critical mechanisms why internal drainage is better than external drainage in restore intestinal barrier function of obstructive jaundice mice.

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

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

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

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

Results: TNF-α and IL-1-β mRNA levels increased in the small intestine of BDL mice, compared with WT. TLR-4 and TGF-β expression was increased in both sham- and BDL-mir-21 KO mice which is in accordance with the higher LPS in blood plasma observed. Zona occludens (ZO-1) and occludin mRNA levels were decreased in WT mice after BDL. Strikingly, mir-21 KO reverted mRNA of tight junction proteins to control levels. BDL mir-21 KO mice showed decreased circulating levels of hepatic enzymes, concomitant with decreased fibrogenic gene expression in the liver, in comparison with WT mice, suggesting that miR-21 contributes to BDL-induced liver injury and fibrosis. Further, mir-21 KO not only show a decreased small intestine permeability though 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 expression of key 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.
Akkermansia muciniphila mediated liver injury is associated with different microbial communities. Accumulating evidence indicates that gut microbiota participates in systemic inflammation and hepatocellular carcinoma (HCC). However, the application of Sorafenib in therapy has faced increasing challenges due to drug resistance. Drug resistance is known to be associated with cancer stem cells (CSC). The transcription factor ZBP-89 expression were statistically associated with better survival of HCC patients. Unfortunately, the mechanism of ZBP-89 in modulating sensitivity of Sorafenib in CSC remains unknown.

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

Results: We found that sphere-forming HCC cells had significant higher resistance to Sorafenib, compared with their parental cells. The expression of Notch1 and EpCAM was increased along with the treatment of low dose of Sorafenib, suggesting that the activation of Notch1 pathway was associated with the drug resistance in liver CSC. Studies further indicated that ZBP-89 overexpression was able to improve the sensitivity of Sorafenib in sphere-forming HCC cells. Furthermore, we found that ZBP-89 expression was negatively correlated with CSC marker CD44 in human HCC tissues. In vitro study indicated that tumor sphere formation was impaired upon transducible overexpression of ZBP-89, suggesting that ZBP-89 was involved in suppression of CSC phenotype. Detailed investigation against control cells showed that overexpression of ZBP-89 resulted in reduced expression of CSC markers EpCAM, CD133, Sox2 and c-myc at both mRNA and protein levels. In addition, the overexpression of ZBP-89 or silencing of Notch1 reduced the number of colonies formed by sphere-forming HCC cells, demonstrating opposite effects of these two proteins. Mechanistic studies revealed that ZBP-89 was able to repress the expression of Notch1 and reported target genes including HES1, HES6, HEY1 and NRRARP. Amino acids Δ6–180 of ZBP-89 could directly bind to the activated Notch1 in the nucleus, resulting in a negative regulation of CSCs and overcome of Sorafenib resistance.

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

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

References:

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

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

Aims & Methods: This study investigated the effect of A. muciniphila on immune-mediated hepatitis and potential underlying mechanisms. Twenty-two C57BL/6 mice were assigned to three groups (N=7–8 per group) and continuously administered A. muciniphila MucT (ATTC BAA-835) by oral gavage for 10 days. Mouse feces were collected for gut microbiota analysis on the eleventh day, and acute hepatitis was induced by Concanaavalin A (Con A, 15 mg/kg) injection through the tail vein. Samples (blood, liver, ileum, colon) were assessed for liver inflammation, immunohistochemical and liver 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-12p70, TNF-α, MIP-1α, β) were significantly increased in the control group that received the vehicle alone. Meanwhile, liver tissue injury-related factors (IL-12p40, IFN-γ, DR5) were negatively associated with specific genera (Ruminococcaceae_UCG-009, Lachnospiraceae_UCG-001, Akkermansia), which were enriched in mice pretreated with Akk.

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

Disclosure of Interest: All authors have declared no conflicts of interest.
Our study indicated that the change of the gut microbiota and pathobiology was significantly decreased in the three NAFLD models than the Control, and was identified as the biomarker of NAFLD in LEfSe analysis. More biomarkers at genus level (Lachnospira, S24-7, etc.) were identified in pairwise comparison of one mouse model with the Control.

**Conclusion:** In summary, the composition of gut microbiota varied remarkably between mice administrated different experimental diets to induce non-alcoholic fatty liver disease.

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

**References**


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

**Introduction:** Non-alcoholic fatty liver disease (NAFLD) has become the most common liver disease worldwide, and is thought to be strongly associated with gut microbiota. Several diet models were therefore built in mice to try to clarify the molecular mechanisms. However, how and to what extent these diet models alter the composition of the gut microbiota and pathology connection were suggested in acknowledgment of the decrease of F.P in the NAFLD patients. The decreased abundance of F.B in NASH with severe fibrosis, elevated blood-endotoxin in NAFLD with severe fibrosis patients suggests a role for ET in the pathogenesis of fibrosis. Moreover, we need to investigate that the mechanism of fibrotic progression via the endotoxin in NAFLD may relate to the presence or not of liver steatosis.

**Results:** Among those taxa with greater than 1% representation in any of the disease groups, it was significantly decrease in Bacteroidetes at phylum level in NAFLD compared with HC. At genus level, Faecalibacterium prausnitzii (F.P) was significantly decreased in NAFLD compared with HC. F.P is significantly decreased in NAFLD with severe fibrosis compared with those with mild fibrosis patients. In addition, endotoxin levels were increased in NAFLD with severe fibrosis than those with mild fibrosis. Furthermore, occupation ratio of F.P was 0.6% in patients with blood ET level (R=0.32). Additionally, it showed a significant correlation among three items of F.B, EAA and LMR (F.B vs EAA: P < 0.0001, LMR vs EAA: P < 0.0001, LMR vs F.B: P < 0.0025).

**Conclusion:** Our study indicated that the change of the gut microbiota and pathobiology connection were suggested in acknowledgment of the decrease of F.P in the NAFLD patients. The decreased abundance of F.B in NASH with severe fibrosis, elevated blood-endotoxin in NAFLD with severe fibrosis patients suggests a role for ET in the pathogenesis of fibrosis. Moreover, we need to investigate that the mechanism of fibrotic progression via the endotoxin in NAFLD may relate strongly gut-permeability. We postulate that the distinct composition of the gut microbiota among NAFLD and HC could offer a target for intervention or a marker for disease.

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

**References**


patients with HFE mutations and (transferrin saturation index (TSI) values above 40). But we did not have C282Y/C282Y participants 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 (C282Y/C282Y), Group B (C282Y/C282Y, C282Y/H63D, H63D/H63D, and TSI > 45 %; Group C: no predisposing mutations for HH and TSI > 45 %; 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 HF study was available: C282Y/C282Y 14 (4.49%); C282Y/C282Y, C282Y/H63D 47 (15.06%); H63D/H63D 99 (31.72%); wt/wt 98 (31.41%); C282Y/S65C 10 (3.22%); 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 ± 13.5, 272 men and 40 women. Group A: 54; Group B: 32 Group C: 160; Group D: 54. The mean LIC in group A: 70.53 ± 56.67, group B: 37.21 ± 27.89, group C: 70.53 ± 56.67, group D: 35.23 ± 22.62. Group D: 42.67 ± 22.98. We compared the LIC mean values of the 4 groups (bonferroni) with significant differences (p ≤ 0.0000).

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

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

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P0015 INTERLEUKIN-25 PROTECTS AGAINST HIGH-FAT DIET-INDUCED HEPATIC STEATOsis IN MICE BY INDUCING IL-25 AND M2A KUPFFER CELL PRODUCTION

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Introduction: Alternately activated anti-inflammatory macrophage (also termed M2a Kupffer cell) is important for prevention of the development of steatosis and liver injury in non-alcoholic fatty liver disease (NAFLD). Our previous studies demonstrated that interleukin-25 (IL-25) expressed in NAFLD mice and exogenous IL-25 protected against NAFLD by inducing M2a Kupffer cells.

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

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

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

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

References:

P0016 LONG-TERM BENEFIT OF STATINS USED FOR TREATMENT OF NON-ALCOHOLIC STEATOHEpatitis (NASHi)

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Introduction: NASHi is considered an important risk factor for liver fibrosis. Although literature data indicates that statins may be beneficial when given for NASHi treatment, recent reports are controversial.1

Aims & Methods: To evaluate if statins independently influence the evolution of fibrosis accompanying NASHi using the scales of FibroMax. 120 patients with NASHi and metabolic syndrome were followed-up for a period of 3 years. We excluded patients taking a serie of drugs, with genetic metabolic disorders or impaired intestinal absorption (celiac disease) or alcoholics. Steatosis, fibrosis

References:
and NASH were quantified by using the FibroMax scales at baseline and after three years of statin treatment. Patients were randomized in two groups: the active group of 60 patients receiving low-dose hydrophilic statin (rosuvastatin 5 mg/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 IU/L to 32.80 IU/L, p < 0.05 (s); in the witness group no significant ALT decrease was noticed (69.341 IU/L to 58.17 IU/L, p > 0.5). The FibroMax showed an improvement in steatosis, and fibrosis in active group, compared with the witness group. After three years of statins, our active group was stratified as follows: S0–27%, S1–46%, S2–25%, respectively S3–2% of patients, respectively F0–38%, F1–32%, F2–28%, F3–2%; F4–0% of patients. Nineteen positive evolution of steatosis and steatofibrosis was observed with placebo (N0–36%, N1–40% respectively N2–26%, p > 0.001, s). 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 (p = 0.02, r = 0.27, respectively r = 0.95, p < 0.005).

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

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 involved patients aged 18 to 59 years with joints with a waist circumference > 80 cm for women, over 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 GC were studied. Results: In 3 groups of patients with 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 GC were studied. Results: In 3 groups of patients with 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 GC were studied. Results: In 3 groups of patients with 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 GC were studied. Results: In 3 groups of patients with 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 GC were studied. Results: In 3 groups of patients with 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 GC were studied. Results: In 3 groups of patients with 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 GC were studied.

Conclusion: NAFLD in patients with AO is characterized by the development of carotid metabolic disorder associated with atherosclerosis and atherothrombosis. 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

P0010 INVESTIGATION OF THE RELATIONSHIP BETWEEN THE THICKNESS OF THE INTIMA-MEDIA COMPLEX OF COMMON CAROTID ARTERIES AND PATHOLOGICAL CHANGES IN THE LIVER IN PATIENTS WITH ABDOMINAL OBESITY AND NON-ALCOHOLIC FATTY LIVER DISEASE
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Introduction: In the last decade, the notion of non-alcoholic fatty liver disease (NAFLD) has undergone noticeable changes. It is shown that in the liver with fatty hepatitis, insulin and glucose utilization is disrupted, conditions are created for the synthesis of atherogenic fractions of cholesterol and triglycerides. This contributes to the development of violations of carbohydrate and lipid metabolism, the early appearance of atherosclerosis and associated vascular complications. Thus, NAFLD can be considered as an independent, additional risk factor for atherosclerosis. Obviously, it was important to clarify the nature of the relationship between NAFLD and the early manifestations of atherosclerotic vascular wall lesions are relevant.

Aims & Methods: Study of changes in the vascular wall of the common carotid artery (IMT CCA) and in patients with abdominal obesity (AO) and different forms of nonalcoholic fatty liver disease (NAFLD). The study involved 60 patients with AO between the ages of 18 to 59 years (waist circumference > 80 cm in women and > 94 cm in men) and NAFLD, in the presence of clinical manifestations, provided written informed consent to participate in the study. All patients underwent an ultrasound examination of the abdominal cavity to determine the size of the liver and signs of steatosis. The level of severity of pathological changes in the liver tissue (fibrosis, steatosis, and steato-fibrosis) was assessed by non-invasive diagnostic method Steatoscreen. (Biopredictive laboratory, France). Measurement of the CCA IMT was performed according to standard procedures on the machine Voluson 730 Expert, equipped with a linear transducer phased array with a frequency of 7.5 MHz. The presence of early signs of atherosclerosis was defined as a local thickening of the IMT CCA more than 0.9 mm in any point of the carotid artery (CCA IMT max). Depending on the severity of 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 the future, comparative and correlation analysis of the data was carried out.

Results: Signs of early atherosclerosis, in the form of the IMT CCA > 0.9 mm in any point of the carotid artery (CCA IMT max). Depending on the severity of 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 the future, comparative and correlation analysis of the data was carried out.

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

Reference
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. Overexpression of hepassocin (HPS) increased hepatic lipid accumulation and NAFLD activity scores (NAS), whereas deletion of HPS improved high fat diet-induced hepatic steatosis and decreased NAS in mice.

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

Results: There was stastically significant decrease in mean value of serum hepassocin of group I and IV on comparing with group H and group III. For group II there was stastically significant increase in mean value of serum hepassocin on comparing with other groups. There was a significant serum hepassocin up regulation in patients with type 2 diabetes and non alcoholic fatty liver decreased 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 mellitis.

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

References

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 by elastography was calculated. Liver biopsy was done and histopathological examination by Hematoxilin, 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.

A167

United European Gastroenterology Journal 5(5S)
References

P0024 A NOVEL TOOL FOR THE NON-INVASIVE QUANTITATIVE ASSESSMENT OF HEPATIC STEATOSIS USING B-MODE IMAGE-GUIDED ULTRASOUND ATTENUATION IMAGING: A PROSPECTIVE STUDY

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Introduction: Nonalcoholic fatty liver disease is a main cause of chronic liver disease worldwide. A quantitative, non-invasive assessment of hepatic steatosis is desirable. Throughout the path of ultrasound (US), attenuation by liver parenchyma is uneven. This is the basis of the controlled attenuation parameter (CAP). However, further accumulation of data is needed to assess the role of CAP in the diagnosis of steatosis.

The aims of this study were to determine the diagnostic performance of B-mode image-guided ultrasound attenuation imaging and quantitative assessment of hepatic steatosis by a liver biopsy (LB, reference standard).

Method: We compared with the liver-to-spleen ratio (L/S ratio) from computed tomography (CT) and CAP.

Aims & Methods: We prospectively analyzed 112 consecutive patients with chronic liver disease who underwent ultrasound attenuation imaging. CT, and liver biopsy. Ultrasound attenuation imaging was performed using the LOGIQ E9 scanner (GE Healthcare) with a C1-6D convex array probe (frequency, 4 MHz). We acquired a B-mode image of liver parenchyma. RF signals corresponding to the images were compensated by the reference signal previously measured from the uniform phantom (known attenuation, 0.5 dB/cm/MHz). We acquired a B-mode image of liver parenchyma. RF signals corresponding to the images were compensated by the reference signal previously measured from the uniform phantom (known attenuation, 0.5 dB/cm/MHz). We acquired a B-mode image of liver parenchyma. RF signals corresponding to the images were compensated by the reference signal previously measured from the uniform phantom (known attenuation, 0.5 dB/cm/MHz). We acquired a B-mode image of liver parenchyma. RF signals corresponding to the images were compensated by the reference signal previously measured from the uniform phantom (known attenuation, 0.5 dB/cm/MHz). We acquired a B-mode image of liver parenchyma. RF signals corresponding to the images were compensated by the reference signal previously measured from the uniform phantom (known attenuation, 0.5 dB/cm/MHz).

Results: Patients (51% men; 42% had nonalcoholic fatty liver disease, 58% had hepatitis C virus) had a median body mass index of 26 kg/m2. Median AC values for grades S0 (n = 38), S1 (n = 47), S2 (n = 18), and S3 (n = 9) were 0.49, 0.55, 0.66, and 0.72, respectively, demonstrating a stepwise increase with increasing steatosis severity (P < 0.0001). AC was significantly correlated with the steatosis percentage (r = 0.800, P < 0.0001), L/S ratio (r = −0.670, P < 0.0001), and CAP (r = 0.639, P < 0.0001). AUCs of AC vs. the L/S ratio for identifying grades ≥S1, ≥S2, and ≥S3 were 0.919 vs. 0.855, 0.957 vs. 0.902, and 0.960 vs. 0.919, respectively, showing significantly better results than those for the L/S ratio and CAP. For the sensitivity and specificity of AC ≥58.5%, cut-off values were 0.53 dB/cm/MHz for ≥S1, 0.60 dB/cm/MHz for ≥S2, and 0.64 dB/cm/MHz for ≥S3. Steatosis was the only factor independently associated with AC values.

Conclusion: Ultrasound attenuation imaging had a high diagnostic accuracy for detecting hepatic steatosis.

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

References

P0025 SERUM FERRITIN SPECIFICITY IN PREDICTING EARLY MORTALITY OF PATIENTS WITH ALCOHOLIC LIVER CIRRHOSIS

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Introduction: Serum ferritin concentration shows a poor outcome of patients with alcoholic liver cirrhosis (ALC). However, according to recent research, the protein expression is not limited to the cells of nervous system as it was believed, but since it is highly expressed in various tissues, such as vascular remodeling, inflammation and oxidation. The function and expression of the protein in liver disease is still not clear.

Aims & Methods: In this study we aimed to evaluate plasma levels of RTN4 protein in cirrhotic patients and associate them with clinical parameters and portal hypertension.

The study included 72 patients with ALC. The control group was formed by laboratory tests, clinical features, radiological imaging, and percutaneous or tranjugular liver biopsy. Alcoholic liver cirrhosis was confirmed when all authors have declared no conflicts of interest.

Results: Plasma levels of RTN4 were determined by enzyme-linked immunosorbent assay (ELISA). The study included 72 patients with ALC. The control group was formed by laboratory tests, clinical features, radiological imaging, and percutaneous or tranjugular liver biopsy. Alcoholic liver cirrhosis was confirmed when patients were classified as SPH (p < 0.0001). Using a RTN 4 cut-off value of 1.7 ng/ml, the AUC for predicting early mortality in patients with cirrhosis (AUC 0.838, p < 0.0001).

Conclusion: Serum ferritin level above 400 ng/l, elevated liver enzymes and bilirubin concentration shows a poor outcome of patients with ALC (p < 0.0001). An RTN4 protein level is a specific predictor for predicting early mortality in ALC.

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

References
3. Waterhouse (p < 0.0001). Using a RTN 4 cut-off value of 1.7 ng/ml, the AUC for predicting early mortality in patients with cirrhosis (AUC 0.838, p < 0.0001).

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P0027 MICRORNAS IN ASCITES AS POTENTIAL BIOMARKERS FOR PERITONEAL CARCINOMATOSIS AND PERITONITIS
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Introduction: Peritoneal carcinomatosis (PCA) has a prognostic role in patients with gastrointestinal cancers. Despite the low sensitivity, cytology remains the gold standard in diagnostic differentiation of PCA to peritonitis (for example spontaneous bacterial peritonitis, SBP) or uncomplicated ascites due to portal hypertension. RTN4 correlates with liver function (CD34+) 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 evaluate the expression of PV1 in intestinal vessels (CD34+ of BDL but not PPVL). 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 PV-1 expression indicative of a wider opening of the intestinal diaphragms than in PPVL. Therefore, different mechanisms appear to be involved in alterations of the gut-vascular barrier in pre-hepatic portal hypertension and biliary cirrhosis.

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

Reference

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 were selected for the proof-of-principle analysis (miR-21 and miR-16) were performed for GVB analysis.

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

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

Reference
P-AKT protein expression was detected in the spleen of TAA group compared to control.

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

Results: The ratio of splenic weight to body weight increased by 73.9% in TAA group, while in rats treated with celecoxib, the ratio was significantly reduced. While determined by H&E staining, areas of splenic white pulp in the TAA group enlarged by 27.9%. Yet, compared with that in TAA group, celecoxib obviously decreased the area of spleen with white pulp by 27.6%. Besides, the portal pressure elevated by 79.1% in the TAA group; while significant reduction of the portal pressure was observed in the TAA + celecoxib group by (28.8%). In addition, a considerable amount of collagen was visualized with Sirius Red staining in the spleen of TAA group. The increased spleen weight was found in TAA + celecoxib group. Increased COX-2 protein was detected in the spleen of the TAA group compared with that in the control group. However, the expression of proangiogenic factor VEGF and the novascular marker CD31 increased in TAA group by Western blot and immunohistochemistry, 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
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 Ocluladin, E-cadherin and the p53 family including p53 and p73.

Results: E. coli stimulation of HCT-116 cells resulted in a strong decrease of Ocluladin, E-cadherin and the p53 family including p53 and p73.

Conclusion: By using an in vitro model, we demonstrate destabilizing effects of E. coli on intestinal cells junctions, p53 and p73. As far as these effects are dependent on incubation time, microbial concentration and living bacteria, these effects might represent a mechanism 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 pathophysiologic hallmark for spontaneous bacterial infections increasing mortality sever-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) and the FXR antagonist CDCA were used. Mucus thickness measurement on gut explants and PAS (Periodic acid–Schiff) staining to visualize and count goblet cells (GC) were utilized.

Results: We have observed a significant reduction in mucus thickness in ileum and colon (OCA: CCL4: BDL: PPVL: Control: 154.38±12.51 μm/ C60.74±0.6 μm in proximal colon) and goblet cell numbers in ileum (Control 0.47 GC/100 μm of villus±0.07 vs BDL 0.29 GC/100 μm of villus±0.04) of mice following BDL but not PPVL (Control 0.27 GC/100 μm of villus±0.11 vs BDL: 0.08±0.01). However, the treatment with obeticholic acid strongly decreased the protein expression of VEGF, CD31, P3K and AKT in the spleen of cirrhotic rats.

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

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

P0032 CAPSAICIN AND SULFORAFANE PREVENT THE ADVANCEMENT OF LIVER FIBROSIS IN AN EXPERIMENTAL MODEL OF LIVER CIRRHOSIS

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Introduction: Spontaneous bacterial peritonitis (SBP) is a life-threatening complication in 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.

P0033 DIAGNOSIS OF GASTRIC VARIATES BY ENDOCOSCOPIC 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. Oesophageogastroduodenoscopy is usually the initial investigation in order to detect and treat 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 thicker 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 HYPERTENSION COLOPATHY BUT NOT ILEOPATHY IS COMMON IN EGYPTIANS WITH LIVER CIRRHOSIS

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Introduction: Liver cirrhosis and portal hypertension are associated with esophageal varices, gastric varices, small and large intestinal 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 hypertension complications. Esophageal varices were graded as small, moderate and big varices. Portal hypertensive gastroplasty was classified as absent or present, and if present, it was sub-classified as mild or severe. Coloscopy was done up to terminal ileum in all patients.

Results: Our study included sixty chronic hepatitis C patients with portal hypertension secondary to liver cirrhosis (53.33% females) their mean age (±SD) was 54.75 (±13.13) years. Child-Pugh class was A for 2 (3.4%), B for 33 (55.9%) and C for 24 (40.7%). 53 (88.3%) patients had esophageal varices (23 patients had small esophageal varices, 15 had moderate, and 8 had big varices, 2 post-band ligation and 5 obliterated varices). Gastric varices were present in 3 patients (5%). Portal hypertensive gastroplasty 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 PH.

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 European Association for the Study of the Liver-International Chronic Liver Failure consortium: 1) circulatory- need for vasopressor support; 2) renal- serum creatinine value ≥ 2 mg/dL; 3) cerebral- Grade III or IV hepatic encephalopathy; 4) respiratory- SpO₂-FI O₂ ≤ 214.

Aims & Methods: We aimed to identify predictive factors for ACLF development in cirrhotic patients admitted for variceal gastrointestinal bleeding. All patients admitted in the study were registered in the Institution Transplantation, Transfusion, and Hepatology Iasi (consisting of 8 secondary hepatology centers) between January 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 < 0.001), hospitalization in the last 6 months (p < 0.05). Inhospital and 30-day mortality were significantly higher in patients with ACLF (p < 0.0001).

Conclusion: Patients admitted with variceal bleeding, with alcohol consumption, high MELD on admission, previous admission in < 6 months are more likely to develop ACLF and need to be monitored closely for the development of ACLF.

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

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 cirrhotics 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-thromboelastometry (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 balance. We consecutively enrolled adult patients with cirrhosis due to liver cirrhosis undergoing liver transplantation (LT) or transjugular intra-hepatic 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 thrombinomoid (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 cirrhotics 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: 46 (39–51) vs 62 (49–66), 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 mm: 46 (39–51) vs 62 (49–66), p = 0.056; CD62EPM/L: 1606.5 (680–1885) vs 529.5 (266–781), p = 0.009). There was a significant correlation between diminished levels of PC, PS, AT, FII and either TGT or ROTEM parameters. Comparing portal and peripheral blood of cirrhotics, we detected endogenous heparinoids in portal (α-antemel 51 (46–57) vs
**P0037 RIFAXIMINA 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 (RFX) has been shown to reduce recurrence of episodes of overt hepatic encephalopathy (HE) and HE-related hospitalisations. UK real-world data confirmed reductions in hospital admissions and length of stay with RFX use, however, data on use of emergency department (ED; A&E in UK) resources are still scarce. This study assessed the impact of RFX on utilisation of ED resources.

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

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

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

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

P. Di Maggio: Employee of Norgine

R. Cipelli: Consultant for Norgine; employee of pH Associates which was commissioned by Norgine to provide support with study design and management, data analysis and scientific editorial services

R. Aspinall: Consultant for Norgine; advisory board member; has given sponsored lectures on behalf of Norgine

**References**


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

<table>
<thead>
<tr>
<th>Resource use parameter*</th>
<th>n6</th>
<th>Pre-RFX initiation</th>
<th>Post-RFX initiation</th>
<th>P†</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED attendances with or without admission</td>
<td>81</td>
<td>264</td>
<td>118</td>
<td>–</td>
</tr>
<tr>
<td>ED attendances with or without admission/patient</td>
<td>81</td>
<td>2.3 (0.3)</td>
<td>1.0 (0.2)</td>
<td>&lt;0.001</td>
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<tr>
<td>ED attendances without admission</td>
<td>61</td>
<td>118</td>
<td>60</td>
<td>–</td>
</tr>
<tr>
<td>ED attendances without admission/patient</td>
<td>61</td>
<td>1.0 (0.2)</td>
<td>0.5 (0.1)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Admissions via ED</td>
<td>74</td>
<td>146</td>
<td>58</td>
<td>–</td>
</tr>
<tr>
<td>Admissions via ED/patient</td>
<td>74</td>
<td>1.3 (0.2)</td>
<td>0.5 (0.1)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Bed days/patient admitted via ED</td>
<td>74</td>
<td>18.2 (2.6)</td>
<td>7.2 (2.0)</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

*Data are presented for all surviving patients at the end of the 6 months (N = 114) or 12 months (N = 102) as mean (standard error of the mean, SEM) per patient Number of patients with ≥1 ED attendance/admission in the observed periods *Paired t-test

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HEPTEM 57 (50–59), p = 0.05). This finding, together with a decreased concentration of endothelial-MP carrying TM (TM-MP/L: 232 (190–287) vs 377 (218–493), p = 0.002) and endothelial-PC receptor (EPCR/C65E-MP/L: 16 (14–25) vs 37 (24–70), p < 0.001), demonstrated a local greater endothelial damage in cirrhotics.

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

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

**References**


P0039 SAFETY, EFFICACY AND RISK OF COMPLICATIONS FOR CIRRHOTIC HCV PATIENTS WITH THROMBOCYTOPENIA AND HYPOALBUMINEMIA TREATED WITH OMBITASVIR/R-+DASABUVIR/R+RIBAVIRIN – A REAL-LIFE COHORT

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

Aims & Methods: The aim of this study was to evaluate the impact of thrombocytopenia and hypoalbuminemia on treatment outcome and disease complications. We included in this study 855 HCV-infected cirrhotic patients treated with ombitasvir/paritaprevir/r+dasabuvir/r+ribavirin for 12 weeks in 10 university hospitals in Romania. The following groups were studied: 151 patients (17.7%) with albumin <3.5 g/dl, 239 (28%) with thrombocytopenia (a cutoff of 10000/mm3 was used) and 71 patients (8.3%) with both hypoalbuminemia and thrombocytopenia before initiating antiviral treatment. Safety (as AE in >5% and SAE), efficacy (HCV RNA undetectable at week 12 post-therapy and complications) and re-litigation 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 years (46.6% women (54.57%), high rate of previous interferon-based treatment (36.1%). End-of-treatment and sustained virological response rate were both >99% and there was no correlation with the presence of thrombocytopenia or hypoalbuminemia. The rate of adverse events in the whole cohort was 17.5% at 2 weeks reaching 18% at the end of treatment with only 0.8% severe adverse events with no statistical association with the presence of thrombocytopenia and hypoalbuminemia. The multivariate analysis showed significant association of thrombocytopenia (<10000/mm3) with higher (>1) degree of oesophageal varices (p = 0.001), one of upper digestive hemorrhage during treatment (p = 0.011), and prior exposure to interferon based regimens (p = 0.025). Low albumin (<3.5g/dl) also correlated with higher (>1) degree of oesophageal varices (p = 0.001) and onset of upper digestive hemorrhage during treatment (p = 0.002).

Conclusion: The efficacy and safety of the ombitasvir/paritaprevir/r+dasabuvir/r+ribavirin (as recommended by national regulations) was not different in cirrhotic patients with hypoalbuminemia and thrombocytopenia, but complications were higher at the end of therapy due to the absence of interferon and profatic measures should be recommended, especially if previously exposed to interferon containing regimens.

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

P0040 BACTERIAL INFECTION IN PATIENTS WITH DECOMPENSATED CIRRHOSIS - A PREDICTOR OF LONG-TERM MORTALITY INDEPENDENT OF DISEASE SEVERITY

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

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

Results: 115 cirrhotic patients (85% male, mean age 59 years, mean MELD 15, 72% alcoholic cirrhosis) were included with a total of 197 hospitalizations. Hospitals admissions were more frequent due to variceal haemorrhage (42%) and encephalopathy (37%). The incidence of bacterial infection was 23%: respiratory 25%, spontaneous bacterial peritonitis 24% and urinary 31%. Of these, 51% were nosocomial and in 20% an infectious agent was isolated. The survival rates at 30 days, 3 months, 6 months and 1 year were 65%, 55%, 34% and 27% in patients with infection and 97%, 90%, 85% and 78% in those without infection (p < 0.001). In the multivariate analysis, survival was independently associated with MELD (hazard ratio (HR) 1.073, p = 0.012), age (HR 1, 032, p = 0.012) and infection (HR 3, 821, p < 0.001). Bacterial infection remained an independent predictor of mortality, even when excluding patients with in-hospital mortality and long-term follow ups (HR 3, 093, p < 0.001 and HR 2, 015, p < 0.001).

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

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

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P0041 REAL-WORLD IMPACT OF RIFAXIMIN-A USE IN HEPATIC ENCEPHALOPATHY PATIENTS WITH ADVANCED LIVER DISEASE: A CONTINUED ALCOHOL MISUSE: A POST-HOC ANALYSIS OF THE IMPRESS STUDY

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Introduction: In the UK multicentre, retrospective, real-world study, IMPRESS, rifaximin-NF (RFX) use in patients with hepatic encephalopathy (HE) significantly reduced hospitalisations and length of stay in the 6 and 12 months post-RFX initiation compared to the respective periods pre-RFX initiation. This post-hoc analysis of the IMPRESS data compared hospital resource use pre- and post-RFX initiation in 2 sub-groups of difficult-to-treat HE patients: those with advanced liver disease or disease with continued alcohol misuse.

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

Results: Only patients alive at the end of the 6 and 12 months RFX-treatment periods were included: 114 and 102, respectively. Amongst these, 33/114 (29%), for the 6 months) and 26/102 (25%, for the 12 months) had baseline MELD ≥15; mean age, 63 years; 70% were male; 66% had alcohol-related liver disease; mean MELD 24. The mean (SEM) number of bed days/patient reduced from 25 (6.0) in the 6 months pre- to 15 (5.5) in the 6 months post-RFX initiation, and from 36 (9.5) in the 12 months pre- to 20 (7.7) in the 12 months post-RFX initiation (p value not significant). At 6 months post-RFX initiation, 15/114 (13%) patients were still actively drinking. At RFX initiation, mean age was 56 years; 73% were male, mean MELD was 19. Despite this, the mean (SEM) number of bed days/patient decreased from 36 (7.9) in the 6 months pre- to 15 (5.4) in the 6 months post-RFX initiation (p = 0.048), and the mean of hospitalisations/patient fell from 2.8 (0.8) to 1.2 (0.4) (t-test p = 0.059; Wilcoxon test p = 0.029). Too few patients with continued alcohol misuse were alive at 12 months to evaluate. Two patients reported adverse events, none serious.

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

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

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A174
United European Gastroenterology Journal 5(5S)

P0043 A PROPORTIONALY GREATER ELEVATION IN LIVER TRANSPLANT CANDIDACY IN PATIENTS WITH NAFLD AND PORTAL VEIN THROMBOSIS
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Introduction: NASH progresses to cirrhosis and its complications including hepato-cellular carcinoma. It is possible that risk factors for NAFLD-associated cirrhosis differ in Eastern countries from those in the Western world. Thus, we aimed to document the characteristics of patients with NAFLD-associated cirrhosis from Turkey, a European country sharing 97% of its borders with Asia. Relative to other European countries, the Turkish population exhibits a higher rate of obesity that can contribute to that in the Western world.
Aims & Methods: To characterize non-alcoholic fatty liver disease (NAFLD) presentation with esophageal varices. METHODS: We have kept the records of patients at our hepatology unit and affiliated liver center. Data were collected for esophageal varices at the advancing stage of cirrhosis. A cohort of patients with esophageal varices from 2003 to 2014 was reviewed. Eligible patients were ≥18 years of age and have had esophageal varices diagnosed by upper gastrointestinal endoscopy examination. They had regular clinical follow-up and endoscopic examinations at our clinic. Efficacy data were based on the last evaluation. Transplanted cases were excluded. The main inclusion criterion was the presence of esophageal varices with or without gastric varices. Only 258 patients with esophageal determined high-risk varices had reliable data and were included in this study. Each patient was evaluated for fundal varices, PVT, cirrhosis, HCC, and mortality. After the first evaluation, patients were divided into 4 groups: Those with hepatitis B, hepatitis C, NAFLD and others related to autoimmune hepatitis, Wilson Disease, primary biliary cirrhosis, etc.
Results: Primary end-point of the study was to use this cohort of patients with esophageal varices to evaluate the relationship between this disease and several etiologies, including NAFLD, hepatitis B, hepatitis C, or other liver-related diseases. The main objective was to draw this comparison in terms of PVT, HCC, cirrhosis survival and mortality. Of the 258 patients with esophageal varices, NAFLD was observed in 39.0% (101 patients), hepatitis B virus in 29.1% (75 patients) and HCC in 11.2% (29 patients). The mean age of NAFLD was 56.4 ± 16.0 years and 62% of these patients were men. Moreover, 47.5% had PVT, 5.0% had HCC, and 45.5% had fundic varices. The mortality rate was 47.5% during follow-up, but increased to 80% in the presence of HCC. PVT was observed in 47.5% of patients with NAFLD, 29.3% of patients with hepatitis B, 17.2% of patients with hepatitis C, and 23% of patients with other liver-related diseases (P < 0.001). Of the 111 patients (43%) that died during the study period, 72 patients (64.9%) had no PVT (P = 0.057). HCC was: 5.0% in patients with NAFLD, 26.7% in patients with hepatitis B, 34.5% in patients with hepatitis C, and 5.7% in other diseases (P < 0.001). Of the 38 patients with HCC, 13% had PVT. Moreover, HCC increased the mortality rate in almost in all the groups. Of the patients, 50.0% with NAFLD, 33.3% with hepatitis B, 26.3% with hepatitis C, and 58.3% with other diseases were alive at the end of the 5-year period with a significant difference according to the Kaplan-Meier log Rank test (P = 0.04). Risk for mortality, measured by risk ratio (RR), did not change per gender (RR: male/C6 female = 43.3%/42.5%, P > 0.05) or with the occurrence of cirrhosis (RR: 44.8%/28.6%, P > 0.05). However, it changed with the existence of fundic varices (OR = 4.90; 95% CI [2.24–10.71]; P < 0.001) and antibiotic therapy for infection (OR = 2.3, P = 0.009). MELD score greater than 10 (OR 2.9, P = 0.001) were independently associated with mortality. After the first evaluation, patients were divided into 4 groups: Those with hepatitis B, hepatitis C, NAFLD and others related to autoimmune hepatitis, Wilson Disease, primary biliary cirrhosis, etc.
Conclusion: The prevalence of MDR bacterial infections in cirrhotic patients is significant and associated with a longer hospital stay. It is possible to identify predictors of its occurrence in order to implement epidemiological strategies to reduce the risk of these infections.
Disclosure of Interest: All authors have declared no conflicts of interest.
Reference

P0045 EFFECT OF TREATMENT OF CHRONIC HEPATITIS C WITH SOFOSBUVIR AND DACLATASVIR IN PATIENTS OLDER THAN 60 YEARS
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Introduction: Hepatitis C virus (HCV) diminishes health related quality of life (HRQOL). Currently, there is no published data on assessing 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 (end of treatment) compared to SVR (after 3 months of end of treatment) in about 96% of treated patients. Before treatment, patients with chronic hepatitis C had worse scores especially in work, sleep, rest and recreation and pastimes categories. After treatment, patients who received sofosbuvir/daclatasvir with or without ribavirin had significant improve in work, sleep, rest and recreation and pastimes categories with p-value 0.001. Numerical improvement was observed in total score, physical and psychosocial dimension scores. In patients with SVR, the most improvement was in work and psychosocial dimension scores. There was no significant difference in SIP between scores after end of treatment and after 3 months of end of treatment.
Conclusion: Treatment of chronic hepatitis C in old-aged patients had a significant improvement in HRQOL.
Disclosure of Interest: All authors have declared no conflicts of interest.
Reference

P0044 RISK FACTORS AND PREDICTIVE MODEL FOR THE DEVELOPMENT OF MULTIDRUG RESISTANT BACTERIAL INFECTIONS AND THE IMPACT ON PROGNOSIS IN HOSPITALIZED DECOMPENSATED LIVER CIRRHOSIS PATIENTS
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Introduction: Bacterial infections are a leading cause of mortality in patients with decompensated cirrhosis. Aims & Methods: The objective of this study was to evaluate the prevalence of multiresistant bacterial infections, associated risk factors and their impact on prognosis in hospitalized decompensated liver cirrhosis patients. This was a retrospective case-control study that consecutively evaluated all bacterial infections with confirmed microbiological isolation in patients with decompensated liver cirrhosis admitted to the Gastroenterology ward between January 2009 and May 2016.
Results: There were 308 infections with confirmed microbiological isolates, corresponding to 218 hospitalizations, in a total of 161 patients. The median age of the patients was 63 years (IQR 55–71) and 67% of them were men. Alcoholic liver disease was the major cause of cirrhosis (72%). Among the infections evaluated, 87% were nosocomial and 13% community-acquired. Urinary tract infection was the most common infection (57%). In 27% of patients there were at least two concomitant bacterial infections. Multidrug resistant (MDR) bacteria were isolated in over half of patients. In the 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
EGY FIBRO-MARK: A PANEL OF ACCURATE LABORATORIES’ MARKERS FOR THE IDENTIFICATION OF HEPATIC FIBROSIS PROGRESSION IN PATIENTS WITH CHRONIC HEPATITIS C

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

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

Material and Methods: A total of 148 Egyptian HCV patients were subjected to routine laboratory workup in addition to estimation of serum AFP, hyaluronic acid (HA), platelet-derived growth factor (PDGF), tissue inhibitor of metalloproteinase-1 (TIMP-1) and collagen IV. According to fibroscan, patients were classified into those with non-significant fibrosis (F<2) and significant fibrosis (F2).

Results: Based on univariate analysis, ten variables were significantly higher in patients with significant fibrosis. Patients with F2-F4 had 2.08-fold, 2.14-fold, 1.80-fold and 1.90-fold increase in the concentrations of collagen IV, HA, PDGF and TIMP-1, respectively. Multivariate regression demonstrated that only age, AFP, PDGF, collagen IV and TIMP-1 retained significance. Therefore, a five-marker score named Egypt (EGY) Fibro-mark (FM) was developed. A significant correlation was found between its candidate markers and liver fibrosis progression. AFP was found to have highest correlation (r=0.47, P<0.0001) followed by collagen IV (r=0.46, P<0.0001), age (r=0.43, P<0.0001), TIMP-1 (r=0.40, P<0.0001) and PDGF (r=0.40, P<0.0001). ROC curve was used to estimate and compare the diagnostic accuracy of these candidate variables. As a consequence, these markers were in a decreasing rank: AFP (AUC 0.79), collagen IV (AUC 0.78), age (AUC 0.70), TIMP-1 and PDGF (AUC 0.75). Additionally, Bivariate Spearman’s rank correlation coefficient between EGY-FM and its candidate markers was determined for estimating the impact of each marker on the predictive criteria. The diagnostic value of Egy FM was then assessed by ROC curve showing an AUC of 0.89 for diagnosing significant fibrosis at an optimal cut-off point of 4.05 with 77% sensitivity, 83% specificity and 79% efficiency. Next, the area under the ROC curve (AUC) was used to discriminate and compare the performance characteristics of different non-invasive scores. The AUC was greatest for Fibro-mark (0.89), then BRC (0.83), followed by FRT and King’s score (0.81), APRI (0.80), Fibro-a (0.70) and finally FibroQ (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>BRC 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 (1.21-94.60)</td>
</tr>
<tr>
<td>King’s score (41)</td>
<td>0.82</td>
<td>≥12.3</td>
<td>94</td>
<td>45</td>
<td>79</td>
<td>12.25 (4.39-34.19)</td>
</tr>
<tr>
<td>APRI* (42)</td>
<td>0.80</td>
<td>&gt;1.5</td>
<td>29</td>
<td>94</td>
<td>50</td>
<td>6.13 (1.76-21.30)</td>
</tr>
<tr>
<td>Fibro-score (43)</td>
<td>0.79</td>
<td>&gt;1.28</td>
<td>95</td>
<td>19</td>
<td>72</td>
<td>4.34 (1.33-14.17)</td>
</tr>
<tr>
<td>FibroQ (44)</td>
<td>0.63</td>
<td>&gt;1.6</td>
<td>93</td>
<td>13</td>
<td>69</td>
<td>1.80 (0.53-6.04)</td>
</tr>
</tbody>
</table>

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

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

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

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

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

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

Results: IL-28B rs12979860 CT genotype is the commonest genotype among patients constituting ≈73% of the studied sample. The CC and TT genotypes constituted ≈18% and ≈9% respectively. Liver cirrhosis percentage increased with the increasing number of T alleles as it was 10%, 52% and 96% in CC, CT and TT genotypes, respectively. FibroScan values (kPa) gave a strong positive correlation (r=0.6; P<0.0001) with IL28B polymorphism. Similar to FibroScan, HA, laminin (r=0.5), collagen IV (r=0.4) and PHINP (r=0.4) serum levels showed significant (P<0.0001) positive associations with IL28B polymorphism. There was stepwise increase in the values of fibroscan and ECM proteins from CC to TT genotypes, so that elevated ECM proteins serum levels were associated with the presence of IL-28B T allele. (Table). In comparison with CC genotype, IL-28B rs12979860 T allele had a significant 2.4-fold increase (in case of CT) and 4.7-fold increase (in case of TT) in Fibroscan score (P<0.0001) positive associations with FibroScan, ECM proteins and MELD score. Among cirrhotic patients, liver stiffness was 31.13 ± 2.28 kPa in TT genotype vs 20.96 ± 0.74 kPa in CT genotype, MELD was 9.6 ± 0.73 in TT genotype vs 3.9 ± 0.41 in CT genotype and ECM proteins were significantly (P<0.0001) higher in patients with TT than CT genotype. AUC values for FibroScan, HA, laminin, collagen IV and PHINP serum levels to differentiate CC from other IL-28B genotypes were 0.91, 0.85, 0.84, 0.82 and 0.82, respectively. These values rise to 1.0, 0.97, 0.93, 0.98 and 0.93, respectively, when comparing CC to only TT genotype.
Conclusion: FibroScan and ECM proteins prove to be 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 the light on using FibroScan and ECM proteins as good diagnostic options for liver disease severity in IL-28B genotypes.

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.

P0048 REAL-WORLD EFFECTIVENESS OF FIVE DIFFERENT DIRECT ACTING ANTI-VIRAL REGIMENS FOR TREATMENT OF CHRONIC HEPATITIS C WITH NORMAL LIVER ENZYMES: SINGLE-CENTER EGYPTIAN EXPERIENCE

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

Aims & Methods: We aimed to report the efficacy of 5 different DAAs regimens for treatment of CHCV genotype 4 patients with persistently normal liver enzymes in real-world Egyptian cohort. Data of CHCV genotype 4 patients with normal liver enzymes who started treatment with different DAAs between September 2014 and September 2016 in a single specialized viral hepatitis treatment center in Egypt were retrieved. Treatment regimens included: Pegylated interferon alpha 2b Sofosbuvir/Ribavirin (PEG/SOF/RBV), Sofosbuvir/Daclatasvir (SOF/DCV), Sofosbuvir/Ribavirin (SOF/RBV), Sofosbuvir/Simeprevir (SOF/SIM). All regimens were given for 12 weeks except SOF/RBV which was given for 24 weeks. HCV RNA was tested at week 4 of treatment, and 12 weeks after treatment cessation to check for SVR 12.

Results: Our cohort included 1149 patients (562 males and 587 females). 158 patients were treatment experienced (13.75%) and 146 patients (12.7%) had liver cirrhosis. Regarding the used treatment regimens; 244 (21%) patients were treated with PEG/SOF/RBV, 382 (33.5%) with SOF/DCV, 152 (13.5%) with SOF/DCV/RBV, 117 (10%) with SOF/RBV and 254 (22%) with SOF/SIM. The overall SVR rate was 97.5% while the SVR rates for different regimens were; 94.7%, 99.7%, 100%, 91.5% and 98% for (PEG/SOF/RBV), (SOF/DCV), (SOF/DCV/RBV), (SOF/RBV) and (SOF/SIM) respectively.

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

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

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 once daily, asunaprevir (ASV), an NS3 protease inhibitor, in 200 mg twice daily; and beclabuvir (BCV), a non-nucleoside NS5B thumb-1 polymerase inhibitor, in 75 mg twice daily (BCV-TRIO) for treatment of patients with HCV genotype 1 infection.

Aims & 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 (SIGLE), 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 reviewers. A well-sustained virologic response rate (SVR12) and, commonly reported outcomes were pooled as event rate and risk ratio in the comparison meta-analysis (RR). The meta-analysis was conducted using the Comprehensive Meta-analysis (CMA) platform. The protocol was registered in PROSPERO (CRD42017054391).

Results: Among the included five studies, four studies, with low to moderate risk of bias, were included for the meta-analysis (n = 1096). The BCV-TRIO showed a high-response rate in naïve patients (SVR12 rate: 95.5% [95% CI [93.5–96.9]). This total population was sub-grouped to get SVR12 rates: 89.5% [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 [89–94.0]) for HCV genotype 1a, HCV genotype 1b, IL28B CC genotype, IL28B non-CC genotype, cirrhotic, and non-cirrhotic respectively. The virologic failure occurred only in 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) [0.90–1.03, P = 0.70], using this regimen on interferon-experienced patients (RR = 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% [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 [12.0–16.9]), (13.8%, 95%CI [11.2–16.3]), 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.
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.

The multicentre hospital case control based study was conducted in 4894 Egyptian individuals enrolled 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 lifestyle and having at least 15 years of exposure to the index case. The positive cases (either index or contact cases) in the family were selected with inclusion criteria of 1-HCV positive by PCR RNA ≥ 6 months, 2-Adults (above 18 years) of both sexes 3-Any stage of HCV related liver diseases. While cases were diagnosed as spontaneously cleared the virus (SVC) based on the following criteria: positive Anti-HCV but negative PCR HCV RNA in 2 successive samples at least 6 months apart with no prior history of antiviral therapy. Each participant was subjected to routine clinical and laboratory investigations in addition to molecular diagnostic and PCR HCV to confirm HCV infection. Sequencing analysis of the NS5B region of HCV was performed using ABI Prism 310 Genetic Analyzer (PE Applied Biosystems, Germany). The sequencing reaction was performed using Big Dye Deoxy Terminator method as recommended by the manufacturer (PE Applied Biosystems). Genotypes were determined according to the published reference sequences.

Results: The prevalence of Anti-HCV +ve cases among household contacts was 20.71% but when PCR HCV was performed only 17.83% were +ve while 2.9% were spontaneously cleared the virus (SVC). The HCV prevalence among house hold contacts was 17.29% & negative PCR HCV RNA in 2 successive samples at least 6 months apart with no prior history of antiviral therapy. Each participant was subjected to routine clinical and laboratory investigations in addition to molecular diagnostic and PCR HCV to confirm HCV infection. Sequencing analysis of the NS5B region of HCV was performed using ABI Prism 310 Genetic Analyzer (PE Applied Biosystems, Germany). The sequencing reaction was performed using Big Dye Deoxy Terminator method as recommended by the manufacturer (PE Applied Biosystems). Genotypes were determined according to the published reference sequences.

Results: The prevalence of Anti-HCV +ve cases among household contacts was 20.71% but when PCR HCV was performed only 17.83% were +ve while 2.9% were spontaneously cleared the virus (SVC). The HCV prevalence among house hold contacts was 17.29% & negative PCR HCV RNA in 2 successive samples at least 6 months apart with no prior history of antiviral therapy. Each participant was subjected to routine clinical and laboratory investigations in addition to molecular diagnostic and PCR HCV to confirm HCV infection. Sequencing analysis of the NS5B region of HCV was performed using ABI Prism 310 Genetic Analyzer (PE Applied Biosystems, Germany). The sequencing reaction was performed using Big Dye Deoxy Terminator method as recommended by the manufacturer (PE Applied Biosystems). Genotypes were determined according to the published reference sequences.

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

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

References


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

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Reference

39(3):862–3; author reply 863.
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 with Log-Rank 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 cancers occurred most frequently in the gastrointestinal tract, followed by the urinary organs, hematopoietic organs, biliary tract/pancreas, lungs, and other organs. The median periods from the start of the antiviral therapy to the time of diagnosis were 0.9 and 6.8 years in the DAA and IFN groups, respectively. Cumulative rates of cancer after 1 and 2 years were 3.0% and 5.0% for the DAA group, and 0.2 and 0.0% for the IFN group, respectively. The difference between the groups was significant (p = 0.02) based on Cox regression analysis using IPTW.

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

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Hazard Ratio</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>IFN (Ref.)</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>DAA</td>
<td>4.49</td>
<td>1.264–15.96</td>
</tr>
</tbody>
</table>

**Conclusion:** Because cancer detection in organs other than the liver can be challenging in management of hepatomas, 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:**

**P0054**

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

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**Introduction:** The shift from therapy with interferon to Direct antiviral agents (DAAs) has been a watershed for the management of HCV-related chronic liver diseases. In fact, treatment with second-generation DAAs cures the major proportion of those patients infected 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 years old with chronic HCV infection, neither naive or treatment-experienced. Any patients with any of the following features 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 data was implemented and the retrieved information was pooled and evaluated by a meta-analytical approach. Electronic, systemic 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 (DAA/OR (sofosbuvir) OR (daclatasvir) OR (ledipasvir) OR (velpatasvir)). Results: 1. 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 92.0% 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 (in 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 the literature provided data of 331 patients from 17 full text article and two abstracts. The mean weighted SVR12 rate was 89.4% (95%CI: 80.4–87.8); the rates varied from 79.0% (CI: 70.9–85.3) with sofosbuvir/ledipasvir to 84.4% (CI: 80.4–87.8) with sofosbuvir/ribavirin, to 92.3% (CI: 86.2–93.1) 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 RBV.

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

**References:**
Conclusion: In this cohort the “de novo” incidence of 3.8% of HCC after the transplantation was directly 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 in these patients. 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


3. - Reig M, Suzuki F, Fujisawa Y, Sawaoka H, Hosaka T, Akuta N, Suzuki Y, Saitoh S, Arase Y, et al. Sustained virologic response affecting proteins involved in different biological processes including mitochondrial metabolism. In hepatococytes, miR-506: i) induced dedifferentiation with downregulation of biliary and epithelial markers together with upregulation of mesenchymal and pro-inflammatory markers; ii) increased oxidative and endoplasmic reticulum (ER) stress; iii) caused DNA damage; iv) sensitized to caspase-3-dependent apoptosis induced by cytotoxic bile acids. These events were also associated with impaired energy metabolism in mitochondria (proton leak and loss of mitochondrial membrane potential) and PDC-E2 overexpression. Co-culture of miR-506 over expressing hepatocytes with PBC immune cells induced activation and proliferation of PBC immunocytes.

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-
ses the diagnostic performance of the eight features in the interquartile range (IQR) and median of 10 SWE measurements using body mass index (BMI) and age were analysed using the Mann-Whitney U test.

Results: The study population consisted of 106 men and 94 women with a mean age of 48.2 years (range 18-78 years) and BMI of 25.6±4.6 kg/m². Fatty liver was present in 50% of these patients. BMI of 25.7 was considered to be the diagnostic threshold for hepatic steatosis. AUROCs of the factors are presented in the table. AUROC values ranged from 0.735 (A) to 0.903 (H), respectively. In the cohort of obese (BMI > 25), 52% of patients (n = 124) and older patients (age > 65), 22%, p < 0.012) indicated significantly higher IQR/median. There was no significant difference in the diagnostic accuracy between using the median or mean of five, and 10 measurements. The AUROCs to diagnose patients with severe fibrosis were: F0/F1/F2/F3/F4 in 70/34/20/23/25 patients, respectively. The median AUROC of one measurement was 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 and 10 (p < 0.05) measurements was observed in pairwise comparison. Likewise, A significant difference between patients with severe (F3) and moderate fibrosis (F2) was observed (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.

P0058 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 ablation.

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 software and an imaging post-processing. 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 response 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 × 10⁻³ mm²/s (mean±SD), while after treatment it was 1.46±0.12 × 10⁻³ mm²/s with a statistically significant difference (P =0.003) using paired samples t-test. The b value 1000 before treatment was 1.32±0.28 × 10⁻³ mm²/s, and increased in after treatment in responding lesions to reach 1.52±0.1 × 10⁻³ mm²/s with a statistically significant difference (P=0.003). Using b value 500, the mean ADC value before treatment didn’t show a significant difference between responding (1.26±0.12 × 10⁻³ mm²/s) and non-responding lesions (1.26±0.12 × 10⁻³ 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 (1.46±0.12 × 10⁻³ mm²/s and 1.26±0.12 × 10⁻³ mm²/s 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.

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

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

Aims & Methods: We have performed outcome analysis in 100 patients with diffuse liver disease which were treated from 2015 to 2016. There were 41 male patients (41%), and 59 female patients (59%), age Me (LQ-UQ) 49 (39–56), minimal age was 18 years, maximal age was 77 years. All patients were found to have chronic diffuse hepatic diseases and were hospitalized for morphological and functional characterization. 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, F2-9; F3-15 and F4-45 patients. Given that patients with a degree of fibrosis on the scale METAVIR F0 and F1 do not require active conservative therapy, we combined the data of the group into one F0-F1. The obtained results of shear wave elastography are presented in the form of 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, 10-14, 8) kPa and F4-22, (18, 2-28, 5) kPa. The parameters of liver stiffness in the various subgroups of patients with different stages of fibrosis were presented in the form of median and interquartile range.

Conclusion: No significant correlation was found between the shear wave elastic modulus and the stage of fibrosis in this population. However, there was a significant correlation (P=0.001) between the degree of liver stiffness and the stage of fibrosis. A strong correlation was revealed: the Spearman coefficient was r = 0.97. The coefficient of correlation between the stiffness index (BMI) and age were analysed using the Mann-Whitney test.

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

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

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Introduction: The estimation of liver stiffness (LS) has recently been evaluated by new elastographic techniques, such as Shear Wave Elastography (SWE), with a wider applicability than transient elastography (1). No studies evaluated LS in patients with alcoholic liver diseases (ALD) by using the elastographic methods. Moreover, exploring the possibility to assess the elasticity of other organs and tissues, few studies have evaluated the results of SWE in patients with diffuse liver disease, the possibility of fatty dystrophy should be taken into account, since an underestimated of this fact can lead to false-positive results in the staging of fibrosis by METAVIR. The SWE method can be recommended for evaluation of the degree of hepatic steatosis, in the absence of correlation with elastometry data.

Disclosure of Interest: All authors have declared no conflicts of interest.
0.21–0.57). At univariate analysis LS was associated with liver cirrhosis (p < 0.01), steatosis (p = 0.0003), liver surface nodularity (p = 0.0003), active alcoholic abuse (p = 0.015), alcohol consumption/day (p = 0.0134), diabetes (p = 0.0223). At multivariate analysis cirrhosis (p < 0.0001) and steatosis (p = 0.0073) were independently associated with LS. At both univariate and multivariate analysis, PS was significantly correlated only with liver cirrhosis (p = 0.0058).

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

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

References

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

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Introduction: A previous study was found regulated progression of liver cancer in our previous studies, IL-6/STAT3 pathway play key role, but the precise underlying mechanism remains to be explored. It was found exosomes are the vesicles released by the tumor cells into tumor microenvironment, they are a powerful mechanism to transfer RNAs and proteins. The study of exosomes provide the new way to develop new therapy.

Aims & Methods: The expression of miR-224, IL-6, STAT3 and SMAD4 in tumor as well as adjacent tumor tissues of HCC were detected by RT-PCR. Aims & 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 hepatocarcinogenesis. A total of 165 patients were enrolled in this study, from which serum samples were collected and categorized into four main patient groups: 42 chronic hepatitis C (CHC); 45 CHC with cirrhosis (LC); 38 HCC with HCV infection; and 40 healthy controls. The expression profile of the seven miRNAs was analyzed using TaqMan real-time transcription-polymerase chain reaction. Additionally, the expression levels of liver-specific microRNAs (miR-221, miR-199a) and ALP 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.

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

<table>
<thead>
<tr>
<th>MicroRNAs</th>
<th>Normal</th>
<th>CHC</th>
<th>LC</th>
<th>HCC</th>
</tr>
</thead>
<tbody>
<tr>
<td>miR-16</td>
<td>14.26 ± 0.69</td>
<td>24.09 ± 0.44**</td>
<td>23.29 ± 0.46**</td>
<td>22.35 ± 0.54**</td>
</tr>
<tr>
<td>miR-34a</td>
<td>23.72 ± 0.19</td>
<td>36.39 ± 0.34**</td>
<td>30.01 ± 0.45**</td>
<td>32.50 ± 0.94**</td>
</tr>
<tr>
<td>miR-221</td>
<td>22.82 ± 0.38</td>
<td>27.17 ± 0.44**</td>
<td>28.12 ± 0.30**</td>
<td>28.51 ± 0.46**</td>
</tr>
<tr>
<td>miR-125</td>
<td>20.57 ± 0.54</td>
<td>96.01 ± 4.36**</td>
<td>100.54 ± 0.81**</td>
<td>29.96 ± 0.57**</td>
</tr>
<tr>
<td>miR-139</td>
<td>29.96 ± 0.97</td>
<td>94.63 ± 0.38**</td>
<td>86.02 ± 0.40**</td>
<td>30.03 ± 0.43</td>
</tr>
<tr>
<td>miR-145</td>
<td>20.65 ± 0.52</td>
<td>28.32 ± 0.45**</td>
<td>28.74 ± 0.59**</td>
<td>20.64 ± 0.57</td>
</tr>
<tr>
<td>miR-199a</td>
<td>20.53 ± 0.47</td>
<td>330.38 ± 0.47**</td>
<td>311.98 ± 0.72**</td>
<td>66.16 ± 0.44**</td>
</tr>
</tbody>
</table>

**p < 0.01 significant increase than control; *p < 0.01 significant decrease than CHC; p < 0.01 significant decrease than control; **p < 0.01 significant decrease than CHC and HCC; *p < 0.01 significant decrease than control; *p < 0.01 significant decrease than CHC and LC; *p < 0.01 significant decrease than CHC

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

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

References

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

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Introduction: Primary hepatocellular carcinoma (HCC) is one of the most common malignancies all over the world. HCC is associated with poor prognosis. However, the mechanism of HCC initiation and development remains unclear. In our previous work, high-throughput microarray assay in collected clinical HCC samples followed by bioinformatic analysis suggested that Metallothionein 1G (MT1G) might be one of the key factors in HCC. Aims & Methods: We detected the MT1G expression in paired HCC samples and HCC cell lines by RT-qPCR and Western blot. Then MSP (Methylation specific PCR) and BGS (Bisulfite genomic sequencing) were performed to evaluate methylation status of MT1G in HCC. The functional significance of MT1G in HCC was investigated by overexpression or knockdown in HCC cell lines. The effects of MT1G re-expression were also determined by flow cytometry.

Results: MT1G was inactivated in all (6/6) HCC cell lines tested, but was readily expressed in immortalized liver cell line LO2. The expression of MT1G was
regulated in cancer tissues compared with the adjacent non-tumor tissues (B). The expression level of MT1G in the liver cancer tissue 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 SMCC-7721 and Hep3B 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 cell lines in normally was also markedly inhibited after stable expression of MT1G (P < 0.001). MT1G over-expression in HCC cells induced the cell apoptosis (P < 0.01).

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

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

P0064 THE FXR RECEPTOR PATHWAY IN HEPATOCELLULAR ADENO MA AND FOCAL NO DULAR 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 histopatho-

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

P0065 CXU1 CONTROLS ENDOPLASMIC RETICULUM STRESS AND AUTOPHAGY-RELATED CELL DEATH

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Introduction: CXU1 (CUTL1) is a transcription factor able to promote the expression of several genes implicated in cellular proliferation, differentiation and demise. In normal adult cells, it preferentially favors the expression of proapoptotic genes. Its aberrant expression in tumor turns its role as foe.

Aims & Methods: Here, we analyze the role exerted by CXU1 during deacetylase inhibitors mediated cell death in liver cancer cells. CXU1, 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 CXU1 and furthermore treated with deacetylase inhibitors panobinostat, SAHA and trichostatin A. Thapsigargin, an endoplasmic reticulum stress inducer, served as positive control.

Results: CXU1 knock down caused a suppression of ER stress and autophagy markers BIP, CHOP, ATF4, ATF6, Becn1, 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 CXU1 over-expression after 6 hours of treatment, whereas they showed to lose this ability after 24 hours. CXU1 knock-down reduced not significantly its protein level after treatment with deacetylase inhibitors. CXU1 knock down counteracts the accumulation of BIP protein after 24 hours of treatment with deacetylase inhibitors. Thapsigargin induced BIP independently from CXU1.

Conclusion: ER stress and autophagy markers are under the control of CXU1. The cell death induced by deacetylase inhibitors is strictly connected with CXU1 expression and activity. Further studies are needed to clarify the exact mechanism exerted by CXU1 in this scenario.

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

P0066 CXU1 CONFRMS RESISTANCE TO APOPTOTIC CELL DEATH IN LIVER CANCER CELLS

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Introduction: CXU1 (CUTL1) is a transcription factor able to promote the expression of several genes implicated in cellular proliferation, differentiation and demise. In normal adult cells, it preferentially favors the expression of proapoptotic genes. Its aberrant expression in tumor turns its role as foe.

Aims & Methods: Here, we analyze CXU1 activity in TRAIL (Tumour necrosis factor related apoptosis inducing ligand) mediated cell death in liver cancer cells. CXU1 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 then-signalors). The cell death assays 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 Flp detection.

Results: Treatment with superkiller TRAIL, at 50 and 100ng/ml, caused cell death in HepG2 and Hep3B cells after 48h proven by an accumulation of 40% of sub-G1 events. CXU1 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). CXU1 knock down did not change the expression of TP53, KRT18, CDKN1A and CDKN1B. Interestingly, silencing CXU1 caused a sensitization of liver cancer cells to TRAIL effect by increasing, significantly, the percentage of sub-G1 events to 40% of sub-G1 events. prolonged transfection did not affect the expression of several genes implicated in cellular proliferation, differentiation and demise. In normal adult cells, it preferentially favors the expression of proapoptotic genes. Its aberrant expression in tumor turns its role as foe.

Conclusion: Limited by sample size, this study suggests that misdiagnosis based on imaging might actually correlate with aberrances on hepatocyte trans-

Disclosure of Interest: All authors have declared no conflicts of interest.
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 fetoprotein (AFP).

Methods: Serum samples were obtained from 300 consecutive patients with chronic hepatitis C, of whom 150 had cirrhosis and 150 were without cirrhosis. By using an enzyme-linked immunosorbent assay (ELISA) method, serum SCCA and AFP levels were measured. The correlation between these markers and tumor size, staging, and survival was calculated. SCCA and AFP levels were also compared between patients with and without cirrhosis, patients with and without HCC, patients with and without BCLC stage B, patients with and without BCLC stage C, and patients with and without BCLC stage D.

Results: The median SCCA level in patients without cirrhosis was 7.8 ng/ml (range: 0.2–56.7 ng/ml) and in patients with cirrhosis was 15.0 ng/ml (range: 0.6–154.0 ng/ml). The median AFP level in patients without cirrhosis was 0.6 ng/ml (range: 0.1–20.0 ng/ml) and in patients with cirrhosis was 3.3 ng/ml (range: 0.6–20.0 ng/ml). The correlation between SCCA and AFP levels was significantly positive in patients with and without cirrhosis and in patients with and without HCC.

Conclusion: SCCA and AFP levels were significantly higher in patients with cirrhosis and HCC than in patients without cirrhosis and HCC. The correlation between SCCA and AFP levels was significantly positive in patients with and without cirrhosis and in patients with and without HCC.

Table 1: Comparison Between Different Studied Groups Regarding SCCA

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean (ng/ml)</th>
<th>Std. deviation</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>A (cirrhosis)</td>
<td>15.0</td>
<td>438</td>
<td>150</td>
<td>564</td>
</tr>
<tr>
<td>B (cirrhosis)</td>
<td>3.3</td>
<td>380</td>
<td>145</td>
<td>564</td>
</tr>
<tr>
<td>C (cirrhosis)</td>
<td>7.5</td>
<td>210</td>
<td>75</td>
<td>210</td>
</tr>
<tr>
<td>D (cirrhosis)</td>
<td>6.3</td>
<td>9</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>E (cirrhosis)</td>
<td>0.8</td>
<td>1.6</td>
<td>0.8</td>
<td>1.6</td>
</tr>
</tbody>
</table>

Table 2: Comparison Between Different Studied Groups Regarding Alpha Feto Protein

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean (ng/ml)</th>
<th>Std. deviation</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>A (cirrhosis)</td>
<td>263.0</td>
<td>96.02</td>
<td>150</td>
<td>438</td>
</tr>
<tr>
<td>B (cirrhosis)</td>
<td>209.4</td>
<td>64.7</td>
<td>145</td>
<td>380</td>
</tr>
<tr>
<td>C (cirrhosis)</td>
<td>154.5</td>
<td>48.16</td>
<td>75</td>
<td>210</td>
</tr>
<tr>
<td>D (cirrhosis)</td>
<td>7.1</td>
<td>1.82574</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>E (cirrhosis)</td>
<td>1.22</td>
<td>0.27406</td>
<td>0.8</td>
<td>1.6</td>
</tr>
</tbody>
</table>

Table 3: Correlation Between AFP and SCCA

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

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

<table>
<thead>
<tr>
<th></th>
<th>AUC</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFP</td>
<td>0.930*</td>
</tr>
<tr>
<td>SCCA</td>
<td>0.820*</td>
</tr>
<tr>
<td>AFP + SCCA</td>
<td>0.909*</td>
</tr>
</tbody>
</table>

References

Hepatocellular Carcinoma Multidisciplinary Clinic – Cairo University (HMC-CU) Score: A New Simple Screening Tool 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 liver cirrhosis and no HCC. Diagnosis of HCC related liver cirrhosis was based on clinical, laboratory and imaging evidence of chronic liver disease in addition to detection of HCV antibodies and HCV RNA by PCR technique. Each patient signed an Informed consent and the study was carried out according to the ethical guide-lines of 1975 Helsinki Declaration.

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

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

<table>
<thead>
<tr>
<th>Age Gender</th>
<th>Hb</th>
<th>INR</th>
<th>OR</th>
<th>Lower</th>
<th>Upper</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The best overall formula that could best predict HCC was then constructed. HMC-CU score = 0.080 x Age + 1.164 x Hb + 0.886 x INR - 2.653 x Hb + 0.0498 x INR + 0.347 x Hb + 1.022 x INR + 0.080 x Hb

The overall accuracy (cutoff point) of 0.56 HMC-CU enabled the correct identification of HCC with 92% sensitivity and specificity. The area under the ROC curve (AUC) was 0.93 and 95% confidence interval was 0.91–0.94. 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 early diagnosis of HCC as compared with HCV related CLD. The advantage 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 only routine laboratory parameters. The HMC-CU score may be useful during surveillance programs for HCC. Our study included large number of HCC and non HCC patients all are Egyptians with a background of HCV type 4 related CLD. A 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

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

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Introduction: Monopolar radiofrequency ablation (RFA) treatment for hepatomas has been unsatisfactory with local tumor recurrent rates of 8–40% in tumors ≥3 cm. Bipolar RFA devices have been developed to overcome the limitations of monopolar RFA devices.

Aims & Methods: This study aimed 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 other palliative treatment were included in the study and compared between medium and large hepatomas using Kaplan-Meier survival and the prognostic factors were using multivariate analysis.

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 of 40% and 60% (p = 0.098) vs 73.3% and 80% (p = 0.652) for medium and large hepatomas during 30 months follow up were not statistically significant. The overall survival rates of 80%, 66.7% vs 60%, 46.7% at 12 and 30 months, respectively, was not statistically significant (p = 0.390). By multivariate analysis, BCLC stage (HR = 3.904, p = 0.023) MELD score (HR = 1.220, p = 0.021) and pre-treatment AST level (HR = 1.028, p = 0.019) were independent prognostic factors for overall survival.

Conclusion: Multiple bipolar RFA system can achieve high complete tumor necrosis rates and low complication rates in treating medium to large hepatomas with shorter pre-treatment BCLC stage. MELD score and AST level were independent prognostic factors for overall survival. The therapeutic effect and long term survival for large hepatomas (≥5 cm) was not inferior to that of medium hepatomas by multiple bipolar RFA.

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

References
PO070 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. Although, they are considered benign neoplasms. 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, etiology, clinical manifestations and prognosis of HCA. We undertook retrospective analysis of patients with HCA, histologically confirmed (by guided biopsy or surgical resection), between 2008 and 2016, in a tertiary referral centre. When feasible, the subtype classification of HCA proposed by Bordeaux group, was performed. Descriptive statistics, univariate and multivariate analysis were performed using IBM SPSS Statistics 22, with p < 0.05 deemed to be statistically significant.

Results: In this study 27 patients were included, 2 man and 25 women, with a median age of 38±11 years, followed for a mean time of 78±36 weeks (lost follow-up in 7 cases). Three cases of hepatic adenomatosis were included. Forty-one percent of the women used OC and 38% of the patients had dyslipidemia. The mean size of the HCA was 70±42 mm; 65% of the patients had abnormal liver tests at diagnosis, 46% were symptomatic and 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, only 20% had an imagiological diagnosis of HCA. In 12 (44%) cases, immunohistochemical analysis was performed. According to the Bordeaux classification of HCA, 8 (67%) cases were classified as inflammatory, 2 (17%) as HNF-1α-mutated, 1 (8%) as β-catenin mutated and 1 (8%) as unclassified. During the follow-up period, a hemorrhagic shock related with HCA rupture and in 2 (10%) was necessary surgical revision due to incomplete resection. There was no HCC diagnosed during the follow-up. The median size of the HCA that weren’t completely resected and also of those presenting with HCA rupture was significantly higher: (110±55 mm [p=0.035] and 105 vs 47 mm [p=0.037], respectively). The 2 male patients had inflammatory HCA (p=0.011).

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

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

References:

PO071 LASER ABLATION IS SUPERIOR TO TACE IN LARGE SZED HEPATOCELLULAR CARCINOMA: A CASE–CONTROL 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 years, range 54-88, Child-Pugh 37/4) with a single node of HCC ≥ 40 mm (median size 46 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 years, range 49-86; Child-Pugh A/B: 34/7; LA: n=20 and 22G PCN: n=23). The baseline liver radiofrequency ablation of hepatocellular carcinoma with a multi-pin bipolar system. J Surg Oncol 2011;103:69-74.

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 eficacy of LA was confirmed in all categories, also after the stratification of the tumor size according to the thresholds (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=0.00315). Overall survival probability at 5 years was 90.2% and 55.4% in LA group and 85.4 and 40.8. in TACE group.

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

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

References:

PO072 ENDOCISTIC 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. Aim & 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 stain was 92.6%. Three (7.3%) were non-diagnostic (7.3%) 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 were 92.6%, 92.6% and 100%, respectively. The diagnostic yield in 25G PCN and 22G PCN was significantly superior to 20G PCN (p = 0.045). There was one bleeding complication, but controlled with endoscopic hemostasis with endoclips.

Conclusion: EUS-FNB with core biopsy needle may be a safe and useful modality in the management of patients with hepatic solid mass. Moreover, 20G and 22G FNB may be adequate for liver biopsy.

Disclosure of Interest: All authors have declared no conflicts of interest.
P0073 COMPARISON OF METHODS TO ESTIMATE LIVER FUNCTION IN NEWLY-DIAGNOSED HEPATOCELLULAR CARCINOMA PATIENTS WITH ASCITES

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Introduction: Liver function is a key element in determining outcome of patients with hepatocellular carcinoma (HCC). For HCC with ascites, estimation of liver function is particularly important, as they already have decreased liver function. Aims & Methods: We aimed to find out best method to predict outcome of HCC patients with ascites. A total of 437 newly-diagnosed HCC patients with ascites (mean age = 56.0 y, male = 74.8%, hepatitis B virus = 73.2%) were analyzed. We compared Child-Pugh score, Model for End-Stage Liver Disease (MELD) score, MELD-Na score, and the Albumin-bilirubin (ALBI) grade for overall survival. Results: During a median 9.0 months of follow-up (range: 0.1~154.0), mortality was 371 (85.4%) patients. MELD-Na showed highest time-dependent area under receiver-operating characteristics curve (AUROC)s at 1 year (0.672) that was significantly higher than ALBI grade (0.605), MELD score (0.580), and Child-Pugh score (0.580). The median survival was significantly lower for those with MELD-Na < 12 than those with MELD-Na ≥ 12 (median: 13.6 vs. 37.3 months, p < 0.001). Overall, 350 patients received treatment, and most commonly used modality was transarterial chemoembolization (62.3%), followed by sorafenib (29.9%). Conclusion: In HCC patients with ascites, treatment was associated with better survival, except for subgroup with advanced tumor with decreased liver function, in which mortality rate was not significantly different from that of those who did not receive treatment (median survival: 13.3 vs. 24 months, p < 0.001). When patients were further stratified by mUICC stage and MELD-Na score, treatment was not associated with better outcome for mUICC stage IV patients with MELD-Na ≥ 12 (median survival: 2.2 vs. 12 months for treatment vs. best supportive care, p = 0.15), while treatment was associated with better outcome in other subgroups. Disclosure of Interest: All authors have declared no conflicts of interest.

P0074 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 Alpha-fetoprotein (AFP) has unsatisfactory characteristics. Squamous Cell Carcinoma Antigen (SCCA) is expressed in tissues of 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 SCCA-IgM levels were 76% and 76% in HCC etiology and size. 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 = 0.015) than those who presented SCCA-IgM levels ≥130 AU/mL. In conclusion, SCCA-IgM levels were significantly higher in patients with higher tumor stage and good correlation between SCCA-IgM levels and survival were found. SCCA-IgM levels and survival were also significantly higher in patients with high tumor grade and size. SCCA-IgM levels were significantly associated to the BCLC stage IV, Child-Pugh classes C, and to the presence of neoplastic thrombosis and metastases. The mean overall survival in patients treated according to BCLC indications was 35.5months, while in patients managed differently was 31.9 months (p < 0.0001). Conclusion: Adherence to BCLC algorithm in field-practice was high in early and 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.

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

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Introduction: The BCLC algorithm is the standard system for clinical management of HCC. Data on adherence to this therapeutic paradigm are scarce. The aim of this field-practice study is to provide a description of HCC patients in Southern Italy, to evaluate the adherence to BCLC guidelines and its impact on patients’ survival. Aims & Methods: We analyzed the region-wide Italian database of Progetto Epatocarcinoma Campania, which includes data of HCC patients, prospectively collected from January 2013 to December 2015 in 16 regional centers. Results: Overall 1008 HCC patients were enrolled: 70.6% patients received therapy recommended by BCLC algorithm, while 29.4% underwent different treatment. Among patients who were treated in adherence to guidelines, a higher rate of diagnosis on surveillance programs, better liver function, lower rate of AFP > 200 ng/ml, more early stage and monofocal HCC, lower frequency of nodules >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 35.5months, while in patients managed differently was 31.9 months (p < 0.0001). Conclusion: Adherence to BCLC algorithm in field-practice was high in early and end stage HCC patients, but it was poor in intermediate and advanced patients. This may be due to the wide heterogeneity of intermediate-stage patients, and to the limited use of sorafenib in advanced-stage patients. Strategies to improve treatment and stratification of HCC patients are required. Disclosure of Interest: All authors have declared no conflicts of interest.

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

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

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

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

P0078 NON-GOVERNMENTAL HCV SCREENING IN A VILLAGE IN NILE DELTA IN DAAS ERA IN EGYPT

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Introduction: HCV is highly endemic in Egypt with a prevalence of 12%. The ministry of health through the national committee for hepatic viruses has done an extra-ordinary effort since the beginning of the DAA’s era which resulted in treatment of almost one million infected patients till now. Still this looks as the summit of the iceberg and there is still estimated more than 10 million Egyptians infected with the virus, the majority of them are still undetected.

Aims & Methods: The aim of this work is to give an example of non-governmental efforts which can be done to solve this tough national problem. A group of young medical and non-medical volunteers all from El Salam village in Mansoura, Dakahilia governorate, Egypt have worked together. They contacted mosques and pharmacies in the village and distributed brochures to announce for the free of charge screening for the virus in the village. They contacted businessmen in the village to sponsor the campaign. They contacted the laboratory of the village to do the HCV Ab test with nonprofit price.

Results: A total of 2220 citizens have visited the referral lab to do the antibody test. Only 419 persons proved positive. This gives an estimated prevalence in the village of 19.0%. 119 patients were insurance patients and they went to treatment and did not complete the study. The rest 300 Ab +ve patients completed the study. All patients were Hbs Ag –ve. 132 PCR +ve (44%) patients from the 310 HCV Ab +ve group. The rest 168 patients were +ve for HCV RNA (56%). 18 patients of the HCV PCR –ve had previous HCV treatment (6.5%). Only 2 patients of the 168 HCV RNA +ve (1.2%) were previously treated. The PCR +ve patients without previous treatment were 114 patients (38%). So only 62.0% of the HCV Ab +ve in the community are PCR +ve and require treat- ment. The total cost for the screening of the 2220 patients was 40.000 L.E. which means 18.0 L.E per person (almost one Dollar).

Conclusions: The screening of the HCV Ab positivity can be markedly reduced if it is done in each village depending on volunteers from the same village working in related fields like medical, pharmacists, laboratory and social jobs. Only 62.0% of the HCV Ab +ve in the community are PCR +ve and require treatment.

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

References
Early Diagnostics of NAFLD: Analysis of Risk Factors Using Biliary Pressure with ERC.

**Aims & Methods:** In order to evaluate the practical use of the technique of using only BMI when evaluating the chances of development of hepatic steatosis among practically healthy young persons, a valid, repeatable non-invasive method for the assessment of NAFLD was developed. 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:** Fifty-nine volunteers (students of medical university) at the age of 19–28 years (the median age of 20.5) have participated in the research. There were 22 men (37.3%) and 33 women (62.7%) among them with verified liver diseases. The survey was conducted in order to exclude or detect risk factors. Determining the body mass index (BMI), body fat, and steatosis was diagnosed in 4 (6.8%). After analyzing data of BIA it was revealed that body weight above normal values in 23 (40.3%) women, and the mean body composition of S/N/3 in 19 (33.3%), and BMI was statistically insignificant.

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

**References:**

1. **A188** United European Gastroenterology Journal 5(5S)
Conclusion: In this systematic review with meta-analysis, alcohol consumption has a dose-dependent negative co-relation with the risk of gallstone disease development.

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

References
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 in all tested area. The releasing drug capacity and duration was measured by using drug releasing test in vitro for 3 days.

Results: The mean thickness of membrane was 50um. The mean capacity of drug per unit area was 100 ug/cm², and the amount was constant in all tested area (Standard deviation, 5 ug/cm²). In drug release test, the capacity of releasing drug was different depended on the kinds of polyurethane. The total amount of released drug in 24 hrs was 919 ug, 836 ug, 681 ug and 580 ug in tecophilic coating, tecothean coating, tecoflex coating, and pellethane 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>Gemcitine (ug)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coating Polymer</td>
<td></td>
</tr>
<tr>
<td>Tecophilic</td>
<td>24 hrs 248 hrs 72 hrs</td>
</tr>
<tr>
<td>Tecotehean</td>
<td>919 927 933</td>
</tr>
<tr>
<td>Tecoflex</td>
<td>681 690 698</td>
</tr>
<tr>
<td>Pellethane</td>
<td>580 604 622</td>
</tr>
</tbody>
</table>

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

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

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

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

Aims & Methods: We aimed to evaluate the antitumor effect of the paclitaxel, gemcitabine, and mitomycin C eluting polyurethane membrane in a tumor model. Total of 24 mice were used in current study and divided into four groups, each group had six mice. Membranes containing different antitumor drugs (paclitaxel, gemcitabine, 250ug/ml; mitomycin C, 119.02 mm3, P value 0.0029; control 1362.62mm3). The antitumor effect of gemcitabine was superior compared to the other drugs. However, it was not statistically difference. No significant difference in body weight change was observed among groups.

Membrane only Paclitaxel Gemcitabine Mitomycin C

| Mouse weight (g) | 24.28 21.05 19.56 20.67 |
| Tumor volume (mm³) | 1362.62 291.77 63.38 119.02 |
| Tumor weight (mg) | 1025 524 496 443 |

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

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

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

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

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Introduction: Liquid-based sample preparations for cytology have improved the cellular yield in pancreatico-biliary (PB) malignancy.1,2 The SurePath (SP) method-ology produces a pellet of concentrated cellular material which enables addi-ional 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 useful for the diagnosis of malignancy. The aim of this study was to assess the Ki67 staining in biliary epithelium obtained from patients with bile duct obstruction.

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

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

Conclusion: SP is superior to conventional slide-based cytology preparations in the diagnosis of malignant bile duct structures. Advantages include ease of collect-ion, no requirement for a cytology technician, a sizable pellet of intact cells for the cytopathologist to examine and the ability to undertake IHC staining. Ki67 is a marker of cell division and cells stained with Ki67 are increased significantly in adenocarcinoma as confirmed by this study. The presence of a large number of cells stained with Ki67 as well as the pattern of intracellular staining adds a level of confidence for the cytopathologist to diagnose malignancy, particularly when there is no clinical or scan evidence of a tumour mass. Early diagnosis is the key for current 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

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

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

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

Results: Sixty eight patients (45 males, mean age 63.7+/-14.8 years) were enrolled, 35 patients were classified into the plastic stent group, 18 patients were classified into the metal stent group and 15 patients were classified into the plastic stent followed to metal stent group. Demographic data, primary malignancy, tumor staging and ECOG score, initial total bilirubin and stricture length were similar between 3 groups. The median survival time was 5.4 months 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 decline 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 different 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

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

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Introduction: The most widely used standard for determining the effectiveness of chemotherapy is a set of rules called Response Evaluation Criteria in Solid Tumors, or RECIST. However, it is often difficult to evaluate radiologic response to chemotherapy especially in patients with biliary tract cancer (BTC) mainly because of the pathognomonic tumor progression along bile duct and/or inflammatory reaction induced by indwelling biliary drainage. Therefore, quantitative evaluation using tumor markers is expected to play complementary roles to assess treatment efficacy, however, the prognostic value of carbohydrate antigen 19-9 (CA 19-9) kinetics in patients with advanced or recurrent BTC receiving chemotherapy remains to be elucidated.

Aims & Methods: Between January 2006 and March 2016, a total of 185 advanced or recurrent BTC patients receiving a first line systemic chemotherapy for at least two cycles were retrospectively studied. Serum CA 19-9 was measured at baseline (CA19-9_Pre) and after two cycles of chemotherapy, and patients were categorized into three groups based on CA19-9 response: CA19-9 decrease group (≥30% decrease), stable group (<30% decrease and ≥20% increase) and increase group (≥20% increase). The Cox proportional hazards model was used to analyze the prognostic factors for OS and PFS, using the landmark method.

Results: The primary tumors were located as follows: 68 (37%) in intrahepatic bile duct, 43 (23%) in extrahepatic bile duct, 64 (35%) in gallbladder and 10 (5%) in ampulla. As for chemotherapeutic regimen, single-agent or combination therapy was given in 49 (26%) or 136 (74%), respectively. After 2 cycles of chemotherapy, CA19-9 decrease was obtained in 77 (42%), stable in 56 (30%), and increase in 52 (28%). The median CA 19-9 levels at baseline and after two cycles were 264 IU/mL and 194 IU/mL, respectively. After 2 cycles of chemotherapy, CA19-9 decrease was obtained in 77 (42%), stable in 56 (30%), and increase in 52 (28%). The median PFS and OS were 5.62 months (95% confidence interval [CI], 2.59-13.28) and 13.71 months (95% CI, 11.38-22.06). There was a statistically significant trend for CA 19-9 and RECIST responses (p=0.001), compared with CA19-9 decrease group, hazard ratios for stable and increase groups were 1.22 (95% CI, 0.79-2.00) and 2.42 (95% CI, 1.57-3.72) for PFS, respectively (p for trend <0.001), and 1.04 (95% CI, 0.68-1.59) and 2.54 (95% CI, 1.68-3.85) for OS (p for trend 0.060). Multivariable analyses showed that CA19-9 response was prognostic both for OS and PFS in addition to CA19-9_Pre and performance status.

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

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

P0090 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 endoscopic 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 complication 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
Cholangitis: Elevation in temperature more than 38, 5°C and Leukocytes ≥10 *10^9/L, thought to have a biliary cause, without concomitant evidence of acute cholecystitis, requiring invasive intervention.

Acute cholecystitis: Radiologic evidence of cholecystitis, elevation in temperature more than 38.5°C and Leukocytes ≥10^9/L, and requirement of percutaneous drainage or emergency cholecystectomy.

Failure of drainage or Reintervention: Rising or steady bilirubin level after therapeutic success had initially been obtained, without signs of cholangitis or cholecystitis, requiring new cannulation of the tumor. Bilirubin levels >50μmol/L within 14 days after the initial procedure

Unsuccessful cannulation during the initial drainage procedure.

Acute pancreatitis: Second drainage procedure ≤14 days after the initial procedure.

Biliary injury: Injury to the bile duct documented by any radiographic technique requiring intervention.

Duodenal perforation: Injury to the bili duct documented by any radiographic technique requiring intervention.

Cardiopulmonary complications: Any pulmonary or cardiac abnormality occurring during the drainage or in the post-intervention period that produces identifiable disease or dysfunction which is clinically significant and adversely affects the clinical course.

and data on the biliary drainage procedure were collected from medical records.

Definitions of failure of drainage or other severe drainage related complications are shown in Table 1. Results: In total, 187 patients were included. Initial drainage was performed in a non-referral center in 125 patients (66.8%). The initial drainage procedure was endoscopic in 158 patients (84.5%) and percutaneous in 29 patients (15.5%). A stent was placed in 91 patients (61.5%) at the initial drainage procedure. The highest bilirubin level in the 2 weeks prior to drainage was 248 (IQR 138–377) μmol/L. Only 14 (8.1%) patients had cholangitis prior to the initial drainage procedure. Failure of drainage or other severe complications related to the initial drainage procedure were noted in 117 (62.6%) patients. Failure of drainage or reintervention was most common and was noted in 95 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 between 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 PCHC on imaging have a very high failure rate and complication rate after initial biliary drainage.

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

P0091 BRUSH CYTOTOLOGY GUIDED BY ENDSOCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY OF BILIARY STRICTURES

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Introduction: Endoscopic retrograde cholangiopancreatography (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 passages 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 (IQR: 55–81). The cytological analysis was compatible with identifiable disease or dysfunction which is clinically significant and adversely affects the clinical course.

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

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

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

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Introduction: Endoscopic biliary stenting is widely accepted as effective palliation therapy for unresectable malignant hilar biliary obstruction (MHBO). Although drainage more than 50% of liver volume is associated with better outcomes, this is technically difficult. Aims & Methods: The aim of this study was to evaluate differences in technical feasibility and clinical efficacy between unilateral and bilateral stent-in-stent (SIS) placement of metal stents for MHBO. We retrospectively reviewed 23 consecutive patients with MHBO who underwent endoscopic biliary drainage with self-expandable metal stents (SEMS) at our institution from March 2012 to March 2017. Unilateral metal stenting was performed in 15 patients (Uni group) and bilateral metal stenting was performed in 18 patients (Bi group).

Introduction: We placed crossed wired metal stents with the SIS technique. Technical success rates, complication rates and stent patency were compared between groups.

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

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

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

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

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

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

Results: 30 patients had the Biodegradable Biliary Stent (BBS) implanted. 18 patients (60%) were males, the mean age was 58.9 years. 26 patients (86.7%) had benign biliary duct disease and 4 (13.3%) patients had malignant condition.
9 patients had the fast and medium degradation stents respectively and 12 had the slow degradation stents implanted. All stents were 3.4 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 used in single biodegradable stents, but however, all patients with biliary stone had sphincterotomy to facilitate retrieval of the stones. Serum bilirubin level (SBL) showed reduction of 52% from the mean SBL of 54.9 m before 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, trackability 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 since 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**


**MONDAY, OCTOBER 30, 2017**

**P0095**

**TOLL-LIKE RECEPTOR 5 IS ESSENTIAL FOR THE ACTIVATION OF LIVER AND PANCREATIC STELLATE CELLS**

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

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

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

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

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

**P0096**

**THE IMPAIRED FUNCTION OF THE PLASMA MEMBRANE Ca2+ PUMP RESULTS IN Ca2+ OVERLOAD AND CELL DAMAGE IN CFTR KNOCK OUT PANCREATIC DUCTAL CELLS**

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**Introduction:** The cystic fibrosis transmembrane conductance regulator (CFTR) has a major role in pancreatic ductal secretion and it’s genetic defects damage the pancreas. It is known that intracellular Ca2+ homeostasis is disturbed in bronchial epithelial cells in cystic fibrosis (CF), but the connection of CFTR and the intracellular Ca2+ signaling has never been suggested in pancreatic damage in CF 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 CFTR had 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 organoids with VX-809 have restored the PMCA function to the control level. Similarly native CFPAC-1 cells and PDEC treated with siRNA to inhibit the expression of CFTR showed the same PMCA dysfunction. Viral transfection of CFPAC-1 with CFTR gene completely restored PMCA function. Sustained [Ca2+]i levels decreased ΔΨm and induced cytochrome c release in CFTR KO PDEC without significant alterations in mitochondrial morphology.

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

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

**P0097**

**EXPDF 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 developmental and regenerative medicine. The 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 (Hohwieler et al., *GUT*, 2016).

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

**Results:** First, a limited role of Expdf was observed until the PE stage, while PP differentiation were induced by treatment with Expdf knock out leading to mostly cystic structures. Phenotyping for ductal and acinar lineage allowed to investigate these
changes in more detail and genome wide expression profiling helped us to under-
stand the role of Expdf in more detail.

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

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

Reference
Human pluripotent stem cell-derived acinar/ductal organoids generate 
pancreas upon orthotopic transplantation and allow disease modelling.

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Sainz B Jr, Mayerle J, Costa IG, Seufferlein T, Kormann M, Wagner M, Liebau 

P0098 MELATONIN METABOLITE, N1-ACETYL-N2-FORMYL-5-
METHoxykynuramine STIMULATES PANCREATIC ENZYME 
SECRETION VIA CCK RELEASE. STUDY ON THE RATS
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Introduction: N1-acetyl-N2-formyl-5-methoxykynuramine (AFMK), melatonin 
metabolite, has been demonstrated recently as effective pancreatic protector 
against acute inflammation. AFMK significantly attenuated acute pancreatitis; 
however, its effect on pancreatic exocrine function has not been investigated yet.

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

Results: AFMK given i.d. produced the dose-dependent increases of pancreatic 
amylase secretions both; unstimulated, as well as that induced by DPBJ. The rise of pancreatic amylase outputs were accompanied by significant increase of CCK plasma levels. Administration of lorglumide, a CCK1 receptor blocker, comple-
pletely abolished the stimulation of pancreatic exocrine function induced by 
AFMK. This melatonin metabolite failed to affect protein signal for CCK recep-
tor in AR42J cells.

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

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

P0099 INVESTIGATION OF THE FUNCTION OF TRPM2 IN MOUSE 
PANCREATIC ACINAR CELLS
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Introduction: Aberrant intracellular Ca2þ signaling is the hallmark of acute pancreatic 
secretion is crucially impor-
tant in the physiology and pathophysiology of the exocrine pancreas. However, 
the role of human pancreatic secretory processes is great challenge due to the 
limited access to human pancreatic ductal cells. The recently developed three-
dimensional pancreatic organoid cultures (OC) may help to overcome this limi-
tation. 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 a CO2 media. Changes of the intracellular pH was measured to characterize 
the ion transporter activities of the epithelial cells in OC.

Results: Basolateral administration of 20 mM NH4Cl in standard HEPES or 
CO2/HCO3- buffered solution resulted in rapid intracellular alkalinization, 
however, its effect on pancreatic exocrine function has not been investigated yet.

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

P0100 INVESTIGATION OF THE PANCREATIC DUCTAL ION 
SECRETION IN PANCREATIC DUCTAL ORGANOID CULTURES
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Introduction: Pancreatic ductal fluid and HCO3- secretion are crucially impor-
tant in the physiology and pathophysiology of the exocrine pancreas. However, 
the role of human pancreatic secretory processes is great challenge due to the 
limited access to human pancreatic ductal cells. The recently developed three-
dimensional pancreatic organoid cultures (OC) may help to overcome this limi-
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week in a CO2 media. 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 alkalinization, 
however, its effect on pancreatic exocrine function has not been investigated yet.

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

P0101 INVESTIGATION OF THE ORAI1 MEDIATED CA2+ ENTRY 
IN MOUSE PANCREATIC DUCTAL CELLS
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Introduction: Acute pancreatitis (AP) is the most common inflammatory disorder 
in the gastrointestinal tract with an overall mortality of 20–30% in severe cases. 
The treatment of AP is not resolved yet, urging the identification of novel drug 
targets. Toxic cellular Ca2+ overload was highlighted as a key event in pancreatic 
acinar and ductal cells during the pathogenesis of AP. In addition, the inhibition 
of Orai1 in pancreatic acinar cells markedly decreased the Ca2+ toxicity and the 
severity of AP. However, we have no information regarding the role of Orai1 in 
pancreatic ductal physiology or pathophysiology.

Aims & Methods: Wild type FVB/N mice were used for the isolation of pancreatic 
ductal fragments. The intracellular pH and Ca2+ level of the pancreatic ductal 
cells (PDC) were measured by microfluorimetry. The effect of selective Orai 
inhibitors provided by CalCiMedica was evaluated.

Results: The tested compounds dose-dependently inhibited Ca2+ influx during 
the carbachol induced Ca2+ signal in PDC. Inhibition was complete at a con-
centration of 10μM (CM-B: 99.87%, CM-C: 95.29%). Next, endoplasmic reti-
culum Ca2+ stores were depleted with cyclopiazonic acid and the inhibition of 
store-operated Ca2+ entry (SOCE) was investigated after the re-addition of 
extracellular Ca2+. Under these conditions CM-B and CM-C significantly, but not 
completely, decreased SOCE in PDC (55.96% and 55.03% respectively). The 
removal of extracellular Na+ to abolish activity of the Na+/Ca2+ exchanger 
had no effect on the inhibition of SOCE by CM-B or CM-C. We also showed 
that the inhibition of Orai1 has no effect on the basal secretion of HCO3- by 
PDC, which is the main physiological function of these cells.

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

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

P0102 ACUTE PANCREATITIS OF UNKNOWN ORIGIN AND 
IDIOPATHIC JUVENILE PANCREATICITIS IN SWEDEN
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Reference
Human pluripotent stem cell-derived acinar/ductal organoids generate 
pancreas upon orthotopic transplantation and allow disease modelling.

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Kleidermann SM, Weichl A, Zenker M, Leischinger M, Rosendahl J, Zenke M, 
Sainz B Jr, Mayerle J, Costa IG, Seufferlein T, Kormann M, Wagner M, Liebau 
Aims & Methods: We searched factors to predict hospital mortality in patients with severe acute pancreatitis who admitted at 44 institutions of severe acute pancreatitis. This was a retrospective cohort study of all consecutive patients with severe acute pancreatitis: Japanese guidelines 2015. J Hepatobiliary Pancreat Sci 2015; 22: 405-32.


References

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

P0104 EARLY OR LATE CHOLECYSTECTOMY IN MILD GALLSTONE PANCREATITIS? RESULTS FROM RANDOMIZED TRIAL
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Introduction: Cholecystectomy during the index admission may reduce risk of recurrent biliary events but concerns have been raised about complications if surgery is performed to early. The objectives of this study were to compare gallstone- and cholecystectomy-related complications and patient reported quality of life. The primary outcome was recurrent biliary events. Secondary endpoints were cholecystectomy complications within 1 months, the proportion of common bile duct stones at cholecystectomy requiring ERC and patients reported quality-of-life and pain.

Results: Sixty-four patients between May 2009 and March 2017 were randomized into either index- or scheduled cholecystectomy (IC vs. SC). IC was performed when patients showed recovery and within 48 hours from randomization. SC was planned after 6 week from randomization. The primary outcome was recurrent biliary events. Secondary endpoints were cholecystectomy complications within 1 months, the proportion of common bile duct stones at cholecystectomy requiring ERC and patients reported quality-of-life and pain.

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

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

P0103 THE FACTORS FOR PREDICTING HOSPITAL MORTALITY IN EARLY STAGE OF SEVERE ACUTE PANCREATITIS
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Introduction: Severe acute pancreatitis has high mortality and needs intensive care. However it is difficult to stratify the severity of acute pancreatitis in early stage because revised Atlanta classification requires persistent organ failure lasting at least 48 hours.

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

Results: The mortality was 12.7% (142/1114 patients). All ten factors were associated with mortality in univariable analysis. In multivariable analysis, four factors, namely "partial pressure of oxygen in blood ≤60 mmHg (room air) or mechanical ventilation", "age ≥70 years", " blood urea nitrogen ≥40 mg/dL (or creatinine ≥2.0 mg/dL) or oliguria (daily urine output <400 mL even after adequate intravenous fluid resuscitation)", and "lactate dehydrogenase ≥2 times upper limit of the normal range" were associated with mortality. The other factors, namely "base excess ≤−3.5 meq/L", "platelet count ≤100,000/mm³", "serum calcium ≤7.5 mg/dL", "c-reactive protein ≥15 mg/dL", "number of positive measures in systemic inflammatory response syndrome criteria ≥3" and "computed tomography grade" were not associated with mortality.

Conclusion: Advanced age, respiratory failure, renal failure and high lactate dehydrogenase could predict mortality in early stage of severe acute pancreatitis.

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

P0101 COMPARISON OF PREDICTIVE SYSTEMS TO PREDICT MORTALITY IN SEVERE AND MODERATE PATIENTS ACCORDING TO THE REVISED ATLANTA CLASSIFICATION
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Introduction: The course of acute pancreatitis (AP) ranges from life threatening to mild, so accurately predicting its outcome is important. The revised Atlanta classification breaks the previous mild/severe dichotomy, so the absence of predictors of severity does not preclude a mild course. Studies designed according to the new classification evaluating existing predictors are still scarce.

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

Results: Of the 817 eligible patients, 118 were excluded, most for a previous episode before admission. We analyzed 699 patients with a median age of 57.5 years (IQR: 45.1–72.7), 57.4% males. Most frequent comorbidities were: diabetes (10.6%), hypertension (16.6%) and COPD (7.7%). Median length of stay was 7 (5–10) days. Most common causes were: biliary (53.9%), idiopathic (21.8%) and alcoholic pancreatitis (14.3%). A CT scan was performed in 56.1% identifying local complications in 36.2% of them, acute fluid collections in 16.8%. There were 42 (6.6%) severe and 196 (28%) moderately severe cases. Overall mortality was 2.4% (1.5–3.9%), 35.7% (23–50.8%) among severe cases. BUN at admission AUC: 0.88 (0.85–0.90), BISAP score (AUC: 0.88 [0.85–0.90]) and APACHE II (AUC: 0.87 [0.84–0.89]) were the best predictors for mortality. The BISAP score presented the highest sensitivity, 100% (81.6–100%), while the BISAP score presented the highest specificity, 93.1% (90.6–94.9%). BUN at admission (AUC: 0.89 [0.86–0.91]) and the BISAP score (AUC: 0.87 [0.84–0.89]) also presented the best predictive power. The BISAP score identified the highest sensitivity (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% (83.91%), 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, Ascariis 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, infection of common bile duct (CBD) or pancreatic duct (PD). The inflammation 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 is an extremely rare clinical entity. Only case reports have been described in 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 echoendoscope. 13 patients presented with symptoms of acute pancreatitis. Out of 13 patients, 9 presented with first episode of idiopathic pancreatitis while 4 patients presented with recurrent episodes of idiopathic pancreatitis. The patients underwent side viewing endoscopy/ERCP using a standard enteroscope. EUS features were single or multiple echogenic nonshadowing linear, tubular structures and curved strips with anechoic tubular central lines. EUS features were single or multiple hyperechoic structures without acoustic shadowing in the PD or CBD (“single-tube sign” or “strip sign”) or with central hyperechoic tube representing alimentary canal of the worm (‘‘double tube sign’’ or “inner tube sign”) and movements of worms inside the duct. Live rondworms were removed from PD without undertaking sphincterotomy. In endemic areas, sphincterotomy facilitates the risk of migration of worms into the CBD or PD. An important cause of acute pancreatitis is usually cold and EUS is the investigation of choice. The recurrence is rare and treatment is side viewing 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 accurate method to diagnose the etiology of IAP with reference to biliary or 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 purposes. EUS 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

P0107 LARGE-VOLUME FLUID RESUSCITATION IN PATIENTS WITH SEVERE ACUTE PANCREATITIS IS ASSOCIATED WITH REDUCED MORTALITY: A MULTICENTRE RETROSPECTIVE STUDY

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

Aims & Methods: The aim of this study is to evaluate the association between the total fluid administered in the first 24 hours and 6000 ml with the outcome of severe acute pancreatitis. We conducted a secondary analysis of data from a multi-centre retrospective study of patients with severe acute pancreatitis in Japan, which was registered with the University Hospital Medical Information Network Clinical Trials Registry (Registry number 00012220) and approved by the Institutional Review Board or the Medical Ethics Committee at each institution. The diagnosis of severe acute pancreatitis was based on criteria of the Japanese Ministry of Health, Labour and Welfare (Japanese Severity Score). Patients ≥18 years old and admitted to ≥250-bed hospitals in Japan with severe acute pancreatitis diagnosed according to the revised Atlanta classification.

Results: We analysed 1097 patients, and the mean fluid volume administered was 5619 ± 3018 ml (mean ± standard deviation), with 708 and 389 patients stratified into the fluid < 6000 ml and fluid ≥6000 ml groups, respectively. Overall in-hospital mortality was 12.3%. The fluid ≥6000 ml group had significantly higher mortality than the fluid < 6000 ml group (15.9% vs. 10.3%, p < 0.05). However, in multivariable logistic regression analysis, conversely fluid ≥6000 ml within the first 24 hours was significantly associated with reduced mortality (OR 0.58, 95%CI 0.34–0.98). We performed subgroup analyses for patients diagnosed with severe acute pancreatitis based on the revised Atlanta classification. One thousand-seven-seven patients were classified in the fluid < 6000 ml group, and 201 patients classified in the fluid ≥6000 ml group. There were no significant differences between the two groups with regard to in-hospital mortality (fluid < 6000 ml: 35.3% vs. fluid ≥6000 ml: 28.4%, p = 0.18). In multivariable logistic regression analysis, patients ≥6000 ml with severity 3 were associated with significantly less mortality (OR 0.56, 95%CI 0.32–0.98).

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

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

References


P110 POST-ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAFY: PREDICTORS OF SEVERE ACUTE PANCREATITIS IN A EUROPEAN COHORT

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Introduction: Endoscopic retrograde cholangiopancreatography (ERCP) is increasingly used for therapeutic management of various biliary and pancreatic diseases. However, ERCP is not a procedure without complications. The most frequent complication after ERCP is post-ERCP pancreatitis (PEP); this is the most common and serious complication after ERCP.[3]

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

Results: The study population consisted of 996 patients. Their mean age at presentation was 58.42 ±14.72 years, and there were 454 male and 442 female patients. Overall, PEP occurred in 102 (10.2%) patients of the study population; the highest AUC in terms of severe acute pancreatitis (SAP) predictions whereas Lactate had was the best in terms of mortality prediction.

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

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

References
P0112 COOTON VS. REVISED ATLANTA CRITERIA TO DEFINE SEVERITY OF POST-ERCP PanCREATITIS

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Introduction: The Cotton criteria (1) and the revised Atlanta classification (2) are advocated to define post-endoscopic retrograde cholangiopancreatography (ERCP) 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 ERCP 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 ERCP procedures from a Dutch university medical center 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 ERCP to capture delayed PEP. Patients were excluded if they had acute pancreatitis prior to ERCP 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. Secondly, we compared the sensitivity and specificity of both definitions for mortality.

Results: Out of a total 2156 ERCPs, 66 patients (3%) had PEP. Two patients were excluded due to missing data for hospital stay. Of the 64 patients analysed, 39 (60.9%) were female, mean age was 60.6 years and the most common indication for ERCP was choleclocholethiasis (n=33, 51.6%). Four patients (6.3%) developed organ failure, 3 patients (4.7%) died. The table below depicts the PEP severity distribution according to Cotton and Atlanta. No significant differences were found (p=0.64). Of the 25 severe patients according to Cotton, 23 were categorized due to hospital stay exceeding 10 days, but were mild according to Atlanta. In 11 patients (44%), concomitant disease (syndrome of inappropriate antidiuretic hormone secretion, cholangitis, pneumonia, perforation or biliary leakage) was the cause for prolonged stay.

Severity of PEP according to Cotton and Atlanta

<table>
<thead>
<tr>
<th></th>
<th>Mild-moderate</th>
<th>Severe</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cotton</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mild-moderate</td>
<td>37 (62%)</td>
<td>2 (30%)</td>
<td>39 (61%)</td>
</tr>
<tr>
<td>Severe</td>
<td>23 (38%)</td>
<td>2 (30%)</td>
<td>25 (39%)</td>
</tr>
<tr>
<td>Total</td>
<td>60 (94%)</td>
<td>4 (6%)</td>
<td>64 (100%)</td>
</tr>
</tbody>
</table>

All 3 patients that died had severe PEP according to Atlanta due to persistent organ failure. Cotton classified them as mild, moderate and severe based on hospitalization. Two patients died within 10 days of early multiple organ failure. No other Cotton criterion for severity was met. Thus, the Cotton criteria did not capture early deaths due to multiple organ failure. The sensitivity and specificity of Atlanta and Cotton for mortality were 100%, 98.4%, 33.3% and 60.7% respectively.

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

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

References

P0113 RISKS FACTORS AND OUTCOMES OF INFECTED PanCREATIC NECROSIS: RESULTS FROM A COHORT OF 148 PanCREATITIS ADMITTED IN ICU FOR SEVERE ACUTE PanCREATITIS

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Introduction: Acute pancreatitis (AP) is a common but potentially lethal pathology due to the multiplicity and severity of its complications1. Infected pancreatic necrosis (IPN) occurs in 30% of patients with necrotizing AP and is associated with an increase in mortality ranging from 15% to 39%2. While interventional drainage and/or removal of the infected tissue remain the mainstay of therapy of IPN, important progresses have been achieved over the last decade and minimally invasive interventional treatments have been developed. The aim of this study was to identify factors associated with IPN and to describe outcomes and mortality.

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-variante 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. 16 patients died 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 required 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 organ 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 1.4%, p < 0.01). In multivariate analysis, factors associated with IPN were number of OF and postoperative venous 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 anticoagulation (p=0.31).

Table 1: Multivariate factors of associated with infected pancreatic necrosis

<table>
<thead>
<tr>
<th></th>
<th>OR_adj (95%CI)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cause of pancreatitis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alcohol abused Biliary Others</td>
<td>1.24[0.79–7.45]</td>
<td>0.02</td>
</tr>
<tr>
<td>Number of organ failure (OF)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No OF or 1 OF multiple OF (≥3)</td>
<td>1.44[1.07–18.40]</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>28.67[6.23–131.96]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Postoperative venous thrombosis</td>
<td>8.16[3.06–21.76]</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

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 studies3, 4, 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 additioanl necrosectomy. Finally, PSVMT and early OF appeared to be associated with risk of developing an IPN but anticoagulation for PSVMT 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.

References

P0114 EARLY PREDICTORS AND OUTCOMES OF FLUID SEQUESTRATION IN ACUTE PanCREATITIS

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Introduction: Although it is well known that some patients with AP have an increased need for fluid therapy, it is not clear who should get fluids aggressively. Changes in hematocrit, BUN and serum creatinine, has been documented to limit need for fluid therapy. The early prediction of fluid sequestration may help to select patients for more or less aggressive fluid resuscitation. In this prospective cohort study 300 consecutive patients of acute pancreatitis were included. Fluid sequestration was calculated by adding the total amount of fluid administered and subtracting the total amount of fluid lost in the first 48 hours of hospitalization. Local complications were defined...
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) and 4 L (2.9–5.7) in those with 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 (73.3%); median fluid sequestration in the patients who died was 6.5 L compared to 4.2 L.

**Variable**

<table>
<thead>
<tr>
<th>Fluid sequestration (48 hours) (L)</th>
<th>Univariate analysis</th>
<th>Multivariate analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>5.1 (2.7–8.9)</td>
<td>0.06 (p &lt; 0.05)</td>
</tr>
<tr>
<td>Sex</td>
<td>5.1 (2.8–8.9)</td>
<td>&lt;0.01 (p &lt; 0.05)</td>
</tr>
<tr>
<td>Etiology</td>
<td>5.5 (2.7–8.8)</td>
<td>0.001 (p &lt; 0.001)</td>
</tr>
<tr>
<td>Hematocrit (%)</td>
<td>3.6 (2.7–4.9)</td>
<td>&lt;0.01 (p &lt; 0.05)</td>
</tr>
<tr>
<td>SIRS score</td>
<td>5.3 (2.7–4.1)</td>
<td>&lt;0.01 (p &lt; 0.05)</td>
</tr>
</tbody>
</table>

**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 a higher risk of local complications and prolonged stay.

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

**Reference**


**P0116 AUTOIMMUNE PANCREATITIS CLASSIFIED AS NOT-OTHERWISE-SPECIFIED (NOS) ACCORDING TO INTERNATIONAL CONSENSUS DIAGNOSTIC CRITERIA: CLINICAL FEATURES AND OUTCOMES IN 47 PATIENTS**

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**Introduction:** Autoimmune pancreatitis (AIP) is a well-recognized fibro-inflammatory disease of the pancreas characterized by a dramatic response to steroid therapy. (1) Three different types have been identified according to the International Consensus Diagnostic Criteria: type 1, type 2 and type not otherwise specified (NOS). (2) Despite the significant number of studies published on AIP type 1 and 2, (3, 4) no studies have been focused on AIP type NOS and therefore very little is known about clinical features and long-term outcomes of these patients.

**Aims & Methods:** Aim was to investigate clinical features, risk of other organ involvement, risk of relapse and long-term outcomes of AIP type NOS patients. Patients classified by International Consensus Diagnostic Criteria (ICDC) as AIP type NOS at clinical onset included in our database prospectively maintained since 1995 have been evaluated. AIP type 1 (168 patients) and AIP type 2 (63 patients) were excluded. Epidemiological and clinical data have been collected and analyzed.

**Results:** 47 patients fulfilled inclusion criteria. Symptoms at clinical onset were mainly weight-loss (40, 5%), jaundice (34%) and pancreatitis (28.9%). Six patients (12, 8%) had other organs involvement (5 proximal biliary involvement and 1 salivary involvement) and only two (4, 3%) patients had serum IgG4 levels > 140 mg/dL at clinical onset. Six patients (12, 8%) developed ulcerative colitis (UC) during follow-up and were therefore reclassified as AIP type 2. The mean time between the clinical onset of AIP-NOS and development of UC was 14 months (range 4–48). Eight patients (17%) experienced a relapse after steroid treatment and two (4, 3%) patients needed immunosuppressive drugs (Azathioprine) because of recurrent relapses. None underwent resective surgery despite 30 patients (63, 8%) had a focal pancreatic involvement of the pancreas at imaging. **Conclusion:** Patients suffering from AIP type NOS have own clinical features. The risk of relapse is low (17%) but not irrelevant, as well as the risk of developing UC (12%) during follow-up switching the diagnosis to AIP type 2.

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

**References**

CONCLUSION:
By EPDBD therapy, the relapse rate of pancreatic stone decreased, minor papilla with good prognoses. Case C; 72 y/o male. alcoholic chronic pancreatitis. After EPDBD, EPS was successful in 2 cases via major papilla, and 14 cases via divisum. The 16 cases of divisum consisted of 6 complete and 10 incomplete type. EPBDB respectively. Complications after these therapies are also evaluated.

Results:
The purpose of EPDBD therapy for pancreatic stone was to ease endoscopic procedures in the pancreatic duct and stone removal, and to reduce stone relapse rates. 568 cases of pancreatic stone were treated by EPDBD. They consisted of 90 cases treated by endoscopic method alone (via major papilla 62, and 48 cases treated by EUSWL+ endoscopic method (via major papilla 38, and 11 minor papilla 20). After EPDBD therapy, the stone free rate was 75.3%, the pain free rate 97.1%. The stone relapse rate was 5.7% - this is a much lower result compared to other reports. We think that EPDBD contributes to this good result. Complications of EPDBD therapy were only minor bleeding from orifice at the therapy and mild pancreatitis after therapy for several days. Case A; 22 y/o male. idiopathic chronic pancreatitis, pancreas stone: After 4th EUSWL, 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 was done easily. This is one of the good result. In our hospital, EPS and ENPD (endoscopic nasal pancreatic drainage) are the preferred choice for pancreatic pseudocyst therapy after dilation of the stenotic duct. 114 cases were successfully treated without major complications, and their prognoses were good. Case B; 59 y/o male. alcoholic chronic pancreatitis, pancreatic stone: ERP via minor papilla revealed the duct rupture in the body portion and contrast medium flowed out into thoracic and abdominal cavity. After dilation of the stenotic duct in the body, EPS placement was done and she recovered quickly. The histopathology of divisum consisted of 6 complete and 10 incomplete type. After EPDBD, EPS was successful in 2 cases via major papilla, and 14 cases via minor papilla with good prognoses. Case C; 72 y/o male. alcoholic chronic pancreatitis, pancreatic stone: ERP revealed type 2 incomplete divisum. After ERP placement was done via minor papilla, then EPS was placed into minor papilla successfully.

Conclusion:
By EPDBD therapy, the relapse rate of pancreatic stone decreased, and the success rate of endoscopic drainage and stenting in pseudocyst and divisum cases are also evaluated. Their prognoses were good. EPDBD is a safe and favorable procedure for pancreatic diseases.

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

Aims & Methods: Retrospective analysis of prospectively collected data in our tertiary University center. From March 2007 to October 2015, 218 (124 men, 94 women; age range: 60–14 years) patients underwent EUS for suspected solid pancreatic neoplasm because of cross sectional imaging results, idiopathic acute pancreatitis, weight loss, pancreatic hyperenzymemia, painless jaundice and elevated Ca 19-9 values. Cystic pancreatic lesions, pseudocysts and cystic pancreatic neoplasm were excluded from the analysis.

Results: Malignant lesions were diagnosed in 98 (45%) patients. 54 patients (24.8%) underwent surgery and 61 patients (28% of all patients) underwent clinical follow-up (16.5 ± 2.7 months, 18 needed surgery). 43 lesions not undergoing surgery needed EUS follow-up before achieving final diagnosis: pancreatic cancer (n = 6, 9.8%), neuroendocrine tumor (NE T) (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%), micro cystic serous neoplasms (n = 1). Ventral/dorsal split (n = 1), lipomatosis (n = 1). EUS showed sensitivity and specificity for malignancy of 91.4% and 97.7%, respectively, in the non-pancreas group (n = 121) and 44% and 87.1% in the pancreatitis group (n = 97). Ca 19-9 elevation, rapid onset jaundice, double duct sign are useful indicators of malignancy both in the setting of normal and inflamed pancreas. Patients without pancreatitis the presence of enlarged lymph nodes or a mass in EUS, weight loss and worsening diabetes are predictor of malignancy. In patients without pancreatitis and without jaundice Ca 19-9 sensitivity for malignancy was 95% and specificity was 39%. In the pancreatitis group, Ca 19-9 sensitivity for malignancy (in patients without jaundice) was 45% and specificity was 86%. IgG4 elevation presented a sensitivity of 83.3% and a specificity of 84.8% for AIP, where one false elevation was seen in a d i s s t e l o u n g e o l o g i c a l l y.

Conclusion: Diagnostic accuracy of EUS is lower in the presence of pancreatitis.

P0121 GALECTIN-1 EXPRESSED IN PANCREATIC STELLATE CELLS PROMOTES TUMOR PROGRESSION IN PANCREATIC CANCER VIA UPRREGULATION OF SDF-1 AND ACTIVATION OF NF-

Introduction: Pancreatic cancer is characterized by a high density of stroma. Interactions between tumor and stromal cells play a critical role in tumor progression since there is increasing evidence that pancreatic stellate cells (PSC), a main component of the stroma, may participate in the development of pancreatic cancer[1]. However, details of the mechanism underlying the interaction between PSCs and pancreatic cancer cells (PCC) are poorly understood.

Stromal cell-derived factor-1 (SDF-1) or CXC chemokine ligand 12 (CXCL12) belongs to the CXC chemokine family and is the ligand of CXCR4 [2]. I t has been implicated in promoting the metastatic potential of breast, gastric, ovarian, prostate, lung and pancreatic cancer cells. Although SDF-1 reports of SDF-1 in pancreatic cancer cell lines are rare, the role of SDF-1 in pancreatic cancer is controversial. The SDF-1 production is correlated with the presence of cancer cells [3], suggesting that SDF-1 induced active PSCs may be an integral factor in tumor-stroma interactions.

Gale cin-1 mediates communication between cells by binding to glycol-conjugated proteins on the cell surface. Studies have shown that it is involved in multiple cancer-related processes, including immunosuppression, angiogenesis and metastasis [4]. We previously reported that Gale cin-1 was highly expressed in pancreatic cancer tissues; furthermore, the primary source of Gale cin-1 was in activated PSCs within the stroma of cancer cells [5]. It has previously been hypothesized that Gale cin-1 may also induce activation of PSCs and stimulate secretion of chemokines [6]; however, the biological mechanism and its activities in PCCs are unclear.
mural nodules, it is useful to analyse genetic mutations of cystic fluids or walls. Currently, adequate samples from EUS-FNA were unavailing 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 GNAS, KRAS, TP53, 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 PTEN11 DRIVES TUMOR DEVELOPMENT AND DEFINES A NOVEL THERAPEUTIC TARGET IN KRAS-MUTANT CANCERS

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Introduction: The ubiquitously expressed non-receptor protein tyrosine phosphatase SHP2, encoded by PTEN11, is involved in the regulation of multiple signaling cascades. SHP2 was the first reported oncogenic tyrosine phosphatase, required of Shp2 for pancreatic carcinogenesis. Spontaneous as well as cer-
cinated in mutant Kras-driven lung adenocarcinoma GEMMs, in which the lack of SHP2 significantly delayed carcinogenesis suggesting a central role for Shp2 in tumour development and defines a novel therapeutic target in KRAS-mutant cancers.

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

References

P0124 CIRCHIK3 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 (ncRNAs) that are widely distributed in mammalian cells and involved in the regulation of gene expression. 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 tumorigenesis, proliferation, apoptosis, angiogenesis, metastasis and invasion 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 consistently upregulated in various cancer, such as liver, esophageal. However, the mechanism remains unclear. Previous studies revealed that signal transducer and activator of transcrip-
tion 3 (STAT3) as an oncogene that was activated in pancreatic carcinoma. Phosphorylation of STAT3 (p-STAT3) is a downstream target of interleukin 6 receptor (IL6R). Activation of STAT3 leads to malignancy of tumorgenesis, cell proliferation and migration. Knockdown STAT3 induces cell apoptosis by Bcl-
X L, 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.

Aim & 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 miRNA mimic. Real-time quantitative reverse transcription-polymerase chain reaction (qRT-PCR) was performed to detect circHIPK3, miR-124 and mRNAs. The expressions of p-STAT3, IL-6R, pSTAT3, IL-6R were measured by Western blot. Overexpression of STAT3 was transfect 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. Bioinformatic analysis and luciferase assay demonstrated that circHIPK3 interacts with miR-124. qRT-PCR was performed in the cells, the expression of miR-124 decreased of miRNA levels of STAT3 and IL-6R and protein levels of STAT3, p-STAT3 and IL-6R. Previous studies confirmed that miR-124 significantly regulates STAT6, IL-6R via interacting with 3’-UTR (untranslated region). Real-time qRT-PCR expression of miR-124 decreased the expression of miR-124 by 1.5 fold. CircHIPK3 was significantly decreased by knockdown of miR-124 in BxPC3 cells. The expressions of p-STAT3 and IL-6R were upregulated in BxPC3 cells than HPDE6-C7 cells while miR-124 was downregulated. CircHIPK3 was negatively correlated with circHIPK3 and STAT3, p-STAT3 and IL-6R.

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

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

References

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

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

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

References


Aims & Methods: Twenty concomitant PDAs and IPMNs (39 samples, including 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 IPMN was measured after precise pathological mapping. Target amplicon sequencing that covers 18 PDA-associate genes, including KRAS, LIN28A, TP53, SMAD4, CTNNB1 and RNF43, was performed using Ion PGM™ system (Thermo Fisher Scientific). Protein expression of TP53, SMAD4, p16, 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 = 11), tended to harbor identical KRAS mutations as the index IPMNs (KRAS identical; n = 8, 72%, KRAS different; n = 3, 27%). Among cases with contiguous neoplastic lesions via the main pancreatic duct between PDAs and IPMNs had identical KRAS mutations. In contrast, 7 of 9 “distant” concomitant PDAs, defined as those greater than 5 mm away from the IPMN (n = 9), possessed distinct KRAS mutations from the index IPMNs (78%). Mutations in KRAS were demonstrated in 14/20 (70%) of index IPMNs and in 29/39 (74%) of all IPMNs, but not in PDAs, supporting de novo carcinogenesis rather than progression from the IPMNs. PDAs harboring identical mutations in KRAS as IPMNs were significantly closer to the IPMNs (KRAS identical; n = 16, 0–35 mm, average 9 mm) versus PDAs with distinct KRAS mutations in the PDAs and IPMNs (n = 23, 0–75 mm, average 20 mm, p = 0.0397). The KRAS identical group had a better prognosis than the KRAS different group (disease-free survival p = 0.0249, overall survival p = 0.205). Curiously, the molecular signature of 18 PDA-associated genes was not significantly different between two groups.

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

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

Reference:

P0126 POLYMPHORIS System of TP53 Gene, Levels of INFLAMMATORY CYTOKINES IN PATIENTS WITH PANCREATIC CANCER
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Introduction: The pancreatic cancer is a leading cause of death in cancer carriers worldwide.

Aims & Methods: To study the polymorphism of the TP53 gene on the suppressor of apoptosis gene and to evaluate proinflammatory cytokines in PCa; TNF-α insulin blood serum levels at patients with various pathologies of the pancreas (PCa), acute and chronic pancreatitis (OP and CP) with various genotypes of TP53. 150 patients were followed in a one-stage clinical trial (42 patients with PCa, 81 with CP, and 27 with PCa). The diagnosis has been verified by clinicogenic examination. The concentration of IL-1beta after admission to hospital, patients with CP were examined at the stage of exacerbation. The frequency of Arg/Pro genotypes was 35% in patients with PCa and 38% in patients with PCa, 49% in the control group. In patients with PCa there was significantly higher in patients with OP than in patients with CP and PCa. The Pro/Pro genotype of the TP53 gene was significantly more prevalent in patients with PCa than in patients with PCa. The level of IL-1β was significantly lower in patients with PCa than in patients with CP.

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

P0128 COMBINED HISTO-CYTOLOGICAL ANALYSIS OF EUS-FNA SAMPLES FROM SOLID LESIONS USING STANDARD FNA NEEDLES GIVES BETTER DIAGNOSTIC YIELD AND ACCURACY
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Introduction: Diagnostic yield from EUS-FNAC (fine needle aspiration cytology) has improved in the past few years with better tissue acquisition techniques. Core biopsy needles are now available but are more expensive than FNAC needles. We assessed the diagnostic yield and accuracy of FNAC samples processed for both cytology and histology.

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

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

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

Tanaka M, Fernandez-del Castillo, C, Adsay, V et al. International consensus diagnosis in such cases is a problem for the future. 15% of carcinoma patients did not have nodules, and the handling of the diagnosis was acceptable. Mural nodules observed with EUS was considered as the cutoff value for the size of MN, the diagnosis of malignant carcinoma without MN was present in 8 patients (8/45 (17%) among 78 WF patients. Pathological findings of these patients were noninvasive carcinoma in 6, invasive carcinoma 2.

Conclusion: Algorithm for the management of BD-IPMN of International Consensus Guidelines 2012 was acceptable. Mural nodules observed with EUS had significant factors. In multivariate analyses, size of MN (p < 0.0001) and cyst size of BDPs (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 ≥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 patient 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%. Carcinoma without MN was present in 8 patients (8/45 (17%) among 78 WF patients. Pathological findings of these patients were noninvasive carcinoma in 6, invasive carcinoma 2.

Conclusion: Algorithm for the management of BD-IPMN of International Consensus Guidelines 2012 was acceptable. Mural nodules observed with EUS had 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 such as 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-analysis, the diagnostic accuracy of endoscopic ultrasound (EUS)-fine needle aspiration (FNA) cytology, it is often impossible to obtain sufficient cellular material when diagnosing these lesions with current modalities [1]. Recently, a novel biopsy forceps (MorayTM, 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 mounting 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 93% (n = 17) - technical failure was only seen in transduodenal puncture (n = 3, 15%). Biopsies were generally of good quality and contributed to the diagnosis in 14 patients (clinical success of 82%). Among these, there were ten cases of intraductal papillary mucinous neoplasia, two serous cyst adenomas, one mucinous cystic neoplasm, one chromidipapillary tumors, and one pseudocyst. 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 85% [2]. This is a first larger-scale feasibility study. 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 endo-}
endoscopic ultrasonography fine needle aspiration. One patient developed mild pancreatitis (16.7%).

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 METASTASES: A MULTICENTER 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 hospitals in Japan (8 pancreatic cancer, 7 colorectal cancer, 3 lung cancer, 2 breast cancer, 2 sarcoma, 2 gastrointestinal polyposis, 2 malignant mesothelioma, 1 pituitary tumor, 1 sarcoma, 1 gastric cancer, 1 thyroid cancer, 1 liver cancer, 1 adenocystic carcinoma, 1 multiple myeloma, 1 other cancer, 1 unknown origin) 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 surgical resection, and no surgical resection was performed in 95 patients (60%). Additional therapies were chemotherapy (n = 69), chemoradiation (n = 4), radiation (n = 3), palliative care, and unclear (n = 2). Eight patients were lost during follow-up and 151 patients were included in the statistical analysis. All patients with PM had a median overall survival of 43.0 months, with 3- and 5-year survival rates of 52.5% and 42.6%, respectively. Among the five frequent primary sites of PM, prognoses of RCC, breast cancer, and colorectal were better than those of lung cancer and 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 1.71–5.51, p < 0.001), tumor-related symptoms at PM diagnosis (HR 3.88, 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 3.02, 95%CI 1.71–5.51, 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

### P0133 LUNG METASTASIS IN PANCREATIC CANCER: SHOULD STAGING CHEST CT BE ROUTINELY PERFORMED?

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

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

Results: A total 278 PDA patients referred to MDPC were staged with CT chest (Table 1). Out of these, 36 (12.6%) patients were found to have either malignant (N = 6) or indeterminate (N = 30) lung lesions on initial staging chest CT. Out of the six malignant lung lesions, 5 (83.3%) patients had metastatic PDA lesions, and 1 (16.7%) patient had incidental primary lung cancer. On a follow-up of 30 patients with indeterminate lung lesions, 8 patients (27.6%) were later determined to be lung metastasis. The overall prevalence of definite lung metastasis was at least 4.8% (13/278). The prevalence of lung metastasis in pancreatic head cancer was 3.0%, while body and tail masses was 10.5%. Lung metastasis was almost four times more likely in the body, and tail masses (OR = 3.83, CI 1.2–11.8, p = 0.02) compared to head. Overall CT chest result changed in change in management plan in 9 (29.6%) patients due to change in the stage to metastatic (8) and diagnosis primary lung cancer (1). Staging with CT chest changed otherwise resectable disease to unresectable/metastatic in 5 patients (1.8%) and borderline resectable to metastatic in 2 (0.7%) patients. Prevalence of isolated PDCA lung metastasis without any other metastasis was 2.8% (8/278).

Table 1: Comparison of patient and tumor characteristics.

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Patients without Lung metastasis</th>
<th>Patients with Lung metastasis</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>265</td>
<td>13</td>
</tr>
<tr>
<td>Age (yrs, mean (S.D)</td>
<td>68.6</td>
<td>64.8 (9.8)</td>
</tr>
<tr>
<td>Male (%)</td>
<td>69.2</td>
<td>68.6 (9.8)</td>
</tr>
<tr>
<td>Race, Caucasian (%)</td>
<td>90.2</td>
<td>100 (0.0)</td>
</tr>
<tr>
<td>Mass size (mm, mean (S.D)</td>
<td>26.9</td>
<td>31.1 (1.16)</td>
</tr>
<tr>
<td>Mass Location</td>
<td>Head (%)</td>
<td>46.2 (0.01)</td>
</tr>
<tr>
<td>Body/Tail (%)</td>
<td>53.8</td>
<td>53.8</td>
</tr>
<tr>
<td>CA 19-9, mean (S.D)</td>
<td>899 (128)</td>
<td>961 (482) (0.90)</td>
</tr>
</tbody>
</table>

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

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

### P0134 VALUE OF EUS IN EARLY DETECTION OF TUMOR LESION IN THE REMNANT PANCREAS

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Aims & Methods: The aim of this study was retrospectively to investigate the observation ability of EUS for renal pancreas. In this retrospective study, 44 patients who underwent EUS for remnant cancers and 26 cases were enrolled. The definition of observation under the EUS for remnant pancreas was as follows, total observation for remnant pancreas observed from linear white line (anastomotic part) to opposite side pancreas, otherwise it was insufficient observation. We compared the detection rate of EUS findings and that of CT or MRI findings.

Results: Among the 395 patients who underwent resection at the JA Omotchi General Hospital December 2002 and March 2016, the enrolled patients were 44 who underwent EUS for remnant pancreas. In the surgical procedure, pancreaticoduodenectomy (PD) including pylorus-preserving PD (PPPD) and subtotal stomach-preserving PD (SSPPD) was 20 cases and distal pancreatectomy (DP) was 24 cases. Total observation of remnant pancreas was possible in 41 cases (93%). Seven of 44 cases showed the lesion of recurrence in the remnant pancreas. Although CT or MRI was able to point out it only 2 cases, EUS was able to point out it in the remnant pancreas of all cases. Stage of 6 cases were as follows, 1 case of stage 0, 2 cases of stage Ia, 3 cases of stage Ib. The other cases as IPMN, were able to perform EUS-FNA for lesion in the remnant pancreas in all cases. Pathological results were positive in 5 cases. One of the other 2 cases was negative (class III), but it was a recurrence by surgery. The other case was strongly suspected to recurrence by Positron emission tomography (PET) and 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 performed for lesion in remnant pancreas, and that remnant pancreatic cancer may be pointed out an early stage.

Disclosure of Interest: All authors have declared no conflicts of interest.
pared with 33.1 months (95% CI, 9.0–27.2) in the 2nd PDAC group (N: 259 vs. 250) (log-rank ¼ 0.001). The 5-year OS rate of patients who underwent EUS-FNAB, the median OS was 10.7 months (95% CI, 10.0–11.4) in 1st PDAC compared with 10.8 months (95% CI, 9.2–12.3) in 2nd PDAC (N: 1094 vs. 66, p = 0.952).

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

<table>
<thead>
<tr>
<th>Univariate</th>
<th>Multivariate</th>
<th>Multivariate</th>
</tr>
</thead>
<tbody>
<tr>
<td>HR (95% CI)</td>
<td>p-Value</td>
<td>HR (95% CI)</td>
</tr>
<tr>
<td><strong>Sex</strong></td>
<td><strong>Sex</strong></td>
<td><strong>Sex</strong></td>
</tr>
<tr>
<td>Male</td>
<td>1.23 (1.08–1.40)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Female</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td><strong>Age</strong></td>
<td><strong>Age</strong></td>
</tr>
<tr>
<td>Mean</td>
<td>67.4 (64.7–70.4)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td><strong>CA19-9</strong></td>
<td><strong>CA19-9</strong></td>
<td><strong>CA19-9</strong></td>
</tr>
<tr>
<td>Median</td>
<td>123 (71–245)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td><strong>Histology</strong></td>
<td><strong>Histology</strong></td>
<td><strong>Histology</strong></td>
</tr>
<tr>
<td>Low</td>
<td>0.96 (0.81–1.15)</td>
<td>0.58</td>
</tr>
<tr>
<td>High</td>
<td>1.00</td>
<td>1.00</td>
</tr>
</tbody>
</table>

**Conclusion:** This study suggests that continuous LDA may be acceptable for gastric ESD in patients 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 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 continuous LDA users, continuous single-LDA and continuous LDA on DAPT were not related to postoperative bleeding.

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

References
P0140 Patients with chronic gastrointestinal ischemia have an altered sublingual microcirculation


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Introduction: Chronic gastrointestinal ischemia (CGI) results in insufficient blood supply to the gastrointestinal tract. The majority of CGI patients has systemic disorders of the circulatory system including hypertension, diabetes and other cardiovascular risk factors. Studies in patients with acute gastrointestinal ischemia found a correlation between intestinal ischemia and sublingual microcirculatory alterations. However, little is known about microcirculatory alterations in patients with CGI. We hypothesized that patients with CGI may reveal sublingual microcirculatory alterations. We further hypothesized that such alterations will be amplified when challenging the patient to enteral caloric challenges. This would provide a patient-friendly means to identify CGI.

Aims & Methods: Consecutive patients with CGI and healthy controls were prospectively included from September 2014 and August 2015. All patients received the standard work-up for CGI consisting of assessment of medical history and symptoms, radiological imaging of the gastrointestinal tract, and endoscopic visible light spectroscopy (VLS) for assessment of gastroduodenal capillary oxygen saturation. The sublingual microcirculation was evaluated before (T0) and 20 minutes after enteral feeding (T1). Total vessel density (TVD (mm/mm²)), perfused vessel density (PVD (mm/mm²)), proportion of perfused vessels (PorPV (%)) and microvascular flow index (MFI (AU)) were assessed.

Results: We included 12 consecutive patients (63.2 (IQR 48.8–70.4) years, 67% male) with CGI and 12 controls (32.7 (IQR 27.7–38.1) years, 42% male). At baseline, patients with CGI had a decreased PorPV of the sublingual small vessels (median 84.77% vs 95.70%, p = 0.006), PORPV of all vessels (median 85.38% vs 95.27%, p = 0.007) and MFI of all vessels (median 3.00 vs 2.80, p = 0.039) compared to healthy controls. After caloric challenge, PVD increased significantly in both in small (PVDs) and all vessels (PVDs) in patients with CGI (PVDs (T0) median 16.3 (IQR 13.3–22.1) mm²/mm² vs (T1) 19.9 (IQR 14.2–26.2) mm²/mm², p = 0.008; PVDs (T0) median 19.1 (IQR 16.2–23.6) mm²/mm² vs (T1) 22.2 (16.5–28.9) mm²/mm², p = 0.02; PorPVs (T0) median 84.8% (IQR 75.3–90.4) vs (T1) 91.0% (80.1–93.8), p = 0.01). In contrast, no significant changes in microvascular parameters were observed after caloric challenge in the healthy controls.

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

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

References

P0141 Conventional narrow band imaging has good correlation with OLGA staging of gastritis

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Introduction: The operative link of gastritis assessment (OLGA) staging system is relatively new and has been proposed to assess the risk of Helicobacter pylori infection on the basis of biopsy samples taken from the antrum and corpus. However, little is known about microcirculatory alterations in patients with CGI. We hypothesized that patients with CGI may reveal sublingual microcirculatory alterations. We further hypothesized that such alterations will be amplified when challenging the patient to enteral caloric challenges. This would provide a patient-friendly means to identify CGI.

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

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

Conclusion: NBI is able to approximate histopathological staging of gastritis to a certain extent. More studies and comparative testing will further improve the performance of our suggested new staging method.

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

Reference

P0142 Safety advantage of the new device (Splash-M knife®) for endoscopic submucosal dissection of early gastric cancer

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Introduction: Endoscopic submucosal dissection (ESD) is a standard treatment for early gastric cancer. Development of the ESD device has been conducted repeatedly. Splash-M knife® is a new multi-functional needle-knife (ESD-C, n = 50). As primary endpoint, the lesions of Helicobacter Pylori (H. Pylori) related gastric atrophy selected according to NBI endoscopic findings. The diagnosis of H. Pylori based on direct detection of the organism by histopathology assessment. The NBI grade of lower gastric atrophy scored from 0 to 3. The histopathological assessment of lower gastric atrophy was based on OLGA scoring system. Furthermore, we assessed the presence or absence of intestinal metaplasia. The NBI and histology stages of gastric atrophy were compared using a combination of scores for the antrum and corpus. These stages further classified into low risk (stage 0, I and II) and high risk (stage III and IV). Finally the degree of correspondence between the scores obtained by NBI and by histology was 58% (29/50) for the lower gastric body atrophy and 86% (n = 43/50) for the antral intestinal metaplasia. The degree of correspondence between the high risk and low risk groups determined on the basis of NBI endoscopy on one hand and histopathology on the other hand was 80% (n = 40/50).

Conclusion: NBI is able to approximate histopathological staging of gastritis to a certain extent. More studies and comparative testing will further improve the performance of our suggested new staging method.

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

Reference
among two groups. As sub-analyses, the cutting time, rate of en-block/completion rate and all 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 forces in ESD-N than that in ESD-C (4.35% vs 84.8%, p < 0.001), and the bleeding rates of both groups were the same (en-block resection rate 100% in both groups; complete resection rate: 97.8% vs 100%, p = 1). Cutting time: 84.6 min vs 53.0 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 compared to edaravone for ESD by reducing usage of hemostatic forces during ESD procedure.

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

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 chi2 and Wilcoxon signed rank test.

Results: The incidence of IF was 0.95% (248/26130). 238 patients were identified, with a mean age of 63.2 (SD 16.1), with ‘failure to progress’ in 41 and ‘failure to tolerate’ in 197. Subsequent investigations included barium radiology (59.7%, n = 142), CT (21%, n = 50), repeat gastroscopy (29.4%, n = 70) and no further investigations (19.7%, n = 47). Structural pharyngeal abnormalities were diagnosed in 35% comprising of pharyngeal hypertrophy (24%), Zenker’s diverticulum (ZD) (14.6%), pharyngeal web (12.2%), ZD with CPH (9.8%), cervical spondylosis (7.3%) and other (7.3%). Endoscopist status was a predictor of IF (OR for medical vs. non-medical endoscopist 0.7, 95% CI: 0.5-0.9, p = 0.007). Within the IF cohort, predictors of structural changes on barium radiology included: dysphagia (OR 5.5, 95% CI: 2.5-11.8, p < 0.001), failure to progress (OR 5.2, 95% CI: 2.3-12.0, p < 0.001) and age ≥ 65 (OR 4.0, 95% CI: 1.8-8.9, p < 0.001). Repeat gastroscopy was successful in 65/70 (2 using nasendoscope) after increasing midazolam dosage (mean increase = 1.5 mg, 95% CI: 1.0-2.0 mg, p < 0.001). Diagnostic yield for barium radiology, CT and repeat gastroscopy were 69.0%, 54.0% and 64.3% respectively. The concordance of IF in terms of diagnostic yield, and may be more helpful in evaluating pharyngeal and functional pathology.

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

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P0144 DIAGNOSTIC CAPABILITY OF ENDOSCOPY FOR HELICOBACTER PYLORI INFECTION

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Aims & Methods: The aim of this study was therefore to determine the usefulness of the Kyoto classification for diagnosis of HP infection status. A total of 498 subjects were recruited during the period from January to October 2015 for this study after providing informed consent in writing. HP infection status was determined by the presence of HP-IgG antibody (E-plate II H. pylori antibody, Eiken Chemical Co., Ltd., Tokyo, Japan) and history of eradication therapy. HP infection status was judged to be “eradicated” if there was a definite history of eradication therapy. Without a history of eradication therapy, HP infection statuses were judged to be “infected” for an HP antibody titer of less than 3 U/ml, “eradicated” for an HP antibody titer of 3-10 U/ml and “infected” for an HP antibody titer of more than 10 U/ml. Seven endoscopists (5 well-experienced endoscopists and 2 trainees) who were blinded to history of eradication therapy performed the endoscopies. The following endoscopic findings were assessed according to the Kyoto gastritis classification: diffuse redness, regular arrangement of collecting venules (RAC), fundic gland polypl (FGP), atrophy, xanthoma, hyperplastic polypl, map-like redness, intestinal metaplasia, nodularity, mucus and 8.6 for enlarged fold in subjects with infected status.

Conclusion: The Kyoto classification is useful for diagnosis of HP infection and may be helpful in evaluating pharyngeal and functional pathology. Particularly important findings are RAC, FGP and red streak for uninfected status, map-like redness for eradicated status, and diffuse redness, mucosal swelling, sticky mucus and enlarged fold for infected status.

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

References

P0145 A RETROSPECTIVE AUDIT OF OUTCOMES AND CURRENT CLINICAL PRACTICE POST-BALLOON TAMPOONADE FOR ACUTE 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 high re-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 describe the current practices surrounding the insertion of SBT for acute variceal bleeding, the outcomes and to identify areas requiring improvement. A retrospective audit of all patients from 2008–2016 who required SBT insertion for control of acute variceal bleeding was undertaken at Monash Health, a large tertiary Australian centre. These patients were identified from coding classifications. Details regarding their admission were obtained via electronic records.

Results: Approximately 14% of all patients with variceal bleeding required insertion of SBT. Of these 42 patients, the majority were males (51%), with a mean 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 15 (range 3–39). At the time of endoscopic therapy (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.
Rebleeding occurred in 45% patients during the admission despite SBT insertion, of which 79% did not survive. Seven other patients subsequently underwent a rebleeding procedure, of these still died. The mean duration 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, rebleeding occurred in 45% and was associated with a poor survival rate of 20%. Short and long-term survival overall has not significantly improved since studies in the 1970s-1980s despite advances in pharmacological therapy. Current practice of SBT insertion and care for these patients are variable and would benefit from future education. Rates of direct visualization of balloon position prior to inflation with endoscopy should be improved as with referrals for early TIPS.

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

References

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

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Introduction: Preoperative diagnosis of invasion depth of superficial esophageal squamous cell carcinoma (SESCC) is very important to select appropriate therapeutic procedure. The Japan Esophageal Society (JES) classification using narrow-band imaging with magnification (M-NBI) was effective for predicting invasion depth of SESCC.2) Blue laser imaging (BLI) is an image enhanced endoscopy consisted of two different lasers with wavelength 410 and 450 nm as a light source, which can enhance superficial vascular and surface structure. In previous study, BLI with magnification (M-BLI) was useful for evaluating gastrointestinal neoplasms such as predicting invasion depth or tumor detection.3) Aims & Methods: We aim to investigate the diagnostic value of M-BLI by comparison with M-NBI. Our study was a single institution 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 subs mucosal dissection (ESD) for esophageal tumor at Kyoto Prefectural University of Medicine between April 2014 and March 2016. Endoscopic images of SESCCs were recorded by both M-BLI and M-NBI prior to ESD. SESCCs were pathologically diagnosed by ESD specimens. Three endoscopists with no information of the lesions evaluated invasion depth of SESCCs using M-BLI and M-NBI images according to JES classification. The diagnostic value of each procedure was evaluated.

Results: 124 SESCCs were analyzed in this study. The numbers of male/female were 104/20, respectively. Median age was 68.5 years old. Median size of tumor was 17.6 mm. The proportion of tumor location at U/M/L/I was 13.7/70.1/17%, respectively. The proportion of macroscopic type for 0-I/0-IIa/0-IIb was 10/66/23%, respectively. The proportion of invasion depth of the lesions subclassified as IP or LP, M1, 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 were 0.679/0.560/0.559 and 0.568/0.822/0.560, respectively. The interobserver variability with BLI and NBI was 0.839/0.718/0.531 and 0.517/0.514/ 0.441, respectively.

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

Disclosure of Interest: O. Handa: I received lecture fee from AstraZeneca Co., Dai-iichi sannyo Co.
Naito: I received collaboration research funding from Fujifilm Co. Y. Itoh: I am affiliated with a department that was partially funded by Fujifilm Medical Co., Ltd.

All other authors have declared no conflicts of interest.
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). Cystic neoplastic antigen (CEA) tumor marker has also been used to differentiate PCN and is the most accurate marker of mucinous cystic neoplasms. Recently, needle-based confocal laser endomicroscopy (NCLE) has been increasingly used for the diagnosis of PCN. NCLE allows for evaluation of pancreatic cysts with results similar to that of a pathological diagnosis. In this study, we will compare our standard of care EUS with combined CEA and NCLE to determine which combination of modalities is a better predictor of PCN.

Aims & Methods: In this retrospective chart review, 22 patients with pancreatic cysts were evaluated. Specificity and Negative Predictive Value (NPV) of EUS alone, EUS with combined CEA and NCLE 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 Euclidian distance and later were used in hierarchical clustering to create two clusters based on Euclidian distance.

Results: Diagnosis of PCN using EUS alone had a specificity of 0.73 and a NPV of 0.80. EUS and CEA with combined NCLE 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 = 0.00289.

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

P0149 FULL-SPECTRUM ENDOSCOPY FOR UPPER GASTROINTESTINAL SCREENING INCLUDING PRECISE OBSERVATION OF THE AMPULLA OF VATER AND THE ANAL SIDE OF THE PYLORIC 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 and others), tumor size (diameter of 200mm2), difficult location: 2 points, the number of biopsies, /others), and as predictor for submucosal fat tissue, body mass index, waist circumference, visceral fat tissue measurements on CT, blood test findings (glycated hemoglobin, triglyceride and total cholesterol), blood pressure, and heart rate before ESD.

Results: Significant differences were found regarding the number of biopsies (group L: 8.5; group S: 6.8, P = 0.0231), (group L: 616.7mm2; group S: 999.0mm2, P = 0.0026), biopsy visualization of SCJ was 92.9% (0.0086). Based on these factors and odds ratio, we prioritized sensitivity to avoid missing cases with removal difficulties during ESD and suggested predictive factors for removal difficulties during ESD. The size of the resected specimen >800mm2: 3 points, difficult location: 2 points, the number of biopsies > 7 pieces: 1 point, Group 5 on biopsy diagnosis: 1 point. Cases of 6 points or more was regarded as difficult to remove that takes over 70 minutes. We examined 43 patients who underwent ESD for gastric neoplasms between August to November 2016 the sensitivity was 87.5% and the specificity was 80%.

Conclusion: Our results suggest that the number of biopsies, size of the resected specimen, biopsy diagnosis, preoperative scar and biopsy location are predictive factors for difficulties in ESD.

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

References
in the lesser curvature (43.9%, 284/647). Posterior EGC was more frequent in the mid-to-upper part than the anterior part (20.4%, 31/157 vs. 16.4% (n = 51), respectively). For EGCC characteristics compared between the lower and mid-to-upper parts, submucosal invasive EGC was found to be significantly different (odds ratio, 1.919; confidence interval, 1.014–3.623; p = 0.045).

**Conclusion:** Most of the EGCC 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 EGCC 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 ENDOSCOPIC IMAGES BY MACHINE LEARNING WITH CONVOLUTIONAL NEURAL NETWORK AND DEEP LEARNING**

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**Introduction:** The recognition of general images by machine learning (ML) with the convolutional neural network (CNN) and deep learning (DL) is good. However, the possibility of the recognition of endoscopic images by ML with CNN and DL is 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 Dens layers by TensorFlow and Keras. We trained the ML model with the learning group images (n = 8313) and then tested it with the testing group images (n = 327) to determine whether it can recognize the endoscopic site. Two members of our hospital staff performed the same test utilizing the same images.

**Results:** It took 73 minutes for the ML model to learn and 6 seconds to answer the test. The percentage of correct answers of the ML model was 70.6% in all categories (n = 327), 77.1% in LP (n = 48), 91.5% in TE (n = 47), 64.4% in AE (n = 45), 73.3% in GF (n = 38), 61.5% in GB (n = 39), 79.5% in GA (n = 36), 68.5% 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 = 35), 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 nurses (n = 4).

The percentage of correct answers of the ML model was lower than those of humans who have knowledge about endoscopic images. However, it was higher than those of other humans who do not.

**Conclusion:** The possibility of the recognition of endoscopic images by ML with CNN and DL is further 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 NEOPLASMS (CONNECT-G): A MULTICENTER, RANDOMIZED CONTROLLED TRIAL**

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**Introduction:** The recognition of general images by machine learning with CNN and 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 Dens layers by TensorFlow and Keras. We trained the ML model with the learning group images (n = 8313) and then tested it with the testing group images (n = 327) to determine whether it can recognize the endoscopic site. Two members of our hospital staff performed the same test utilizing the same images.

**Results:** It took 73 minutes for the ML model to learn and 6 seconds to answer the test. The percentage of correct answers of the ML model was 70.6% in all categories (n = 327), 77.1% in LP (n = 48), 91.5% in TE (n = 47), 64.4% in AE (n = 45), 73.3% in GF (n = 38), 61.5% in GB (n = 39), 79.5% in GA (n = 36), 68.5% 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 = 35), 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 nurses (n = 4).

The percentage of correct answers of the ML model was lower than those of humans who have knowledge about endoscopic images. However, it was higher than those of other humans who do not.

**Conclusion:** The possibility of the recognition of endoscopic images by ML with CNN and DL is further 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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**P0154 MACHINE LEARNING-BASED AUTOMATIC DETECTION SYSTEM FOR DEMARCATION LINE OF GASTRIC CANCER WITH IMAGES**

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

**Aims & Methods:** In this study, a method for automatically detecting early gastric cancer lesions by narrow-band imaging (NBI) using a magnifying endoscopic image in the stomach is proposed to support diagnosis. The proposed system quantitatively shows the demarcation line (DL) of lesions in narrow-band images. Machine learning is introduced into the VS classification and image processing is performed. In addition, the obtained DL was similar to that indicated by an experienced gastroenterologist.

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

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

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

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**References**


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 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 management of duodenal and/or double-pigtail-stent. 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 ±53 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: recurrence of fistula (p = 0.02), patients with collection greater than 5 cm, an internal drainage should be proposed first. A collection greater than 5 cm, an internal drainage should be proposed first. A second surgical procedure before endoscopy is associated with longer care. It is well known that hormone for external use is more easily absorbed in broken skin. Accordingly, we explored an 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: randomly. Four patients received systemic steroid treatment (ST), 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 group started with 30mg/day prednisolone on the second day post-ESD, and continued with a gradually tapering prednisolone dose, finally discontinuing systemic steroid administration 8 weeks later. IT + ST group started with 80mg intraluminal steroid at the end of ESD procedure, and 30mg/day prednisolone on the second day post-ESD which exactly was the same as ST group of tapering process. OHA group started with mixture of hydrocortisone sodium succinate and aluminum phosphate gel for 2 weeks and continued with a gradually tapering OHA dose on the second day post-ESD.

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, and 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% (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 alimentary fistula reconstruction. The secondary EBD 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).

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
The next day we performed a follow-up upper endoscopy to inspect the intake and administration of broad spectrum antibiotics. We clipped the visible vessel and decided to close the opening with clips (Figure 1). The esophageal opening was 11 cm long, with a Mallory-Weiss tear at the distal end. We also found mediastinal free air. Due to the hemorrhage we performed an emergency endoscopy and closed the opening using clips and hemostatic clips. We observed an amazing healing (Figure 2). The chest symptoms resolved one week after the intervention. All patients were discharged on the eighth day. We performed an upper endoscopy after one month with no bleeding. The mean follow-up period after upper gastrointestinal endoscopy was 3 months after the intervention. The presence of residual tumors was evaluated by conducting endoscopic examinations and histopathological tests with tissue samples obtained from the cold polypectomy scars. Subsequently, patients underwent upper gastrointestinal endoscopy annually, and when residual tumors could not be denied, biopsies were taken from the scars.

Results: A total of 43 lesions in 33 patients were removed using cold polypectomy. Of these 20 patients with one or more SNADETs that have been subjected to long-term follow-up. The area under the curve (AUC) of receiver operating characteristics (ROC) was 0.95 for the lesser curvature, greater curvature, and anterum of the stomach by EG-L580NW (FUJIFILM Co., Japan). Finally, we used a total of 639 LCI pictures in the study. The specifications of the AI used in this study were as follows: Operating system: Linux (Ubuntu 14.04 LTS), Neural network: GoogleNet2, Framework: Caffe3, and Graphic processor unit: GeForce GTX TITAN X (NVIDIA Co., Santa Clara, CA, USA), and we used R (version 3.3.2.) for all statistical analyses.

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

References
Resolution White Light Endoscopy (HR-WLE) followed by HR-NBI. A careful evaluation of the antrum and corpus mucosa was performed and 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 histopathological evaluation and diagnosis. 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 (21.6%), and 6 (7.7%) pts (no patients with OLGIM 1 were found).

Table 1 showed 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. In the 6 patients with positive results using the EGGIM classification were H. pylori positive. Analyzing the subgroup of patients with OLGIM 3 and 4, the diagnostic performance of EGGIM was: sensitivity 95.6%, specificity 90.9%, PPV 81.5% and NPV 98.0%. Two of the 5 patients who resulted false positive using the EGGIM classification were H. pylori positive. A high agreement between EGGIM and OLGIM scores was observed (83.3%).

### P0163 COMPARISON OF PERCUTANEOUS ENDOSCOPIC GASTROSTOMY VS PARENTERAL NUTRITION IN TERMS OF INDICATIONS, EFFICACY, COMPLICATIONS; A RETROSPECTIVE ANALYSIS


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 institution was performed.

Results: 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. Multivariate logistic regression and Cox proportional hazards regression analysis were performed for complications and mortality.

### Results

- Out of 760 initial procedures (469 PRG and 291 PEG) were included in the analysis (62.9% male, mean age 62.8+ years [SD 12.6]).
- Most common indications for gastrostomy were Head and Neck cancer (HN), PEG 69.9%, PRG 64.4%, 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 91.2% for PEG (failure mostly due to absence of transillumination, 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).

### Conclusion

- 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 1.224[1.000–1.498]).
- Positive predictive factors for overall survival were PEG, ALS and a higher BMI before placement (adjusted OR for all three factors together 1.292[1.027–1.626]).

### Disclosure of Interest:

All authors have declared no conflicts of interest.

### References

2. Capelle LG et al. The staging of gastric cancer with the OLGA system by using intestinal metaplasia as an accurate alternative for atrophic gastritis. *Gastrointest Endosc* 2010.
**P0165** COMPREHENSIVE EVALUATION OF THE LEARNING CURVE FOR PERORAL ENDOSCOPIC MYOTOMY: LESSONS FROM 1346 PATIENTS

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**Introduction:** Porcelain 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 were performed. Patients were analyzed. The primary outcome of the study was a composite outcome of aborted procedures and complication. The secondary outcomes included procedure time and hospital stay. The impact of risk factors was assessed by backward conditional logistic regression on primary and secondary outcomes. The risk-adjusted CUSUM and moving average methods were used to evaluate the outcomes.

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

**Conclusion:** For POEM operators, seventy cases might be considered a threshold for 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.

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**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 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 completed under the monitor of laparoscopic surgery.

**Results:** Complications were observed in 8 patients (4.9%): bleeding during operations: 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 5~51months). 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**


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**P0167** GASTROENTEROLOGY REGISTRAR OF THE WEEK: A SOLUTION FOR AUGIB ENDOSCOPY TRAINING?

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2United European Gastroenterology Journal 5(5S)

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**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. 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, melena or both who had undergone surgery during the period of 1st of March 2012 to 31st August 2012 were retrieved using the endoscopy reporting tool Unisoft and analysed. Reports where SIRs were the primary operator were considered. Number of procedures, haemostatic intervention and nature of haemostasis was analysed. This was then compared to data from the year before implementation (01/03/2012 to 31/08/2012)

**Results:** A total of 7 SIRs (5 Full Time and 2 Less than Full Time) performed gastroscopies on AUGIB patients as first operators under Consultant supervision. Over the 6-month period a total of 166 gastroscopies were undertaken (Mean 24). On 26 occasions, endoscopic intervention (EI) was performed (Mean 4). On average, 16% of the AUGIB patients required EI. In cases of Non Variceal Bleeding, Dual therapy was applied in 87.5% of the cases. In UGIB cases Haemospray was used. On average each SIR was able to perform one case of oesophageal variceal banding and one case where Haemospray was utilised. Data from the 2012 cohort in comparison showed a total of 66 gastroscopies over 6 months with 13 EI. On average 13 procedures and 2.6 EIs were performed by each SIR. Dual therapy was applied in only 28.5% of the cases.

**Conclusion:** The introduction of the Registrar of the Week Service provides a valuable opportunity for SIRs to be trained in endoscopic haemostasis and augmentation to AUGIB exposure. As per this study each SIR on an average performed endoscopy on 24 AUGIB patients. If this is extrapolated, each SIR will be able to perform 48 procedures in 1 year and 240 procedures over 5 years. In the case of EI, on average a SIR can perform around 4 interventions over 6 months, which comes to 8 per year and 40 in 5 year program. This is significantly better than in the previous cohort and other centres. Hospitals should consider developing similar services not only to meet demands for 24/7 Consultant led AUGIB endoscopy service but provide adequate endoscopic training provision for current specialist registrars in order to ensure future competent and confident consultants.

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

**Reference**

respectively. All cases of EAC were detected (7/7). In 18/75 (24%) patients referred with dysplasia (LGD/HGD) without a visible lesion, the referral diagnosis was thus upstaged to EAC. Overall, 41/82 (50%) lesions were found additionally.

**Conclusion:** The presence of any grade of dysplasia in random biopsies in BE screening in community hospitals is a potential marker for more severe future pathology after endoscopic work-up in an expert centre. Training in Barrett imaging is mandatory for non-expert endoscopists.

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

### TABLE I: Demographics & Results

<table>
<thead>
<tr>
<th>Clinical failure</th>
<th>Clinical success</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of patients n = 22</td>
<td>n = 12</td>
<td>n = 10</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>Female</td>
<td>6/6</td>
</tr>
<tr>
<td>Etiology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-surgery</td>
<td>Post-dilatation</td>
<td>7</td>
</tr>
<tr>
<td>Post-radiation</td>
<td>Post-invasive ventilation</td>
<td>2</td>
</tr>
<tr>
<td>Pulmonary location</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trachea</td>
<td>Right bronchus</td>
<td>10</td>
</tr>
<tr>
<td>Left bronchus</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Orifice size</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Punctiform</td>
<td>Medium</td>
<td>3</td>
</tr>
<tr>
<td>Large</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Timing of closure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resolution at 3 months</td>
<td>Resolution at 6 months</td>
<td>No resolution at 6 months</td>
</tr>
<tr>
<td>Mean number of esophageal stents</td>
<td>Mean number of OTSc</td>
<td>At least one esophageal stent</td>
</tr>
<tr>
<td>3.6 (±3.9)</td>
<td>1.2 (±1.8)</td>
<td>11</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:** Conclusions: Endoscopic treatment of ERF can lead to 45.5% of clinical success and 55.5% of functional success. However, this outcome appears to depend on the size of the fistula and 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 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.

### P0109 CLINICAL UTILITY OF NARROW BAND IMAGING MAGNIFYING ENDOscopy 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- operative treatment because the rate of lymph node metastasis increases in proportion to 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, endo- scope 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 patholo- logically 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 Esophagus Society (JES) magnifying endoscopic classification1. 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 endo- scope was 0-Ic in 16 cases (70%), 0-IIa in 3 cases (13%), 0-IIb in 1 cases (4%), and 0-IIp in 1 case (4%). Predicted depth of invasion by NBI magnifying endo- scope 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, and NBI magnifying endoscopy is essential method for pretherapeutic examination.

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

**Reference**


### P0107 PER-ORAL ENDOSCOPIC PYLOROMYOTOMY (POEP) IN THE TREATMENT OF REFRACTORY GASTROPARESIS – A SINGLE CENTRE EXPERIENCE

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

Aims & Methods: The aim of this prospective case series was to assess our first (single center) experience with POEP. Main outcomes were: 1) the efficacy defined by improvement of GCSI score; 2) gastric emptying evolution and 3) safety; Colour: focal darkness The overall sensitivity and specificity, negative and positive predictive values (PPV) and corresponding 95% confidence intervals are as follows:

<table>
<thead>
<tr>
<th>Colour</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>Pale</td>
<td>96.0 (91.5–98.5)%</td>
<td>98.3 (94.1–99.8)%</td>
<td>98.6 (94.8–99.7)%</td>
<td>95.2 (90.9–97.7)%</td>
</tr>
<tr>
<td>Vessel pattern</td>
<td>94.7 (89.8–97.7)%</td>
<td>93.3 (87.3–99.1)%</td>
<td>94.7 (90.1–97.2)%</td>
<td>95.2 (90.9–97.7)%</td>
</tr>
</tbody>
</table>

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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.
**P0174 COMPARISON OF THE LINKED COLOR IMAGING (LCI) TECHNOLOGY AND CHROMOENDOSCOPY WITH ACETIC ACID FOR DIAGNOSIS OF BARRETT’S ESOPHAGUS**


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3 Department Of General, Visceral And Transplant Surgery, University Medical Center Mainz, Mainz/Germany
4 Interdisciplinary Endoscopy, University Medical Center Mainz, Mainz/Germany

**Aims & Methods:**

The aim of this prospective study was to evaluate the recently introduced LCI technique compared to conventional dye spraying with acetic acid for diagnosis of Barrett’s esophagus. Therefore, consecutive patients with Barrett’s esophagus were entered into the Prague classification and prospectively included. All Barrett segments were carefully evaluated by using high-definition white-light imaging, followed by LCI and acetic acid spraying. At each examination targeted biopsies were taken from all visible lesions, followed by random four-quadrant biopsy protocols.

**Results:**

The diagnostic yield of conventional dye spraying was significantly higher for diagnosis of Barrett’s esophagus compared to high-definition white-light imaging. Of note, no significant difference for diagnosis of Barrett’s esophagus was noted between acetic acid chromoendoscopy and the LCI technique. LCI diagnosis was always consistent to traditional dye spraying.

**Conclusion:**

The newly introduced LCI technique is superior to high-definition white light endoscopy for diagnosis of Barrett’s esophagus and equally effective to acetic acid dye spraying. Therefore, the LCI technique has the potential to facilitate the diagnosis of Barrett’s esophagus and to overcome the limitations of a random 4-quadrant biopsy protocol.

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

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**P0175 ALBERTA FAMILY PRACTICE ELECTRONIC ENDOSCOPY (AFPEE) STUDY (AFPEE)**

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**Introduction:** In Canada, gastroenterologists and general surgeons perform 97% of the colonoscopies. There are a small number of rural Canadian Family Physicians (FP) performing colonoscopies. These endoscopists may improve access for rural patients who require endoscopy and help improve provincial endoscopy wait times. Although some studies demonstrate that adequately trained Family Physicians are able to perform quality endoscopy, other studies question the quality of colonoscopies performed by non-gastroenterologists.

**Aims & Methods:** The Alberta Family Physician Electronic Endoscopy (AFPEE) study aimed to examine the quality of colonoscopies performed by Family Physicians in Canada. Primary outcome measures included the proportion of successful colonic intubations; proportion of patients 50 years and older having a cecal intubation; proportion of patients 50 years old with an adenoma on a first-time colonoscopy was 67.4%.

**Results:**

In this six-month study, 9 Family Physicians performed 1769 colonoscopies in 11 rural Alberta sites. The proportion of successful colonic intubations was 97.9% (95% CI: 97.2, 98.5). All physicians had over 90% successfully completed colonoscopies (ranging from 95.2 to 100%). The proportion of males and females ≥50 years old with an adenoma on a first-time colonoscopy was 67.4% (95% CI: 62.4, 72.7) and 51.1% (95% CI: 45.5, 56.7) respectively. All physicians achieved benchmarks of 30% of males and 20% for females having at least one adenoma. From all colonoscopies in the study there were 2099 pathologically confirmed adenomas or SSA, 628 advanced adenomas and 17 cancers, corresponding to 120 adenomas, 36 advanced adenomas and 1 colon cancer per 100 colonoscopies. There were 2 post-polypectomy bleeds, no perforations and no deaths.

**Conclusion:** Alberta Family Physician colonoscopists are meeting benchmarks in colonoscopy quality. Ongoing electronic collection of endoscopy quality markers should be encouraged. Supporting and training rural Family Physicians who perform endoscopy may help alleviate current wait times and improve access for rural Canadian patients.

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

**References**


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

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**Introduction:** In a randomised controlled trial, flexible sigmoidoscopy (bowel scope) reduced colorectal cancer incidence and mortality in a population aged 55-64. Patients progressed to colonoscopy based on ‘high risk’ features (Table 1).[1] Based on these pivotal findings, the UK bowel scope (BS) surveillance programme was introduced in 2013 to individuals aged 55. The Wolverhampton Bowel Cancer Screening Centre was the first UK site to fully roll out the programme. The correlation between BS findings and subsequent colonoscopy has not previously been evaluated in this specific cohort.

**Aims & Methods:** We prospectively collated data from all BS patients at our centre and identified those undergoing colonoscopy between August 2013–2016. We assessed conversion rates, compliance with BS protocol and correlated endoscopic and histological findings to identify predictors of detection of pathology at colonoscopy. Univariate analysis was performed using Pearson’s chi².

**Results:** 11,711 bowel scopes were performed, with an adenoma detection rate (ADR) of 8.5%, and conversion to colonoscopy in 421 patients (3.6%). 386 were included for analysis after excluding incomplete colonoscopy/histology. All patients were aged 55 (64.8% male). Additional ADR at colonoscopy was 35.2%, with malignant diagnoses in 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 < 0.05). After controlling for all high risk indicators, changing the conversion criteria from any villous to villous only histology altered sensitivity from 27.2% to 83.3%, and specificity from 84.5% to 80.5%.

**Table 1:** Indications for progression from BS to colonoscopy (in bold), and likelihood of new adenoma detection. *Patients in multiple categories are included multiple times. **p < 0.05

<table>
<thead>
<tr>
<th>Indication</th>
<th>N=885</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 10mm</td>
<td>196</td>
<td>86 (43.9%)</td>
<td>2.13 (1.39-3.27)</td>
<td>&lt; 0.001**</td>
</tr>
<tr>
<td>Any villous component</td>
<td>190</td>
<td>69 (36.3%)</td>
<td>0.82 (0.28-2.41)</td>
<td>0.72</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.

**Reference**

1. WS Atkin, Lancet 2010, 375:1624-33
Aims & Methods: Cold snare polypectomy is an established method for the resection of small colorectal polyps (SCPs); however, significant incomplete resection rates still leave room for improvement. We aimed to assess the efficacy of cold snare polypectomy with submucosal lift (SL-CSP) compared to endoscopic mucosal resection (EMR), for nonpedunculated polyps 6–10 mm (ClinicalTrials.gov NCT02678663).

Results: Eligible participants were randomized (1:1) to be treated either with 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 polypomcy 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 (CSPP; any episode requiring emergency department presentation, hospitalization, or reintervention within 30 days of the procedure) and perforation.

Conclusion: SL-CSP appears to be an effective modification of standard cold snare technique, obviating the need to use diathermy for 6–10 mm colorectal small polyps and polyps measuring 10 to 19 mm, respectively. The use of cold snare for removing small and diminutive polyps is most frequent among gastroenterologists with a greater dedication to endoscopy (colorectal polypectomy once per week and performing advanced endoscopy) and among endoscopists with less than 10 years in practice.

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

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

<table>
<thead>
<tr>
<th>Resection Method</th>
<th>1–3 mm</th>
<th>4–5 mm</th>
<th>6–9 mm</th>
<th>10–19 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard cold biopsy forceps</td>
<td>70.5%</td>
<td>32.7%</td>
<td>3.3%</td>
<td>0.3%</td>
</tr>
<tr>
<td>Jumbo biopsy forceps</td>
<td>7%</td>
<td>6.8%</td>
<td>19%</td>
<td>0%</td>
</tr>
<tr>
<td>Hot biopsy forceps</td>
<td>1%</td>
<td>1.9%</td>
<td>2.5%</td>
<td>2%</td>
</tr>
<tr>
<td>Cold snare</td>
<td>16.2%</td>
<td>34.8%</td>
<td>21.2%</td>
<td>1.1%</td>
</tr>
<tr>
<td>Hot snare</td>
<td>4%</td>
<td>19.6%</td>
<td>50.4%</td>
<td>38.9%</td>
</tr>
<tr>
<td>Endoscopic mucosal resection</td>
<td>0.6%</td>
<td>3.9%</td>
<td>19.7%</td>
<td>57%</td>
</tr>
</tbody>
</table>

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colonoscopy. Some operators participated in a follow up session in order to assess the improvement of the robotic microvasculature visualization.

Results: On average, experts required the shortest time to reach the caecum, followed by video gamers, trainees then novices. Polyp detection rate (as a proportion of total number in the model simulator colon) was the highest in the novices (91.67%) followed by the experts (86.11%), then equally, trainees and video gamers (79.17%). Four out of nine participants attended the second session where they were asked to repeat the procedure from the first session. Each participant had a lower caecal intubation time during session 2 in comparison with session 1 (p = 0.001). A significant difference in the prevalence of irregular WOS between mucosal (M) or SM-s cancer was 67.8% (21/31) and 75% (9/12), respectively. There was no significant difference in the prevalence between irregular WOS in M or SM-s cancer (p = 0.001), but in SM-m cancer (9/12) the prevalence of irregular WOS was 75% (9/12) and 75% (7/12) respectively.

Discussion: The WOS was determined for cases in which WOS was present and in whom WOS could not be investigated because of rich mucus. The analysis was conducted using 125 lesions from 96 patients. Of these 125 lesions, 33 were determined to have irregular WOS and 92 to have regular WOS. Of the 33 lesions showed irregular WOS, 13 (14.1%) were early cancer and 79 (92.3%) were adenomas. Of the 92 lesions demonstrated regular WOS, 13 (14.1%) were early cancer and 79 (88.5%) were adenomas. The prevalence of irregular WOS in early cancer was significantly higher than that in adenomas (p = 0.001, chi-square test). The diagnostic accuracy for the differentiation between early cancer and adenoma using irregular WOS as an indicator of cancer was 87%. The sensitivity was 91% and specificity was 86%. The frequency of irregular WOS in M or SM-s cancer and SM-m cancer was 67.8% (21/31) and 75% (19/12), respectively. There was no significant difference in the prevalence between irregular WOS in M or SM-s cancer and SM-m cancer (p = 0.727, chi-square test).

Conclusion: These findings suggest that in colorectal epithelial neoplasms in which WOS is visualized because of WOS, the morphological accuracy 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


P0102 NARROW BAND IMAGING OPTICAL DIAGNOSIS OF SMALL COLONIC POLYPS, LEARNING CURVE AND SUBSEQUENT DIAGNOSTIC ACCURACY IN UNEXPERIENCED EVALUATORS
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Introduction: To reduce costs of colorectal cancer screening, a repeat 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 NICE classification. All participants were posteriorly 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 a 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 define the performance improvement cut-off of 3, 45 and 90% for diagnostic performance, consecutive patients with lesions ≤7 mm were included. Patients with polyps lacking classification, polyps > 7 mm or incomplete polypectomies were excluded. All participants received the same white light and NBI training. Training was provided to 10 polyps every week, including all polyps excised. Colonoscopies were presented in the same order as they were included in the study. Histological results were available with a 2-week delay. Evaluators pre-trained their polyp’s histology level of confidence, and recommended a surveillance interval for each patient. Diagnostic accuracy 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 mm) included in the learning evaluation curve evaluation 19 were NICE 1.71 were NICE 2 and 10 NICE 3. Median diagnostic accuracy was 88% (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 lesions according to the LC-CUSUM curve. 20 evaluators (52.6%) 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% (80.5–82.1%) 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% (77.7%) of patients, 81.3% (80.2–82.4%) in those presenting highly 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 the performance improvement of the histological results (p = 0.74) improved the evaluators’ accuracy.

Conclusion: Self-formation 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 cleansing the colon in preparation for colonoscopy is compared to three active comparators, with attention to their efficacies in patients aged ≤65 years and >65 years who had a readable colonoscopy.

Aims & Methods: Colon cleansing efficacy of NER1006 was compared to three currently used bowel preparations in patients aged ≤65 years and in patients aged >65 years. NER1006 was compared to sodium picosulfate + magnesium citrate (NaPic + MgCit), trisulfate and 2L PEG with ascorbate (2L PEG + Asc), in three multicentre randomised Phase 3 clinical trials: DAYB1, NOCT2 and MORA3, respectively. 2L PEG + Asc was administered over 2 days and in the MORA trial, the doses of NER1006 were administered either both 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. NER1006 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 both 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.

Conclusion: NER1006 was efficacious in successful colon cleansing in patients aged >65 years, who had a readable colonoscopy. In the elderly, NER1006 demonstrated an exceptionally high adequate level bowel cleansing success (90% or greater in the overall colon cleansing). NER1006 demonstrated an exceptionally high adequate level bowel cleansing success. A significant improvement was shown for both the overall colon and right sided colon cleansing (segmental score ≥2). The analysis includes all subjects for whom colonoscopy videos were available for assessment by central readers.

References

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 5mm, 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 for the two primary endpoints, in those patients who had a readable colonoscopy.

Aims & Methods: In the MORA trial, 2,849 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 (94%) patients on NER1006 achieved adequate level overall colon cleansing compared to 232/260 (89%) on 2L PEG + Asc (Table 1). Using morning-only dosing, 243/270 (90%) patients on NER1006 achieved the same. Using evening/morning split-dosing, 254/262 (97%) patients on NER1006 achieved adequate level right colon cleansing compared to 242/260 (93%) on 2L PEG + Asc. Using morning-only dosing, 253/270 (94%) patients on NER1006 achieved adequate level right colon cleansing. Adequate level cleansing success was achieved significantly more often with NER1006 evening/morning split-dosing than 2L PEG + Asc, both in the overall colon (P = 0.013) and in the right colon (P = 0.042). The slight improvement seen with NER1006 morning-only dosing in the cleansing rate of the overall colon and right sided colon was not statistically significant. Table 1: Adequate level cleansing of the overall colon and right colon (BBPS segment scores ≥2) 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

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></th>
<th>DAYB (1:1)</th>
<th>NOCT (1:1)</th>
<th>MORA (1:1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NER1006 (NDB) NaPic + MgCit</td>
<td>127/196 (64.8)</td>
<td>115/205 (56.1)</td>
<td>192/208 (92.3)</td>
</tr>
<tr>
<td>NER1006 Trisulfate</td>
<td>197/213 (92.5)</td>
<td>191/210 (90.9)</td>
<td>184/192 (95.8)</td>
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<tr>
<td>NER1006 (N1D)</td>
<td>5.7</td>
<td>0.9</td>
<td>5.6</td>
</tr>
<tr>
<td>NER1006 (N2D)</td>
<td>5.3</td>
<td>0.9</td>
<td>5.6</td>
</tr>
<tr>
<td>2L PEG + Asc</td>
<td>5.3</td>
<td>0.9</td>
<td>5.6</td>
</tr>
</tbody>
</table>

P-values: 0.522, 0.699, 0.856

95% CI (%): −21.4 to 11, −21.4 to 21, −8.1 to 9.8

N.B. successful cleansing defined here as a Harefield Cleansing Scale grade of A or B (overall colon)
Patients (N) | evening/morning split dosing | morning only dosing | 2L PEG + Ase evening/morning split dosing
--- | --- | --- | ---
Patients with an adequate level cleansing success of the overall colon, n (%) | 262 | 270 | 249 (95) | 243 (90) | 232 (89)
Patients with an adequate level cleansing success of the right colon, n (%) | 254 (97) | 253 (94) | 242 (93)
P vs. 2L PEG + Asc (overall colon) | 0.013 | 0.772 | 0.042 | 0.772

References

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 local experience in implementing colonoscopy QI record trough an automatic data extraction from two 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), polyp detection rate, caecal intubation rate, quality of bowel preparation (using the Boston bowel preparation scale) and type of sedation. During a first period of 6 months starting in January 2016, endoscopists were encouraged to fulfill the dedicated tab on a voluntary basis. In a second period, filling of QI was turned to be mandatory. The completeness of QI recording was evaluated across both periods, and results from second period are presented. Performance measures of all endoscopists were compared to global results of our department and we refer to them as all endoscopists. Results: Performance measures of all endoscopists were compared to global results of our department and we refer to them as all endoscopists. 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). Colonoscopy were performed under propofol sedation in 94.1%. During this second period, the global ADR was 32.4% (range: 0%-55.7%). The polyp detection rate was 44.4% with a mean of 1.19 polyp removed by colonoscopy. Conclusion: This study illustrates that quality indicators for colonoscopy assessment in a Belgian tertiary hospital endoscopy unit could be easily implemented with limited human resources by adapting a company reporting system and link it with patient management database. Nevertheless, mandatory filling of QI was necessary for system implementation success. Our results were consistent with goals required by international guidelines. This system allows giving feedback to individual endoscopists for self-performance assessment and might be easily adapted in the future following guidelines updates.

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

References

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
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 CFH-240i (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 that was used to validate the CAD algorithm and 21 no-lesion) videos were used at validation. A novel CAD algorithm was trained to detect a polyp with 90.9% sensitivity and 76.2% specificity.

Conclusion: Our preliminary results showed that state-of-the-art artificial intelligence has the potential for achieving automatic detection of colorectal polyps. A prospective study is now planned after more machine-learning sessions.

Acknowledgment: This study was supported by JSPS KAKENHI Grant Number JP 16K15971.

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

P0191 MOTORIZED SPIRAL COLONOSCOPY (MSC) – A FIRST FEASIBILITY TRIAL

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Introduction: Colonoscopy is widely accepted for the diagnosis and treatment of colonic diseases. Accepted quality parameters for colonoscopy include a cecal intubation rate of ≥ 90%, 10% of all colonoscopies are difficult and intubation of the cecum can sometimes be impossible. The novel motorized endoscope was developed by the Cybernet System Corporation (Düsseldorf, Japan) and represents a disruptive new technology in endoscopy. It is currently being evaluated for anterograde enteroscopy. Spiral technique offers the potential to overcome some of the limitations of standard colonoscopy with push technique by actively pleating the bowel onto the endoscope with motorized rotation of the spiral overtube. This may have advantages in cases of difficult standard colonoscopy to facilitate cecal intubation on the one hand and in all colonoscopies in terms of patient comfort, sedation and ease of use also in therapeutic situations.

Aims & Methods: To evaluate feasibility and safety of MSC for diagnostic colonoscopy. Secondary endpoints were ileum intubation rate, procedure time, need for sedation and external compression, patients' pain and satisfaction, adenoma detection rate (ADR) and feasibility of therapeutic interventions. 30 consecutive patients with indication for colonoscopy meeting the inclusion criteria at a single tertiary referral center were enrolled in the trial between December 2016 and January 2017. The study was conceived as proof of concept trial with the primary aim to achieve a cecal intubation rate of at least 90% according to quality guideline recommendations.

Results: 13 male and 17 female patients were enrolled. Mean age was 68.9 years (30–90), health status was ASA-1: 16.7%, ASA-2: 36.7% and ASA-3: 46.6%. 41 polyps were detected in the patients examined. Indications for colonoscopy were clarification of indeterminate iron deficiency anemia (IDA, n = 5), lower gastrointestinal bleeding (GIB, n = 6), surveillance after previous polypectomy (n = 6), screening for polyps and colorectal cancer (n = 11) and others (n = 2). Sedation level (ROC, EFAC) in all 31 patients was 3 (deep sedation). The mean amount of propofol was 305 [130–880] mg. Mean procedure time was 20.8 [11.4–55.3] min. Cecal intubation rate (technical success) was 96.7% (29/30).

One incomplete colonoscopy occurred due to patient's postinflammatory stricture of the sigmoid. All colonoscopies reaching the cecum also successfully intubated the ileum (96.7%). Only in one case external compression was needed. Adenoma detection rate was 46.7%. EMR was performed in 9 cases, 5 patients had forceps polypectomy. One case of incidental finding of submucosal invasive adenocarcinoma in EMR specimen was histologically proven to have R0 en-bloc resection. All other therapeutic interventions could also successfully be conducted (e.g. n = 3, argon plasma coagulation n = 1, tissue sampling n = 2).

Conclusion: For the first time, the presented computer-aided spiral-enteroscopy was successfully tested in a feasibility study. Mild adverse events were recorded (mild superficial mucosal lesions without further complications).

Conclusion: This study represents the first clinical evaluation of the novel motorized spiral enteroscope for examination of the colon. Our data show that it is effective and safe for diagnostic and therapeutic colonoscopy. It may also have potential advantages over standard colonoscopy technique in terms of effectiveness and convenience of colonoscopy.

Disclosure of Interest: H. Neuhaus: Honoraria and consultancy fees from Olympus Medical Systems Corporation
All other authors have declared no conflicts of interest.

References


P0192 TREATMENT OUTCOMES OF COLD FORCEPS POLYPECTOMY FOR PATIENTS WITH DIMINUTIVE POLYPS: A TERTIARY REFERRAL CENTER EXPERIENCE

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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 by CFP from June 15, 2015 to March 2017. Magnifying colonoscopy 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-bit rate between endoscopists’ experience. No cancer was observed in histology. Rates of delayed bleeding after CFP was 0.19% (1/515). Concomitant use of anticoagulation use of antiplatelet drugs was found in 14% (72/548), and none of them experienced delayed bleeding. No perforation occurred. Seventy-five patients had their follow-up colonoscopy so far. There were no polyps on surveillance 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, the rate of newly discovered polyps found at follow-up colonoscopy was 54% (14/26)/42%/ (8/18) 37%/11% (30, respectively).

Conclusion: The rate of one-bite polypectomy was significantly higher for diminutive polyps less than 3 mm. Importantly there are no polyps on surveillance or recurrent lesion. CFP is a safe and effective option for diminutive polyps (5 mm). Although the rate of one-bit 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 essential for complete surveillance, 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 CIMETROPIUM BROMIDE ON POLYP DETECTION DURING COLONOSCOPIC WITHDRAWAL: A DOUBLE-BLIND, RANDOMIZED, PLACEBO-CONTROLLED, CLINICAL TRIAL

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Introduction: Colonoscopy is the most effective method for preventing colorectal cancer, as it offers easy detection and resection of polyps. Cimetropium bromide
results in colonic spasmylosis and may improve polyp detection. We studied the effect of cimetropium bromide on polyp detection during colonoscopic withdrawal.

Aims & Methods: Patients undergoing colonoscopy for screening examinations were included and randomized at cecal intubation to receive either 5 mg cimetropium bromide 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 colonrectum.

Results: A total of 181 patients were analyzed in this study. Cimetropium group consisted of 90 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 = 0.603; 3.2% vs. 7.7%, P = 0.187; respectively). Similarly, PDR and ADR in the right side colon were not statistically 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 colonrectum. Thus, administration of cimetropium bromide can be used selectively in screening colonoscopy.

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

References
2. Sato T, Tomono O, Higuchi K et al. Female Patients Require a Higher Propofol Infusion Rate for Sedation. Anesth Prog 2016; 63: 67–70
nontattooing group, both side injection group was better result (96.2% vs. 91.9%, p=0.022). Most results did not have statistical association with higher lymph node yield in colorectal cancer. But in T1 cancer, the rate of adequate lymph node harvest was higher in the both side injection group, statistically (94.7% vs. 81.0%, OR 4.235, p-value 0.047).

Conclusion: ICG was associated with higher lymph node harvest in colorectal cancer, especially in T1 cancer. And both side injection of ICG increased the rate of adequate lymph node harvest. Further studies and methods are needed to harvest adequate lymph nodes in colorectal cancer.

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

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


Objective: The aim of this study was to investigate the success rate of CPR for complete resection of subcentimetre colorectal adenomatous polyps compared to that of HSP.

Aims & Methods: This was a prospective, multicentre, randomised controlled, non-inferiority study, conducted in 12 Japanese colorectal units. Patients aged ≥20 years, undergoing elective colonoscopy/polypectomy, and who provided written informed consent were included. Patients who were taking anti-thrombosis agents undergoing hemodialysis were excluded, as well as those with inflammatory bowel diseases, polyposis, and pregnancy. Endoscopically diagnosed sessile adenomatous polyps, 4–9 mm in size, were randomly assigned to the CPR or HSP group. After complete removal of the polyp using the allocated technique, biopsy specimens from the resection margin after polypectomy were obtained. The primary endpoint was the complete resection rate, defined as no evidence of adenomatous tissue in the biopsied specimens, among all pathologically confirmed adenomatous polyps (full analysis set: FAS). Pre-planned subgroup analyses for the size of polyp were also conducted. The sample size was calculated according to the incomplete resection rate seen in previous articles and the required sample size was estimated at 780 lesions, including drop out cases. The protocol was approved by the institutional review board in each institution.

Results: A total of 796 eligible polyps were detected in 538 of 912 patients (males and females, aged 52–80 years) assigned to receive CPR (6–18 mL): i) Endoscopic Shielding Technique (CSP, n=400) and ii) Endoscopic Shielding Technique (CSP, n=402). Subgroup analysis according to the size of polyp (4–5 mm and 6–9 mm) showed a comparable complete resection rate for CSP and HSP for both subgroups of polyps.

Conclusion: The complete resection rate of CSP is not inferior to that of HSP. CSP can be one of the standard techniques for subcentimetre colorectal polyps.

References

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

V. Lorenzo-Zúñiga1, V. Moreno De Vega1, I. Mariní2, N. Caballeró2, R. Bartoll1, I. Bon3, J. Boix1

Aims & Methods: In the EndoPRP study 15 patients (males and females, aged 52–80) were assigned to receive PRP (6–18 mL): i) Endoscopic Shielding Technique (CSP, n=400) and ii) Endoscopic Shielding Technique (CSP, n=402). Subgroup analysis according to the size of polyp (4–5 mm and 6–9 mm) showed a comparable complete resection rate for CSP and HSP.

Conclusion: The complete resection rate of CSP is not inferior to that of HSP.

References
with a defined AE. Treatment options, including none required, were taken from a predefined list of potential responses examined per country. Over 62% of providers were gastroenterologists and anaesthesiologists. Local guidelines determined practice in most cases, and propofol and midazolam were the main sedation agents employed. The most common AEs reported were hypotension and bradycardia, with 9% and 4% of respondents, respectively, estimating each to occur during >10% of procedures. Mean provider time required to treat AEs ranged from 1.7 minutes for mild desaturation in Germany to 3.10 minutes for cardiac arrest in the USA. Accounting for interventions and provider time, the mean direct cost per procedure ranged from EUR 12 for bradycardia in Germany to USD 3,877 for cardiac arrest in the USA (Table). When costs were “fully loaded” these became EUR 39 and USD 19, 722, respectively. Although of low direct cost, bradycardia in Germany was reported to cause procedure termination or substantial delay in 3.8% of cases. In Euro countries, the median of mean direct costs for an AE was EUR 40 (IQR: 29–67). When costs of outcomes of AEs were included the median “fully loaded” cost reached EUR 301 (IQR: 115–738).

Table: Costs of select adverse events by country. FL: Fully-loaded (costs including hospital admission, 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>Bradycardia mean</th>
<th>Bradycardia extremes</th>
<th>Cardiac arrest</th>
<th>Cardiac arrest mean</th>
<th>Cardiac arrest extremes</th>
</tr>
</thead>
<tbody>
<tr>
<td>France, EUR 32</td>
<td>173</td>
<td>23</td>
<td>47</td>
<td>Direct; FL</td>
<td>Direct; FL</td>
<td>Direct; FL</td>
<td>Direct; FL</td>
</tr>
<tr>
<td>Germany, EUR 23</td>
<td>193</td>
<td>18</td>
<td>212</td>
<td>Direct; FL</td>
<td>Direct; FL</td>
<td>12</td>
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<td>Italy, EUR 41</td>
<td>111</td>
<td>32</td>
<td>98</td>
<td>Direct; FL</td>
<td>Direct; FL</td>
<td>20</td>
<td>12</td>
</tr>
<tr>
<td>UK, GBP 69</td>
<td>334</td>
<td>34</td>
<td>606</td>
<td>Direct; FL</td>
<td>Direct; FL</td>
<td>93</td>
<td>12</td>
</tr>
<tr>
<td>US, USD 247</td>
<td>841</td>
<td>465</td>
<td>1456</td>
<td>Direct; FL</td>
<td>Direct; FL</td>
<td>529</td>
<td>1715</td>
</tr>
</tbody>
</table>

Conclusion: Costs of sedation-related AEs can be substantial regardless of country of origin. Disruption of patient flow and provider efficiency may add to the cost burden. Even relatively minor events may prompt additional intervention, increasing the overall cost of care.

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

Main characteristics of the resected lesions by procedure

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Mean tumor size, mm; median (range)</th>
<th>Length of procedure, min; median (range)</th>
<th>Rectal location; n (%)</th>
<th>Vienna category ≤4; n (%)</th>
<th>Follow-up; months</th>
<th>p (median range)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESD en bloc KAR</td>
<td>28 (11–50)</td>
<td>20 (11–65)</td>
<td>42.1 (17–100)</td>
<td>0.002</td>
<td>226 (62–340)</td>
<td>175 (60–300)</td>
</tr>
<tr>
<td>p-KAR</td>
<td>16.3 (2.6–62.7)</td>
<td>16.9 (8.0–91.3)</td>
<td>13.8 (1.1–46.9)</td>
<td>0.59</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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


P0200 COLORECTAL ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD), KNIFE-ASSISTED SNARE RESECTION (KAR) AND SPARENESS RATE: 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 linvofuscular invasion in 4 patients. Five out of the remaining 80 cases, were lost to follow-up. Finally, 75 CR neoplasms were included in 74 patients (43 male; 58.1%). Median age was 71 years (range: 37–93). Median size of the lesions was 32 mm (range 10–100). Histology was 26 (34.7%) Vienna category 3; 46 (61.3%) Vienna 4 and 3 (4%) sm1-Vienna 5. En bloc resections were obtained in 44 cases (57.7%); 33 ESD (44%) and 11 KAR (14.7%). The ER finished as a p-KAR in the 31 remaining lesions (41.3%). R0 resections (n = 23; 30.7%) were achieved in 18/33 ESD and 5/42 KAR [OR=8.9 (CI 95%; 2.8–28.3); p < 0.0001]. The median follow-up period was 16 months (1–91). Local recurrence occurred in 11 cases: 9 of the latter throughout the first year (81.8%). No surgery was needed because of recurrence. The overall recurrence rate at 36 months was 15%. The recurrence rate at 3 years showed a statistical significant difference when R0 resections were compared with R1/Rx: 0% vs. 21.5% (p = 0.03). When results were stratified according to histology and en bloc resections, no significant differences were found in the recurrence rate. When en bloc resections in pT1a (n = 84); (pT2; n = 34) were analysed separately, ESD distribution showed 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.

Table: Main characteristics of the resected lesions by procedure

<table>
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<th>Procedure</th>
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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.
as either “proximal” or “distal” colon. Thereafter the division into six anatomical segments was considered (cecum, ascending, transversal, descending, sigmoid and rectum).

Results: A total of 218 LSTs were included in this study. Most patients (59.4%) were female. The mean age was 66.1 years, and the average size of the LSTs included was 1.69 cm. The most common proximal colon was the most common location (73.4%) of occurrence of the LSTs, with 34% being at the ascending colon. The most common histological type was the low grade dysplasia adenoma (Vienna 3), followed by the SSA without dysplasia with 21.6%. There was significant correlation between size and histology (p < 0.005), where the adenomas and lesions were found to be larger than the other categories. This association, however, is not observed on follow-up histology was even higher (88%). The following adverse events were found to be larger than the other classifications. This association, however, is not observed between SSAs lesions. There is association between location and histology; with the SSAs without dysplasia being the predominant type at the ascending colon.

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

References

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

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Introduction: Endoscopic mucosal resection (EMR) and endoscopic submucosal dissection (ESD) are well-established and effective techniques for the endoscopic resection of mucosal neoplasms along the gastrointestinal (GI) tract. However, these procedures are limited to superficial lesions. In the case of deeper ingrowth into the gut wall as well as anatomic sites prone to perforation, the novel full-thickness resection device (FTRD) opens a new dimension of possibilities for endoscopic resection.

Aims & Methods: Sixty patients underwent therapeutic endoscopic full-thickness resection (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, Tubingen), is fitted onto a therapeutic endoscope. The endoscope with the FTRD is advanced to the previously marked lesion. Grasping forceps are used to take hold of the target lesion and carefully pull it into the plastic cap of the FTRD®. Immediately after deployment of the OTSC®, eFTR is performed using the hyperthermic snare within the plastic cap. The full-thickness specimen is retrieved and processed for histopathological examination. Safety, learning curve, R0 resection rate and clinical outcome of all 60 interventions were studied.

Results: EFR was performed for the following indications: 1. Recurrent adenomas (n = 22.3%) with a non-lifting sign after previous incomplete polypectomy and adenomas with a primary non-lifting sign on saline injection (n = 2.3%). 2. Non-lifting base after extensive piecemeal resection of a spreading adenoma (n = 2.3%). 3. Diverticular polyps (n = 2.3%). 4. Polyps the cecal appendix (4.6%). 5. Submucosal lesions (n = 58.3%). 6. Early carcinoma (n = 71.2%). 7. Follow-up resection of a malignant polyph (n = 0.1%) had. 8. EFR over endoloop resection (n = 2.3%). In 97% (58/60) of the interventions, the FTRD®-mounted endoscope reached the previously marked lesion and eFTR was performed (technical success). Full-thickness resection was achieved in 88% of the cases, with an R0 resection on histological examination in 79%. The clinical success rate based on follow-up histology was even higher (88%). The following adverse events occurred: Appendicitis of the residual cecal appendix after eFTR of an appendicular adenoma (1/58.2%). Minor bleeding at the eFTR site (2/58.3%). EFR performed accidently 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.

P0203 VASCULAR AND PIT-PATTERN ANALYSIS ACCORDING TO KUDO, SANO AND NICE CLASSIFICATIONS: A FEASIBLE AND PRACTICAL APPROACH

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Introduction: Narrow Band Imaging (NBI) and chromoendoscopy with methylene blue are enhancing techniques which are helpful in differentiating vascular and pit patterns of colorectal neoplasms. Therefore, they have a key-role for the adequate management of the lesions which might be candidates for endoscopic resection.

Aims & Methods: The aim of our study was to measure the interobserver agreement and the diagnostic accuracy in an endoscopic unit using methylene blue and NBI for the evaluation of the pit and vascular pattern according to the Kudo, Sano and NICE classifications of colo-rectal neoplasms, before and after an image-based training program. We retrospectively collected consecutive endoscopic images (NBI and with methylene blue) of colo-rectal neoplasms from the internal database. The image set was then evaluated by our gold standard composed by two expert endoscopists. Their evaluation resulted confident with histology reports in 88% of cases. The images set was then evaluated by the 9 endoscopists of the unit, before and after a 30-minutes image-based training program on enhancing techniques and surface colorectal patterns. NBI and 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 colo-rectal neoplasms' evaluation before and after the training was also calculated using the McNemar test. A value of p < 0.05 was considered statistically significant.

Results: A total of 30 images were obtained (see Table). Before the training process, the interobserver agreement was minimal for Kudo (0.10 ± 0.03) and Sano (0.12 ± 0.04), and poor for the NICE classification (0.24 ± 0.05). Diagnostic accuracy was 0.33 ± 0.07, 0.54 ± 0.12 and 0.60 ± 0.10 for Kudo, Sano and NICE classifications, respectively. After the image-based training program, interobserver agreement moved to moderate for the Kudo classification (p < 0.0001) and to good for Sano and NICE classifications (p < 0.0001). Diagnostic accuracy increased significantly, too, with values of 0.00 ± 0.05, 0.76 ± 0.05, 0.80 ± 0.05 for Kudo, Sano and NICE classifications, respectively (p < 0.0001).

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

Classification Type N
Kudo I 0
II 2
III 3
IV 1
V 4
Sano I 2
II 19
III a 5
III b 4
NICE I 2
II 19
III 9

Conclusion: To the best of our knowledge, we present the first study on the ability of an image-based training program in increasing the interobserver agreement and diagnostic accuracy in differentiating pit and vascular patterns of colo-rectal neoplasms using all the available endoscopic classifications (Kudo, Sano and NICE classifications). Such training seems mandatory for endoscopists using enhancing techniques especially when advanced lesions are planned to be treated endoscopically.

Disclosure of Interest: All authors have declared no conflicts of interest.
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 the HR group and 1977 in the IR group. There had been taking antithrombotic medication before CSP (antithrombotic group), and 1977 (77.7%) in 817 patients not taking antithrombotic medication (non-antithrombotic group). In the antithrombotic group, 106 patients with 283 polyps continued taking the antithrombotic medication; specifically, aspirin in 41 patients with 113 polyps, clopidogrel in 13 patients with 17 polyps, dual antiplatelet therapy (DAPT) in 13 patients with 18 polyps, antiplatelet agents other than clopidogrel in 17 patients with 68 polyps, anticoagulant agents in 20 patients with 56 polyps, and antiplatelet plus anticoagulant combination therapy in 2 patients with 11 polyps. Heparin bridging was used in 13 patients with 38 polyps. Post-CSP bleeding occurred in patients in the antithrombotic group, the specific antithrombotic medication being used was aspirin in 1 patient with 1 polyp (0.88%, 1/113), and aspirin and clopidogrel a patient with 2 polyps (11.1%, 2/18). No post-CSP bleeding occurred in patients on other antiplatelet or anticoagulant agents, or on heparin bridging. Clipping after CSP was more likely used in the antithrombotic group (i.e., 13.5% vs. 4.6%; p < 0.01). No significant difference in post-CSP bleeding rate was observed between lesions with and without clipping (0% vs. clipping vs. 0.34% without clipping; p = 0.55).

Conclusion: CSP is a safe procedure even in patients on antithrombotic medication, in particular aspirin. The postprocedural antithrombotic therapy should be continued after CSP. The risk of bleeding in patients on antithrombotic medication (post-procedural bleeding rate, 0.09–0.61%) is lower than in patients on non-antithrombotic medication (post-procedural bleeding rate, 2.54%). Therefore, CSP can be performed safely in patients on antithrombotic medication.

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

P0205 SAFETY OF COLD SNARE COLON POLYPECTOMY IN PATIENTS ON ANTIMONTHROMBOTIC MEDICATION
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Contact E-mail Address: miosakura@outlook.jp

Introduction: Cold snare polypectomy (CSP) has been increasingly used in recent years because post-polypectomy bleeding is less common with this technique than with conventional polypectomy. According to the 2012 update of the Japanese guideline for periprocedural management of antithrombotic medications, the post-polypectomy colonoscopic surveillance intervals for patients undergoing antithrombotic medication were predicted correctly in 90% of patients with OE. The post-polypectomy colonoscopic surveillance intervals were predicted correctly in 90% of patients with OE.

Conclusion: Optical enhancement allows to accurately predict the histology of diminutive colorectal polyps in vivo in real-time and meets the PIWI thresholds for reliable and discarding diminutive polyps without histological assessment and for leaving 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.
P2020 \AN INNOVATIVE 3D COLONOSCOPE SHAPE IMAGING SYSTEM BASED ON FIBER BRAG GRATING ARRAY
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1\Division of Gastroenterology and Hepatology. Department of Internal Medicine, Korea University College of Medicine, Seoul/Korea, Republic of
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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.

Methods: The aim of this study was to evaluate the accuracy and feasibility of the innovative 3D Colonscope using FBG. In the first part of the study, the FBG sensor was inserted into the working channel of a routine colonoscope in the first 70 cm from the tip of the scope. Then, the scope was placed in front of the monitor to confirm movement in 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 well correlated with the comparative findings at the same time. The mean average 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 colonoscope configuration. This flexible, thin and almost weightless FBG sensor based advanced image display would be a new technique for identification of colonoscope shape.

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

References
1. I.K. Yoo, B. Keum, W. Kim, S.J. Choi, G. Min, S.H. Kim, J.M. Lee, H.S. Choi, E.S. Kim, Y.T. Jeem, H.J. Chun, H.S. Lee, C.D. Kim. 1\Division of Gastroenterology and Hepatology. Department of Internal Medicine, Korea University College of Medicine, Seoul/Korea, Republic of
2\Department Of Internal Medicine, Institute of Digestive Disease and Nutrition, Korea University College of Medicine, Seoul/Korea, Republic of
permeability process after IRE by providing the real-time images. Additionally, Metallic mushroom swab as STOPA assessment method, included Annexin V, FITC and PI staining. This MP probe protocol would dramatically increase the accuracy of diagnostic techniques by providing in vivo cell images.

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

P0211 LARGE (>30MM) POLYP ENDOSCOPIC MUCOSAL RESECTION: OUTCOMES AND PREDICTORS OF SUCCESS

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2Department Of Surgery, Dudley Group Hospitals NHS Foundation Trust, Dudley/United Kingdom

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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 (SMA), histology and follow-up endoscopy were retrospectively collected. Binary logistic regression modelling was performed using SPSS, with components comprising of year, individual SMA 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%, of all whom achieved haemostasis. The 30-day complication rate was 1.1% (delayed bleeding in 1 patient), 54 (59%) were fully resected in one session, with overall EMR success in 75 (81.5%) after an average of 1.5 sessions. On multivariable analysis, significant predictors of complete resection at first attempt (Table 1) included: increasing year, sessile vs. flat morphology, and non-malignant histology. Malignant histology (p < 0.001) predicted overall EMR failure, but not age, gender, year of EMR, SMSA score, or concomitant argon plasma coagulation. Of the EMR failure group, 11/16 (69%) underwent surgical resection, of which 7/11 (64%) harboured malignant polyps with R0 endoscopic resection. The overall malignant histology rate in this cohort was 119/121 (91%). In this cohort, the R0 EMR success rates was 4/11 (36%), with no recurrence after 60 months of follow-up. The overall 12-month recurrence rates following complete EMR was 1.5%, with no significant factors affecting EMR durability identified.

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

<table>
<thead>
<tr>
<th>Factor</th>
<th>Odds Ratio</th>
<th>95% Confidence Interval</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
<td>1.41*</td>
<td>1.04–1.90</td>
<td>0.048**</td>
</tr>
<tr>
<td>Size (3–3.9 cm vs. &gt;4.0 cm)</td>
<td>2.96</td>
<td>0.85–10.3</td>
<td>0.088</td>
</tr>
<tr>
<td>Site (left vs. right colon)</td>
<td>0.46</td>
<td>0.09–2.48</td>
<td>0.367</td>
</tr>
<tr>
<td>Access (easy vs. difficult)</td>
<td>1.39</td>
<td>0.38–5.14</td>
<td>0.619</td>
</tr>
<tr>
<td>Morphology (sessile vs. flat)</td>
<td>3.38</td>
<td>0.14–11.0</td>
<td>0.043**</td>
</tr>
<tr>
<td>Non-malignant histology</td>
<td>41.5</td>
<td>3.74–461</td>
<td>0.002**</td>
</tr>
</tbody>
</table>

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

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

P0212 PROSPECTIVE RANDOMIZED CONTROLLED TRIAL COMPARING EFFICACY OF 1-L PEG-ASC WITH PRUCALOPRIDE AND 2-L PEG-ASC FOR BOWEL PREPARATION

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Introduction: Although numerous research has enabled decrease of the bowel preparation solution volume, it is still a major complaint of patients preparing colonoscopy. There have been studied that additional administration of laxatives could lessen the amount of enema formula with prokinetic effect. Prucalopride is a serotonin (5-HT4) receptor agonist which stimulate colonic mass movements and provide main propulsive force for defecation.

Aims & Methods: The aim of this study is to compare 2-L PEG-Asc or 1-L PEG-Asc plus prucalopride with prucalopride. Group A, patients referred for colonoscopy were divided into group A (the split-dose 2-L PEG-Asc) and group B (1-L PEG-Asc + prucalopride) randomly. During colonoscopy, each patient’s bowel preparation quality was evaluated with The Boston Bowel Preparation Scale (BBPS) and Arochick Preparation Scale (APS). The tolerability and satisfaction of patients was determined based on a questionnaire-based survey.

Results: One hundred patients received either 2-L PEG-Asc or 1-L PEG-Asc with prucalopride. Regarding colon cleansing outcome (BBPS and APS), the 1-L PEG-Asc with prucalopride group showed similar, but non-inferior results compared to the 2-L PEG-Asc group on both BBPS (7.65 ± 1.27 vs 7.52 ± 1.40, p = 0.586) and APS scales (93.3% vs 95%, p = 0.717). Tolerability was similar for both 1-L PEG-Asc with prucalopride and 2-L PEG-Asc.

Conclusion: 1-L PEG-Asc plus prucalopride preparation showed comparable result to traditional 2-L PEG-Asc preparation. 1-L PEG-Asc plus prucalopride preparation method could be an alternative method for bowel preparation which can relieve patient discomfort.

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

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 (>30mm) 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 time interval. Although SC1 (the first surveillance colonoscopy after initial EMR) is scheduled and executed in the appropriate time. Inadequate or absent scheduling of SC1 can have an impact on the detection of recurrent adenomas, increasing potential patient morbidity, adding unnecessary costs and potentially leading to repeated and avoidable procedures. The aim of this study was to conduct a quality improvement initiative aimed at increasing compliance in SC1 by understanding 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 lesion ≥20mm were eligible for inclusion. The process of following-up patients after EMR was divided at two levels: a dedicated team generated a monthly report identifying patients who underwent colon EMR using our endoscopy procedure documentation program. The appropriate timeline for SC1 for each patient who underwent colon EMR was identified and orders and scheduling for the colonoscopy follow-up were carried out. Evaluation of follow-up: A dedicated team member reviewed the status of patients who underwent colon EMR six months prior to the start of the QI study. If patient did not show up on their scheduled follow-up, phone calls were placed to contact the patient. Patients who had followed-up with their local gastroenterologists were recorded. All the data in intervention group was compared retrospectively with non-intervention group who were not tracked through quality improvement process. The mean follow-up time and follow-up rate (%) at 6 months at SC1 after index EMR was compared between the two groups.

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

Table 1: Demographic, clinical characteristics, follow up rates

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


Median(range) 7.3 months (4–66 months)

Site of polyp resection

Rectum 8% (2) 35% (9) 35% (21)
Sigmoid 4% (1) 23% (6) 13% (8)
Recto-sigmoid 0% 5% (3) 0% 3% (2)
Descending colon 0% 5% (3)
Transverse colon 15% (4) 12% (7)
Hepatic flexure 15% (4) 8% (5)
Ascending colon 23% (6) 37% (22)
Mid ascending colon 0% 5% (3)
Cecum 23% (6) 13% (8)
Cecum with appendiceal orifice 8% (2) 0% 3% (2)
Ileoceleal valve 4% (1) 8% (5)
Polyp histology

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

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References


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

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Introduction: Missed adenomas in the right colon are of major concern for inter- 
val colon cancer (CRC) development. There is evidence from cohort and rando- 
mized 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 ADR (AADR) in 
the right colon. Study outcomes effect sizes were calculated using RevMan 5.3 
software fixed or random effect model, as appropriate, and they are presented as 
OR[95%CI]. Heterogeneity was measured using the I² statistics. Publication bias 
was assessed by Funnel plots inspection and the quality of the meta-analyzed 
studies was assessed using the Jadad criteria.

Results: We identified 8 studies (5 cohort and 3 RCT, with 9 sets of data and 5639 
subjects – mixed CRC screening/surveillance and symptomatic population) that 
reported on the aforementioned outcomes. Two sets of data examined the yield 
of the second direct view as compared to that of a single inspection, one set 
examined the cumulative yield of two passes compared to that of an extended 
(timely) inspection of the right colon and six sets of data evaluated the yield of 
the second examination of the right colon with scope retroflexion compared to 
that of the single direct view. We were moderate risk of bias studies; suspicion 
for publication bias was detected in the direct view arm of the analysis. As 
compared to a single pass, the second right colon inspection significantly 
increased ADR (1.31 [1.15–1.48], I² = 69%). The effect size of ADR was 
higher in the direct view second pass arm (1.56 [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.
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>Distant</td>
<td>30 mm, Is, Kudo V, negative lifting sign</td>
<td>Tumor budding, excision margin, Kikuchi's level, depth with submucosal invasion</td>
<td>unfit for surgery (ASA IV)</td>
<td>T0, N0</td>
<td>R0, full-thickness resection; histology negative for residual disease</td>
<td>Endoscopy, EUS, and CT negative at 3 and 12 months; Endoscopy and EUS negative at 18 months.</td>
</tr>
<tr>
<td>2</td>
<td>Distant</td>
<td>20 mm, I sp, Kudo III, negative lifting sign</td>
<td>Tumor budding, Haggitt's level, excision margin, depth and width of submucosal invasion</td>
<td>refusing surgery (ASA II)</td>
<td>T0, N0</td>
<td>R0, full-thickness resection; histology negative for residual disease</td>
<td>Endoscopy, EUS and CT negative at 6 and 12 months.</td>
</tr>
<tr>
<td>3</td>
<td>Distant</td>
<td>18 mm, I sp, 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, I s, Kudo V, negative lifting sign</td>
<td>Haggitt's level, excision margin</td>
<td>unfit for surgery (ASA IV)</td>
<td>T1, N0</td>
<td>R0, full-thickness resection; histology positive for adenocarcinoma</td>
<td>Endoscopy, EUS and CT negative at 6 month. Patient died for severe cardiac disease at 8 months follow-up month.</td>
</tr>
<tr>
<td>5</td>
<td>Distant</td>
<td>0.7 mm, I s, 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>Distant</td>
<td>18 mm, I s, Kudo III, negative lifting sign</td>
<td>Tumor budding, excision margin, width of submucosal invasion</td>
<td>refusing surgery (ASA III)</td>
<td>T0, N0</td>
<td>R0, complete submucosal resection but no muscularis propria layer in the specimen; histology negative for residual disease</td>
<td>Endoscopy, EUS and CT negative at 6 and 12 months.</td>
</tr>
</tbody>
</table>

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

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Abstract No:P0216

<table>
<thead>
<tr>
<th>Complex (n = 27)</th>
<th>No complex (n = 27)</th>
<th>P Univ.</th>
<th>Odds ratio/Univ.</th>
<th>PMultiv.</th>
<th>Odds ratio/Multiv.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEX, n(%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male Female)</td>
<td>16 (59.2) 11 (40.8)</td>
<td>49 (60.4) 32 (39.6)</td>
<td>0.910</td>
<td>0.95 (0.39–2.31)</td>
<td></td>
</tr>
<tr>
<td>AGE, n(%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;70 years old &gt;70 years old</td>
<td>17 (63) 10 (37)</td>
<td>51 (63) 30 (37)</td>
<td>1</td>
<td>1.00 (0.41–2.46)</td>
<td></td>
</tr>
<tr>
<td>SMOKER, n(%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Yes Former smoker</td>
<td>12 (44.4)</td>
<td>30 (37)</td>
<td>0</td>
<td>1, 8 (0.50–6.43)</td>
<td></td>
</tr>
<tr>
<td>ANTICOAGULANT-ANTIAGGREGANT COAGULATION DEFICIT, n(%)</td>
<td>No Yes</td>
<td>22 (81.4)</td>
<td>5 (18.6)</td>
<td>61 (75.3)</td>
<td>20 (24.7)</td>
</tr>
<tr>
<td>CO2 insufflation, n(%)</td>
<td>No Yes</td>
<td>15 (55.6)</td>
<td>12 (44.4)</td>
<td>16 (19.8)</td>
<td>68 (80.2)</td>
</tr>
<tr>
<td>FATTY TISSUE, n(%)</td>
<td>No Yes</td>
<td>10 (37)</td>
<td>17 (63)</td>
<td>59 (72.8)</td>
<td>22 (27.2)</td>
</tr>
<tr>
<td>LOCATION, n(%)</td>
<td>Right Colon Left Colon Rectum</td>
<td>MORPHOLOGY, n(%)</td>
<td>17 (63)</td>
<td>5 (18.6)</td>
<td>16 (19.8)</td>
</tr>
<tr>
<td>LST-G LST-NG No LST SEVERE FIBROSIS, n(%)</td>
<td>No Yes</td>
<td>14 (51.9)</td>
<td>13 (48.1)</td>
<td>75 (92.6)</td>
<td>6 (7.4)</td>
</tr>
<tr>
<td>FATTY TISSUE, n(%)</td>
<td>No Yes</td>
<td>11 (40.7)</td>
<td>16 (59.3)</td>
<td>63 (77.8)</td>
<td>18 (22.2)</td>
</tr>
</tbody>
</table>

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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
A CT scan was performed in the 2 patients requiring 100 mcg of fentanyl, showing serositis in 1 patient and no abnormalities in the other. Both patients were admitted and managed conservatively (discharge day 6 and 2 respectively). The other 5 patients were discharged home on the same day after extended recovery. Predictors of PP were lesion size ≥45 mm (P = 0.003), Paris classification (P = 0.022) and intra-procedural bleeding requiring endoscopic control (IPB, P = 0.042). Lesion size ≥45 mm and IPB were also independent variables on multivariate analysis with an odds ratio of 2.8 (95% confidence interval 1.3-6.3, p = 0.012) and 2.3 (95% confidence interval 1.0-5.2, p = 0.042 respectively (Table 1).

Conclusion: Pain after EMR occurs in 20% of patients and is associated with longer lesion size and intraprocedural bleeding requiring endoscopic control in a multivariate analysis. If pain subsides after parenteral acetaminophen and does not recur the patient can be safely and confidently discharged to the step down recovery area and after medical review allowed to leave hospital. PP despite parenteral acetaminophen heralds a more serious scenario and imaging should be considered when stronger analgesics do not relieve the pain.

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

P0217 PERSISTENT PAIN AFTER COLONIC ENDOSCOPIC MUCOSAL RESECTION: PREDICTORS, A MANAGEMENT ALGORITHM AND OUTCOMES

Aims & Methods: We aimed to characterise potential predictors for PP and develop a simple and effective management algorithm for patients with PP based on the need for analgesics in recovery. Data on consecutive patients with a LSL referred for EMR at a single, tertiary referral centre were included. Patient and lesion characteristics and peri-procedural data were prospectively collected. Standard post EMR care included 2 hours in first stage recovery where clear fluids were given and collected. Standard post EMR care included 2 hours in first stage recovery with a LSL referred for EMR at a single, tertiary referral centre were included.

Results: No prospective data exist on the optimal selection of analgesics, the necessary was recorded. In the Paris classification, 0-Is was more frequent in the left colon than in the right colon (p = 0.042). An intra-procedural serositis in 1 patient and no abnormalities in the other. Both patients were admitted and managed conservatively (discharge day 6 and 2 respectively). The other 5 patients were discharged home on the same day after extended recovery. Predictors of PP were lesion size ≥45 mm (P = 0.003), Paris classification (P = 0.022) and intra-procedural bleeding requiring endoscopic control (IPB, P = 0.042). Lesion size ≥45 mm and IPB were also independent variables on multivariate analysis with an odds ratio of 2.8 (95% confidence interval 1.3-6.3, p = 0.012) and 2.3 (95% confidence interval 1.0-5.2, p = 0.042 respectively (Table 1).

Conclusion: Pain after EMR occurs in 20% of patients and is associated with longer lesion size and intraprocedural bleeding requiring endoscopic control in a multivariate analysis. If pain subsides after parenteral acetaminophen and does not recur the patient can be safely and confidently discharged to the step down recovery area and after medical review allowed to leave hospital. PP despite parenteral acetaminophen heralds a more serious scenario and imaging should be considered when stronger analgesics do not relieve the pain.

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

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 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 outpatient 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, uncontrollable malignancies, by trainee endoscopists (<500 colonoscopies), no agreements of polyp removal, and/or patients with continuation of anti-thrombotic agents. Outcome measurements were polyp removal rate (per-lesion analysis), complete polyp removal rate (per-patient analysis) and complications. Proportions of each endoscopic removal method according to size were also analyzed.

Results: A total of 2527 patients (mean age 66.8 ± 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 patients was 3.2. Mean size was 4.7 (±2.9) mm. Polyp removal rate (per-lesion) and complete polyp removal rate (per-patient) were 97.0% (95% CI 803) and 94.7% (95% CI 2527), respectively. Post-polypectomy bleeding requiring endoscopic hemostasis occurred in 7 patients (0.27%) and all origins of bleeding were of mucosal mucosal resection (EMR) and hot snare polypectomy (HSP). Post electrocoagulation syndrome requiring admission was occurred in one patient (0.04%) after pre-cutting EMR. Mean procedure time was 27.4 (±13.3) min. Proportions of each endoscopic removal method according to size were presented in an attached table. In 1-4 mm CRNs, both cold snare polypeotomy (CSP) (51.8%) and cold forceps polypectomy (CFP) (45.8%) for 1-4 mm CRNs were mainly 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%).
2. Prosst RL, Joos AK, Ehni W, Bussen D, Herold A. Prospective pilot study
Further improvements should focus on increasing healing potency of the fistula
postop changes, long-term success may be achieved in around half of all patients.

Results:
0–100%, depending on the size of perforation, type and nature of lesion and the
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, rectovesical n = 7, rectourethral = 2, other rectal fistula n = 3).

Results: In most situations a previous interdisciplinary discussion was reported
before an OTSC attempt, or patients refused to undergo re-operation. However,
special characteristics of these leaks were reported to make more difficult the
OTSC procedure compared with other GI locations, e.g. the site of the fistula is
nearby located to L. dentata and anal sphincter, it includes a localization with
little space for endoscopic manipulation, fibrous and scarry tissue is around the
fistula in rectum or anastomosis and there may be sometimes suture material in
situ. Thus, the tissue is often fixed and there is not so much tissue for grasping
tissue into the OTSC.

The diagnosis of recto-urogenital fistula was usually made by endoscopic visu-
ization and radiologically documented extravasation of contrast media into the
vagina, urethra, bladder or into other adjacent tissue. For fistula closure traum-
atric OTSC was mostly used, but sometimes other adjuvant therapeutic mod-
alities were also combined locally (e.g. histoacryl injection, fibrin glue, argon
plasma coagulation, brushing etc) or systemically (e.g. argon ascorbic 7.5 g i.v.)
to stimulate wound healing. The procedural success of occluding various types of
recto-urogenital fistulae by the OTSC system was found to be successful in 71% (59
cases) in short-term, while a durable clinical success was found in only
52% (0–100%) of all 25 patients. The success rate was lower in cases of highly
fibrotic chronic fistulae, after dislocation of clips and when using the atraumatic
clip. Thus, even in this distal problematic site usage of a traumatic OTSC should
be tried in experienced hands before surgical repair.

Conclusion: In conclusion, recto-urogenital fistula may be a potential indication
for OTSC application, after interdisciplinary consensus, when re-operation is
avoided, deemed to be too risky or cumbersome. Although this type of fistula
carries some difficulties because of little space, tissue tension and fibrous or
postop changes, long-term success may be achieved in around half of all patients.
Further improvements should focus on increasing healing potency of the fistula
or better after performing anastomosis creation (ascorbic acid?), to avoid post-
operative recto-urogenital leaks.

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

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2. Prosst RL, Joos AK, Ehni W, Bussen D, Herold A. Prospective pilot study of
anorectal fistula closure with the OTSC Proctology, Colorrectal Dis. 2015
3. Raitelh, M., Albrecht, H., Scheppeh, W. et al. Outcome, comorbidity, hos-
pitalization and 30-days mortality after closure of acute perforations and
postoperative anastomotic leaks by the over-the-scope-clip (OTSC) in an
5242-x.

Prosst RL, Joos AK, Ehni W, Bussen D, Herold A. Prospective pilot study
Further improvements should focus on increasing healing potency of the fistula
postop changes, long-term success may be achieved in around half of all patients.

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

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System in the endoscopic closure of gastrointestinal fistulae - a meta-analy-
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anorectal fistula closure with the OTSC Proctology, Colorrectal Dis. 2015
3. Raitelh, M., Albrecht, H., Scheppeh, W. et al. Outcome, comorbidity, hos-
pitalization and 30-days mortality after closure of acute perforations and
postoperative anastomotic leaks by the over-the-scope-clip (OTSC) in an
5242-x.
Results: According to endoscopic or pathologic judgment resection was complete in 40 or 30 patients, respectively. During hospital follow-up (12-14; median 4 days) abdominal pain, fever or local peritonitis were noted in 6 and bleeding in 3 patients (hypotension in 1) with antibiotics/transfusions/surgery needed in 4/0 patients. There was no hospital mortality. Among those with histologic incomplete resection (n = 21), surgery or FTR was performed in 5 patients, endoscopic follow-up is pending in 7 and revealed no residual neoplasia in 9. Among those with cancelled ESD or endoscopic incomplete resection (n = 11), surgery or FTR was performed in 5, endoscopic follow-up is pending in 2 and revealed no residual neoplasia in 4.

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. Klieber: 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

P022 CLINICAL USABILITY QUANTIFICATION OF A REAL-TIME POLYP DETECTION METHOD IN VIDEOCOLONOSCOPY

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Introduction: Colorectal cancer is the second leading cause of cancer death in US [1]. Its incidence can be mitigated by detecting its precursor lesion, the polyp, before it develops into cancer. Coloscopy is still the gold standard for colon screening though some polyps are still missed. This can be explained by technical limitations of colonoscopes (camera orientation, field of view, etc.), but also by human factors (such as experience). Several computational systems, being the majority still-frame-based, have been proposed to assist clinicians in this task [2] but, to the best of our knowledge, none of them is being used in the exploration room due to not meeting real-time constraints (40 ms max per image). In this abstract, we present a methodology to adapt and evaluate a real-time still frame-based method [3] to video analysis.

Aims & Methods: The still frame detection system used as reference [3] was based on an active learning method. We base the adaptation to video analysis on two aspects: (i) influence of the type of information used for polyp candidate 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 of the detector output over consecutive frames. The learning stage of the method used a public still-frame database (CVC-Clinic, 612 images) whereas the testing was done on a new set of 18 sequences with a polyp (10,294 images) collected with an Olympus colonoscope CIF-H190 at Hospital Clinic, Barcelona. Performance was evaluated using two groups of metrics: (i) standard image/video metrics: Precision, Recall and F1-Score (ii) ad-hoc clinical metrics (assessing the clinical usability). Among the latter group we define: a) Polyp detection rate (PDR), checking if a method is able to detect polyp at least in the first appearance of a polyp in the sequence and the first correct detection procedure (providing each other). b) First time recognition (RT), checking if a method is able to detect polyp at least in the first appearance of a polyp in the sequence and the first correct detection procedure (providing each other).

Disclosure of Interest: X. Dray: Xavier Dray has received consultant fees from Covidien GI solutions

All other authors have declared no conflicts of interest.

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

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Introduction: The use of Narrow Band Imaging (NBI) technology for in vivo histological prediction of colorectal polyps presents high accuracy in Referral Centers, particularly for diminutive polyps, which could be managed by the “reject 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 colon 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

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

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Introduction: Cold forceps polypectomy (CFP) is commonly used to remove diminutive colorectal polyps (<5 mm). In addition, jumbo biopsy forceps are superior to standard forceps for removing colorectal polyps. However, problems remain for CFP with regard to residual adenomatous tissue on histological evaluation after a complete endoscopic cold forceps polyp resection.

Aims & Methods: The aim of this study was to evaluate the efficacy and safety of jumbo forceps biopsy using narrow-band imaging endoscopy in patients with diminutive polyps. In addition, we evaluated the factors related to one-bite resection, and factors for carcinomatous lesions associated with a high frequency of delayed bleeding and the perioperative periods.

Results: A total of 503 patients were prospectively assessed, and 1015 polyps were resected. The median age of the patients was 65 years. The patients comprised 329 men (65%) and 174 women (35%). The polyp morphologies were 0-Ia lesions in 886 cases (87.0%), 0-IIa lesions in 65 (6.4%), 0-IIp lesions in 63 (6.2%) and 0-IIp lesions in 1 (0.1%). Polyps were most often resected in the ascending colon (289 lesions) or the transverse colon (262 lesions). Of all the polyps, 88% (896 lesions) were adenomas, 10% (100 lesions) were hyperplastic, and 0.3% were adenocarcinomas. The mean procedure and treatment times were 26.5 and 20.4 min, respectively. The complete resection rate was 99.3%. The rate of one-bite polypectomy was 71.8%, which included rates of 100%, 91.5%, 81.8%, 56.9%, and 40.5% for lesions 1, 2, 3, 4, and 5 mm in diameter, respectively. Delayed bleeding that required endoscopic hemostasis occurred in only one case, but no other adverse events occurred. The most important factor related to one-bite polypectomy was polyp size (≤5 mm; OR: 5.58), followed by macroscopic type of polyps (non-Ha; OR: 1.95).

Conclusion: In this large-scale multicenter prospective study, 99.3% of all diminutive polyps were completely resected by using jumbo forceps biopsy and magnified endoscopy with NBI. In addition, we were able to do one-bite resection for more smaller polyps (≤3 mm). Jumbo forceps biopsy appears to be adequate for resecting diminutive polyps if no residual tissue is visible by using magnified endoscopy with NBI.

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

References

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

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Introduction: Heparin bridging therapy (HBT) is recommended for patients administered anticoagulants who have a high thrombotic risk and who undergo a high-risk procedure such as endoscopic submucosal dissection (ESD) or endoscopic mucosal resection (EMR). However, HBT is actually related to a high frequency of delayed bleeding. Aims & Methods: Our aim is to analyze bleeding and coagulation markers in the perioperative periods of patients with oral anticoagulants during the period from January 2013 to March 2017. Generally, administration of warfarin was continued during the perioperative period. Patients who underwent ESD or EMR were administered a direct oral anticoagulant (DOAC) during the period from January 2013 to September 2016. Patients aged 20 to 75 years with diminutive polyps were enrolled in this study. When lesions were found, we used magnification endoscopy with narrow-band imaging (NBI) in all the cases.

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 antithrombotic agents had delayed bleeding among the patients in whom administration of warfarin was continued with 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 EMR and had a hemorrhagic coagulopathy.

Conclusion: For peroperative management of anticoagulants in patients undergoing ESD or EMR, continuous use of warfarin within the therapeutic range is recommended. DOAC should be carefully managed with attention to hemorrhagic risk and coagulable condition.

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

References
TABLE 1: DETECTION RATES BY INDICATION

<table>
<thead>
<tr>
<th></th>
<th>ADR</th>
<th>OR (95% CI)</th>
<th>p-value1</th>
<th>aOR* (95% CI)</th>
<th>p-value1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% (n)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-polypectomy surveillance</td>
<td>49.3 (629/1275)</td>
<td>2.2 (2.2-2.9)</td>
<td>&lt;0.001</td>
<td>2.2 (1.9-2.5)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>FIT+</td>
<td>54.0 (928/1718)</td>
<td>3.0 (2.7-3.4)</td>
<td>&lt;0.001</td>
<td>3.0 (2.6-3.4)</td>
<td>0.001</td>
</tr>
<tr>
<td>Direct screening</td>
<td>31.6 (174/550)</td>
<td>1.2 (1.0-1.5)</td>
<td>0.085</td>
<td>1.4 (1.1-1.7)</td>
<td>0.005</td>
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<tr>
<td>SDR</td>
<td>28.0 (79/2832)</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
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<tr>
<td>Post-polypectomy surveillance</td>
<td>4.2 (53/1275)</td>
<td>3.5 (2.6-5.3)</td>
<td>&lt;0.001</td>
<td>3.4 (2.2-5.3)</td>
<td>&lt;0.001</td>
</tr>
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<td>FIT+</td>
<td>1.9 (32/1718)</td>
<td>1.5 (0.9-2.5)</td>
<td>0.091</td>
<td>1.5 (0.9-2.5)</td>
<td>0.094</td>
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<td>Direct screening</td>
<td>3.3 (85/250)</td>
<td>2.7 (1.5-4.8)</td>
<td>&lt;0.001</td>
<td>2.8 (1.6-5.0)</td>
<td>0.001</td>
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<tr>
<td>Digestive symptoms</td>
<td>1.2 (35/2832)</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
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<tr>
<td>AADR</td>
<td>Post-polypectomy surveillance</td>
<td>23.1 (294/1275)</td>
<td>2.0 (1.7-2.4)</td>
<td>&lt;0.001</td>
<td>1.8 (1.5-2.2)</td>
</tr>
<tr>
<td>FIT+</td>
<td>36.8 (632/1718)</td>
<td>4.0 (3.4-4.6)</td>
<td>&lt;0.001</td>
<td>3.9 (3.3-4.6)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Direct screening</td>
<td>14.9 (82/550)</td>
<td>1.2 (0.9-1.5)</td>
<td>0.177</td>
<td>1.3 (1.1-1.8)</td>
<td>0.023</td>
</tr>
<tr>
<td>Digestive symptoms</td>
<td>12.8 (362/2832)</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>CRCRD</td>
<td>Digestive symptoms</td>
<td>5.8 (165/2832)</td>
<td>13.1 (5.8-29.6)</td>
<td>&lt;0.001</td>
<td>11.6 (4.7-28.7)</td>
</tr>
</tbody>
</table>

* 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.
Conclusion: SpyGlass cholangioscopy system can be safe and useful for definite diagnosis with high accuracy in patients with indeterminate bile duct lesions, and successfully guided stone therapy. Further prospective multicenter trials of the system are warranted in the future.

P0230 DIAGNOSTIC AND THERAPEUTIC ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY (ERCP) IN INFANT AND CHILDREN: A LARGE RETROSPECTIVE STUDY

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Introduction: Endoscopic retrograde cholangiopancreatography (ERCP) is increasingly being used in the diagnosis and management of biliary and pancreatic disorders in pediatric patients.

Aims & Methods: To evaluate the indications, success rate, diagnostic and therapeutic yields, and complications of ERCP performed in Chinese children. A retrospective study was conducted in an academic, tertiary care, medical center, in which all children undergoing ERCP between 2005 to 2016 were identified from endoscopy databases. Data on demographics, indication, ERCP findings, therapeutic interventions performed and complications were collected.

Results: A total of 288 children (mean age 9.7 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 obstructions (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 were 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 were operated on at our center from September 2005 to July 2016 were retrospectively reviewed. Data regarding to patients baseline characteristics, procedure-related details and adverse events was recorded and analyzed.

Results: A total of 304 procedures were performed in 291 patients met inclusion criteria for the study. The rate of adenoma recurrence after EMR was 4% (25/525). Complications occurred for only 13 patients (4.3%), including 12 cases of post-ERCP pancreatitis and 1 case of bleeding. No severe pancreatitis, or perforation was noted.

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 ≥20 mm, high grade dysplasia, use of argon plasma coagulation (APC) and intraprocedural bleeding (IPB), have been well documented in literature. However, it is unknown if the latest generation dual-focus (DF) colonoscopes ability to visualize subtle residual neoplasia, has improved the rate of complete EMR.

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

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

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

Disclosure of Interest: All authors have declared no conflicts of interest.
P0234 WALLED-OFF NECROSIS (WON): OUTCOMES OF AN ALGORITHMIC APPROACH TO NECROSECTOMY
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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.
Aims & Methods: This study was intended 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.
Results: This observational study included 45 consecutive patients with WON who had suboptimal treatment response to EUS-guided transluminal drainage and subsequently underwent necrosectomy. The conventional technique using a diagnostic or therapeutic gastroscope involved removal of necrotic debris 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 120mg gentamicin and 2% hydrogen peroxide was reserved for sterilizing 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. 66.7%, 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 = 0.64, 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. Most PD patients are asymptomatic, but a few may present with symptoms in the form of recurrent acute pancreatitis (RAP), chronic pancreatitis (CP) or pancreatic-type pain. It is imperative to treat PD associated with RAP as early as possible to prevent 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 (ERCP) for the treatment of pancreas divisum (PD) associated with recurrent acute pancreatitis (RAP) in children. We retrospectively analyzed patients of PD associated with RAP who were younger than 18 years old from January 2011 to December 2015 in our center. All the patients were diagnosed and treated with ERCP. Patients of complete PD associated with RAP underwent endoscopic sphincterotomy, papillary balloon dilatation and/or intraductal ultrasound sonography to remove all choledochal debris. Patients of incomplete PD underwent biliary stenting (ESCS). Patients of incomplete PD underwent biliary endoscopic sphincterotomy combined with dorsal duct stenting (Bi-ESCS). ERCP-related data, complications and other relevant data were collected. The time-long time follow up was conducted after removal of the dorsal duct 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). ERCP-related complications were mild with a rate of 9.5% (2/21). One was acute mild pancreatitis and the other was hyperamylasemia, both of which were managed conservatively. During follow up from 15 to 74 months (mean 33.9 months), all patients had pain relief with a relief rate of 100%, of which 10 were asymptomatic with no longer onset of acute pancreatitis. During follow-up, there was no recurrence of PD-related symptoms in all children and all presented normal in weight, growth, intelligence.
Conclusion: The techniques of EESCS and Bi-ESCS under ERCP are safe and effective methods to manage PD associated with RAP in pediatric patients. It seems very vital for such children to undergo endoscopic interventions as early as possible in order to avoid developing CP.
Disclosure of Interest: All authors have declared no conflicts of interest.

P0236 ENDOSCOPIC BILARY SPHINCTEROTOMY IN MALIGNANT BILIARY OBSTRUCTION: IS IT INDICATED IN CASE OF STENT PLACEMENT? A META-ANALYSIS
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Disclosure of Interest: All authors have declared no conflicts of interest.
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Introduction: Endoscopic biliary stenting is the treatment of choice in presence of malignant biliary obstruction (MBO), especially if palliative treatment. The role of endoscopic biliary sphincterotomy (EBS) before stent insertion is not clearly defined. The primary outcome of our meta-analysis was to assess the technical success of biliary (plastic or metal) stent insertion. Secondary outcomes included early complications within 30 days from ERCP and late complications which (from 30 days since ERCP).

Aims & Methods: We performed a literature search by using PubMed, SCOPUS, Google Scholar and the Cochrane Central Register of Clinical Trials (up to February 2017) using full-text studies assessing the efficacy and safety of biliary stent positioning, with and without EBS, in patients with MBO not suitable to surgery.

Results: 14 papers were assessed via full text for eligibility. 8 articles were included leaving 6 prospective studies (total of 711 patients). Technical success: The overall rate of biliary stent insertion was not significantly different: 384/392 patients (98%) in the no-EBS group versus 331/339 (97.6%) in the EBS arm (OR: 1.05, 95%CI: 0.42–2.63).

Early complications: The overall early AEs developed in 43.2% (11%) of patients without EBS versus 68.3% (20.1%) of patients who received EBS, with a significantly different OR (0.55; 95%CI: 0.33–0.92). Post-ERCP pancreatitis (PEP) was no significantly different in the two groups: 24/392 (6.2%) in the no-EBS group versus 17/339 (5%) in the EBS group (OR: 1.13; 95%CI: 0.63–2.09). 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: 0.09; 95%CI: 0.03–0.34). The rate of duodenal perforation was not significantly different between groups: 4/392 (1.0%) in the no-EBS group versus 4/420 (1.1%) in the EBS group (OR: 0.52; 95%CI: 0.29–0.97). Early cholangitis was significantly more frequent in patients who didn’t receive EBS: 13/392 (3.3%) patients in no-EBS group versus 5/298 (1.7%) subjects in the EBS group (OR: 0.38; 95%CI: 0.17–0.83). Early mortality rate was 0% in both groups. Late complications: No significantly difference occurred in the overall adverse events in the two groups: 50/251 patients (19.9%) in no-EBS group vs 38/201 subjects (18.9%) in the EBS group (OR: 0.93; 95%CI: 0.56–1.53). No significantly differences in stent occlusion (11.6% patients in no-EBS group vs 11.4% EBS group) were found. The efficiency of biliary stent migration (4% in no-EBS group vs 5.5% - OR: 0.81; 95%CI: 0.29–2.25). No significantly differences in late cholangitis (2.6% in no EBS vs 0% in EBS group - OR: 1.83; 95%CI: 0.17–19.85). Long-term mortality was not significantly different (2.55% in no-EBS group and 2.9% in the EBS arm - OR: 1.18; 95%CI: 0.42–3.29).

Conclusion: Our meta-analysis showed no significantly differences in technical success and in PEP. In consideration of the significantly increase of the overall AEs in the EBS group, and in particularity of the bleeding and cholangitis, the EBS seems not be recommended in patients not suitable to surgery undergone biliary stenting.

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

References

PO238 OUTCOME OF ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY IN PATIENTS WITH PERIAMPULLARY DIVERTICULUM

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Introduction: Pancreatic ductal carcinoma (PD) is frequently asymptomatic, usually encountered in patients undergoing endoscopic retrograde cholangiopancreatography (ERC). 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 PAD. A total of 1164 ERCP procedures were performed in 833 patients in a single center by single operator from January 2012 to October 2016 after excluding PD post liver 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.

Baseline characteristics and comparison of findings

<table>
<thead>
<tr>
<th>BASELINE CHARACTERISTICS AND COMPARISON OF FINDINGS</th>
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<tr>
<td><strong>PO237 ENDOscopic pancreatic sphincterotomy</strong></td>
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<td><strong>PO238 OUTCOME OF ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY IN PATIENTS WITH PERIAMPULLARY DIVERTICULUM</strong></td>
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<tr>
<td>Age (mean±SD)</td>
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<td>Sex (male/female)</td>
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<td>Patients with bile duct stones</td>
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<td>Patients with bile duct stones (n = number of patients %)</td>
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<td>CBD cannulation (easy/difficult)</td>
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<td>Patients with bile duct stones (n = number of patients %)</td>
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<td>Complications (biliary/pancreatic/perforation)</td>
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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 near diverticulum) was found in 8 pts (16.3%). Patients with PAD had mean age of 59.10 years (range 18 to 84 years) 17 were < 50 yrs while 32 > 50yrs, compared to controls mean age 52.74 yrs (range 12 to 95 yrs) 230 were < 50 yrs while remaining more than 50yrs. P-value < 0.05. PAD predominantly occurred in women, individuals aged >50 yrs. In 35 patients with PAD had increase 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 (PRECUT)/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 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.
P0239 COMPARISON OF DIGITAL VS FIBEROPTIC CHOLANGIOSCOPY IN PATIENTS REQUIRING EVALUATION OF BILE DUCT DISEASE OR TREATMENT OF BILIARY STONES

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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 prospective review of 68 cases needing cholangioscopy, and which were performed in our department. Patients undergoing their first cholangioscopy or exhibiting 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).

Results: 30 women and 38 men with a mean age of 61 years underwent cholangioscopy.

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

References
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**A244**

**P0240 EMERGENCY ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY IN SUPER-ELDERLY PATIENTS WITH SEVERE ACUTE CHOLANGITIS: CAN WE PERFORM THE PROCEDURE SAFELY?**

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Introduction: Tokyo Guidelines 2013 (TG13) have been used worldwide to assess the diagnostic criteria and severity grading of acute cholangitis. Acute cholangitis is a life-threatening disease, and the emergency biliary drainage procedure is necessary for moderate or severe cases, according to TG13, with an aging society, necessity to perform endoscopic retrograde cholangiopancreatography (ERCP) in elderly patients is increasing. However, few studies have examined the efficacy and safety of emergency ERCP in super-elderly patients with severe cases.

Aims & Methods: In this study, we examined the efficacy and safety of emergency ERCP in super-elderly patients with moderate to severe acute cholangitis, according to TG13. We performed 178 emergency ERCP 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, ERCP procedure (examination time, endoscopic biliary sphincterotomy (EST) pre-cut papillotomy, treatment success rate, presence or absence of peripapillary diverticula and papilla after EST, suture dosage), ERCP-related complications (bleeding, perforation, post-EST pancreatitis, ERCP pneumonia, death within 30 days after ERCP procedure), anesthesia-related complications (blood pressure decrease, pulse reduction, respiratory depression).

Results: We examined 69 males (52.3%) and 63 females (47.7%). Women accounted for a larger proportion in the super-elderly group (71% vs 40%). The average age was 92.5 years (range, 90–97) in the super-elderly group and 77.9 years (range, 50–89) in the non-super-elderly group. The super-elderly group comprised 54 ERCP procedures (moderate, 32; severe, 22) against 124 ERCP procedures (moderate, 104; severe, 20) in non-super-elderly group, and severe 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 incidence of other diseases and receiving anticoagulant medication between the two groups. The causes of acute cholangitis were common in both groups with common bile duct stone (46% vs 46%), followed by malignant obstruction (9% vs 12%) and benign stenosis (0% vs 5%), but no difference was found.

Regarding the ERCP procedure, the examination time was longer in the super-elderly group (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 peripapillary diverticula. The patients were sedated using midazolam (MDZ) plus pentazocine (PTZ). The amount of anesthetic used was less in the super-elderly group (MDZ 2.2 ± 3.3 mg vs p < 0.001, PTZ: 3.1 ± 5.4 mg, p = 0.005). Regarding (i) ERCP-related and (ii) anesthesia-related complications, these were higher in the super-elderly group [(i) 15% vs 9%, p = 0.293; (ii) 17% vs 7%, p = 0.040]. Regarding (i) complications, the complication rate was highest in the super-elderly group (9% vs 0.1%), and 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 incidence of other diseases and 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.

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

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

Aims & Methods: The aim of the study was to evaluate the efficacy and morbidity of endo-biliary RF for the treatment of residual endo-biliary dysplastic lesions after endoscopic ampullectomy. A prospective open-label multicenter study
included 20 patients with low-grade dysplasia (DBG) or high grade (DHG) lesion. The lesion was excised by a double-balloon enteroscopy. In relation to a residual adenomatous bud after endoscopic ampullectomy for ampullary adenoma, the lesions should extend to a maximum length of 20 mm in the CBD. Endoscopic retrograde cholangio-pancreatectomy (ERCP) was performed in the Harbour EndoHPB probe (EMcision, UK) (effect 8, power 10Watts, 30 s). Biopsy ± 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 endoscopic ampullectomy 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 ductal 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 satisfactory in the invasive cases. DBG resections 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 radiopaque 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 angiostasis requiring biliary stent replacement. One patient had an episode of unexplained spontaneously resolved abdominal pain (normal CT scan, colonoscopy and biological tests). At M12, one patient presented with a biliary stricture resolved by dilation and a calibration biliary stent.

Conclusion: Endoscopic RFA performed on residual endo-biliary dysplastic buds after ampullectomy is an alternative to surgery, with a rate 55% dysplasia eradication at 12 months after a single RFA session. Regular monitoring of these patients is still necessary considering recurrence rate. Multiple RFA sessions may be proposed in case of incomplete results.

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

PO2424 EXPERT VALIDATION OF A NOVEL MECHANICAL CUTTING PAPILLA

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Introduction: Simulation-based training has become an important pillar in competence-based learning in medicine, especially in training novice endoscopists. Several simulators have been validated and implemented in training curricula pertaining gastrointestinal endoscopy. Surprisingly, limited data are available on simulators in ERCP training, despite the fact that ERCP seems to be an ideal task for simulation-based training due to its technical complexity. Available simulators are difficult to implement in training settings due to the lack of realism or use of live animals or ex-vivo components. Recently, the Boskoski-ideal platform for simulator-based training due to its technical complexity. Several simulators have been validated and implemented in training curricula for competence-based learning in medicine, especially in training novice endoscopists. ERCP was performed on 40 ERCP experts. All experts were men, originating from 16 different countries with a mean age of 49.6 years (range 37-65). The participating ERCP experts were gastroenterologists (92.5%), 3 participants were surgeons (7.5%). The mean number of years of endoscopic experience was 20.9 (range 10-40). Experts’ opinion on realism of performing a sphincterotomy was rated 6.98 on a ten-point Likert scale, resemblance of the performed maneuvers 7.60 and tactile feedback 6.78. When asked if the cutting was perceived as expected, experts rated 6.35 and the cutting result was rated 7.30 on a ten-point scale. The potential as a training tool of the cutting papilla in training novices was rated 3.93 on a four-point scale, and there was a high agreement among the experts to include the papilla in the training of novices (3.93 on a four-point scale).

Conclusion: This is the first mechanical papilla available for training sphincterotomy on the Boskoski-Costamagna ERCP Trainer and demonstrates good expert validation. ERCP experts highly agree and added value of this papilla in the training curriculum of novice endoscopists.

Disclosure of Interest: M.J. Bruno: We have received a unrestricted research grant with Cook Medical, Limerick, Ireland

All authors have declared no conflicts of interest.

PO2423 MEDICO-LEGAL CLAIMS IN GASTROINTESTINAL ENDOSCOPY: DOES PROCEDURE RISK RELATE TO SUCCESSFUL OUTCOMES?

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Introduction: Complications in endoscopy can lead to adverse clinical events. The likelihood of developing a complication depends on the degree of risk associated with a certain procedure. It is generally noted that riskier the procedure larger is the chance for a complication and higher the likelihood for medico legal issues. This is relevant as in the event of risk materialising, patients make seek legal redress. The aim of this study was to investigate the degree of success of medico legal claims based on the nature of the endoscopic procedure and the outcome of the claims.

Aims & Methods: The National Health Service Litigation Authority (NHSLA) database in U.K. was searched using a Freedom of Information request (F/2405) for all cases with ERCP and ERCP related medico legal claims notified to the NHSLA between 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</th>
<th>SUCCESSFUL</th>
<th>UNSUCCESSFUL</th>
</tr>
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<tbody>
<tr>
<td>Gastroscopy</td>
<td>10</td>
<td>7</td>
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<tr>
<td>PEG</td>
<td>12</td>
<td>19</td>
<td>12</td>
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<tr>
<td>Sigmoidoscopy</td>
<td>17</td>
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<tr>
<td>ERCP</td>
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<td>26</td>
<td>24</td>
</tr>
<tr>
<td>Colonoscopy</td>
<td>50</td>
<td>40</td>
<td>28</td>
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</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.

PO244 VISUALIZATION OF INTRA-AMPULLARY CHOLEDOCHOCOELE WITH CONTRAST MEDIUM FOR EVALUATING TECHNICAL DIFFICULTY IN ERCP

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Introduction: Cholecdochocele has been rarely recognized. We focus on intra-ampullary cholecdochocele (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 current study.

Introduction: This study aims to recognize the morphology of intra-ampullary biferucation of bile duct (BD) and pancreatic duct (PD). Its variation allows the elucidation of the reason for difficulties in cannulation. The current study is a retrospective consecutive case study that is conducted in a single facility, with a study period of 8 years. Our strategy for ERCP was carried out with the contrast medium injected via a catheter, but without guide wire (GW) seeking. Intra-ampullary biferucation 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 naive papilla and both of BD and PD must be visualized. The following factors were evaluated: ampulla shape, number of orifices, angle of IAC. The mean age of the claims was used for statistical analysis.
Results: There were cases of 1223 naïve papilla out of 2226 cases in total. The success rate to access BD with naïve papilla was 97.2% (1195/1223) and overall post-ERCP pancreatitis (PPE) 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 59.0% (48/82), 2.0% (0/0) and 7.0% (2/29), respectively. IAC was significantly higher in the L/N type (p < 0.01) and F type (p < 0.05) than in the D type. The choledochocoele shapes of Sp, Sh and Q were 59.3%, 13.0% and 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 63.0% and 37.0%, respectively. Patients of IAC in Ah were found in L/N shape only. Patients of 53.7% (29/54) required GW placement on PD to access BD. IAC was alternat-ively seen on MRCP in 10% (3/30).

Conclusion: Choledochocoele is rarely seen even on cERCAP, in addition the visual-ization on cERCAP has been rarely reported. IAC could be actually visualized with prudent contrast medium injection. Our results showed miscellaneous variations in the intra-ampullary images. IAC would require refractory pursuit of the axis alignment due to its unexpected pathway within ampulla to access BD. Moreover 6.0% prevalence of IAC should not be ignored. IAC can be one of the factor of refractory cannulation. cERCAP with focus on ampulla could the difficulty in cannulation. On the other hand, WGC would not do. The previous randomized control trials showed no difference to access BD between WGC and cERCAP. However, both procedures still remained cases with refractory cannulation. It has been reported that refractory cannulation might cause PEP1). Therefore careful attention should be paid while passing through IAC to avoid PEP. According to ampulla shapes, especially of L/N and F, cERCP would be recommended to be performed. According to IAC in Ah, cERCP would not be recommended to access BD due to unexpected pathway within ampulla.

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

Reference
Disclosure of Interest: The aim of this study was to evaluate the diagnostic efficacy of EUS-FNA for a pancreatic mass using the CB method without rapid on-site cytology retrospectively. A total of 206 patients with pancreatic masses (head: 87; body: 86; tail: 33) who underwent EUS-FNA using a GF-U1240P or GF-UL240P (Olympus Medical Systems LTD, Tokyo, Japan) between June 2005 and November 2016 were included in this study. The needles used were 22/25G needles. At least two passes were made during the procedure (mean 3.0 ±0.9 passes). Adequate specimens were regarded to be those in which whitish flag was macroscopically achieved. The samples were immediately fixed in 10% formalin and processed by the cell block method using sodium algin. Rapid on-site cytology was not performed. All samples were stained by hematoxylin and eosin, periodic acid Schiff and Azan-blue, and immunostaining for synaptophysin, chromogranin A, CD56. The final diagnosis was based on histological findings of surgically resected specimen, image diagnosis and clinical course for more than six months.

Results: The final diagnosis was malignancy in 184 patients (pancreatic ductal cancer (PDC), 171; neuroendocrine tumor (NET), 7; malignant lymphoma, 2; metastasis of malignant melanoma, 1; solid pseudopapillary neoplasm, 1), and benignity in 23 patients (autoimmune pancreatitis (AIP), 11; chronic pancreatitis, 7; organizing pancreatic pseudocyst, 4; IPMN, 1). Adequate tissue sampling was successfully achieved in 197/199 (99.5%). Of 199 patients with successful tissue sampling, sensitivity, specificity and accuracy for malignancy were 98% (175/179), 95% (19/20) and 97% (194/199). The diagnostic accuracy of PDC only by HE staining was 97% (129/137) (Class V 97; IV 4; III 6; II 2), and by adding immunohistochemical staining, the accuracy of PDC was 98% (167/170) (Class V 112; IV 6; III 5; II 2). In the cases of highly suspicious NET, all samples were stained by chromogranin A and synaptophysin and the diagnostic accuracy of NET was 100% (6/6). No procedure-related complications occurred.

Conclusion: EUS-FNA of a pancreatic mass with the CB method without rapid on-site cytology showed high accuracy for definitive diagnosis.

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

P0250 A COMPARATIVE STUDY BETWEEN EUS-GUIDED BILIARY DRAINAGE AND PERCUTANEOUS BILIARY DRAINAGE IN PATIENTS WITH MALIGNANT BILIARY OBSTRUCTION AND FAILED ERCP

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Introduction: Patients with malignant biliary obstruction conventionally undergo percutaneous transhepatic biliary drainage (PTBD) after failed endoscopic retrograde cholangiopancreatography (ERCP) (1). While PTBD is effective, it is associated with significant morbidity, such as bile leakage, bleeding, and pneumothorax, and involves uncomfortable external drainage (2). Endoscopic ultrasound-guided biliary drainage (EUS-BD) is a minimally invasive endoscopic procedure increasingly offered for malignant biliary obstruction after failed ERCP (3). Although a recent meta-analysis reported better clinical efficacy and superior safety of EUS-BD when compared to PTBD (4), no prospective randomized comparison has been performed. Aims & Methods: We aimed to compare efficacy and safety of EUS-BD to PTBD in patients with malignant biliary obstruction after failed ERCP at a single tertiary referral center from mainland China. From November 2011 through December 2015, consecutive patients undergoing EUS-BD or PTBD for malignant biliary obstruction after failed ERCP were included. Demographical, biochemical, and outcome data were registered for each group. The primary outcomes included technical success rate and incidence of complications, the secondary outcomes were clinical success rates and re-intervention rate.

Results: A total of 93 patients (mean age 68 ±13.5 years, 49 males) were included, 33 in the EUS-BD group and 60 in the PTBD group. Both groups were similar in terms of age, gender, baseline bilirubin and functional status. Technical success was achieved in 32 (97%) of 33 patients in the EUS-BD group and in 57 (95%) of 60 patients (p > 0.05) in the PTBD group. The clinical success (jaundice relief: reduction in serum bilirubin by 50% within the first month) was achieved in all patients with technical success (32/32, 100% EUS-BD vs. 57/57, 100% PTBD). Procedure-related complication rates were higher in the PTBD group (18/57, 31.6%; 5 bleeding, 5 catheter site infection, 4 bile leaks, 2 cholangitis, and 2 tube malposition) than in the EUS-BD group (3/32, 9.4%; 2 bleeding and 1 cholangitis) (p = 0.018). Rate of re-intervention appeared to be lower in the EUS-BD group (3/32, 9.4%; 2 bleeding and 1 cholangitis) compared to the PTBD group (17/57, 29.8%; 6 stent occlusion, 5 catheter site infection, 4 bile leaks, and 2 tube malposition) (p = 0.009).

Conclusion: Despite similar high technical and clinical success rates compared with PTBD, EUS-BD was associated with reduced rate of complications, reduced rate of re-interventions. EUS-BD seems to be a better alternative than PTBD for malignant biliary obstruction after failed ERCP. Disclosure of Interest: All authors have declared no conflicts of interest.
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 AXIOMS, 15 mm × 10 mm) or two double pigtail plastic stents (7 Fr × 4 cm). Reintervention in persistently symptomatic patients included additional stent placement, percutaneous drainage and/or endoscopic necroscopy. 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 number 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 56 patients.

Results: 60 patients were randomized to LAMS (n = 31) or plastic stent (n = 29) placement. While there was no significant difference in the no. of reinterventions (median 1 [IQR 1–2] for both stent types, p = 0.78), the procedural duration was significantly shorter (15 vs. 42.5 mins, p < 0.001) and stent-related adverse event rate was significantly higher with LAMS placement (32.3 vs. 6.9%, p = 0.02). At an interim audit, significant adverse events (delayed bleeding [n = 3], buried stent [n = 2], biliary stricture [n = 3]) were observed in the LAMS cohort after 3 weeks post-intervention. This necessitated an amendment to the study protocol whereby a CT scan was obtained at 3 weeks following 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 = 0.90). Also, there was no significant difference in treatment success, SIRS resolution, clinical adverse events, readmissions or length of hospital stay between the cohorts (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. Varadaraju: Consultant for Boston Scientific Corporation and Olympus America Inc.
All other authors have declared no conflicts of interest.

References

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 uptill now and also intraductal biopsies were used. The yield are difficult to diagnose with any modality used. Brush cytology under ERCP guidance was used uptill now and also intraductal biopsies were used. The yield was hardly around 60% using all together. We started doing EUS localization of these masses and comparing it to ERCP guided brush cytology in the diagnosis of these masses.

Aims & Methods: We aimed to study the efficacy of EUS guided FNA for diagnosing 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 FNA performed with a 25 G needle making 2 to 5 passes and material sent for cytology. Same patients subjected to ERCP. A wide papilotomy was performed and over the wire cytology brush was used and brush cytology was obtained. Two passes were made and material taken on a slide and sent for cytology after wet fixation.

Results: Total number of cases 56 Age (range) 57.2 ± 13.6 Male to Female 40: 16 Total Serum Bilirubin 90 mg/dl) 5.9

Conclusion: EUS FNA is a very effective method for diagnosis of distal bile duct masses with a 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.

Reference

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 provides an excellent medium to transfer ultrasound waves. 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), and may provide excellent medium for delivery of tumour cytopathology. Obtaining a tissue diagnosis from lymph nodes which are difficult to access may lead to erroneous diagnosis and planning of treatment.

Aims & Methods: The feasibility and safety of the trans aortic endoscopic ultrasound guided fine needle aspiration (EUS-GUIDED FNA) of lymph nodes on the ‘far-side’ of major blood vessels using a newly designed trans-aortic endoscopic ultrasound probe with a needle sheath is assessed.

Methods: The study included patients who had biopsy proved lung cancers or underwent video-assisted thoracoscopic surgery. EUS-GUIDED FNA of lymph nodes on the ‘far-side’ of major blood vessels were performed after an interim audit. Significant adverse events (delayed bleeding [n = 3], buried stent [n = 2], biliary stricture [n = 3]) were observed in the LAMS cohort after 3 weeks post-intervention. This necessitated an amendment to the study protocol whereby a CT scan was obtained at 3 weeks following 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 = 0.90). Also, there was no significant difference in treatment success, SIRS resolution, clinical adverse events, readmissions or length of hospital stay between the cohorts (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: None declared

References
A248 United European Gastroenterology Journal 5(5S)
Aims & Methods: We aimed to evaluate the feasibility, yield, and safety of EUS-guided drainage of lung tumors and pancreatic fluid collections.

We undertook a retrospective case series of 12 consecutive patients with suspected lung cancer or tuberculosis who underwent transaortical FNA during a study period of 7 years. In all cases, the para-aortal lesion was the only site suspicious for malignancy (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, four patients had right-sided lesions, and one presented with both left and right thoracic lesions. Four patients have enlarged para-aortic lymph nodes (mean size 18 mm, range 8–22 mm), suspicious for IASLC stations 5n (n=1) and 6n (n=3). 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 left lung or mass lymph node was performed. The para-aortal area was observed on EUS for 5 minutes to assess for immediate procedure-related complications.

Results: The final diagnosis was known in 11 patients (5 non-small-cell lung carcinoma [NSCLC], 2 small-cell lung carcinoma [SCLC], 3 tuberculosis and one thymolipoma). EUS-FNA established diagnosis in 9 of 12 patients (75%) (4 NSCLC, 1 SCLC, 3 tuberculosis and 1 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 established by transaortical FNA underwent subsequent surgical staging (1 thoracotomy, 1 mediastinotomy, and 1 VATS), and malignancy was found in 2 of the 3 patients. Trans aort FNA was found to be safe. In one patient, EUS images after FNA were suspicious for a small para-aortica hema-toma. This patient recovered without any adverse event.

Conclusion: Demonstrates the feasibility and probable safety of single EUS guided transaortical 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 includes day care procedure, less invasive than surgical procedures, low cost, good diagnostic yield and can be performed in poor surgical candidate. Limitations includes single centre study, require EUS expertise, more data is required. At present, Transaort 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.

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Introduction: Ultrasound-guided transaortical 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 risk leakage. Recently, the use of fully covered self-expanding metal stents (FCSEMSs) has been reported as an effective alternative.

Aims & Methods: We aimed to evaluate the successful placement of stents, the diagnostic yield and the 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 includes day care procedure, less invasive than surgical procedures, low cost, good diagnostic yield and can be performed in poor surgical candidate. Limitations includes single centre study, require EUS expertise, more data is required. At present, Transaort 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.

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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 diagnostic 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. Multimodality of passes ranged from 1 to 14. A 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 carcinosarcoma), 17 (34%) benign SELs (3 leiomyomas, 7 schwannomas, and 1 lipoma), and 6 (12%) indeterminate SELs. Considering malignant vs. benign lesions, the sensitivity, specificity, PPV, and NPV were 85% (95% CI 70.2–94.3), 100% (95% CI 58.7–100), 100% (95% CI 85.1–100), and 62.5% (95% CI 27.7–84), respectively. No major complications requiring additional care were observed.

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


Endoscopic Ultrasound-Guided (EUS)-guided ethanol ablation for pancreatic cystic lesions


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Introduction: EUS-guided ethanol injection (EUS)-guided ethanol ablation for pancreatic cystic lesions (PCLs) is a recently introduced treatment option for PCLs. The aim of this study was to compare the clinical outcomes of EUS-guided ethanol ablation with those of the natural course of PCLs.

Aims & Methods: We performed retrospective study of patients with PCLs divided in two groups: EUS-guided ethanol ablation group (n = 118, performed between June 2006 to August 2015) and natural course group (n = 458, diagnosed between January 1993 to August 2015). The propensity score-matching analysis
between the two groups was applied in order to minimize the effect of selection bias. The success rate of reaching the biliary anastomosis was the rate of significant reduction in size (≥20% of initial size). The secondary outcomes were the rate of significant growth in size (>10 mm), complete remission rate, and surgical resection rate.

Results: In a propensity matched analysis of 88 pairs, the mean initial cystic size of EUS-guided ethanol ablation group and non-cirrhosis group was 23.72 ± 10.99, 23.15 ± 13.15 mm and the mean follow-up duration was 75.45 ± 38.12, 82.12 ± 59.06 months respectively. Significant reduction in size was detected in 53 (60.2%) of the EUS-guided ethanol ablation group and 17 (18.5%) of the control group (p = 0.023). Significant growth in size was detected in 6 (8.9%) of ablation group and 11 (12.5%) of natural course group. (p = 0.202). Seven patients (7.95%) underwent surgical resection in the EUS-guided ethanol ablation group and 17 patients (19.3%) in the natural control group (p = 0.028) during follow-up. Overall 28.8% patients (34 of 118) who underwent EUS-guided ethanol ablation had achieved the complete remission.

Conclusion: PCLs that underwent EUS-guided ethanol ablation can be seen the likelihood of getting clinical benefits such as reduction of the cystic size, the clarity in decision making for ablative treatment compared to the natural course of them. It is also expected to achieve a certain level of complete remission for PCLs.

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

Reference
Varadarajulu S, Jhara NC, et al. EUS-guided radiofrequency ablation with a prototype electrode array system in an animal model (with video). Gastrointest Endosc 2009; 70: 372–376

P0259 EUS-GUIDED RADIOFREQUENCY ABLATION OF DIFFICULT SITES IN THE LIVER: A PRECLINICAL STUDY
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Introduction: Liver tumors such as hepatocellular carcinoma and liver metastases sometimes occur in positions in which treatment using percutaneous radiofrequency ablation (RFA) is difficult, such as the caudate lobe and surface of the left lobe. EUS-guided RFA (EUSRATM) can offer an alternative treatment by accessing these tumors through the stomach or duodenum. To the best of our knowledge, only one report has described EUS-RFA of the liver in an animal model, using a 19-gauge EUS-FNA needle with an umbrella-shaped array at the liver edge.

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 needle (19-gauge needle) and a VIVA combo™ generator (TaeWoong Medical, Gimpso, Korea) were used for the procedures. Three kinds of RFA needles (10-, 15-, 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 45–50 W for 2–6 min in general mode. In each pig, three RFA needles with 10-, 15-, or 20-mm exposed tips were serially used for insertion and ablation. Subsequently, the RFA needle with the 10-mm exposed tip was used in the quadrant lobe of the gallbladder through the bulb of the duodenum.

Results: All procedures were technically successful. After the procedure, the liver of the pig was removed, and visible RFA effect were evaluated macroscopically. Histology with hematoxylin and eosin (HE) staining showed coagulative necrosis in the ablated area, corresponding with the macroscopic ablated area.

Conclusion: In this experimental study, EUS-RFA could be performed technically not only in the surface of the left lobe, but also in the adjacent to the gallbladder of the porcine liver. Further studies are required to confirm the efficacy and safety.

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

Reference

A0260 CYANOACRYLATE INJECTION THERAPY OF SMALL BOWEL VARIES BY DOUBLE-BALLOON ENTEROSCOPY (DBE): A TERTIARY CENTRE EXPERIENCE
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Introduction: Small bowel varices (SBV) occur as a consequence of portal hypertension and may result in life-threatening mid-gut bleeding. First line management usually involves radiological intervention (RI) (e.g. TIPSS, stenting of occluded mesenteric veins +/- embolisation of culprit varices). In cases where RI is impossible, management options become very limited.

Aims & Methods: This case series evaluated the usefulness of DBE facilitated cyanoacrylate injection of SBV. Retrospective review of DBE facilitated cyanoacrylate injection of SBV at our institution (December 2015 to August 2016). Demographic, clinical, endoscopic and radiological findings, interventions and follow-up data were analysed.

Results: Seven DBEs were performed in 5 patients (3 women, median age: 73-years). Four patients had previous surgery (hepaticojejunostomy or Roux-en-Y bypass), 3 patients had a history of infra-abdominal sepsis in childhood causing portal vein thrombosis. No radiological or surgical options were deemed feasible in any case. SBV were diagnosed at capsule endoscopy and triple phase CT mesenteric angiography. At DBE, a total of 10 nests of SBV were identified.
and injected with cyanoacrylate glue. There were no haemorrhagic or embolic complications. A lesion developed an appearance 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-thrapy, 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 endoscopy and capsule endoscopy has markedly improved the assessment 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). Magnifying NBI was performed, and the images were evaluated by assessing visibility, increased vascularization, and the increased caliber of capillaries into three grades as follows: Normal, Visible and Irregular. Normal was indicative of inactive disease, while Visible and Irregular were indicative of acute inflammation in our study. The outcome measures included the diagnostic ability of magnifying NBI findings to distinguish active CD from inactive CD on the basis of histological activity.

Results: Twenty-four patients were enrolled. There was a correlation between magnifying NBI findings and the histological assessment (Spearman’s r = 0.54, p<0.05). Visibility, 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, 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 definitive treatment. Laparoscopic-assisted DBE (LA-DBE) using a standard enteroscopist is an option that can be applied for the management of a 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

P0263 GASTRIC EMPTYING IN CROHN’S DISEASE – EVALUATION BY SMALL BOWEL CAPSULE ENDOSCOPY

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Introduction: The complex relationship between inflammatory bowel disease (IBD) and motility disorders of the digestive tract is a complex area of study, so far incompletely elucidated. The association between Crohn’s disease and gastric emptying time modification has been relatively less studied. However, there is no single standardized method to study gastric emptying, one particular investigation that could bring direct information in this field being the small bowel capsule endoscopy (SBCE).

Aims & Methods: We aimed to study gastric emptying by small bowel capsule endoscopy in patients with suspected and confirmed Crohn’s disease. We evaluated gastric passage time showed by SBCE in patients with small bowel Crohn’s disease, compared to patients without IBD, investigated by SBCE (PillCam), following recognized indications, in the Institute of Gastroenterology and Hepatology of Iasi, tertiary center in North-East of Romania.

Results: 144 SBCE studies were included, 24 were cases of suspected and confirmed Crohn’s disease. The mean time of gastric passage in patients with Crohn’s disease was 51±21.9 minutes, longer than in patients without inflammatory bowel disease, in which the mean gastric passage time was 24±16.6 minutes.

Conclusion: Gastric passage time, evaluated by SBCE, is prolonged in patients with Crohn’s disease compared to patients without IBD, suggesting a relationship between chronic inflammation and gastric motor disorders. Globally, the values correlated with those considered as physiological by other exploration methods. SBCE studies may provide additional data on gastric motility (and in general gut motor disorders), with special usefulness in some individual cases, as particular symptoms or variations in the bioavailability of small bowel released drugs.

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

P0264 META-ANALYSIS SHOWS THAT PURGATIVE PREPARATION INCREASES SMALL BOWEL VIDEO CAPSULE ENDOSCOPY DIAGNOSTIC YIELD AND IMPROVES THE QUALITY OF SMALL BOWEL MUCOSA VISUALIZATION

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Introduction: The value of purgative preparation (PBP) before small bowel video capsule endoscopy (VCE) remains controversial and it has been recently challenged.

Aims & Methods: The aim of this meta-analysis was to examine the effect of PBP on small bowel VCE outcomes. We performed literature searches in MEDLINE and Cochrane Library to identify randomized-controlled trials (RCTs) evaluating the effect of small bowel preparation –purgative (PEG, sodium phosphate,
## 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 with colonoscopy, cleaning scales should be described in the report in order to better interpret results. In 2009, Brote et al proposed and validated 3 different 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, bire 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 100% and by observer 2 in 73%, with an inter-observer kappa index of 0.76 (p < 0.001) suggesting strong agreement. In the qualitative scale, most of the bowel preparations were considered reasonable (40% observer 1 vs 36% observer 2), with an intra-class coefficient of 0.89 (p < 0.001). In the quantitative scale, the mean score of the two observers was 6.5 and 6.7, resulting in an intra-class agreement of 0.78 (p < 0.001).

### Conclusion:

The optimization of quality of bowel preparation and the diagnostic yield of the CE requires, first, a well-validated cleaning scale. Brotz’s rating scales have strong inter-observer agreement. The quantitative 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

Brote C, Nandi N, Conn M et al. A validation study of 3 grading systems to evaluate small-bowel cleansing for wireless capsule endoscopy. This pilot study shows that image quality is a defining factor in accurate diagnosis in CE. Image quality is commonly affected by the opacity of luminal fluid/residue, and the quality of imaging delivered by the CE system. More subtle mucosal lesions such as aphthae are affected more by decreased contrast. Interestingly, a relatively high level of image opacity can be tolerated by CE readers whereas blurriness seems to have a greater effect on visualisation quality and reviewer confidence in the diagnosis. The effects of these aspects in combination merit further investigation.

### Disclosure of Interest:

All authors have declared no conflicts of interest.

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## 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 undetermined between studies and poses significant limitations to the quality of study reporting. As yet, there is no widely-accepted or integrated method for scoring SB cleanliness during CE reporting. This pilot study aims to quantify the image properties contributing to adequate visualisation quality in CE images.

### Aims & Methods:

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

### Results:

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

### Disclosure of Interest:

All authors have declared no conflicts of interest.

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P0267 EVALUATION OF A NEW PAN ENTERIC CAPSULE SYSTEM IN PATEIENTS WITH SUSPECTED OR ESTABLISHED CHRONIC INFLAMMATORY BOWEL DISEASE - ASSESSING THE SYSTEM FUNCTIONALITY TO VISUALIZE AND ASSESS THE SMALL AND LARGE BOWELS

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Introduction: Chronic 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 performance of the capsule and software. Subjects enrolled in the study were instructed the new capsule after standard bowel preparation plus boosts. Contraindications for its use include obstruction, dysphagia or swallowing disorders, pacemakers etc. GI patency was assured using the patency capsule. The performance of 50 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 50 patients (54 were enrolled and 49 ingested the capsule (14 patency failure, 5 withdrew consent). Mean age was 40.1 years, 51% were males. 69% of patients had established CD, 10% UC and 21% suspected 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 underwent extensive colon resection was excluded from all colon analyses. 68 patients were screened, of which 54 were enrolled and 49 ingested the capsule. The primary endpoint was successful procedure in terms of video creation and report generation in accordance to the video reading methodology. Secondary endpoints were subjective coverage of SBC, subjective duration of total and segmental reading time, over all video quality and occurrence/severity of adverse events.

Conclusion: The small bowel capsule endoscopy (SBC-CE) system was successful in 92% of patients. The system was easy to use, especially for patients with severe impairment of small bowel motility. The new SBC capsule is a friendly, minimally invasive capsule allowing complete evaluation of the entire gut of IBD patients. The system may be used to assess disease severity and extent and for follow up of IBD patients.

Disclosure of Interest: R. Eliakim: I have received consultant fee from Medtronic. I am in the advisory committee for PhotoPill, Tarus medical. C. Spada: consultant and speaker fees for Medtronic. I. Yana: I received Consulting fee from Medtronic. H. Yana: I received consulting, advisory, lectures and speaker’s fees from: Abbvie, Janssen, and Takeda. I. Eyal: Employee at Medtronic. A. Lahat: Employee at Medtronic. N. Adler: Received consulting fee from Medtronic. All other authors have declared no conflicts of interest.

P0268 THE UTILITY OF A NOVEL TRANSPAPILLARY DILATION TECHNIQUE WITH A DIATHERMIC CATHETER FOR SEVERE MAIN PANCREATIC DUCT STRicture DUE TO CHRONIC PANCREATITIS

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

Aims & Methods: To evaluate the efficacy and safety of a novel transpapillary dilation technique with a diathermic catheter for severe MPD stricture due to chronic pancreatitis. Between April 2011 and March 2017, 143 patients with chronic pancreatitis underwent endoscopic transpapillary stent placement for MPD. MPD dilatation was indicated in 18 patients, and diathermic 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 abuse, unknown 1. The strictures were in the head of pancreas: 8, body: 1, tail: 7. The mean length of stricture was: 20.2 mm (range, 10.8–30.8). The mean MPD diameter was the distal side of stricture was 6.2 mm (range, 5.5–6.6). Stenting for chronic pancreatitis was successful in all patients (100%). After diathermy and stent placement, 8 (88.9%) showed improvement of clinical symptoms (abdominal pain). RBO occurred in 1 patient with severe stricture (55.6%) among them had no former procedure for MPD including stenting. (2) A wire-guided 6Fr diathermic catheter with 30 W power was used for all cases. All cases underwent diathermic dilation as salvage procedure subsequent to conventional dilation. One to 7 diathermy procedures (mean 2.9) were applied to pass through each stricture. (3) Passage of the diathermic catheter and stent placement was successful in all patients (100%). After diathermy and stent placement, 8 (88.9%) showed improvement of clinical symptoms (abdominal pain). RBO occurred in 1 patient with severe stricture (55.6%) among them had no former procedure for MPD including stenting. (2) Two adverse events (22.2%) were observed and both of them were mild pancreatitis. Multiple diathermy procedures (6 times and 4 times, respectively) and relatively long duration of total dilation time (39 sec. and 25 sec. respectively) were observed in cases with pancreatitis.

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

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

References
PO270 OUTCOME OF ENDOSCOPIC REINTERVENTION FOR MALIGNANT BILIARY OBSTRUCTION TREATED BY STENT-IN-STEM DEPLOYMENT


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

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

Results: Technical and functional success rates of endoscopic reintervention were 83.3% (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) andivor 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.

PO271 LONG-TERM OUTCOMES OF ENDOSCOPIC ULTRASOUND-GUIDED RIGHT INTRAHEPATIC DUCT DRAINAGE WITH TRANSMURAL COVERED METAL STENT


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Introduction: Endoscopic ultrasound-guided biliary drainage (EUS-BD) has been regarded as an effective alternative in cases of endoscopic retrograde cholangiopancreatography (ERCP) failure or inaccessible papilla. However, EUS-BD for right intrahepatic duct obstruction (EUS-BDR) remains challenging, although recent studies showed promising result. The aim of current study was to evaluate the feasibility and long-term outcomes of EUS-BD with transmural coved metal stents for right intrahepatic duct obstruction.

Aims & Methods: Retrospective study, a total of 24 consecutive patients who underwent EUS-BDR after failed ERCP were enrolled. The patients were consisted of 12 cases of benign strictures and 12 cases of malignant strictures. The biliary stents used in this study was covered metal stent with anchoring flaps. The rate of adverse events tended to be higher in Group A than in Group B (26.1% vs 13.5%, p = 0.10). The re-intervention rate tended to be higher in Group A than in Group B (16.7% vs 8.1%, p = 0.25). Groups A and B did not differ significantly in terms of median overall patient survival (75 days vs. 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 chemotherapy, there were no difference in the overall patient survival time (121 vs 137 days, p = 0.08) between the two groups although the time to stent dysfunction or patient death was significantly shorter in Group A than in Group B (71 vs 95 days, p = 0.02).

Conclusion: Technical success rate of HGS with AGS was lower than HGS, although HGS with AGS is superior to HGS in terms of stent patency in patients undergoing chemotherapy.

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

PO272 UTILITY OF EUS-GUIDED HEPATICOGASTROSTOMY WITH ANTEGRADE STENTING FOR MALIGNANT BILIARY OBSTRUCTION OF ERCP INABILITY

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Introduction: Recently, EUS-guided biliary drainage (EUS-BD) techniques such as endoscopic cholecystostomy (EUS-GBD) have 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-BD with conventional percutaneous cholecystostomy.

Aims & Methods: This is a single-center, retrospective study to investigate long-term outcomes of EUS-BD and percutaneous cholecystostomy in patients who are not suitable for cholecystectomy. Data about the patient who underwent EUS-BD for acute cholecystitis is obtained from prospective collected EUS database in HGS institute. In percutaneous cholecystostomy, electronic medical record of patients who underwent percutaneous cholecystostomy was reviewed and analyzed. Demographics and procedure related outcomes including early, late adverse events and need for re-intervention in each group was compared. Results: A total of 181 patients (74 in EUS-GBD group and 107 in percutaneous cholecystostomy group) were enrolled in this study. The cause of cholecystitis and ASA class were similar in both groups. The technical/clinical success rate was 100%/98.6% in EUS-GBD group and 99.1%/97.2% in percutaneous cholecystostomy group (P = 0.591 for technical success and 0.70 for clinical success). Early adverse events were also similar between two groups (6.8% in EUS-GBD group vs. 15.0% in percutaneous cholecystostomy group, P = 0.103). However, late adverse events including migration of stent or dislodgement of drainage tube, stent or tube occlusion, tract inflammation around percutaneous tube, bile leakage and recurrence of cholecystitis was more frequently observed in percutaneous cholecystostomy group (3/74 in EUS-GBD group and 21/107 in percutaneous cholecystostomy group, P = 0.017). Percutaneous cholecystostomy tube was indwelled for
median 20 days (14.0–45.2) after the procedure. A total of 7 patients in 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 BILIARY 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 stenosis 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 biliary complications from our center within the last 3 years. fcSEMSs were inserted in 23 patients (13 males and 10 females) (Group-1) and 13 patients (8 males and 5 females) (Group-2) with mean age 51 ± 9 years). The diameter of the fcSEMSs was 10 mm in 11 patients and 8 mm in 12 patients. The patients were followed up for at least 3 months after stenting were included to the study. Primary endpoints were the number of endoscopic procedures and the time required for stricture resolution. The secondary endpoint was the recurrence rate of the stricture.

Results: fcSEMSs were successfully deployed in all cases. The diameter of the fcSEMSs was 10 mm in 22 patients and 8 mm in 1 patient. The length of the fcSEMSs measured 8 cm in 13 patients, 10 cm in 8 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 stricture 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 ± 36 days, respectively. Conclusion: fcSEMSs are an effective method for the treatment of anastomotic biliary strictures after LDLT, with a lower number of endoscopic sessions and a shorter stenting duration required for the resolution compared to MPSs.

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

References

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, mortality rate, compared to surgical intervention. 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 stents1–5. 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 malignant colorectal obstruction were implanted 78 stents (39 bare, 39 covered EGIS Colorectal stent, S&G Biotech Inc., South Korea). A double uncovered stent has a two-layer structure created by crossing two stents, resulting in a smaller cell size. Such a design theoretically can slow the migration and reduce tumor ingrowth. The covered tumor 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%. The median follow-up was provided to 43 (58.8%) 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 relieved, the patient was operated. In one case, 18 hours after stenting with an uncovered stent, was diagnosed perfusion 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 significant. One patient with the carcinoma of a 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
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Introduction: Endoscopic therapy has been emerged as alternative treatment to bariatric surgery for reducing weight. We developed a new endoscopic gastro-intestinal (GI) bypass stent and designed a preclinical study to assess the safety in a porcine model.

Aims & Methods: The aim of this study is to investigate the feasibility of our GI bypass device in animal. Before animal study, we performed an experimental study for durability test under simulated intestinal fluid flow. And next, we performed an animal study with 10 Yorkshire pigs. The stents were placed on pylorus with fixation by clipings 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 device showed a good durability in simulated solution flow. No breakage or migration of stent occurred under continuous water flow in simulation system setting. In animal study, the mean starting weight was 30.1 ± 1.5 kg. Delivery of the implant took an average of 19.8 min (range, 11–32 min) for pylorus gus group and 11.2 min (range, 6–18 min) in duodenal bulb stent group. It required an average clipping time of 10.8 min (range, 8–14 min). Followed for stent migration after implantation, the mean patency duration was 1.5 ± 0.7 weeks. One pig was died due to small bowel perforation and peritonitis after stenting. In histologic finding, there were moderate degree of mucosal erosions, but no definite ulceration on pylorus and duodenum.

Conclusion: New GI bypass stent has a good physicochemical properties in simulated intestinal system. In animal, all stents were successfully deployed and tumor overgrowth by 165 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.

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

References
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P0277 LONG-TERM EFFICACY OF AN ENDOSCOPIC DILATION PROGRAM ON POST-RADIATION AND ANASTOMOTIC FARINGO-ESOPHAGIC STRICTURES

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Introduction: Dysphagia may occur due to benign pharingo-esophageal strictures, or post-surgery esophagus stenosis. The aim of this study was to access long-term efficacy of pharingo-esophageal dilatations due to anastomotic or post-radiation strictures.

Aims & Methods: Two retrospective studies: patients suffering of dysphagia due to radiation (Group I) or anastomotic (Group II) caused 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-Piknas scale), c) absence of further dilations and d) absence of PEG. Additional therapy (PEG or per-oral-phagae dilatation, electrocoagulation or surgery) was considered inefficacy 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. There salve between the two groups was statistically significant. Of 5 weeks. Pre-endoscopic dysphagia Mellow-Piknas score and luminal calibre were 3 ± 1 and 7 ± 2, 8mm, respectively. Twenty-eight patients (out of 30 live patients non-submitted to additional therapies) answered to the interview: a) 96% had improved, b) 60% had full resolution. Efficacy predictive factors were assessed by uni- and multivariate analysis; recurrent/refractory stenosis didn’t significantly improve the results. Mean follow-up was 29, 2 months. Number of dilations (range 0 to 21) and luminal calibre were significant predictors of combined efficacy in the univariate 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 REFRATORY VARICEAL BLEEDING – A VIENNA MULTICENTER EXPERIENCE

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Introduction: Current guidelines favour the use of bleeding stents over balloon tamponade for refractory 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 (EBL) 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 EBL, while in 3 patients the stent had to be replaced and 1 patient received a Linton-tube. Among these patients with initial Danis-Stent control 4 died of uncontrolled 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 a further EBL and received a second Danis-Stent, and 1 patient was supported by 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=1 (31.4%) patients did not experience any rebleeding after Danis-Stent removal, while n=8 patients died with the Danis-Stent in situ. Notably, no “early-TIPS” was performed in this study, but 4 (11.4%) received TIPS during follow-up. n=6 patients (17%) died due to uncontrolled bleeding (<5days) and n=10 died within 6 weeks (bleeding-related mortality: 28.6%). Overall, n=22/35 (62.9%) patients died. The median survival was 10.5 (IQR82) days after Danis-Stent placement. Median Danis-Stents dwell time was 5 (range: 0–13) days. The most common adverse events were stent disloca- tions (n=13; 37.1%), while ulcers/nerosion of the esophageal mucosa was seen only in 4 (11.4%) patients.

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

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

References
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European Gastroenterology Journal 5(5S)

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

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Introduction: Benign anastomotic strictures are common adverse events of gastrectominal tract surgery. And, they are difficult to be managed conservatively. The first choices of treatment of anastomotic stricutures are balloon dilatation and bougination. But, they are requiring repeated sessions. Self-expandable metallic stent (SEMS) placement has continous expanding effect for a long period. But, It has problem of frequent stent migration, because of slow stent expanding, 2–3 days. Self-expandable metalic stent (SEMS) placement has continous expanding effect for a long period. But, It has problem of frequent stent migration, because of slow stent expanding, 2–3 days. Therefore the new method to inhibit stent migration is needed for more successful management of anastomotic stenosis.

Aims & Methods: The aim of this study was to evaluate the clinical feasibility of new method to inhibit stent migration in postoperative anastomotic stricture. From January 2013 until February 2015, patients with benign anastomotic stricture after subtotal gastrectomy were enrolled at a single tertiary referral hospital, prospectively. The Niti-S ComVi pyloric stents (Taewoong Medical, Korea), double-layered, were inserted. We made two nylon thread loops at the proximal bared section of the stents. After stent placement, stent fastening with loop and clip method was performed. Patients’ symptoms and oral intake were assessed once or twice a week with a clinical check-up or telephone interview. After two weeks, the loop and stent removals were done.

Conclusion: New method with fastening the stent with loop and clip can reduce the risk of stent migration.
Our fastening method can be feasible and useful technique for postoperative anastomotic stricture, especially, with some series studies estimating the rate at around 20%10. We report a single-centre, retrospective cohort study on the use of 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 from the stomach or the baseline stent insertion due to 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). This also met Bonferroni-corrected significance. We demonstrate a trend towards shorter strictures being associated with an increased risk of migration [OR 1.14 CI1.12–1.164 (p=0.0523)]. 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 stents being more likely to migrate.

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

References

Disclosure of Interest: All authors have declared no conflicts of interest.
Severity of intrahepatic 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 newly 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 16.6% II group 1-year survival 6.45%.

Conclusion: The use of 3D-modeling performing with 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 advisable to plan taking into account the constructed 3D-models, which helps to solve the problem of the possibility of surgical intervention in esophageal cancer.

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

P0284 INFLUENCE OF CONTINUOUS ADMINISTRATION OF LOW-DOSE ASPIRIN FOR INTRAOPERATIVE BLEEDING ON GASTRIC ENDOSCOPIC GASTRIC DISSECTION: A PROPENSITY SCORE MATCHING ANALYSIS

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Introduction: Endoscopic submucosal dissection (ESD) was a promising method for the removal of higher complication rate of gastric early cancer. The use of antiplatelet 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 bleeding major. Secondary outcomes included procedure time, HB reduction rate, EN blec section rate, and adverse event rate.

Results: The propensity score analysis yielded 39 matched pairs. Adjusted comparison between the two groups showed similar with regards to major bleeding, mean (range): 1.0 (0-4.0) vs. 1.0 (0-4.0), p = 0.621. Procedure time was prolonged in Aspirin group by 16.7% without significant differences. Other aspects were the same in both groups with low incidence of adverse events; perforation (0%), thromboembolism (0%).

Conclusion: This study indicated the feasibility of gastric ESD with continuous administration of LDA including little intraoperative bleeding and adverse events.

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

P0285 IMPACT OF POSTOPERATIVE COMPLICATIONS AND PERIOPERATIVE ONCLOGICAL TREATMENTS FOR GASTRIC CANCER PATIENTS AFTER GASTRECTOMY

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Introduction: Recently, multidisciplinary treatments such as perioperative chemo/radiotherapy or postoperative intervention have been introduced to improve the prognosis of gastric cancer surgery. Besides that, the postoperative severe complications are thought to be the poor prognostic factor. Present study assessed the prognostic impacts of severe postoperative complications and perioperative oncological treatments in gastric cancer patients.

Aims & Methods: Consequent gastric cancer patients who underwent curative gastrectomy in Karolinska University Hospital between 2006 and 2016 were enrolled. Patients' characteristics, surgical data, postoperative courses and prognostic examinations 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: A total of 633-nine-sixty-nine patients were examined in this study. 89 (52.7%) and 66 (39.1%) patients had neoadjuvant and adjuvant treatment, 85 (50.3%) and 84 (49.7%) underwent distal and total gastrectomy, respectively. 24 (14.2%), 16 (9.5%) and 25 (15.0%) were diagnosed as grade III, IV, V complications. The prognosis of the patients with grade III or higher complication was significantly worse (3-year OS: 66.6% vs 47.3%, P = 0.001). Subgroup analysis by pathologic stage showed that the prognosis of pStage III/IV patients with postoperative complications was significantly poorer than the patients without grade III or higher complications (3-year OS: 45.3% vs 7.5%, P < 0.001). For the patients who had either neoadjuvant or adjuvant treatment, however, no obvious prognostic worsening were seen by the existence of complications (3-year OS: 69.2% vs 52.9%, P = 0.13). Multivariate analysis identified that severe complication 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 postoperative complications.

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

P0286 ENDOCOSPIC PAPILLOLECTOMY 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 of duodenal papillary tumor has developed and is accepted as an alternative approach to surgery in recent cases. Endoscopic papillectomy as a relatively difficult endoscopic technique mainly performed by experienced endoscopists. Standardized 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 duodenal 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 manifestations, laboratory tests, CT, MRCPE, endoscopy, 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 analyzed.

Results: 75 patients (50 males and 25 females) with a median age of 58.6 yrs (range 27 to 82 yrs) were evaluated. The main clinical symptoms were predominated by abdominal pain followed by cholestasis and cholangitis, but nine cases presented as 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 adenoma (37.3%, 28/75), gastric adenocarcinoma with high-grade intraepithelial neoplasia (18.7%, 14/75), adenoa 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 piecemeal resection was performed in 22 cases (29.3%). After endoscopic papillectomy, the ERCP procedures were performed in 70 cases (93.3%). The prophylactic pancreatic duct stent was placed in 30 cases (40%) for preventing pancreatitis, the biliary plastic stent or nasobiliary drainage tube in 16% (12/75), the combined of both in 17.3% (13/75), and no stent placement in 26.7% (20/75). Moreover, intraoperative hemostasis was performed in 47 cases (62.7%), including pure endoscopic clip placement, followed by injection therapy, thermal therapy or in combination. Regarding to the postoperative adverse events,
hemorrhage was identified in 11 patients (14.6%) but mainly cured by endoscopic haemostasis, followed by pancreatectomy (9.3%, 7.75) but cured with medical treatment.

Conclusion: Endoscopic papillotomy can be considered as a feasible and reasonable treatment option for suitable patients with tumours of duodenal papilla.

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

P0205 PSEUDOPHYLLUM CAMELUNICUM WITH EXTENDED INDICATION OF RECTAL PRESERVATION IN RELATED ACUTE FAMILIAL ADENOMATOUS POLYPOSIS: SYSTEMATIC REVIEW AND META-ANALYSIS

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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 resection 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 that underwent prophylactic surgery for FAP with aggressive endoscopic follow up in our unit: systematic endoscopic treatment of adenomas (argon, mucosectomie), were prospectively included. MYH-related polyposes and patients who underwent abdominopenirectal resection were excluded from analysis.

Results: 296 patients were included: 92 proctocolectomy with IAA (31.1%), 197 IRA (66.5%) and 7 abdominoperineal resections (2.4%). Mean (SD) follow-up was 16.6 (11.9) years, during which the mean (SD) number of preoperative rectal adenomas was 24.7 (33.9) in the IRA group, 129.8 (188.8) in the IAA group (p = 0.06); secondary cancer incidence 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. 1.1% (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.

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

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

Aims & Methods: The aim of this study is to determine the prevalence of anal problems and constipation during the second and third trimester of pregnancy, in the immediate postpartum and up to three months after childbirth. We also want to identify the risk factors for the development of anal symptoms. This is a prospective cohort study. Women between their 19th and 25th week of pregnancy are included. High-risk pregnancy and non-Dutch speaking are exclusion criteria.

Nine hundred and ninety-three women completed the symptom questionnaire in the second and third trimester, in the immediate postpartum (within 3 days) and 3 months postpartum. Descriptive data were obtained from the patient files. A specific proctological diagnosis was presumed on the basis of combined symptoms (rectal bleeding, anal pain and swelling). Constipation was defined by the Rome III criteria. Statistical analysis was performed with SPSS and risk factors were identified using multivariate analysis with binary logistic regression.

Results: Sixty-eight percent of the women developed anal symptoms during the whole study period. Anal symptoms occurred in 50% of the women during pregnancy, in 56.2% in the immediate postpartum and in 62.9% during the three months postpartum. The most prevalent symptom was anal pain. Constipation was reported by 60.7% during the whole study period. Most prevalent hemorrhoidal condition was hemorrhoidal thrombus (immediate postpartum), hemorrhoidal prolapse (3rd trimester and immediate postpartum) and anal fissure (not episode-related). Anal incontinence was only reported in 2% during the postpartum. Multivariate analysis identified constipation and a history of anal problems as significant risk factors for the development of anal complaints postpartum and postpartum.

Conclusion: Two-thirds of pregnant women deal with anal symptoms during pregnancy or postpartum, especially hemorrhoidal complications and anal fissure. This high prevalence emphasises the clinical importance of this problem. The most important risk factor is constipation. Therefore, prevention of constipation in pregnant women is recommended.

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

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


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Introduction: Diverticulitis is a common gastrointestinal disease in developed countries, especially among elders. It is classified into five stages according to the severity of the inflammation with stage 5 involving peritonitis as a consequence of perforation and/or abscess formation, with 30-50% of the patients having complications and/or mortality ranging from 30% to 32%. This indicates that acute diverticulitis is an emergency case requiring rapid management. However, the surgical interventions of diverticulitis vary according to its grade and severity, there is a controversy about the preferable surgical procedures of these different grades of diverticulitis.

Aims & Methods: We aimed to systematically review and meta-analyze randomized controlled trials (RCTs) comparing outcomes and complications between different surgical approaches for acute diverticulitis and its complications. Nine electronic databases, including PubMed, Scopus, Google Scholar, ISI Web of Science, WHO Global health library (GHL), POPLINE, Virtual health library (VHL), NYAM (New York Academy of Medicine), and SIGLE (System for Information on Grey Literature in Europe), were searched for RCTs comparing different surgical procedures for different grades of diverticulitis. Out of 1738 articles, we included 14 studies with 1076 patients. The primarily assessed outcomes were post-surgical mortality rate besides short- and long-term post-surgical complications. The risk of bias was assessed using the Cochrane Collaboration tool. The pooled risk ratio (RR) and 95% confidence interval (CI) were calculated in the meta-analysis using the RevMan platform. The protocol was registered in PROSPERO (CRD42015032290).

Results: Nine RCTs comparing laparoscopic sigmoid resection (LSR) (n = 247) versus open sigmoid resection (OSR) (n = 237) for treatment of acute complicated diverticulitis with minimal heterogeneity. For short-term outcomes, there was no significant difference in postoperative overall morbidity (RR 0.89, 95% CI [0.61–1.31]; P = 0.56), all major postoperative morbidity (RR 0.79, 95% CI [0.12–5.07]; P = 0.80), and all minor postoperative complications (RR 0.98, 95% CI [0.62–1.57]; P = 0.94). Similarly, there was no difference between the two procedures regarding the long-term postoperative morbidity (RR 0.85, 95% CI [0.57–1.21]; P = 0.32). In other four RCTs comparing laparoscopic lavage with resection (sigmoidectomy) for treatment of perforated diverticulitis with peritonitis, the postoperative mortality rate was non-significant in both short-term (RR = 1.55, 95% CI [0.79–3.04]; P = 0.21) and long-term (RR = 0.67, 95% CI [0.29–1.58]; P = 0.36) follow up. Interestingly, the short-term reoperation rate and long-term precence of intra-abdominal abscesses were significantly higher in OSR (RR = 1.74, 95% CI [1.01–3.02], P = 0.04) and (RR = 1.47, 95% CI [1.03–5.92]; P = 0.04) respectively. The remaining five RCTs compared between different procedures, like primary anastomosis versus non-rectostomal resection, RP-LASR versus RNR-LASR, and primary versus secondary resection, for different situations and reviewed qualitatively.

Conclusion: The superiority of LSR over OSR was non-significant in the treatment of acute symptomatic diverticulitis regarding postoperative complications, mortality, hospital stay, and operational duration. Hence, LSS is feasible and can act as definitive treatment. Further RCTs are still needed to make a decision regarding these and other procedures.

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

P0210 NLR AND PLR IN DIAGNOSING SYNCHRONOUS LIVER AND LYMPH NODE METASTASES IN PATIENTS WITH CRC

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

Aims & Methods: This study was designed to investigate the efficiency of preoperative NLR, PLR as a tool for the assessment of synchronous lymph nodes
and liver metastases in newly diagnosed patients with CRC. Three hundred patients with CRC undergoing curative resection were included in this cross sectional study. Complete blood counts with automated differential counts were performed preoperatively. The NLR was calculated by dividing the absolute neutrophil count by the absolute lymphocyte count; also PLR was calculated by dividing the absolute platelet count by the absolute lymphocyte count. The diagnostic performance of NLR and PLR was estimated by ROC curve.

Results: Our results suggest that there was high statistically significant difference between NLR (p < 0.003), PLR (p < 0.002) and tumor stages (I to IV). ROC curve revealed high diagnostic accuracy of NLR (AUC 0.774, 95%CI = 0.683–0.790) and PLR (AUC 0.698, 95%CI = 0.649–0.732) for synchronizable lymph node and liver metastases. Also combination of NLR and PLR improved diagnostic efficacy (AUC 0.841, 95%CI = 0.811–0.863) for synchronous liver and lymph node metastases.

Conclusion: Our results suggest that NLR and PLR could be useful diagnostic CRC biomarkers, and could have potential use in early recognition of different stages of CRC.

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

References

P0292 IS HAEMORRHOIDECTOMY SAFE IN PATIENTS WITH ULCERATIVE COLITIS?
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Introduction: Haemorrhoidectomy in ulcerative colitis (UC) have been considered to be potentially dangerous, but the evidence is poor.

Aims & Methods: A study was conducted to ascertain the safety of haemorrhoidectomy in UC patients in the clinical practice.市中合併症を用いてUC症例の術後鎮痛,術後の対症療法,術後に発症した合併症を観察し,その薬理学的評価,対症療法の検討,さらに経過観察により,術後鎮痛の適応を検証した。

Results: The results were 29 males (65.9%), median age 44 (range, 19–72) years. Predominant symptoms were bleeding and prolapse (n = 24; 54.5%), prolapse only (n = 6; 13.6%), bleeding only (n = 14; 31.8%). 17 patients (BD, 38.6%) were diagnosed with UC prior to surgery. 4 patients (9.1%) had haazioplon therapy before surgery. There was no other perianal disease. Disease was limited to the rectum (n = 33; 75%), left-sided (n = 9; 20.5%), and extended to right-sided (n = 2; 4.9%). During follow-up, there were no complications such as sepsis, anal stenosis, abscess and fistula formation, and recurrence. There were no differences in complications and other clinical characteristics between BD and AD. There was no difference in complications according to disease extent (p = 0.158).

Conclusion: Our data suggest that haemorrhoidectomy may be performed safely in UC patients.

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

P0293 EARLY VERSUS DELAYED CLOSURE OF TEMPORARY LOOP ILEOSTOMY AFTER COLORECTAL SURGERIES: A PROSPECTIVE RANDOMIZED STUDY
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Introduction: Temporary loop ileostomies are commonly performed to protect a temporary ostomy (85.25–93.26) during temporary loop ileostomy or ileal conduit diversion for colorectal cancer patients. The study was conducted from May 2014 to September 2015. Following creation of loop ileostomy after colorectal surgeries, distal loop contrast study was done on POD 7. Patients who had no leak were randomized to either early closure (8–13 days) or delayed closure (after 6 weeks) group. Patient demographics, operative parameters, morbidity, mortality and quality of life data were recorded in both groups.

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

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

Disclosure of Interest: All authors have declared no conflicts of interest.
P0294 FULL-SCALE INTRODUCTION OF RADICAL LAPAROSCOPIC SURGERY FOR INGUINAL HERNIA EMPLOYING THE TRANSABDOMINAL PREPERITONEAL (TAPP) REPAIR AND EARLY OUTCOMES

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Introduction: Ger reported the first laparoscopic hernia repair in 1982 by approx- imation with stainless steel sutures. First laparoscopic inguinal transabdominal preperitoneal repair (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 recur- rence rate after surgery employing the TAPP method was reported to be 4%, posing a problem regarding the thoughtlessness introduction of the TAPP method. Our hospital is a university hospital employing the TAPP method only occasionally until April 2015, but treatment of inguinal hernia was integrated, the indication was established in May 2015, and laparoscopic surgery employing the TAPP method has been performed for the indicated cases. In this study, we investigated the current state of inguinal hernia 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 anesthesiologist stands at the patient’s head, and a nurse stands caudal to the assistant.

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 2015-2017 (5 months)). 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 old). There were 114 male and 6 female patients with a total of 132 hernia lesions (60 right, 60 left, 48) and bilateral in 12). The hernia classification (Japanese Hernia Society) was 1, 2, 3, 4, rec in 91, 37, 0, 3, and 1 lesions. Surgery was performed under local anesthesia in 43, lumbar anesthesia in 1, and general anesthesia in 76. A laparo- scope was used in 70 and not used in 50. TAPP, mesh plug, and UHS were used in the early and late periods, respectively. Changes in the surgical procedure, complications, and duration of hospital stay were investigated in 120 patients.

Discussion: 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 conver- sion to open surgery was registered. The mean operative time and estimated blood losses were 184.3 ± 32.7 minutes and 81.2 ± 22.7 ml respectively.

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 HINCHRY 3 AND 4

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Introduction: For 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 emerg- ency surgery for acute complicated Hinchey 3 diverticulitis from January 2012 to December 2016 was retrospectively evaluate. 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-stay–related data, as well as short-term outcomes. Complications were classified using the Clavien-Dindo classification system (CDCS).

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 conver- sion to open surgery was registered. The mean operative time and estimated blood losses were 184.3 ± 32.7 minutes and 81.2 ± 22.7 ml respectively. All the specimens showed diverticulitis with peridiverticulitis. Length of hospital stay was 7.8 ± 2.8 days and we have not recorded any readmissions in patients dis- charged within 60 days after surgery. The rates of postoperative complications were 6.8% for grade I, 8.6% for grade II, 3.6% for grade III, 2.3% for grade IV, and 5 according to the CDCS respectively.

Conclusion: Laparoscopic left colectomy with primary anastomosis and loop ileostomy seems to be a good technique that resulted in encouraging short- term outcomes. In expert hands it represents an effective technique for the treat- ment 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 in Japan. However, ME alone is the international standard surgical procedure for rectal cancer. Complete LLND is difficult due to the pelvic wall, bladder wall and sciatic nerve. Subsequently, proximal internal iliac nodes were removed and superior vesical artery was separated. Distal internal iliac nodes from the coccycgeal artery (Akoo’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 sepa- rated 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.

Aims & Methods: After laparoscopic ME, the external iliac artery was exposed and the external iliac nodes were completely removed from iliac 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 sciatic nerve. Subsequently, proximal internal iliac nodes were removed and superior vesical artery was separated. Distal internal iliac nodes from the coccycgeal artery (Akoo’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 sepa- rated 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 (429–679 min), and the median blood loss was 90 ml (5–500 ml). 32.7 minutes and 81.2

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 SIGNET RERECTION IN AN ANIMAL SURVIVAL MODEL USING THE ANUBIS-SYSTEM

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Introduction: Since natural orifice transluminal endoscopic surgery (NOTES) pro- posed advantages should be established by comparison with standard proce- dures. 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 using a survival model. Using the ANUBIS scope, a transgastric access was realized by needle-knife incision and balloon dilatation. CO2 peritoneum was achieved by insufflation via a working channel. By steoring the colonoscope, the colon was maneuvered endoluminally and the colic mesentery was exposed. Boweel-close preparation was carried out with a coagulating needle-laparoscopy and simulta- neously assistance by a grasper via the ANUBIScope. Both instruments have the possibility of two-directional movements. The access angle for preparation and visualisation could be altered during the procedure by maneuvering the colono- scope and the movements of the flexible endoscopic instruments. To prepare anastomosis, circular stapler anvil was introduced transluminally and penetration of the colon wall was carried out. Subsequently, proximal ressection of the sigmoid colon was performed using a linear stapler inserted through a trocar at the left

Disclosure of Interest: All authors have declared no conflicts of interest.
lower abdomen. The bowel extraction was performed by invagination transrec- taly. After the extraperitoneal 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 abnormalities were not seen in the 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 peri gastric 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 orientation and dissection. For resorption 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 seen in both of 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 features 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. A laparoscopic evaluation with biopsies was performed in 16 patients. Fluid protein content and ascitic fluid showing lymphocytic predominance and no malignant cells and absence of malignant ascitic fluid cultures was negative in all. CA-125 was elevated in all and the ascites were aspirated and sent for pathological analysis which showed a lymphocytic predominant pattern, and absence of malignant cells. A laparoscopic evaluation with biopsies was performed in 16 patients and an exploratory laparotomy in 4 women for suspected ovarian cancer. Intraoperative findings of tubercles on the pelvic organs and peritoneal surfaces were noted in 10 patients. In two, TB was not suspected intraoperatively. The diagnosis of TB was confirmed by histopathology in 95.2%. Response to therapeutic trial of anti-tubercular drugs was the basis of diagnosis in one case because of the clinical risk.

**Conclusion:** It is a diagnostic challenge to differentiate pelvic-peritoneal TB from ovarian cancer which has entirely different management and prognosis. Ascitic fluid showing lymphocytic predominance and no malignant cells and positive(FTG) are pointers to obtain a histopathological diagnosis by laparoscopic biopsy or frozen section at laparotomy.

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

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

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**Introduction:** Epidemiological studies have shown that there was an inverse relationship between H. pylori infection and 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 function of FoxP3+ Treg cells in the Breg cells in the context of H. pylori treatment on 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 immunofluorescence. The anti- and pro-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±2.88 vs. 16.00±2.00, P<0.025) and colon length shortened (0.83±0.22 vs 7.30±0.40, P<0.001). 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=0.03; MLN:5.89±0.54 vs 4.94±0.65, P=0.047; PP: 6.95±1.67 vs 5.39±0.88, P=0.05; respectively. (2) 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±1.53, P=0.001; PP: 12.70±3.24 vs 8.58±1.71, P=0.01. The numbers of Foxp3+Treg cells per mm in colon Group 1 vs Group 2 were 3.44±0.40 vs 25.8±3.34, P=0.004. (4) mRNA expression in colonic mucosa: IL-10 (P=0.001) mRNA relative expression upregulated and IFNγ (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 were detected by flow cytometry in different tissues: blood: 7.09±0.58 vs 5.37±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: 6.61±0.51 vs 7.37±0.87, P=0.001; 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+ Treg cells per mm in PP 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 IFNγ (P<0.001) mRNA relative expression downregulated significantly.
Conclusion: 1) H. pylori infection can alleviate the acute and chronic colitis induced by DSS and CD4+CD45R- Foxp3 Treg cells expanded significantly in H. pylori/DSS co-treated acute colitis mice. (3) CD19+IL-10+ Breg cells expanded while CD4+CD25+ Foxp3+ Treg cells reduced significantly in IFNγ/DSS co-treated chronic colitis mice. The potential protective effect of H. pylori infection on acute and chronic colitis induced by DSS may take through the expansion and function of CD19+IL-10+ Breg cells.

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

P0301 FUNGAL COMPOSITION AND FUNGI-BACTERIA CORRELATION IN IBD PATIENTS WITH DIFFERENT TREATMENT STRATEGIES

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Introduction: The microbial dysbiosis plays a pivotal role in the pathogenesis of inflammatory bowel disease (IBD), however, the role of fungal microbiota in IBD has not been fully understood. We studied the fungal gut microbiota composition 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 administering colon IBD-protective effect of andecaliximab (previously GS-5745) is a high-affinity IgG4 monoclonal antibody against human Matrix Metalloproteinase 9 (MMP9). In a 36-day Phase 1b study in UC, andecaliximab demonstrated clinical efficacy relative to placebo treatment [5]. Here we describe bacterial microbiota analysis of stool samples collected during the Phase 1b study of andecaliximab in UC.

Aims & Methods: The objective of this study is to examine changes to the bacterial microbiota in pre- and post-andecaliximab treatment and relative to therapeutic response. stool was collected before and after therapy (Baselinel and after the end of the study (Day 36). Clinical response was defined as a Mayo score reduction ≥3 point and ≥30% reduction from baseline score; accompanying decrease in rectal bleeding sub-score of ≥1 or an absolute rectal bleeding sub-score of 0 or less and Dxy was extracted from fecal samples using a modified CTAB method and 16S rRNA amplicon sequencing was performed on 59 samples (27 paired and 5 unpaired samples). Alpha diversity, beta diversity (calculated in QIIME), and taxonomic differences were examined between placebo and andecaliximab-treatment, and between 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 < 0.007). Specifically, the genera Clostridia and Akkermansia represented the most of the top organisms enriched post andecaliximab treatment relative to placebo. Andecaliximab treatment exhibited a non-significant expansion of Akkermansia from Baseline to Day 36 (p = 0.15). Amongst the clinical biomarkers, sex was the only marker to achieve a trend of increased relative abundance of Akkermansia muciniphila (p = 0.08).

Conclusion: Akkermansia muciniphila is the most consistently enriched organism for subjects treated with andecaliximab who respond to treatment. The presence of Akkermansia muciniphila may be an early marker for clinical efficacy. These preliminary results are unlikely to be pursued in relation to andecaliximab treatment effects, but may be beneficial as a reference for future trials in inflammatory bowel disease.

Disclosure of Interest: B. LaMere: Microbiome data was analyzed and interpreted by UCSF and funded by Gilead Sciences. E.R. Wendt: Employee of Gilead Sciences, Inc. B. Kanwar: Employee of Gilead Sciences, Inc. S.V. Lynch: Consultant for Thravance Sponsored research projects from Sloan Foundation, CF Foundation, J&J, Janssen Pharmaceuticals and Gilead Royalties for IP licensed by Kalbo Bios Inc. Founder and Board of Directors, Siolta Therapeutics

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 Disease (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).

Disclosures: All authors have declared no conflicts of interest.

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 before and after therapy (Baseline and after the end of the study (Day 36). Clinical response was defined as a Mayo score reduction ≥3 point and ≥30% reduction from baseline score; accompanying decrease in rectal bleeding sub-score of ≥1 or an absolute rectal bleeding sub-score of 0 or less and Dxy was extracted from fecal samples using a modified CTAB method and 16S rRNA amplicon sequencing was performed on 59 samples (27 paired and 5 unpaired samples). Alpha diversity, beta diversity (calculated in QIIME), and taxonomic differences were examined between placebo and andecaliximab-treatment, and between 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 < 0.007). Specifically, the genera Clostridia and Akkermansia represented the most of the top organisms enriched post andecaliximab treatment relative to placebo. Andecaliximab treatment exhibited a non-significant expansion of Akkermansia from Baseline to Day 36 (p = 0.15). Amongst the clinical biomarkers, sex was the only marker to achieve a trend of increased relative abundance of Akkermansia muciniphila (p = 0.08).

Conclusion: Akkermansia muciniphila is the most consistently enriched organism for subjects treated with andecaliximab who respond to treatment. The presence of Akkermansia muciniphila may be an early marker for clinical efficacy. These preliminary results are unlikely to be pursued in relation to andecaliximab treatment effects, but may be beneficial as a reference for future trials in inflammatory bowel disease.

Disclosure of Interest: B. LaMere: Microbiome data was analyzed and interpreted by UCSF and funded by Gilead Sciences. E.R. Wendt: Employee of Gilead Sciences, Inc. B. Kanwar: Employee of Gilead Sciences, Inc. S.V. Lynch: Consultant for Thravance Sponsored research projects from Sloan Foundation, CF Foundation, J&J, Janssen Pharmaceuticals and Gilead Royalties for IP licensed by Kalbo Bios Inc. Founder and Board of Directors, Siolta Therapeutics

References
Aims & Methods: This work was designed to investigate the pattern of cytokines that regulate the mucosal immune response occurring in different intestinal compartments of IBPD 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 mucosal biopsy (EP) and live mucosa (LP) (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 IBPD 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 a decreased production of IL-17A.

The gut microbiota play important roles in the development of the mucosal immune response in IBD patients. In particular, CD seems to be prominently a CD4 lymphocyte-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 a decreased production of IL-17A.

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

Reference
before treatment in the active stage to possibly be associated with increased proportions of Bacteroides, Parabacteroides, Rickenella, Clostridium, Flavonifractor, Pelagibacter, Bordetella, Massilia and Piscirickettsia species. In responders after treatment, populations of Bifidobacterium and Lactobacillus species were significantly increased. In this study, there was an especially strong negative correlation between Bacteroides and Bifidobacterium both before and after treatment.

Conclusion: These results suggested metagenomic analysis results to be associated with a remarkable change in gut microbiota after antibiotic combination treatment. In non-responders, in association to positive changes 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 renowned for regulating gastrointestinal motility, secretion, and insulin levels by release of peptide hormones. Neuropeptides and EEC 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 Pyy is released by EEC in UC to Paneth cells. Since Pyy is a functional co-factor of GLP-1 and the amount of GLP-1 expressing EEC is reduced in the inflamed conditions of inflammatory bowel disease (IBD), a role for EEC in disease pathogenesis is limited and 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 specimens. Mouse models of intestinal inflammation used include genetic models, Il-10−/−, T cell receptor- and Foxp3−/− mice, as well as receptor and adoptive transfer models, Rag2−/− mice reconstituted with CD4+ T cells (cohost, chemically (DSS)-induced colitis and an infection model (Citrobacter rodentium).

Results: Numbers of GLP-1+ and Chga+ cells were consistently reduced in all mouse models of intestinal inflammation. These changes were confined to the site of intestinal inflammation. Neither absence of mature B and T cells in Rag2−/− mice alone was associated with reduced numbers of EEC, nor adoptive transfer of CD4+ T cells per se, since transfer of non-colitogenic CD4− CD25+ T cells did not lead to changes in Chga+ cell numbers in the colon. The reduction of GLP-1+ and Chga+ cells observed by immunohistochemistry was reflected by diminished levels of Gcg and Chga mRNA expression, whereby mRNA levels of the L-cell-derived hormone 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 if these alterations represent a consequence or causatively contribute to intestinal inflammation and elucidate the functional consequences on immune responses.

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

References

P0309 IMPAIRED MITOCHONDRIAL PROTEOSTASIS IS ASSOCIATED WITH MITOCHONDRIAL DYSFUNCTION AND INDUCES PHENOTYPIC TRANSITION OF LGR5+ STEM CELLS INTO PANETH CELLS

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Introduction: The intestinal stem cell niche is a multicellular interface that is completely renewed every 3–5 days. Pluripotent stem cells reside at the crypt bottom giving rise to transient amplifying cells and subsequently differentiated intestinal epithelial cells (IEC) of all subtypes. Phases of cellular and functional transitions are characterized by distinct metabolic identities, reflected by changes in mitochondrial activity. Alterations in mitochondrial function and mitochondrial unfolded protein response (MT-UPR) activation are associated with various chronic pathologies including inflammatory bowel diseases (IBD) and cancer. We have previously shown that MT-UPR and mitochondrial function itself is involved in the regulation of cell cycle progression and intestinal stemness. Here, we present evidence that impaired mitochondrial proteostasis is sufficient to drive differentiation of Lgr5+ stem cells (ISC) into Paneth cells.

Aims & Methods: To depict the impact of imbalances in mitochondrial proteostasis on ISC, we used mice with a tamoxifen-inducible ISC or IEC-specific conditional knockout allele for the mitochondrial chaperone Hsp60 and the mitochondrial protease ClpP. Molecular consequences of the gene deletions in the different models were further characterized ex vivo using intestinal organoid culture. In situ hybridization, IHC and combinations of both as well as IF were performed to illustrate alterations of ISC subtypes. Readouts were complemented by RNA expression and biochemical approaches.

Results: Cln5 knockout as well as chemical inhibition of the respiratory chain in intestinal organoids led to diminished Lgr5 expression confirming our results from ISC and IEC specific Hsp60-deletion. In vivo, the IEC-specific loss of Hsp60 resulted in a transient drop in Lgr5+ cells with Lgr5 expression being reduced from day 2 after end of tamoxifen treatment and signals reappearing from day 4. Cells positive for the stem cell markers Olfm4 and Hopx expanded at day 2, indicating reserve stem cell populations compensating for the Lgr5 deficiency. Loss of minimal numbers of Lgr5+ stem cells at day 2 were further paralleled by increased numbers of Lgr5−, Lyz− Paneth cells and no signs of enhanced cell death, indicating differentiation of ISC into Paneth cells. Lgr5−, Lyz− Paneth cells displayed a premature phenotype with diffuse Lyz staining in the cytoplasm.
Concomitantly, these cells were positive for the WNT ligand WNT11A and autophagy/mitophagy-associated LC3, suggesting autoregulatory mechanisms for the maintenance of the stem cell niche and mitochondria-associated functional alterations, respectively.

**Conclusion:** Our results indicate that mitochondrial function not only reflects IEC phenotypic changes but seems to be the driving force in differentiation processes. Mitochondrial function might therefore represent a key player at the edge of intestinal tissue homeostasis and repair/healing processes in the context of disease.

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

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**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 metabolomic profile in a newly diagnosed cohort of UC patients recruited from St. Marks Hospital, London, UK. Patients were stratified by ethnicity (SA, Caucasian, Other), treatment (None, 5-ASA, Azathioprine and Steroids) and disease duration. Healthy controls (HC) were recruited locally among the staff at St. Marks Hospital. Biofluids (urine, faeces and serum) were collected at diagnosis (time point 1; months 0–3) and 2 further time points over one year (time point 2: months 4–8, time point 3: months 9–12). Metabolomics analysis was performed using a multivariate Gaussian mixture model for both clinical and metabolomic outcomes, ranging from an 85%3 to statistically insignificant level.4

**Results:** Fifty patients with UC of SA and Caucasian backgrounds were recruited locally among the staff at St. Marks Hospital. Biofluids (urine, faeces and serum) were collected at diagnosis (time point 1; months 0–3) and 2 further time points over one year (time point 2: months 4–8, time point 3: months 9–12). Metabolomics analysis was performed using a multivariate Gaussian mixture model for both clinical and metabolomic outcomes, ranging from an 85%3 to statistically insignificant level.4

**References**

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**P0311 BASELINE CLINICAL AND ENDOSCOPIC FEATURES OF ULCERATIVE COLITIS PATIENTS ARE RELEVANT GUIDE FOR SELECTING RESPONDERS TO SELECTIVE DEPLETION OF MYELOID LINEAGE LEUCOCYTES AS REMISSION INDUCTION THERAPY**

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**Introduction:** Patients with active inflammatory bowel disease have elevated myeloid lineage leucocytes1 including the CD14+CD16+ DR+ e phenotype known as proinflammatory monocytes, and a major source of tumour necrosis factor-a.2 Accordingly selective depletion of myeloid leucocytes by granulocyte/monocyte apheresis (GMA) is expected to promote remission or enhance drug efficacy. However, studies in ulcerative colitis (UC) patients have reported contrasting efficacy outcomes, ranging from an 85%3 to statistically insignificant level.4 Patients’ baseline demographic features may guide to selecting responder patients.

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

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**Table 1.**

<table>
<thead>
<tr>
<th>Mass/RT (mins)</th>
<th>Biofluid</th>
<th>Univariate or Multivariate (MV)</th>
<th>Change</th>
<th>p-value</th>
<th>Compound</th>
<th>Pathway</th>
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<td>136.061/2.13</td>
<td>Faecal</td>
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<td>Increased</td>
<td>0.0049</td>
<td>Adenine</td>
<td>Protein digestion and absorption small bowel</td>
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<tr>
<td>268.103/1.72</td>
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<td>Adenosine</td>
<td>Purine biosynthesis</td>
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<td>Increased</td>
<td>0.0014</td>
<td>Glutamic acid</td>
<td>Tyrosine metabolism</td>
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<tr>
<td>247.142/3.88</td>
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<td>MV</td>
<td>Unassigned</td>
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<tr>
<td>249.149/3.87</td>
<td>Urine</td>
<td>MV</td>
<td>Unassigned</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**BILE ACIDS**

- **375.280/10.29** Faecal UV Decreased 0.0046 Lithocholic acid Secondary bile acid from bacterial metabolism of chenodeoxycholic acid
- **375.280/8.81** Serum UV Decreased 0.0041 Lithocholic acid
- **391.281/10.35** Serum UV Decreased 0.0072 Deoxycholic acid Secondary bile acid from metabolism of cholic acid
- **407.28/8.33** Serum UV Decreased 0.0045 Cholic acid Primary bile acid
- **432.314/9.91** Serum UV Decreased 0.0230 Glycolithocholic acid Sulphur ester of lithocholic acid
- **373.372/10.17** Serum MV Decreased 0.0007 5-Cholic Acid-1B-ol
- **391.283/10.34** Serum MV Decreased 0.0018 Deoxycholic acid

**References**

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

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<td>Urine</td>
<td>MV</td>
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**References**
Aims & Methods: In a retrospective and single-centre setting we aimed to under- stand if patients’ baseline clinical and endoscopic features were relevant guide for identifying likely responders and non-responders to adsorptive GMA. The sub- jects were 145 consecutive UC patients who had undergone GMA with the Adacolumn as reinnovation induction therapy between 2012 and 2016. Seventy- five percent patients were steroid naive, 70 were steroid dependent, and 2 patients were steroid refractory. Patients had received up to an 11 GMA sessions over 10 weeks. At entry and week 12, patients were clinically and endoscopically evaluated, allowing each patient to serve as her or his own control. Clinical activity indexes defined as remission. Biopsies from endoscopically detectable inflamed large intestinal mucosa were processed to see the impact of GMA on leucocytes within the mucosal tissue.

Results: At entry, the average CAI was 12.8, range 10–17. Ninety-three patients (64.1%) had achieved remission (CAI ≤ 5) after GMA. 52 of 71 steroid dependent (71.7%), 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 the expression of monocytes and macrophages were mostly normalised and monocytes and macrophages were mostly normalised. There was a marked reduction of infiltrating leucocytes 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 (96%), 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 patients for its safety profile and for being a non-remission induction therapy. Patients with extensive deep ulcer, 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 stop futile use of medical resources.

Disclosure of Interest: A.R. Saniabadi: Dr. Saniabadi has a non-regural employ- ment position at JIMRO. All other authors have declared no conflicts of interest.

References

P9013 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 SCFAs, butyrate has been described as a potent communicator to the immune system eliciting an anti-inflammatory response and other positive effects to human health1. A reduction of faecal butyrate levels has been reported in IBD but results have been conflicting or discrepant because of small study numbers and failure to distinguish disease type, activity or other variables such as diet. Microbiota is receiving increasing attention as a key environmental factor influencing IBD2, and butyryl-CoA:acetate CoA-transferase (BCoAT) is considered the main enzyme involved in butyrate synthesis by gut microbiota3.

Aims & Methods: We performed a comparative assessment of the capacity of the microbiota for butyrate synthesis by quantifying BCoAT gene content in stool from patients with Crohn’s disease (CD; n = 71), ulcerative colitis (UC; n = 58) and controls (n = 75), and determined whether it was related to disease activity, inflammation, microbial diversity and composition and/or dietary habits. BCoAT gene content was quantified by qPCR. Disease activity was assessed clinically and faecal calprotectin concentration measured as biomarker of inflammation in the gut. Microbial composition was determined by sequencing 16S rRNA gene. Dietary data were collected using an established food frequency questionnaire.

Results: Reduced butyrate-synthetic capacity was found in patients with active and inactive UC (p < 0.001 and p < 0.01, respectively), but only in active UC (p < 0.05). In patients with CD, low BCoAT gene content (below 9.5 log10 copies BCoAT/g) was associated with active disease, increased inflammation, lower microbial diversity, greater microbiota compositional change and decreased butyryltaconic acid, while no major changes were observed between patients with UC grouped according to BCoAT gene levels. Reduced BCoAT gene content in patients with CD was, in part, linked with lower intake of certain foods containing fibre (vegetables, fruits, high-fibre cereals, brown/wholemeal bread and nuts).

Conclusion: Reduced butyrate-synthetic capacity by the microbiota is more evi- dent in CD than UC and may relate to reduced fibre intake. The results suggest that simple replacement of butyrate per se may be therapeutically inadequate, perhaps by other components in diet. Dietary means may be more appropriate and profitable for patients with CD.

Disclosure of Interest: C. Hill: Prof Colin Hill has received research funding from Janssen and Artgen Therapeutics.
F. Shanahan: Prof Fergus 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 VANCOMYCIN MIDS MILDE COLD INCREASES 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 (VCM), both antibiotics, metronidazole, neomycin, or a combination of ABPC and VCM (AV) for three consecutive days. Colitis was assessed by fecal occult blood test (FOBT) and mRNA level of cytokines. Metabolites and short chain fatty acid (SCFA) in the feces were measured by a chromatography- tandem mass spectrometry. Faecal microbiota was determined by 16S rRNA sequencing.

**Results:** Gut microbiota was analyzed in the A-V mice. Moreover, Gln metabolites and SCFA including butyric acid were decreased and family S24-7 and order Clostridiales were less abundant in the A-V mice. Interestingly, Gln treatment improved the anti-inflammatory and anti-mutagenic effects of butyric acid in RAW264.7 and macrophage cell culture. Pre-treatment with 7-OH-DPAT decreased the mucosal layer thickness 1.1-fold (p<0.05) during IA-colitis. Furthermore, 7-OH-DPAT significantly increased the expression of microglial and macrophages in 0.5 h (1.6-fold, p<0.05) and in 2 h (1.3-fold, p<0.05) after IA enema. Pre-treatment with 7-OH-DPAT decreased the mucosal layer thickness 1.1-fold (p<0.05), crypt depth 1.1-fold (p<0.05) and Goblet cell staining or by the reaction with Folin reagent. The content of hexose, fucose and hexosamine were determined by standard biochemical assays. Morphometric analysis was performed to evaluate the histological changes of colonic epithelial and goblet cells. Oxidative metabolism and arginase activity (analyzed by colorimetric method) in peritubular microvessels were investigated.

**Results:** Pre-treatment with 7-OH-DPAT did not affect the glycoprotein levels in normal mucosa, but significantly increased total levels of glycoprotein (1, 1.6-fold, p<0.05) and hexose (1, 1.1-fold, p<0.05) during IA-colitis. Furthermore, 7-OH-DPAT significantly increased the expression of microglial and macrophages in 0.5 h (1.6-fold, p<0.05) and in 2 h (1.3-fold, p<0.05) after IA enema. Pre-treatment with 7-OH-DPAT decreased the mucosal layer thickness 1.1-fold (p<0.05), crypt depth 1.1-fold (p<0.05) and Goblet cell intersection area 1.1-fold (p<0.05) after IA enema.

**Conclusion:** Pre-treatment with D3R-agonist increased levels of mucus secretion and activated natural immune response by macrophage activation during experimental colitis, which could indicate about the protective role of D3R.

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

**References**

**P0316 THE MECHANISM OF PROTECTIVE ROLE OF D3 DOPAMINE RECEPTORS IN PATHOGENESIS OF ULCERATIVE 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 activation of D3R improves colonic mucus secretion during experimental colitis. Study was done on male Wistar rats (180–230 g). Experimental colitis was induced by 6% dextran sodium salt (IA) (0, 1 ml, enema). Selective D3R agonist 7-OH-DPAT (0.02 mg/kg, s.c.) was injected m. b. prior to IA enema. Rats were euthanized 0, 5 and 2 h after IA enema. In the autopsy 7 cm colon from the anus has been removed. Surface mucous layer was separated from epithelial cells with N-acetyl-L-cysteine and glycopolymers were measured by periodic acid/Schiff (PAS) staining or by reaction with Folin reagent. The content of hexose, fucose and hexosamine was determined by standard biochemical assays. Morphometric analysis was performed to evaluate the histological changes of colonic epithelial and goblet cells. Oxidative metabolism and arginase activity (analyzed by colorimetric method) in peritubular microvessels were investigated.

**Results:** Pre-treatment with 7-OH-DPAT did not affect the glycoprotein levels in normal mucosa, but significantly increased total levels of glycoprotein (1, 1.6-fold, p<0.05) and hexose (1, 1.1-fold, p<0.05) during IA-colitis. Furthermore, 7-OH-DPAT significantly increased the expression of microglial and macrophages in 0.5 h (1.6-fold, p<0.05) and in 2 h (1.3-fold, p<0.05) after IA enema. Pre-treatment with 7-OH-DPAT decreased the mucosal layer thickness 1.1-fold (p<0.05), crypt depth 1.1-fold (p<0.05) and Goblet cell intersection area 1.1-fold (p<0.05) after IA enema.

**Conclusion:** Pre-treatment with D3R agonist increased levels of mucus secretion and activated natural immune response by macrophage activation during experimental colitis, which could indicate about the protective role of D3R.

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

**References**
Results: Of 104 ileoecal resections, 30 (29%) and 15 (14%) had inflammation at the resection margin, respectively. After a median follow-up of 8.6 years, clinical recurrence was seen in 57%, and surgical recurrence in 26%. A significantly increased recurrence rate was seen in patients with active inflammation at the distal resection margin whereas recurrence rates were comparable for inflammation at the proximal site and radical resections (87%, 61%, and 50% resp., p < 0.001). Active inflammation at the distal resection margin (HR: 3.189 (1.635–6.220); p = 0.001) and smoking (HR: 2.502 (1.331–4.703; p = 0.004) were the only independent predictors for clinical recurrence. The incidence of surgical small bowel recurrence was significantly lower in randomised controlled trials compared with non-RCTs (25% vs. 38%, p = 0.004).

Conclusion: At the distal (colon) resection margin, and not the proximal ileum, after ileocecal resection was associated with significantly increased risk of clinical recurrence. This unexpected finding suggests that radiosensitivity in correctly diagnosed terminal ileitis (I1 disease), while it is of crucial importance to exclude colonic L3 disease. As this different phenotype is unlikely to benefit from more extensive surgery, pathological finding of positive distal resection margin should be regarded as a risk factor, warranting prophylactic drugs or close monitoring.

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

References

P0319 LIPOSOMAL FORMULATION AS A NEW DRUG DELIVERY SYSTEM FOR CROHN’S DISEASE - VALIDATION IN THE MOUSE MODEL OF TNBS-INDUCED COLITIS
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Introduction: Crohn’s disease (CD), a chronic inflammatory disease of the gastrointestinal tract, constitutes a significant healthcare burden, especially in the developed societies. Current methods of treatment are only partially effective and/or associated with major adverse effects. New therapeutic solutions are therefore urgently needed to ameliorate the often complex 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-lipid hydration method. 0.9% sodium chloride was used as a solvent. The hydration solutions contained a nonionic surfactant (sodium cholate) and a cholesterol analogue (cholesteryl dimyristoyl phosphatidylethanolamine), and were prepared by thin-lipid hydration method. In order to evaluate the capacity for drug delivery of the liposomal formulation, the best anti-inflammatory effect was obtained when liposomal suspension with berberine was used, while the treatment with 5-ASA was less effective. Additionally, we assessed the efficacy of a liposomal suspension containing 5-ASA and berberine for the treatment of Crohn’s disease.

Results: The macroscopic scoring index 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 determined and body weight was measured. The obtained results indicate that the best anti-inflammatory effect was obtained when liposomal suspension with berberine was used, while the treatment with 5-ASA was less effective. Surprisingly, CGA administration caused a detrimental effect as demonstrated by higher macroscopic score and increased MPO activity.

Conclusion: Drug-loaded liposomes may enhance the penetration of active compounds through the gut wall and therefore allow for increased bioavailability and effectiveness of the treatment at lower doses. We also showed that plant-derived compounds, such as berberine and CGA, provide a new direction in the search of anti-inflammatory substances. However, increased bioavailability of anti-inflammatory compounds may result in adverse effects.

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

References
1. United Kingdom

P0320 EPIDEMIOLOGY OF MICROSCOPIC COLITIS IN NOTTINGHAM: A CONTEMPORARY COHORT STUDY
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Introduction: Diarrhoea is a common indication for colonoscopy. International guidelines recommend colon biopsies should be routinely taken at lower GI endoscopy in patients with diarrhoea [1, 2] to look for microscopic colitis. The epidemiology of contemporary microscopic colitis is largely unknown with published data based on an earlier time period pre-2001 and in small retrospective series. We have systematically collected a large and contemporary cohort of patients with incident microscopic colitis to help further our understanding of this disease.

Aims & Methods: Colonic biopsies demonstrating microscopic colitis between 2001 and 2007 were identified from the pathology reports of the Endoscopy Department. GI endoscopy procedures taking place during this time period were identified from an electronic database. Incidence rates were calculated using the total population for Nottinghamshire derived from UK mid-year population estimates [3]. Poisson regression models were used to determine rate ratios.

Results: 843 people were diagnosed with microscopic colitis of which 60.7% were female (n = 512). The mean age at diagnosis was 65.0 (95%CI 64.0, 65.9) years. 57.5% (n = 485) had collagenous colitis and 42.5% had lymphocytic colitis. The
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 UCERULATORY COLITIS ARE ASSOCIATED WITH A MORE SEVERE DISEASE OUTCOME: A POPULATION-BASED STUDY
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Introduction: Data on extra-intestinal manifestations (EIM) and their impact on disease course of ulcerative colitis (UC) in population-based cohorts are scarce, particularly in paediatric- and elderly-onset UC patients.

Aims & Methods: The aims of this population-based study were to assess 1) the occurrence of EIM in paediatric- and elderly-onset UC; and 2) their impact on long-term disease outcome. Paediatric-onset (<17 years at diagnosis) and elderly-onset UC patients (>60 years) from a French prospective population-based Registry (EPIMAD) were included. Data on EIM and other clinical factors at diagnosis and at maximal follow-up were collected.

Results: 158 paediatric- and 470 elderly-onset UC 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, 9–7.9). Extensive colitis was another independent risk factor in both age groups.

Conclusion: Elderly-onset UC patients had lower risk of EIM either at diagnosis or during follow-up than paediatric-onset UC. Presence of EIM at diagnosis predicted more severe disease outcome including need for immunosuppressive or biologic therapy or surgery in both paediatric- and elderly-onset 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: All new cases 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 CC or LC. Demographic and clinical data were retrospectively collected from diagnosis to February 31th, 2017.

Results: One hundred and thirty cases of MC, 87 CC and 43 LC were included (median age at diagnosis 70 and 48 years, respectively). The median follow-up was 9.6 years (Q1 = 7.6; Q3 = 10.61). By the end of follow-up, 37 patients (28%) relapsed after a median time of 3.9 years (1.2; 5) since diagnosis, without significant difference between CC and LC (30% vs 25%, 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 corticosteroid-resistant. Only one patient was treated by immunosuppressants (azathioprine). No colorectal cancer was reported during follow-up. Any of the death (n = 25) observed during follow-up were linked to MC. In multivariate analysis, age at diagnosis (HR 1.03; 95%CI, 1.00–1.06; p = 0.02) and budesonide exposure (HR 0.46; 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 (CCCPNOW) (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
Within the first 10 years after UC onset. Furthermore, biological therapy investigation of the average disease activity in 5-year-intervals in UC patients lighted that allow better targeting of patients and areas requiring an improve-
ment in IBD treatment.

**Conclusion:** Using the IBD-INFO, an updated self-administered questionnaire built to assess IBD patients' knowledge, several risk factors have been high-
lighted that allow better targeting of patients and areas requiring an improve-
ment in IBD treatment.

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

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**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 disease comprising Crohn’s disease (CD) and ulcerative colitis (UC), which are characterized by chronic remittent intestinal inflammation and carry the risk for extraintestinal manifestations including primary sclerosing cholangitis (PSC). Available data on the impact of PSC on the disease course in IBD patients is scarce. Therefore, we assessed the impact of coincidental PSC on the disease course in a large IBD patient cohort.

**Aims & Methods:** In total 1814 patients with histologically confirmed IBD were evaluated. Medical records from 795 UC and 1022 CD patients as well as from 77 UC-PSC and 10 CD-PSC patients were assessed. Data were evaluated using standard statistical methods. In matched-pair analyses, IBD patients with and without PSC were matched at the ratio of 3:1 by sex, disease entity, age at diagnosis, time from diagnosis to first presentation, and duration of follow-up. Time to event analysis was performed using survival analytic methods including Kaplan-Meier method and log-rank test.

**Results:** PSC was diagnosed in 77 and 10 patients out of 781 UC (9.8%) and 1022 CD (0.1%), respectively. Age at UC onset was significantly lower in UC-PSC patients than in patients without PSC (25.3 vs. 29.3 years; p < 0.001). Extensive disease manifestation was observed in 46% of UC patients, whereas pancolitis was more frequently diagnosed in UC-PSC patients (75% vs. p < 0.001). Concerning CD, all patients with coincident PSC showed colonic involvement, while only 69% of the CD patients without PSC had colonic manifestation (p = 0.044). Interestingly, IBD patients without PSC presented more frequently with active disease, as compared to IBD-PSC patients (p = 0.011; age: year; p = 0.055). Conveneniently, 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-α antibodies was initiated more frequently (21.7% vs. 16.4%; 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 (HGIN) and CRC were detected in 25 IBD-PSC patients and in 7 IBD-PSC (4 UC and 3 CD) patients (1.45% vs. 8.05%). Of note, in IBD-PSC patients, HGIN/CRC occurred significantly earlier than in IBD patients without PSC (20-year-risk: 9.6% vs. 5.6%; p = 0.003).

**Conclusion:** In our large cohort study, IBD patients with 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.

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**P0325 UNCHANGED SURGERY AND HOSPITALIZATION RATES IN AN EAST-WEST EUROPEAN INCEPTION COHORT DESPITE PSC PRESENCE**


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**Aims & Methods:** In our large cohort study, IBD patients with coincident PSC showed more frequently with active disease, as compared to IBD-PSC patients (7.3 vs. 6.2; p < 0.001). Extensive disease manifestation was observed in 46% of UC patients, whereas pancolitis was more frequently diagnosed in UC-PSC patients (75% vs. p < 0.001). Concerning CD, all patients with coincident PSC showed colonic involvement, while only 69% of the CD patients without PSC had colonic manifestation (p = 0.044). Interestingly, IBD patients without PSC presented more frequently with active disease, as compared to IBD-PSC patients (p = 0.011; age: year; p = 0.055). Conveneniently, 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-α antibodies was initiated more frequently (21.7% vs. 16.4%; 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 (HGIN) and CRC were detected in 25 IBD-PSC patients and in 7 IBD-PSC (4 UC and 3 CD) patients (1.45% vs. 8.05%). Of note, in IBD-PSC patients, HGIN/CRC occurred significantly earlier than in IBD patients without PSC (20-year-risk: 9.6% vs. 5.6%; p = 0.003).

**Conclusion:** In our large cohort study, IBD patients with coincident PSC showed a distinct disease course with less relapse, lower disease activity, but earlier disease onset and higher risk for extensive disease manifestation as well as increased risk for colorectal dysplasia development.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
There was a similar, significant increase for codeine (chi2 for trend, p < 0.005). Moderate use (1–3 prescriptions per year) 0.94 (0.64–1.39) 0.83 (0.56–1.21) Moderate use (1–3 prescriptions per year) 1.15 (0.85–1.55) 1.67 (1.25–2.23) Heavy use (>3 prescriptions per calendar year) None/infrequent use (<1 prescription per year) 1 1 Moderate use (1–3 prescriptions per year) 1.66 (0.89–3.09) 0.72 (0.35–1.47) Moderate use (1–3 prescriptions per year) 0.70 (0.35–1.39) 1.83 (1.10–3.05) Moderate use (1–3 prescriptions per year) 0.69 (0.27–1.72) 0.50 (0.19–1.36) Moderate use (1–3 prescriptions per year) 0.79 (0.35–1.81) 1.39 (0.66–2.94) Moderate use (1–3 prescriptions per year) 1.34 (0.67–2.69) 2.44 (1.16–5.15) Moderate use (1–3 prescriptions per year) 2.18 (1.20–3.95) 3.30 (1.77–6.18) Moderate use (1–3 prescriptions per year) 1.04 (0.99–1.06) 1.81 (0.91–3.62) Moderate use (1–3 prescriptions per year) 2.04 (1.14–3.65) 2.47 (1.41–4.33)
**P0328 DETECTION OF MUTATIONS IN NOD2/CARD15 GENE IN ARAB PATIENTS WITH CROHN’S DISEASE**

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**Introduction:** Crohn’s disease is a chronic, immune mediated inflammatory condition which affects the gastrointestinal tract. NOD2/Card15 mutations have been linked to an increased risk of Crohn’s disease and to some of its phenotypes. This study aimed to determine the presence of the above mutations in Arab patients suffering from Crohn’s disease in Kuwait.

**Aims & Methods:** Blood samples were obtained from 103 Arab patients with Crohn’s disease and 100 normal Arab controls. The genomic DNA was isolated from the samples using QIAamp DNA Blood mini kit. The isolated DNA were used in a Polymerase Chain Reaction (PCR) using four sets of primers specific for each mutation in the NOD2/Card15 (rs2066842, SNP5, Exon 8; 902C>T; rs2066845, SNP12, Exon 2104C>T; and rs2066847, SNP13, Exon 3020insC). The PCR-amplified DNA were sequenced using ABI 3130xl Genetic analyzer, and specific mutations were detected by using the sequence analysis software.

**Results:** Table 1 shows the results of all homozygous and heterozygous mutations for each control subject. There was no association in rs2066842 (SNP5, Exon 802C>T) in the NOD2/Card15 sequence of 17 (16.5%) Arab patients with Crohn’s disease compared to 32 (32.0%) normal controls (p < 0.05). This difference was statistically significant if the mutation was heterozygous (p < 0.005). These results support previous studies that mutation in rs2066842 (SNP5, Exon 8 2722C>G) was found in 24 (23.3%) patients and 10 (10.0%) controls (p < 0.05). This difference was statistically significant if the mutation was homozygous (p < 0.05) but not in heterozygous. The mutation in rs2066845 (SNP12, Exon 2104C>T) was found only in one patient and no controls and rs2066847 (SNP13, Exon 3020insC) was not detected in any of the patients or controls. Table 1. Mutations in SNP5, SNP8, SNP12 and SNP13 of the NOD2/Card15 gene in Arab patients with Crohn’s disease and control subjects.

**Conclusion:** The above study suggests that mutation in rs2066842 (SNP5, Exon 8 2722C>G) occurs more frequently in Arab patients with Crohn’s disease compared to controls, but the disease is associated only with the homozygous mutation. Mutation in rs2066842 (SNP5, Exon 802C>T) occurs more frequently in controls compared to patients and the heterozygous mutation appears to have a protective effect against Crohn’s disease in the Arab population.
**P0330** VDR GENE BSM I POLYMORPHISM AND ULCERATIVE COLITIS

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Introduction: Among the numerous genetic factors associated with ulcerative colitis (UC), an increasing attention has been paid to the polymorphisms of the vitamin D receptor gene (VDR) associated with disorders of innate and adaptive immunity, as well as the barrier function of the intestinal epithelium. However, the results of studies on the prevalence, clinical, diagnostic and prognostic significance of polymorphisms of the VDR gene in different populations are ambiguous and contradictory. In particular, associations of Bsm I polymorphism of the VDR gene with UC in the Chinese population and in the Jewish Ashkenazi has been found, while in the Irish population, with a sufficient prevalence of Bsm I polymorphism, this association is absent [1–3]. In the Russian Federation, there is no data on the prevalence, clinical, diagnostic and prognostic significance of Bsm I polymorphism of the VDR gene with UC. These circumstances determined the purpose and objectives of this study.

Aims & Methods: The purpose is to assess the clinical, diagnostic and prognostic significance of the Bsm I polymorphism of the VDR gene (rs1544410) in UC among the residents of the Kemerovo region of the Russian Federation. The study included 76 patients with UC and 85 controls. Genotyping was performed by PCR method (“SNP-express” reagents, Lytech Co. Ltd., Russia) with electrophoresis. The association between the polymorphism and UC was determined using the software GenStat 16 (var) for variants of rs2241880, STAT3 (SNP rs744166), ECM1 (SNP rs3773240), NKKX2-3 (SNP rs10883365), was performed. Serological titers of anti-Saccharomyces cerevisiae (ASCA IgG and ASCA IgA), perinuclear anti-neutrophil cytoplasmic antibodies (pANCA), C-reactive protein (CRP), and antibacterial flagellin antibody (anti-CbIr1), were determined by specific enzyme-linked immunosorbent assay (ELISA).

Results: Fifty-nine out of 80 cases (74%) and 50/77 controls (65%) were positive for at least one of the serum antibodies (p = 0.09). A combination of any 4 of them was found in 3 cases (4%) and no controls (p = 0.28). No significant difference was found for any of the studied autoantibodies between cases and controls. Homozygosity for any susceptibility variant was found in 60 out of 80 cases (75%) and in 52/77 controls (67.5%) (p = 0.37), with no significant association between family history and genotype status. No combination of gene variants significantly differed between cases and controls.

Conclusion: Our preliminary results argue against a role of commonly recognized genetic polymorphisms and microbial antibodies as markers of disease susceptibility in siblings of children with UC. However, data from larger and prospective studies, possibly including microbial characterization, are warranted before drawing definitive conclusions.

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

References


**P0331** GENETIC AND SEROLOGICAL PROFILE AS MARKERS OF DISEASE SUSCEPTIBILITY IN SIBLINGS OF CHILDREN WITH INFANTILE INFLAMMATORY BOWEL DISEASE

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Introduction: Although the pathogenesis of IBD is multifactorial, the role of genetic factors has been widely recognized. Among the numerous genetic factors associated with IBD, the proband is the most reliable proxy for the entire family. Hence, the current study aimed to investigate the genetic factors and serological markers associated with IBD in siblings of affected children, as well as to determine the likelihood of diagnosis in unaffected siblings.

Aims & Methods: The aims of this study were to identify genetic and serological markers associated with IBD in unaffected siblings. The study included 80 siblings of children with IBD and 77 healthy controls with no family history for IBD. Genotyping (TaqmanMGB) for variants of ATG16L1 (rs2241880), STAT3 (SNP rs744166), ECM1 (SNP rs3773240), NKKX2-3 (SNP rs10883365), was performed. Serological titers of anti-Saccharomyces cerevisiae (ASCA IgG and ASCA IgA), perinuclear anti-neutrophil cytoplasmic antibodies (pANCA), C-reactive protein (CRP), and antibacterial flagellin antibody (anti-CbIr1), were determined by specific enzyme-linked immunosorbent assay (ELISA).

Results: Fifty-nine out of 80 cases (74%) and 50/77 controls (65%) were positive for at least one of the serum antibodies (p = 0.09). A combination of any 4 of them was found in 3 cases (4%) and no controls (p = 0.28). No significant difference was found for any of the studied autoantibodies between cases and controls. Homozygosity for any susceptibility variant was found in 60 out of 80 cases (75%) and in 52/77 controls (67.5%) (p = 0.37), with no significant association between family history and genotype status. No combination of gene variants significantly differed between cases and controls.

Conclusion: Our preliminary results argue against a role of commonly recognized genetic polymorphisms and microbial antibodies as markers of disease susceptibility in siblings of children with IBD. However, data from larger and prospective studies, possibly including microbial characterization, are warranted before drawing definitive conclusions.

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

References

and decreased UPRE promoter activity. IRE1 signaling exerted by ORMDL proteins as shown by reduced XBP1 splicing in both in vivo and an acute and chronic DSS-coltis model using Ormdl3-deficient mice.

Results: Our in vitro studies demonstrated that ORMDL3 facilitates ER stress-induced ATF6 activation. Overexpression of ORMDL3 resulted in increased cleavage of ATF6 and augmented ERSE promoter activity. Mechanistically, we show that ORMDL3 colocalizes and directly interacts with ATF6. Furthermore, ORMDL3 overexpression induced the PERK pathway by elevating IRE1 and activating transcription factor 6 (ATF6) and ATFR6 promoters. In contrast, we observed an increased ratio of IRE1 signaling exerted by ORMDL3 proteins as shown by reduced XBP1 splicing and decreased UPRE promoter activity. Ormdl3-deficient mice showed an increased susceptibility to acute DSS-induced colitis compared to their wild-type littermates, Ormdl3−/− mice showed less body weight loss and an improved survival rate.

Conclusion: This study demonstrates for the first time the modulatory functions of ORMDL proteins as regulators of all three UPR signaling pathways. Altogether, our findings suggest that ORMDL proteins constitute a precise fine-tuning mechanism of the UPR determining cell fate decisions in response to ER stress.

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

P0334 THE USE OF LÉMANN SCORE TO EVALUATE THE DAMAGE TO THE DIGESTIVE TRACT CAUSED BY CROHN’S DISEASE IN AN EGYPTIAN COHORT

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Introduction: Few studies have assessed Crohn’s disease (CD) according to disease activity using clinical, laboratory & radiological activity indexes; but few have analyzed the damage the disease bring about on the GI tract. Lémann score was designed to develop a comprehensive assessment of the structural bowel damage, including strictureing lesions, penetrating lesions (fistulas and abscesses), and surgical resection.

Aims & Methods: To calculate Lémann score in a cohort of Egyptian patients to determine its ability to assess the structural damage caused by CD in Egyptian patients. The Lémann score was calculated using specific computer software based on the original paper by Pariente B et al.1 in a cohort of Egyptian patients with CD followed from April 2013 - August 2015. The temporal relation between Lémann score and disease duration was also assessed.

Results: A total of 93 patients with CD were enrolled, 69% males and 31% females. Median age was 32 years, 36% were smokers. The clinical presentation varied between abdominal pain occurring in 90% followed by 69% with chronic diarrhea, 52% with weight loss. Few patients (26%) present with extraintestinal manifestations. According to ECCO classification of disease severity, 73% of our patients had mild disease, 17% had moderate disease, 10% had severe disease. According to Montreal classification, 25% of patients were type 1, 25% type 2, 19% type 3, 10% type 4 & 10% type 5. Radiological assessment of the digestive tract showed 3% with rectal inflammation, 3% with ileal inflammation and 12% with cecal inflammation. In contrast, we observed an increased ratio of IRE1 signaling exerted by ORMDL3 proteins as shown by reduced XBP1 splicing and decreased UPRE promoter activity. Ormdl3-deficient mice showed an increased susceptibility to acute DSS-induced colitis compared to their wild-type littermates, Ormdl3−/− mice showed less body weight loss and an improved survival rate.

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

Reference
P0036 RECONSIDERING THE PROGNOSTIC VALUE OF TRADITIONAL SEROLOGIC ANTI-BODY CLASSES IN CROHN’S DISEASE – IMMUNOGLOBULIN CLASSES TO TAKE THE CENTRE STAGE

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Introduction: The most relevant scope of serologic antibodies in Crohn’s disease [CD] is to stratify the risk of complicated disease course. Significance of distinct antibody classes and their characterisation was rarely considered. We aimed to address these concerns. Aims & Methods: Sera of 266 well-characterized CD patients (m/f=112/154, median age: 25 years, B1:80.1%, P1:18.0%) and 155 controls were assayed for traditional anti-microbial antibodies (ASCA IgA/IgG, anti-OMP IgA), Endotoxin core IgA (EndoCaB) and a panel of non-specific immunoglobulin A (IgA) antibodies (IgA1, IgA2 and secretory IgA) were also assessed by ELISA. An observational follow-up study [median, 143 months] was conducted to assess possible associations between serologic antibodies and the development of various complications and subsequent surgical interventions. A novel flow cytometry test system was established for characterisation of IgA type ASCA to reveal possible origin of the antibody.

Results: A total of 65.7% and 46.2% of the CD patients were positive for ASCA IgA/IgG and anti-OMP antibodies. Both ASCA types occurred equally. EndoCaB IgA positivity was more frequent (15.4% vs. 5.4%, p < 0.001) and IgA subtype (29%) and presence of the secretory component (89% of total ASCA IgA) concurrently. ASCA IgA subtyping assays revealed marked increase in the proportion of IgA2 subtype (29%) and presence of the secretory component (60% of total ASCA IgA) concurrently.

Conclusion: Consideration of antibody classes is an important novel parameter in serologic prediction in CD. Involvement of gut mucosal immune system is in center of IgA type antibody formation reflecting sustained exposure and dysregulated immune response to bacterial constituents.

Disclosure of Interest: G.L. Norman: Gary L. Norman is employed by Inova Diagnostics, Inc., San Diego, California and are getting personal fees from the company.

P0037 UTILITY OF MAGNETIC RESONANCE EVALUATION FOR SMALL BOWEL ENDOSCOPIC HEALING IN PATIENTS WITH CROHN’S DISEASE

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Aims & Methods: The relationship between endoscopic SB lesions and serological relapse was at risk factor for worse prognosis. MRE could evaluate SB endoscopic healing with a high diagnostic accuracy and could predict patient outcomes.

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

P0038 USEFULNESS OF DOUBLE BALLOON ENDOCOSCOPY IN DIAGNOSIS AND TREATMENT OF SMALL BOWEL CROHN’S DISEASE

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Introduction: Double Balloon Enteroscopy (DBE) is a new endoscopic technique used to examine deep small bowel either oral or anal it could be of great utility in the management of Crohn’s disease patients.

Aims & Methods: We aimed to evaluate the diagnostic yield and therapeutic impact of DBE on small bowel CD. The medical records of 180 CD patients, from 2011 to April 2014 were retrospectively reviewed. Exclusion criteria were included if they had known CD based on clinical, colonoscopic and histological findings and had been subjected to DBE. If one patient underwent more than one DBE examination only the first examination was considered. The primary end point of our study was to evaluate small bowel involvement that is beyond the reach of conventional colonoscopy. The secondary endpoints were to determine the impact of DBE findings on management strategy of CD. The diagnostic yield of DBE in small bowel CD was determined. In addition, the changes in medical treatment, endoscopic intervention and surgical procedures, within three months after DBE, were analysed.

Results: Among 180 patients with CD, 90 patients underwent 168 DBE examinations and were included. The mean age of included patients was 40 ± 13.6 years. They were 63 males and 27 females. Eighty-two (91%) patients with established CD underwent DBE for evaluation of small bowel involvement and 8 (9%) patients underwent DBE because of suspicion of CD and had been newly diagnosed. The overall diagnostic yield of DBE was 69%, DBE revealed small bowel involvement proximal to the terminal ileum in 40 (64.5%) patients; of them 17 (42.5%) patients had isolated small bowel CD. Within 3 months after DBE examination the management strategy of CD changed in 47 (52.2%) patients, based on DBE findings. The medical treatment escalated in 20 (23.2%) patients, and decreased in 7 (11%). Forty-one (24%) patients underwent DBE-assisted balloon dilatation, and 6 (9.6%) patients underwent CD-related surgery.

Conclusion: DBE is able to detect small bowel involvement in a significant proportion of CD patients. The DBE findings modified the management strategy in at least one half of CD patients.

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


Boukhnik Y, Bontinck M. Pouvez-vous évaluer la sévérité des lésions inflammatoires du grêle au cours de la maladie de Crohn: l’index de mesure radiologique de la sévérité des lésions inflammatoires du grêle au cours de la maladie de Crohn (CDRMIS)?

References


References


P0340 IS THE CDMRIS USEFUL TO MONITOR PATIENTS WITH CROHN’S DISEASE BY MAGNETIC RESONANCE IMAGING?

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Introduction: Magnetic resonance enterography is now recognized by the European Crohn’s and Colitis Organization (ECCO) as a reference procedure to assess the intestinal involvement of Crohn’s disease (CD), including extra-luminal complications, as well as to monitor patients under treatment. A new MRI index of severity was developed in 2015 by the GETAID consortium, specifically to evaluate lesions located in the small intestine. This score, labeled CDMRIS, is a Crohn’s disease’s magnetic resonance index of severity (CDRMIS), considers, for each 20-cm small bowel segment, the intensity of relative contrast enhancement (mild–moderate or severe), deep ulceration without fistula, “comb sign”, any fistula, and abscess. Although well standardized, this index has not yet been validated, either for the initial assessment of CD at diagnosis, or for monitoring patients under treatment. Its feasibility in routine practice has never been tested.

Aim and Methods: The aims of this study were to evaluate the feasibility of applying the CDMRIS score in clinical practice, to evaluate its variability after the initiation or optimization of an anti-TNF treatment, and to measure its correlation with an evaluation of clinical activity. Patients with known small bowel disease who underwent two MR exams at a maximal interval of 30 months were included between 2010 and 2015. Each exam was interpreted twice and the CDMRIS score was calculated on both exams in addition to classical criteria. All patients had a clinical evaluation over time, separating them in two groups: “active” and “inactive” disease.

Results: Seventy-two patients were included, with a mean CDMRIS of 3.4 at baseline, decreasing to 2.6 (p = 0.052) independently of clinical disease activity. The mean interval between the two MRIs was 15.4 months, and there was a significant larger decrease in the CDMRIS score when the interval was above 12 months. Two other radiological parameters decreased significantly: the rate of patients with a mural T2-hyperintensity (36.1% to 20.8% p = 0.042), with a good chimecorrelational correlation, and mean wall thickness (5.5 to 4.4 mm, p = 0.034).

Conclusion: This study demonstrated the feasibility of applying the CDMRIS in clinical practice, but sensitivity was too low to detect early changes. Accuracy for a long-term monitoring needs to be evaluated. Wall thickness and mural T2-hyperintensity emerged as useful radiological factors, significantly associated with the disease activity, allowing monitoring of the short-term efficacy of biotherapies.

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

References


P0341 CONCORDANCE OF STOOL FREQUENCY AND ABDOMINAL PAIN MEASURES WITH SIMPLE ENDOSCOPIC SCORES FOR CROHN’S DISEASE

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Introduction: Crohn’s Disease Activity Index (CDAI) has been shown to correlate poorly with endoscopic measures of mucosal inflammation/ulceration.1, 2 There is a movement towards using components of the CDAI, namely stool frequency (SF) and abdominal pain (AP), to better define disease activity. Patients randomized in the EXTEND study3 with both major components of CDAI, and mean changes from baseline in both SES-CD and CDAI were assessed at weeks 12 and 52 using Pearson correlation coefficients. Endoscopies were scored by a central reader. Data are reported as observed.

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 correlation of SF + AP with SES-CD 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></td>
<td>Mean (SD) r</td>
<td>P-value</td>
</tr>
<tr>
<td>Stool frequency*</td>
<td>47.1 (35.2)</td>
<td>0.46</td>
</tr>
<tr>
<td>Abdominal pain</td>
<td>41.0 (29.6)</td>
<td>0.21</td>
</tr>
<tr>
<td>General well-being</td>
<td>63.3 (50.2)</td>
<td>0.16</td>
</tr>
<tr>
<td>Extra-intestinal manifestations</td>
<td>14.0 (16.3)</td>
<td>0.22</td>
</tr>
<tr>
<td>Diabetic blood medications</td>
<td>3.2 (9.3)</td>
<td>0.01</td>
</tr>
<tr>
<td>Abdominal mass</td>
<td>0.40 (4.1)</td>
<td>0.50</td>
</tr>
<tr>
<td>HCT</td>
<td>21.1 (23.0)</td>
<td>0.05</td>
</tr>
<tr>
<td>Stool frequency + Abdominal pain</td>
<td>38.1 (56.6)</td>
<td>0.40</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. Mucosal ulceration in EXTEND supported previous findings that the CDAI was only weakly correlated with SES-CD, as assessed at 12 and 52 weeks. 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.

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**P0342. DECREASED CD8⁺/CD8⁺/CD8⁺ T CELLS’ RATIO CAN PREDICT THE POOR OUTCOME SENSITIVELY FOR PATIENTS WITH COMPLICATED CROHN’S DISEASE**

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Introduction: Crohn’s disease (CD) with complications such as penetrating, structural, and perianal disease is called complicated CD. However, no validated, inexpensive, or sensitive models for prediction of risk are available in complicated CD. We have found that a novel immunological balance, the CD8⁺/CD8⁺/CD8⁺/CD8⁺/CD8⁺ ratio, consisting of CD8⁺/CD8⁺, and CD8⁺/CD8⁺ T cells, can predict the prognosis for patients with inflammatory bowel disease (IBD). Thus, we hypothesize that the CD8⁺/CD8⁺/CD8⁺/CD8⁺/CD8⁺ ratio can predict the poor outcome for patients with complicated CD.

Aims & Methods: To test the efficiency of CD8⁺/CD8⁺/CD8⁺/CD8⁺/CD8⁺ balance to predict the subsequent active stage, and to explore the correlation between the balance and the risk factors, for the newly diagnosed complicated CD. Seventeen patients with complicated CD were enrolled as the observation group, while the other 48 CD patients with no complications were enrolled as the control group. Peripheral blood samples were drawn from all the 65 newly diagnosed CD patients for CD8 T cells testing through flow cytometry (FCM) when enrolling. The potential risk factors, including demographic, pathophysiological, and therapeutic factors were compared between the two groups. A 30-week follow-up group was performed, and the CD8 T cells testing were repeated. The sensitivity and specificity of the CD8 T cells’ level and balance in predicting were analyzed through receiver operator characteristic (ROC) curves. The cumulative remission lasting rates (CRLRs) under the different risk factors were analyzed using the Kaplan–Meier method.

Results: I. Risk factors: compared with the control CD group, patients with complicated CD had a larger proportion in male (P = 0.001), younger in age (P = 0.019), lower body mass index (BMI) (P < 0.0001), higher prescriptions in immunosuppressants (P = 0.029) and steroids (P = 0.015), as well as as a significant higher surgical rate (P = 0.001). Pearson and Spearman correlation analysis showed that CD8⁺/CD8⁺/CD8⁺/CD8⁺/CD8⁺ ratio was associated with BMI, CDAI, steroids, and surgery (P all < 0.05). II. Follow-up and dynamic change of the ratios of CD8⁺/CD8⁺/CD8⁺/CD8⁺/CD8⁺ reached the bottom at the 30th week and were significantly lower at the 6th, 22nd, and 30th week during follow-up, in the complicated CD patients when compared to the control ones (all P < 0.05). A shorter lasting time of remission (LTR) was found in complicated CD patients (P = 0.044). ROC curve showed that CD8⁺/CD8⁺/CD8⁺/CD8⁺/CD8⁺ ratio could accurately predict the active stage for the complicated CD patients with 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⁺/CD8⁺/CD8⁺ ratio and lower CRLRs (all P < 0.05).

Conclusion: Depending on steroids and surgery stands for a more severe disease activity and thus disequilibrate the immunological balance, which could be the main reason for lower CD8⁺/CD8⁺/CD8⁺/CD8⁺/CD8⁺ activity and thus disequilibrate the immunological balance, which could be the main reason for lower CD8⁺/CD8⁺/CD8⁺/CD8⁺/CD8⁺ activity.


Patients with successful cleansing N (%) 255 (97) 239 (91) 246 (91) 239 (91)
Difference (%) 6 0.003 0.924
P-value <0.001 <0.001
95% CI (%) 2.0–10.1 5.1–4.6

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Introduction: The success of colonoscopy is dependent on efficient bowel cleansing. Inadequate bowel cleansing may decrease diagnostic sensitivity, necessitate repeat procedures and potentially delay appropriate treatment. The increasing frequency of the incidence of colorectal cancer arising in the ascending colon necessitates effective cleansing of this area; additionally these cancers are often associated with poorer prognoses. Data suggest that detection in the ascending colon is more dependent on higher grades of cleansing, perhaps due to the nature of polyps present, which may be more likely to be sessile or serrated. NER1006 is the first 1L polyethylene glycol (PEG)-based bowel preparation, a patented combination optimised for effective bowel cleansing. The NOCT study (a multicentre randomised Phase 3 clinical trial investigating bowel cleansing efficacy of NER1006 vs trisulfate solution) reported bowel preparation quality assessed by central readers. This post hoc analysis shows the cleansing assessment by site colonoscopists, who typically guide clinical decision making; hence this study may be more relevant for clinical practice than previous studies.

Aims & Methods: In the NOCT study 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;2 following segmental scoring, cleansing of the overall colon was graded from A to D; grades A and B were judged as successful cleansing. Cleansing of the ascending colon was graded from 0 to 4; grades 3 and 4 were judged as high-quality cleansing. 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)

Results: As Table 1 shows, bowel preparation quality of NER1006 when assessed by site colonoscopists did not show a statistically significant difference to trisulfate for the overall colon (93% vs 94%, P = 0.681; 95% CI: 5.1–3.3%) or ascending colon (80 vs 74%, P = 0.079; 95% CI: -0.7–13.6%). There was, however, a numerical advantage in favour of NER1006 on the proportion of patients achieving high-quality cleansing success in the right colon.

Table 1: Successful colon cleansing rates when treated with NER1006 or trisulfate solution.

<table>
<thead>
<tr>
<th>Bowel preparation</th>
<th>N</th>
<th>Patients with successful cleansing n (%)</th>
<th>Difference (%)</th>
<th>P-value</th>
<th>95% CI (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall colon</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NER1006 N2D</td>
<td>263</td>
<td>263 (97)</td>
<td>-1</td>
<td>0.681</td>
<td>-5.1–3.3</td>
</tr>
<tr>
<td>Trisulfate</td>
<td>264</td>
<td>248 (94)</td>
<td>0.079</td>
<td>-0.7–13.6</td>
<td></td>
</tr>
<tr>
<td>Ascending colon</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NER1006</td>
<td>259</td>
<td>208 (80)</td>
<td>6</td>
<td>0.079</td>
<td>-0.7–13.6</td>
</tr>
<tr>
<td>Trisulfate</td>
<td>264</td>
<td>195 (74)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Conclusion: For both preparations, site colonoscopist findings demonstrated similar very high rates of cleansing success for the overall colon (>93%) and high rates of high-quality cleansing of the ascending colon (>73%); however, statistical significance was not met in either comparison. The rates of cleansing success in the ascending colon reported by the site colonoscopists are notably higher than those previously reported by central readers.

References
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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 DAYB study was a European multicentre, randomised trial that tested the hypothesis that NER1006 would be non-inferior to sodium picosulfate and magnesium citrate (NaPic + MgCit) in terms of overall bowel cleansing and high-quality cleansing of the ascending colon plus caecum [1]. Bowel cleansing was assessed using the Harefield Cleansing Scale (HCS) [2]. The primary endpoints of the study were assessed by video review by a central reader. Bowel cleansing on the HCS was also assessed by the site colonoscopist and this post hoc analysis assessed the cleansing grades as determined by the site colonoscopists.

Aims & Methods: In the DAYB study, 515 patients (aged 18–85, median age: 55.0 years) underwent screening, surveillance, or diagnostic colonoscopy and were randomly assigned in a 1:1 ratio to receive either NER1006 or NaPic + MgCit, each on the day before colonoscopy. In this analysis, data from 479 patients who underwent a colonoscopy and had a completed assessment by the site colonoscopist were included. Colonoscopists were blinded to the preparation administered. Cleansing was assessed according to the HCS; cleansing of each segment of the colon was scored from 0 to 4. Scores 3 and 4 of the ascending colon were judged as high-quality cleansing. Cleansing of the overall colon was graded from A to D; grades A (all segments scored 3 or 4) and B (≥2 segments scored 2, no sections scored 1 or 0) were judged as successful cleansing.

Results: As indicated in Table 1, in the overall colon, successful cleansing was achieved in 122% more patients who received NER1006 than who received NaPic + MgCit (73% vs 61%, P = 0.003, 95% CI: 4.9–20.7). In the ascending colon, high-quality cleansing was achieved in 20% more patients who received NER1006.
Ner1006 than who received NaPic + MgCit (34% vs 14%, P < 0.001, 95% CI: 12.7–27.8).

Table 1: A comparison of bowel cleansing efficacy as assessed by site colonoscopists based on Ner1006 and NaPic + MgCit

<table>
<thead>
<tr>
<th>Preparation</th>
<th>Patients with successful cleansing n (%)</th>
<th>Difference (%)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall colon</td>
<td>Ner1006: 236 (73)</td>
<td>0.003</td>
<td>4.0–20.7</td>
</tr>
<tr>
<td>Ascending colon</td>
<td>Ner1006: 236 (82)</td>
<td>&lt;0.001</td>
<td>12.7–27.8</td>
</tr>
</tbody>
</table>

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)

Conclusion: Ner1006 was shown to provide significantly better cleansing of the overall colon and high-quality cleansing of the ascending colon compared to NaPic + MgCit, when both treatments were administered the day before colonoscopy. The cleansing efficacy rate of the comparator was within its previously reported cleansing rates for day before administration, suggesting the improvement seen with Ner1006 is of clinical relevance.

References

P0346 LOW VITAMIN D LEVELS ARE RELATED TO CLINICAL ACTIVITY, MUCOSAL INFLAMMATION, AND INTESTINAL FIBROSTENOSIS IN CROHN’S DISEASE

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Introduction: Several studies in recent decades have revealed new roles for vitamin D. For example, vitamin D plays a role in regulating skeletal muscle, as well as in cardiovascular and renal physiology, producing antinflammatory effects, suppressing fibrosis, and as a regulator of the immune system. In light of these new roles—especially as a regulator of the immune system and suppressor of fibrosis—vitamin D deficiency is considered to be related to disease activity and intestinal fibrosis, including that seen in Crohn’s disease (CD). Several reports have demonstrated a relationship between vitamin D deficiency and CD activity according to clinical parameters such as Crohn’s disease activity index (CDAI) and quality of life (QoL). However, no reports have demonstrated this relationship by using endoscopic parameters such as endoscopic activity, mucosal inflammation, and intestinal fibrostenosis.

Aims & Methods: The aim of this study was to clarify the relationship between vitamin D deficiency and CD by using endoscopic parameters, as well as clinical parameters. Of the CD patients visiting Nagoya University Hospital from May 2011 to February 2016, 82 patients were enrolled in this study. Serum 25-hydroxyvitamin D (25(OH)D) levels, disease activity, and clinical factors of the subjects were investigated prospectively. Endoscopic findings of 52 of the 82 total patients enrolled were investigated retrospectively from endoscopic records. This study design was approved by the ethics committee of Nagoya University Hospital. Clinical remission was defined as CDAI ≤150. Mucosal healing was defined as a simple endoscopic score for Crohn’s disease (SES-CD) ≤1. Moreover, to evaluate endoscopic activity from two aspects (mucosal inflammation and fibrotic stenosis), we divided SES-CD score into endoscopic mucosal inflammation score and fibrotic stenosis score. Mucosal healing was defined as mucosal inflammation score ≤1, fibrostenosis was defined as narrowing score 0.

Results: Mean age of the subjects was 41.11, and the male/female proportion was 64/18. The mean serum 25(OH)D level of subjects was 17.1 ng/mL, and 61 cases (74.4%) were classified as severe deficiency or deficiency. Mean serum 25(OH)D levels of the clinical remission and clinically active groups were 18.7 ± 8.1 ng/mL and 12.4 ± 3.6 ng/mL, respectively (P < 0.001). In a multivariate analysis, low levels of serum 25(OH)D and serum albumin and positive C-reactive protein (CRP) results were correlated with clinical activity. Mean serum 25(OH)D levels of the mucosal healing and non-healing groups were 24.0 ± 9.8 ng/mL and 15.1 ± 6.6 ng/mL, respectively (P < 0.001). Mean serum 25(OH)D levels for the no mucosal inflammation and mucosal inflammation groups were 21.6 ± 9.6 ng/mL and 14.3 ± 5.5 ng/mL, respectively (P < 0.001); and those of the no fibrostenosis and fibrostenosis groups were 20.2 ± 8.3 ng/mL and 14.2 ± 6.7 ng/mL, respectively (P < 0.001; Mann-Whitney U test). In a multivariate analysis, low serum 25(OH)D levels were related with mucosal inflammation and intestinal fibrotic stenosis of CD (P < 0.05; logistic regression analysis).

Conclusion: This study demonstrated the relationship between vitamin D level and disease activity in CD patients. The disease pathology of CD consists of repetitive intestinal inflammation and intestinal fibrostenosis formed during healing of inflammation. We consider it important to demonstrate this relationship not only using clinical parameters, but also using endoscopic parameters such as mucosal inflammation and intestinal fibrostenosis.

Disclosure of Interest: All authors have declared no conflicts of interest.
P0348 SKELETAL MUSCLE ATROPHY IS A PREDICTIVE FACTOR FOR INTESTINAL RESECTION IN PATIENTS WITH CROHN’S DISEASE

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Introduction: Inflammatory bowel diseases (IBD), such as ulcerative colitis (UC) and Crohn’s disease (CD), are chronic gastrointestinal diseases that are associated with protein-energy malnutrition (PEM). Although the frequency of altered body composition, such as reduced fat-free mass or skeletal muscle volume, has been shown to be high in patients with IBD, the relationships between skeletal muscle volume and the prognosis are yet to be elucidated.

Aims & Methods: We have conducted a retrospective study on 61 IBD patients who have admitted due to exacerbation of the disease. We have enrolled IBD patients who had had abdominal computed tomography and assessed the nutritional indices, such as the Onodera’s prognostic nutritional index (O-PNI) and controlling 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 (×109/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: Sarcopenia defined as low SMI were observed in 44% of all IBD patients (P = 0.047). The cumulative operation-free survival rate was significantly lower among sarcopenic patients in all IBD patients (P = 0.039) 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 presents the gastrointestinal diseases which accumulate intestinal deformity.

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

P0349 A PROSPECTIVE STUDY TO PREDICT A MILD COURSE OF CROHN’S DISEASE: AN INTERIM ANALYSIS OF THE PROGNOSIS STUDY

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Introduction: Crohn’s disease (CD) spans a wide range of severity, from mild to severe and is avoided under-as well as overtreatment is challenging. While factors determining bad prognosis are studied in detail, factors predicting a mild course with the chance of simple treatments are less known. Here we show first results of a prospective evaluation of a retrospectively created score (JCC 2013;7:263) for prediction of mild CD which consists of age at diagnosis, CRP, an endoscopy score, presence of perianal lesions and complications.

Aims & Methods: This is a prospective, ongoing study performed in 12 IBID-specialized private gastroenterology practices (outpatients only) in Germany. All consecutive new CD patients (diagnosis ±56 weeks) are included. At screening ileocolonoscopy with histology, investigation of the perianal area, laboratory tests including CRP are performed and CD complications (stenosis, fistula, extraintestinal manifestations or fever > 38°C) evaluated to complete of the above quoted score. Patients are treated at the discretion of the physician. In case of a score indicating a good prognosis (≤2) or of mild clinical appearance mesalamine is started. In all other cases patients are treated according to guidelines. 5 year follow up is planned for all patients. If initial therapy fails, treatment is escalated. Source data verification is performed by external monitors. Primary aim of the study is to confirm the previously identified score and to test its power to predict a mild disease course as indicated by the need of not more than mesalamine therapy. Additional analyses include the percentage of patients with a score indicating a severe disease and their characteristics at diagnosis. This interim analysis presents preliminary data.

Results: 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, 25 female, mean CRP 12.2 mg/l were included into the interim analysis. In 28 patients a score from 0-2 step-up treatment occurred in 77%, whereas in 28 patients with a score >2, step-up treatment rate was 43% (p = 0.043). Differences between patients with a score 0–2 > > 2 were 41 (vs. 28 years, p = 0,011), CRP < 2 mg/l (17/28 patients vs. 0,28, p < 0,0001), endoscopy score 1.4 vs. 2.7, p < 0,01), survival of 728 vs. 4, 28, stenosis 1/28 vs. 6/28. There were no differences in terms of sex, fistula, extraintestinal manifestations and lever.

Conclusion: In this early analysis of a prospective study planned with a 5-year follow up, 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.


L. Leifeld: Financial Support for Research: Boehringer, Olympus, DCCV; Lecture fees: Falk, Abbvie, MSD; Merckle, Falk, Takeda

N. Hoepfner: Lecture fees: AbbVie, Biogen, Biotest, Consultancy: Invendo medicals

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All other authors have declared no conflicts of interest.

P0350 USEFULNESS OF REPEATING TESTING FOR LATENT TUBERCULOSIS INFECTION IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE (IBD): CORRELATION BETWEEN TUBERCULIN SKIN TEST (TST)/BOOSTER AND QUANTIFERON-TB (QFT)

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Introduction: The Spanish Working Group on Crohn’s Disease and Ulcerative Colitis (GETECCU) and other international guidelines recommend testing of latent tuberculosis infection (LTI) before anti TNF therapy by screening with tuberculin skin test (TST) and, in a potential state of energy, double screening by TST and interferon-gamma release assays (IGRAs) or two-time tuberculin test (TST/booster). Routine repetition is not recommended.

Aims & Methods: We aimed to assess the correlation between (TST/booster) and IGRA as using QUANTIFERON-TB (QFT) and the usefulness of repeating periodic (annual or biannual) screening in a population of IBD patients of Zamora (Spain). In a single cohort of IBD patients attended in the department of gastro-enterology 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 TLI screening performed prospectively with the screening of the retrospective cohort.

Results: A total of 404 patients were included with a mean age of 51.5 (SD 16.6), 225 (55.7%) male and 179 (44.3%) female. 227 patients (56.2%) were ulcerative colitis, 167 (41.3%) were Crohn disease and 10 (2.5%) were diagnosed of indeterminate colitis. 160 patients live in rural areas (40.6%), 60/355 (16.9%) were smokers. The prevalence of LTI and the correlation between TST-booster and QFT is shown in table 1.

Table 1: Prevalence of LTI and correlation between TST-booster and QFT.

Prevalence of LTI in patients on immunomodulator therapy

Prevalence of LTI in patients on anti-TNF therapy

TST/booster or QFT (≥) 130/399 (32.6%) 47/239 (28.5%) 9.49 (18.4%) 10%, 28% TST/booster positives 116/371 (31.3%) 45/100 (45.4%) 10%, 28% TST/booster (−) 3272 (10.3%) 12/135 (9.8%) 3.42 (7.0%) QFT positives QFT (−) 28/12 (15.5%) 6/105 (5.7%) 0.12 QFT/booster positives 12/95 (4.5%) 3/89 (3.4%) 0.11 QFT/booster (−) QFT/booster (≥) 24/37 (6.4%) 4/162 (2.4%) 3.49 (6.1%)
Prevalence of LTI in retrospective testing was of 54/246 (22.0%). Prognostic factors such as >5 cm jejunal lesion were strong correlations (r = 0.61 – 0.74, p < 0.001) for both. CEAGA and QFT levels were moderately correlated with 3rd tertile LS (r = 0.68 p = 0.001) for both. The odds ratio of testing positive by TST and IGRA decreased to 0.57 if immunosuppressed (95% confidence interval [CI] 0.31–1.03, p = 0.06). The odds of testing positive by TST if immunosuppressed was 1.14 (95% confidence interval [CI] 0.31–1.03, p = 0.001 for both). There was a moderate correlation between both scores and CFC levels that was somewhat stronger for CEAGA (r = 0.39, p = 0.002 vs r = 0.53, p = 0.001 for both). There was a weak correlation between LS and CFC levels (r = 0.27, p = 0.04) and none for CEAGA and CFC (r = 0.21, p = 0.07). Conclusion: In our prospective study, CEAGA and LS strongly correlated and performed similarly for quantitative assessment of mucosal inflammation in established CD.

Disclosure of Interest: U. koplyov: The study was supported by a generous grant by the Helmsley Charitable fund

All other authors have declared no conflicts of interest.
A. Orlando, M. Principi, M.L. Scribano et al., Medication adherence in patients 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. 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 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 a TP of 0.15-0.25 TGN levels in 6 of 10 cases for VAS, 10 of 26 for Morisky and 4 of 15 for MARS.

Conclusion: Self-report tools provided a patient-friendly and inexpensive way of assessing adherence, but the correlation with TGN levels was only moderate. While providing a more objective assessment TGN levels are problematic for assessing adherence, but the correlation with TGN levels was only moderate. All authors have declared no conflicts of interest.

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R. Goldberg, G. Cunningham, G. Moore, et al., Thiopurine metabolite testing in inflammatory bowel disease, Dept. of Gastroenterology, Melbourne, Australia, 25th Vincent’s Hospital & University of Melbourne, Gastroenterology, Melbourne, Australia, manuscript submitted in press -2014(EECO)
McElroy et al., Non-adherence to medical therapy is associated with hospitalisations and the development of active disease in inflammatory bowel disease, Dutch study-clinical presentation -2014(EECO)

Aims & Methods: Consecutive outpatients on thiopurine maintenance therapy for IBD for >3 months were recruited from clinic. Patients selfreported adherence using the validated Morisky Adherence Instrument (MAI) and self-report tool assessing thiopurine adherence in the IBD clinic and to correlate the results with thioguanine-nucleotide (TGN) levels. Aims & Methods: Consecutive outpatients on thiopurine maintenance therapy for IBD for >3 months were recruited from clinic. Patients selfreported adherence using the validated Morisky Adherence Instrument (MAI) and self-report tool assessing thiopurine adherence in the IBD clinic and to correlate the results with thioguanine-nucleotide (TGN) levels. Aims & Methods: Consecutive outpatients on thiopurine maintenance therapy for IBD for >3 months were recruited from clinic. Patients selfreported adherence using the validated Morisky Adherence Instrument (MAI) and self-report tool assessing thiopurine adherence in the IBD clinic and to correlate the results with thioguanine-nucleotide (TGN) levels.
Conclusion: Us was as accurate as the combination CS + MR1 in assessing disease activity and complications in CD patients. Therapeutic decisions based on US findings alone were appropriate in the vast majority of CD patients. Us is a non-invasive, easy-to-use tool to manage CD patients in clinical practice.

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

P0357 DIAGNOSTIC DELAY IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE - A STUDY OF THE AUSTRIAN IBD STUDY GROUP (ATISG)


Aims & Methods: In a multicentre cohort study adult patients with IBD (CD, UC, 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.

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.

Overall, 102 patients were enrolled in the study (Table 1). Study outcome was the diagnostic delay defined as the time required in complete a multi-item questionnaire, which recorded medical and socioeconomic characteristics. Study outcome was the diagnostic delay defined as the time required in complete a multi-item questionnaire, which recorded medical and socioeconomic characteristics.

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Introducognition: 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.

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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 (Carcinoembryonic antigen-related cell adhesion molecule 6). It has been shown that therapies targeting enterobacteria and/or AIEC could be more effective in mice oversexpressing CEACAM6. In this line, the overexpression of CEACAM6 in the ileum as well as the presence of AIEC in the ileum could be potential biomarkers to select the patients who could benefit from drugs targeting the host-pathogen interaction. Unfortunately, the identification of these biomarkers is time-consuming and invasive highlighting the need for more convenient alternative.

Aims & Methods: We aimed to assess the correlation between the level of CEACAM6 in the saliva and the level of CEACAM6 in the ileum in CD patients and to define the best threshold of CEACAM6 in the saliva to detect overexpression of ileal CEACAM6. In addition, we attempted to identify non-invasive biomarkers of AIEC infection. In this prospective multicentre study (8 centers), all the patients requiring ileocoloscopy, regardless the indication, were consecutively included between September 2015 and September 2016. Clinical and endoscopic data were collected on the day of colonoscopy. Blood samples, stool samples (before bowel cleansing), saliva and ileal biopsies from healthy and IBD patients were also collected. CEACAM6 from ileal biopsies and saliva were measured (duplicates) using ELISA assays. AIEC were identified using phenotypic assays.

Results: Overall, 102 patients were enrolled in the study (Table 1). 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.

Table 1: Baseline characteristics of the 102 CD patients included in the study.

| Female gender n, % | 56 (56.6%) |
| Active smokers n, % | 34 (34.3%) |
| Montreal classification | |
| Disease location | |
| L1 | 27 (28.4%) |
| L2 | 12 (12.6%) |
| L3 | 58 (61.1%) |
| L4 | 7 (7.4%) |
| Disease behaviour | |
| B1 | 51 (54.3%) |
| B2 | 26 (27.7%) |

References


ileal CEACAM6 level did not depend on disease severity or the site of biopsies, as the median level of ileal CEACAM6 was 854 pg/mg [570.3; 1646] and there was no difference in healthy or ulcerated ileum (756 pg/mg [487; 1617] vs. 947 pg/mg [604; 1828], p = 0.86). The median level of CEACAM6 from saliva was 3837 pg/mg [1889; 7338]. There was a positive correlation between the levels of CEACAM6 in saliva and CEACAM6 in the ileum (r = 0.47; p < 0.0001) in both macroscopically healthy areas (r = 0.53, p < 0.0001) and ulcerated areas (r = 0.39, p = 0.0082). Using a ROC curve, we determined the best threshold of CEACAM6 in saliva for detecting ileal CEACAM6. 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; 95.3]). The number of enterobacteria was increased in CD patients with prior intestinal resection (562 [201; 1674] vs. 116 [70; 752] pg/mg, p = 0.003). Interestingly, the number of enterobacteria was also increased in AIEC-positive patients (640 [241; 2596] vs. 30 [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 the ileum is a convenient and reliable test to assess the overexpres-
sion inducing FGF19 release [3]. Disturbances in BA enterohepatic circulation (91.7% [73.0–99.0]).

Conclusion: CEACAM6 measurement in the saliva is feasible, non time-consuming and non-invasive. It could be a reliable test to detect the overexpression of CEACAM6 in the ileum from CD patients and could then be proposed as a non-invasive biomarker to select patients who might benefit from anti-adhesive therapies. In addition, we identify that the number of enterobacteria associated to the ileum is a convenient and reliable test to screen CD patients for AIEC bacteria.

Disclosure of Interest: The study was funded by LESAFFRE company. I declare lecture fees for Abbvie, Takeda, Hospira, MSD, Vifor Pharma, Sanofi-Aventis and Ferring. I declare consulting fees for Abbvie, Takeda, Hospira. All other authors have declared no conflicts of interest.

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P0360 DOUBLE-BALLOON ENDOSCOPIC EVALUATION OF Fecal CALPROTECTIN AS A BIOMARKER FOR SMALL INTESTINAL INFLAMMATION IN CROHN’S DISEASE

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Introduction: Crohn’s disease (CD) has a progressive course and often causes mucosal injury throughout the gastrointestinal tract. Mucosal healing (MH) has been proposed as a treatment goal for patients with CD. Endoscopy, computed tomography, magnetic resonance imaging, and other examinations are used to evaluate MH. However, repeated examinations require considerable effort and are highly invasive. Recent, fecal calprotectin (FC) has attracted attention as a new biomarker. The correlation between FC levels and CD activity is well established in ileocolonic or colonic CD, but few reports have described this correlation in ileal CD alone.

Aims & Methods: This study evaluated the correlation between FC levels and endoscopic activity in ileal CD. Fifteen patients with ileal CD who underwent double-balloon endoscopy (DBE) between May 2016 and February 2017 at our hospital were included in this study. The entire small intestine was examined with DBE and radiological enteroclysis. We evaluated the correlations of FC levels, C-reactive protein (CRP) levels, erythrocyte sedimentation rates (ESR), and CD activity index (CDAI) scores with the endoscopic activity. To evaluate the endo-
scopic activity of the small intestine, we used Double-Balloon Endoscopic Score for CD (DES-CD), which is a modified version of the Simple Endoscopic Score for CD (SES-CD). To determine the DES-CD, the small intestine was divided into four segments (upper jejunum, lower jejunum, upper ileum, and lower ileum), and four variables were evaluated in each segment (ulcer size, extent of ulcerated surface, extent of affected surface, and stenosis) in accordance with the SES-CD. For the evaluation of mucosal injury, the partial DES-CD (pDES-CD) was calculated by excluding “stenosis” from the DES-CD. The DES-CD and pDES-CD ranges were 0–46 and 0–24, respectively.

Results: Fifteen patients (11 males and four females) with a median age of 42 (range, 27–71) were assessed. No colitic lesions were observed in any of the patients. The DES-CD correlated with FC (r = 0.688, P = 0.005) and CRP (r = 0.765, P = 0.001) levels. In addition, the pDES-CD correlated with FC levels (r = 0.803, P = 0.001), CRP levels (r = 0.673, P = 0.006), and ESRs (r = 0.704, P = 0.003). The CDAI scores did not correlate with either of the endoscopic scores.

Conclusion: In this study, the endoscopic activity in ileal CD correlated with FC and pDES-CD levels. PDES-CD scores exhibited a stronger correlation with FC levels than did DES-CD scores. This might be because FC levels reflect mucosal injury and not stenosis. Our findings suggest that FC can be used for monitoring mucosal injuries in the small intestine and as a biomarker for evaluating MH.

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

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P0361 CLINICIANS’ ATTITUDES TO PHOTO PROTECTION IN IMMUNOSUPPRESSION

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**P0632 HOME MONITORING OF DISEASE ACTIVITY AND FECAL CALPROTECTIN IN ADULT PATIENTS WITH INFLAMMATORY BOWEL DISEASE: INTERIM ANALYSIS OF 68 PATIENTS**

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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 CalproSmart™ has 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 health-program to tightly monitor their disease activity either OD or every 3M. Patients randomized to screen every 3M were also allowed to monitor themselves OD if they were feeling a flare was coming. The web-algorithm consists of a short disease questionnaire either Harvey-Bradshaw Index (HBI) for Crohn’s Disease or Simple Clinical Activity Indicators (SCI) for Ulcerative Colitis plus home monitoring of FC, which together gives a total inflammation burden scoring (TIBS). Based on longitudinal FC and disease activity scores area under the curve (AUC) were calculated by an algorithm taking into account the inclusion date and the first observation 357 days after inclusion into the calculation.

**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% 0.03). 52 (93%) patients have completed the first year of follow-up and were included in the analysis. There were no statistical difference between the two groups OD vs. 3M on the following indices: Active disease (FC > 600 mg/kg) at inclusion n = 17, 25% (3M-group: n = 6, 19%; OD-group: n = 10, 29%, p = 0.26), active disease at least once throughout the whole year: 41 patients (61%) (3M-group: n = 21, 66%; OD-group: n = 20, 57%, OD, p = 0.32). Patients screened themselves with regards to FC 233 times in the OD-group and 232 times in the 3M-group. The mean no of FC home measurements pr. patient was similar in the two groups 6.7 (3M-group: 5.9–9.8, 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 (0.2-884) p = 0.61. No significant difference were 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 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.

D. Marker: 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**

**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 frequency of VitD (vitamin D) status in an Italian IBD cohort in relation to disease activity. Serum 25-hydroxyvitamin D was measured in 260 IBD outpatients, not supplemented with VitD (110 Crohn’s Disease (CD)) and 150 Ulcerative Colitis (UC); 145 males and 115 females; median age 50.7 ± 15 years), and compared to those of 205 healthy blood donors, matched by sex, age (+/−2 years) and month in which the blood sample was collected. VitD levels were correlated to C-reactive protein (CRP), erythrocyte sedimentation rate (ESR), Harvey Bradshaw Index (HBI) and Crohn’s Disease Activity Index (CDAI) for CD and Mayo partial score for UC. Chi square, T test and linear correlation were used when appropriate.

**Results:** IBD patients were at higher risk of VitD deficiency (defined as <20 ng/ml) than controls (OR 4.5, 95%CI 2.9–6.9, p < 0.001). Of 260 IBD patients, 156 (60.7%) had VitD deficiency, more often in CD than in UC (72.7% vs 48% respectively, p = 0.001). Age ≤ 40 and ≥ 60 years, winter/spring season, CRP >0.5 mg/dl, ESR >20 mm/h, previous intestinal surgery and HBI ≥ 5 were significant risk factors for VitD deficiency. No differences were observed in relation to sex, smoking status, BMI, age at diagnosis, localization and behavior of disease, and need of steroids. There was a weak negative correlation between CRP values, HBI scores and VitD levels (R = −0.13, p = 0.037 and R = −0.26, p = 0.006 respectively).

**Conclusion:** VitD deficiency is significantly more common in IBD patients than in controls, more so in CD. Patients with active disease are more likely to have VitD severe 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.

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**PO365 MAGNETIC ResONANCE OF THE SMALL BOWEL WITH EARLy (70y) AND LATE (7(9M)) PHASE POST GADOLINIUM IMAGING TO IDENTIFY FIBROSIS IN STRUCTURING SMALL BOWEL CROHN’S DISEASE**

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**Introduction:** Magnetic resonance (MR) imaging is one of the most accurate imaging methods for evaluating Crohn’s disease (CD) extent and intestinal involvement. The need for upper endoscopy in patients with Crohn’s disease (CD) with early symptoms is controversial. The aim of this study was to establish the prevalence of gastroduodenal involvement, regardless of symptoms, and its prognostic implications.

**Aims & Methods:** Patients from a single centre with established CD (n = 347) were retrospectively evaluated – inclusion criteria: upper endoscopy without treatment. Gastroduodenal involvement was defined by considering macroscopic (erosions, ulcers or stenosis) and microscopic criteria (focal gastritis, crypt irregularity, erosion ulceration and granuloma in the absence of Helicobacter pylori (HP) infection).

**Results:** We included 140 patients - phenotype: 50% inflammatory, 31% strictureing and 19% penetrating; Location: 42% ileal, 45% 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 microabcess in 2%. HP was positive in 25% of patients. In CD patients, endoscopic and histological features of the gastroduodenal lesions were observed in 35% of patients: 24% occurred in only 1/10 with a visible stenosis. Average MaRIAs: 2/7 (7 mild); 3/26 (23%) and 11/26 (42%). RCE was more frequent in only 110 with a visible stenosis. Average MaRIAs: 2/7 (7 mild); 3/26 (23%) and 11/26 (42%). RCE did not differ significantly between normal and subjects with disease; albumin 42 g/L vs 38.9 g/L in normal v stricture disease (p < 0.0181 95% CI −0.23 – 0.02). CRP 8.8 mg/L vs 18.3 mg/L (p < 0.003 95% CI −0.46 – 0.10) and v 29 mg/L (p < 0.002 95% CI −0.43 – 0.11) amongst normal v inflammation and stricture v respectively. Neither parameter could differentiate between inflammatory and stricture disease. 26 MREs performed with ileal CD have been further assessed; median age = 41yrs, male = 0.1038%. RCE > 24 and high T2 signal intensity (SI): 6/26 (23%) and 11/26 (42%). RCE was more frequent in only 110 with a visible stenosis. Average MaRIAs: 2/7 (7 mild); 3/26 (23%) and 11/26 (42%). RCE did not differ significantly between normal and subjects with disease; albumin 42 g/L vs 38.9 g/L in normal v stricture disease (p < 0.0181 95% CI −0.23 – 0.02). CRP 8.8 mg/L vs 18.3 mg/L (p < 0.003 95% CI −0.46 – 0.10) and v 29 mg/L (p < 0.002 95% CI −0.43 – 0.11) amongst normal v inflammation and stricture v respectively. Neither parameter could differentiate between inflammatory and stricture disease. 26 MREs performed with ileal CD have been further assessed; median age = 41yrs, male = 0.1038%.

**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.

**References**
1. Acknowledgement: The study was supported by the Research Project PROGRES 2016, 111(Jan), 1–8.

**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 early 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:** We performed an observational study of patients with ileal CD have been further assessed; median age = 41yrs, male = 0.1038%. RCE > 24 and high T2 signal intensity (SI): 6/26 (23%) and 11/26 (42%). RCE did not differ significantly between normal and subjects with disease; albumin 42 g/L vs 38.9 g/L in normal v stricture disease (p < 0.0181 95% CI −0.23 – 0.02). CRP 8.8 mg/L vs 18.3 mg/L (p < 0.003 95% CI −0.46 – 0.10) and v 29 mg/L (p < 0.002 95% CI −0.43 – 0.11) amongst normal v inflammation and stricture v respectively. Neither parameter could differentiate between inflammatory and stricture disease. 26 MREs performed with ileal CD have been further assessed; median age = 41yrs, male = 0.1038%.

**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.

**References**
1. Acknowledgement: The study was supported by the Research Project PROGRES 2016, 111(Jan), 1–8.

**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. The need for upper endoscopy in patients with Crohn’s disease (CD) with early symptoms is controversial. The aim of this study was to establish 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 184 women (35.4%) and 336 men (64.6%) being reported. The median age was 43 (32-53) years and 53% were women. The main indication for CT enterography was CD staging (81%). A total of 531 incidental findings were detected (median of 2 [1–3] per patient). The main findings identified were hepatic nodules (n = 39), hepatic cysts (n = 55) and sarcoidosis (n = 46). The findings implicated orientations to another medical specialty in 80 patients (29%), the main ones being Urology (n = 14) and Gynecology (n = 11). The findings implied additional exams in 59 patients (21%). Five (2%) underwent subsequent surgical intervention. Clinically relevant findings were found in 38 patients (14%), including 2 renal tumors, 2 ovarian teratomas and 3 cases of primary sclerosing cholangitis. The detection of incidental findings implied a change in CD therapy in 9 patients (3%); one suspended biologic therapy, 2 suspended immunomodulator therapy and 6 initiated biologic therapy.

Conclusion: Incidental findings are relatively common in patients with CD who undergo CT enterography. A significant proportion is clinically relevant and may involve change CD therapy. A risk stratification may be important to avoid morbidity associated with unnecessary examinations to assess benign situations.

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

Reference

P0368 CLINICAL SIGNIFICANCE OF ASYMPTOMATIC CLOSTRIDIUM DIFFICILE CARRIAGE IN PATIENTS ON IMMUNOMODULATOR FOR INFLAMMATORY BOWEL DISEASE
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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 enrollment and every follow-up during the study period. Patients were monitored for any IBD flare-up in which if happened, an additional stool specimen for C. difficile cytotoxin RT-PCR assay was obtained. The primary outcomes were the disease activity which was graded by Crohn Disease Activity Index (CDAI) in Crohn disease (CD) (graded as follows: <150: remission; 150–220: mild-moderate; 220–450: moderate-severe; >450: severe); Ulcerative colitis Disease Activity Index (UC-DAI) in ulcerative colitis (UC) (graded as follows: the total index score ranges from 0–12; 0–2: remission; 3–6: mild; 7–10: moderate; >10: severe UC). The secondary outcome was C. difficile cytotoxin status 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 j2 test for numerical and categorical parameters respectively.

Results: Of 197 IBD patients (CD: 98 (49.75%); male: 132(67.01%); age (yrs): median 43, minimum 17, maximum 79), 9(4.57%); CD: 6 patients) patients were found to be asymptomatic carriage of C. difficile during the study period. The demographic features, including age, gender ratio, smoking history and the duration of IBD, of the patient group with and without asymptomatic carriage of C. difficile were comparable each other. Four UC patients in the non-carriage group had 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 test for numerical and categorical parameters respectively showed no significant differences (Table 1).

Clinical characteristics of the IBD patients with and without asymptomatic carriage of C. difficile

<table>
<thead>
<tr>
<th>Age (Yr)</th>
<th>C. difficile carrier (n = 188)</th>
<th>C. difficile carrier (n = 9)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>43(26)</td>
<td>44(33)</td>
<td>0.788</td>
<td></td>
</tr>
<tr>
<td>Sex (m/f)</td>
<td>128:60</td>
<td>4:5</td>
<td>0.159</td>
</tr>
<tr>
<td>Smoker (n, %)</td>
<td>24(12.77)</td>
<td>1(11.11)</td>
<td>0.881</td>
</tr>
<tr>
<td>Year of Diagnosis (Yr)</td>
<td>7(9)</td>
<td>7(13)</td>
<td>0.940</td>
</tr>
<tr>
<td>Crohn disease (n, %)</td>
<td>92(48.94)</td>
<td>6(66.67)</td>
<td>0.298</td>
</tr>
<tr>
<td>Prior exposure of Anti-TNF (n, %)</td>
<td>4(2.13)</td>
<td>1(11.11)</td>
<td>0.095</td>
</tr>
<tr>
<td>Flare up (n, %)</td>
<td>21(11.17)</td>
<td>2(22.22)</td>
<td>0.313</td>
</tr>
<tr>
<td>mild/moderate/severe</td>
<td>16(5.2)</td>
<td>0(0)</td>
<td>0.165</td>
</tr>
<tr>
<td>C. difficile infection (n, %)</td>
<td>14(7.45)</td>
<td>0(0)</td>
<td>0.007</td>
</tr>
</tbody>
</table>

Data were expressed as median (interquartile range) *
*: all are UC cases and 3 for maintenance therapy with indications as follows: refractory colitis, spondyloarthropathy, rectovaginal fistula **: case of UC received 3 doses of anti-TNF for severe flare

Abbreviation: IBD, inflammatory bowel disease; C. difficile, Clostridium difficile; ulcerative colitis, UC; ns, non-significant

Conclusion: The incidence of asymptomatic carriage of C. difficile in the IBD patients on immunomodulators was not common. It did not associate with the disease flare-up but a significant portion of them could evolve subsequently into clinical infection.

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

References

P0369 BOWEL ULTRASOUND IS USEFUL IN DISEASE MONITORING OF ULCERATIVE COLITIS PATIENTS: FIRST ANALYSIS FROM THE TRUST&UC STUDY IN GERMANY
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Introduction: Due to the relapsing and highly variable nature of ulcerative colitis (UC), it would be desirable to have reliable tools for measuring parameters of disease activity in order to monitor response to therapy and to detect relapse. In recent years, ultrasound has already shown that ultrasound (US) is a useful tool to monitor the disease activity.1 The hypothesis of the TRUST&UC (TRANsabdominal UltraSonography of the bowel To monitor disease activity in subjects with Ulcerative Colitis) study is that transabdominal US is an easy to use, easily repeatable, and accurate diagnostic tool in the assessment of UC activity, in monitoring the disease course, and response to therapy.

Aims & Methods: TRUST&UC is a German ongoing prospective, observational multi-center study in patients with active UC. The primary objective of this study is the prospective evaluation of bowel wall US in response to therapy in order to assess its value in monitoring UC patients in routine medical practice. Clinical parameters (e.g. CRP, fecal calprotectin) and the Simple Colitis Clinical Activity Index (SCCAI) were used for routine assessment of disease activity.

Results: 176 patients with active UC have been enrolled in 37 German IBDD study group (GSG) centres until February 2017. 47.2% of the patients were female, median age was 38.9 years (range 19–77) with median disease duration of 152.2 days (range 8–1017). All of the patients with a clinical flare defined by SCCAI 90.3% showed a bowel wall thickening (BWT), and only 9.7% showed no US signals. At US examination, a BWT in the colon sigmoideum was present in 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

Disclosure of Interest: All authors have declared no conflicts of interest.
stratification was the case in 20.6% of the patients, mesenteric fibro-fatty pro-
life in 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 TNF α antagonists in 40.0% of patients (N = 174).

All follow-up patients (N = 104) displayed acute inflammatory symptoms at baseline with all moderate disease activity which required an introduction or escalation of treatment. After 12 weeks, the US examination showed signifi-
cant improvements of the following parameters: BWT in colon segmentum (87.5% vs 33.7%, p = 0.034) and colon transversum (42.3% vs 15.4%, p = 0.012), loss of haustation (54.8% vs 33.7%, p < 0.001), ascites (9.7% vs 2.9%, p < 0.001), mesenteric lymphadenopathy (31.6% vs 14.3%, p = 0.005), mesenteric fibro-fatty proliferation (40.0% vs 10.0%, p = 0.041) and increased signal in color Doppler US (56.7% vs 23.1%, p = 0.039). A decrease of BWT was significantly accompanied by a decrease in SCCA1 (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. Heimg: U. Heimg has received lecture and consulting fees from AbbVie.
A. Rossl: A. Rossl 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.
S. Rath: S. Rath has received lecture and consulting fees from AbbVie.

Reference:

P0370 The gut microbiome in IBD is characterized by impaired metabolic cooperativity and can be restored upon anti-TNFa therapy
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Introduction: Blocking TNFa 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 of intestinal microbial communities is poorly understood. Here, we investigate the effect of anti-TNFa 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 and ankylosing spondylitis as a rheumatic disorder (RD) as an inflammatory disease complex, which usually does not affect the intestine.

Aims & Methods: Anti-TNFa naïve patients suffering from IBD (n = 12) or RD (n = 17), subject to first-time anti-TNFa therapy were recruited for longitudinal stool sampling at baseline and 2, 6 and 30 weeks after therapy induction. Intestinal microbiota communities were studied by 16S rRNA gene (V4) sequencing. Changes in microbiota before and after therapeutic interventions were assessed in terms of alpha and beta diversity, indicator species and prediction of metabolic cooperative interactions. Samples from healthy controls (n = 19) were included as a benchmark of healthy microbial profiles.

Results: Intestinal microbial diversity and cooperativity are decreased in both disease entities, IBD and RA. In IBD, anti-TNFa therapy is able to restore microbial diversity and cooperativity. More over cooperative metabolic interaction is significantly increased only in anti-TNFa responders. In RA, anti-TNFa 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 fecal calprotectin test and a symptom questionnaire
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Introduction: Fecal calprotectin (FC) is a most reliable noninvasive means to distinguish remission from active inflammation in inflammatory bowel disease but commercially available FC tests are time-consuming, and consequently new rapid tests have been validated. As the incidence of IBD is increasing, self-monitoring and eHealth technologies have been evaluated in managing patients with this life-long disease.

Aims & Methods: The aim of this prospective study was to evaluate the feasibility and cost-effectiveness of a semi-quantitative rapid FC home test and a validated symptom questionnaire, in patients with colonic IBD. The influence of the self-monitoring to the course of the disease will also be evaluated. Between April 2015 and December 2016, 180 patients with colonic IBD (126 with UC, 47 with CD, and 7 with IBD unclassified) were included in the study and randomized in a study group and control group. Patients in the study group were instructed to perform the FC home test and fill in a symptom questionnaire every other month and with increasing of the symptoms, and sent the results to the study/IBD nurse by e-mail. The control group patients filled in the symptom questionnaire at baseline and at 12 months and with the appointment to the outpatient clinic accordingly. All patients were not reminded of performing the stool tests or filling in the questionnaires. The study period was 12 months, and it is still ongoing.

Results: By the end of February 2017, 134 of the 180 included patients had completed the 12 months’ follow-up. In the study group, 20/91 (22%) patients had performed the stool tests and filled in the symptom scores according to the study protocol for 6 months, and 14/91 (15%) patients for 12 months. In the control group, 14/89 (16%) patients had filled in the symptom score at baseline and 7/86 at 24 months. There was an 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 the same in both groups.

Conclusion: The self-monitoring of IBD activity with a rapid FC home test provides an option for individualized treatment for increasing amount of IBD patients. However, in this study the adherence to the self-monitoring program was relatively 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:
this study, the clinical and endoscopic features of CAC and ST, treatment method, and comparison.

Aims & Methods: Among 261 UC patients who underwent colonoscopy (CS) and had neoplastic lesions, the clinical features, treatment and diagnosis were compared between 71 patients (88 lesions) with CAC (including HGD; CAC group) and 47 patients (63 lesions) who underwent local excision (surgical or endoscopic resection) within the presence of the past/present inflammation of UC (ST group). Definition of CAC and ST was performed by conventional pathological and immunohistochemical findings.

Results: The age of UC onset (29.8 vs. 39.0) and tumor detection (45.5 vs. 57.3) in the CAC group were significantly higher than those in ST group (p < 0.01). The CAC group (47.1%) has a higher percentage of chronic persistent type than the ST group (2.3%), and the Mayo endoscopic score is also significantly higher (p = 0.031) in the CAC group (1.43) than the ST group (0.38). The percentage of advanced cancer (35.2% vs. 7.9%) was higher in CAC group than in ST group.

In patients with intraepithelial neoplasia (IEN) or submucosal lesions, flat lesion was found in 15 lesions of CAC group and whereas no flat lesion was observed in ST group, one lesion in ST group could not distinguish the lesions from the surrounding mucosa without magnifying colonoscopy. In ST group who received resections, 4 patients after resections observed ectopic CAC or low-grade dysplasia during follow-up. In CAC group, 50, 5, 4 patients received total colectomy, local colectomy, EMR and polypectomy, respectively. Although mortality from cancer was 11.4% (8/70 cases) in CAC group, no death due to cancer observed in patients whose lesions were found as IEN. On the other hand mortality from cancer was 2.1% (1/47 cases) in ST group.

Conclusion: Most sporadic lesions were endoscopically distinct and local resection was performed for patients diagnosed. 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 still good in patients with IEN.

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

P0373 CAN WE PREDICT THE LACK OF RESPONSE TO CYCLOSPORINE AS SECOND LINE THERAPY IN PATIENTS WITH ACUTE SEVERE COLITIS REFRACTORY TO CORTICOSTEROIDS?

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Introduction: Acute severe colitis (ASC) is a dangerous clinical condition that requires intensive intravenous (iv) corticosteroids treatment. Nevertheless, about 30-40% of patients fail to respond. Intravenous cyclosporine is an effective rescue therapy in steroid-refractory patients.

Aims & Methods: The aim of our study was to identify the clinical and biological predictive factors of lack of response to cyclosporine as second-line therapy in patients with ASC refractory to iv corticosteroids.

Results: Our study included 52 females and 30 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 enrolled patients, 68 patients (75.5%) had a good response to cyclosporine. Eleven patients were non responders and underwent corticosteroids withdrawal. In a Kaplan-Meier analysis, more than 6 bloody stools per day before initiation of cyclosporine therapy, a C-Reactive Protein (CRP) greater than 45 mg/l prior to treatment, and at day 3 and 7 of treatment by ciclosporine (p = 0.007; 0.002 and 0.001 respectively), ESR greater than 30-mm at day 3 of treatment (p = 0.05), thrombocytosis at day 3 of treatment (p = 0.05), a Litchiger colitis activity index scoring greater than 10 at day 3 of treatment (p = 0.001) and the need for blood transfusion (p = 0.0001) were significantly correlated with the lack of response to cyclosporine therapy. In a multiple linear regression analysis, only a CRP greater than 45 mg/l on day 7 of treatment, and the necessity of transfusion were predictive factors of no-response to cyclosporine (p = 0.008).

Conclusion: Cyclosporine therapy is rapidly effective in preventing surgery in patients with ASC with a response rate of 75.5%. A high CRP on day 7 of treatment with cyclosporine and the need for transfusion, predispose to poor response to intravenous cyclosporine.

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

P0374 CHANGES IN THERAPEUTIC STRATEGY AND OUTCOMES IN NEWLY DIAGNOSED PATIENT WITH CROHN’S DISEASE IN THE BIOLOGICAL ERA IN HUNGARY: A NATIONWIDE STUDY BASED ON THE NATIONAL HEALTH INSURANCE FUND DATABASE

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Introduction: Accelerated treatment strategy, including tight disease control and early immunomodulators (IM) and biological agents have become increasingly common in IBD.

Aims & Methods: The aim of the present study was to estimate the early treat-ment 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 (OEFP). We used the administrative database of the National Health Insurance Fund (OEFP), the only nationwide state-owned health insurance provider in Hungary. Newly diagnosed CD patients were identified through previously reported algorithms using the ICD-10-CM codes for Crohn’s disease in the out-, inpatient, (medical, surgical) non-primary care records and drug prescription databases between 2004-2015. Patients were stratified according to the year of diagnosis and maximum treatment step during the first 3-years after the diagnosis.

Results: A total of 6173 (male/female: 46.12%/53.87%) newly diagnosed CD patients were identified during the observational period. Maximum treatment steps did not differ in patients diagnosed before and after 2009 (5-ASA: 11.7% vs. 11.4%; p = 0.816; anti-TNF: 26.7% vs. 26.3% p = 0.565; steroid 8.1% vs. 7.9% (p = 0.896), 5-ASA 10% vs. 11% (p = 0.816). Accelerated treatment strategy, including tight disease control 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 increased in all treatment groups, suggesting a change in the patient management.

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

P0375 RELATIVE FREQUENCY OF RELAPSES IN PATIENTS WITH ULCERATIVE COLITIS AND CROHN’S DISEASE TREATED WITH MESENCHYMAL 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 and are currently under phase I-II 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 of IBD with luminal form and after 2009, although immunosuppressive agents were used as proxy marker of severity in CD. Hospitalization rates during the first 3-years after the diagnosis decreased in all treatment groups, suggesting a change in the patient management.

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

P0376 CELL THERAPY FOR PERIANAL CROHN’S DISEASE

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Aims & Methods: We aimed to compare the frequency of relapses and duration of remission for 5 years of follow up in patients with luminal Crohn’s disease (CD) and the total defeat of ulcerative colitis (UC) receiving therapy with mesenchymal stromal cells (MSCs), bone marrow. We compared the frequency of relapses of IBD with luminal form and after 2009, although immunosuppressive agents were 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.
P0377 DYNAMICS OF PROINFLAMMATORY CYTOKINES IN PATIENTS WITH CROHNS DISEASE TREATED WITH MESENCHYMEAL STROMAL CELLS OF BONE MARROW AND AZATHIOPRINE

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Introduction: Mesenchymal stromal cells (MSCs) are used for the treatment of chronic inflammatory and autoimmune diseases in recent years, including rheumatoid arthritis (RA) and inflammatory bowel disease (IBD). In most cases, treatment of the most important immunosuppressive effect. However, studies conducted by Huang HR et al. demonstrate that IFP rendered minimal impact on the MSC proliferation, apoptosis and cell cycle, while azathioprine inhibited cell proliferation and induced apoptosis of MSCs in vitro [2].

Aims & Methods: To evaluate the effectiveness of therapy mesenchymal stromal cells (MSCs) from the bone marrow of patients with Crohn’s disease (CD) receiving azathioprine. 34 patients with inflammatory (luminal) form CD were divided into two groups. The first group of patients aged 19 to 58 years (Mean: 36±10 years) was treated with anti-inflammatory therapy with MSCs in combination with AZA. The second group of patients with CD (n=19) aged 23 to 60 years (Mean: 35±10 years) received MSCs in a combination with AZA.

Results: After 2 months of therapy MSCs level of IFN-γ in 1st group was significantly decreased compared with baseline and amounted to 79.4±8.5 pg/ml in the 2nd - 80.8±7.3 pg/ml (between groups p=0.7). TNF-α in 1st group decreased to 44.9±6.3 pg/ml in the 2nd - 49.7±10.4 pg/ml (between groups p=0.7). IL-1β in 1st group - 53.6±10.7 pg/ml (between groups p=0.7). IL-10 in 1st group was decreased to 8.4±2.3 pg/ml in the 2nd - 6.5±10.7 pg/ml (between groups p=0.7). After 6 months of therapy MSCs level of IFN-γ in 1st group decreased and amounted to 79.4±8.5 pg/ml, in the 2nd - 80.8±7.3 pg/ml (between groups p=0.7). TNF-α in 1st group - 49.7±10.4 pg/ml (between groups p=0.7). IL-1β in 1st group - 53.6±10.7 pg/ml (between groups p=0.7).

Conclusion: Our study demonstrated that combined treatment with AZA and MSCs significantly reduces the level of pro-inflammatory cytokines, which could have a more pronounced anti-inflammatory therapeutic effect.

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

References
Conclusion: serum sample (LLoQ 62.5 ng/ml). Quantities were added to ileal fluid concentrations. V565 was not detected in any subject 31003; and 125MTs (1260 mg) 2 h post dose from subject 31004. Overall, recovered 3 h post dose from subject 31002; 78MTs (458 mg) 3 h post dose from stored in a way to enable reliable analysis. 64MTs (containing 135 mg V565) were recovered from the ileostomy bags of all subjects. Each 1665 mg dose contained a In addition to the V565 concentrations in ileal fluid, partially dissolved MTs were streaked with blood. The examination revealed the exacerbation of UC, left-sided and the likely maximum daily dose for initial clinical efficacy assessment. High concentrations of active V565 were demonstrated in the ileal fluid of all four subjects as shown in Table 1 below.

Micromolar concentration of V565 in ileal fluid

<table>
<thead>
<tr>
<th>Hours post-dose</th>
<th>Subject</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
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<tr>
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</tbody>
</table>

In addition to the V565 concentrations in ileal fluid, partially dissolved MTs were recovered from the ileostomy bags of all subjects. Each 1665 mg dose contained a total of 135 MTs. 50 MTs were recovered 2h post dose from Subject 31001; these were not analysed for V565 as this was a post hoc analysis and the MTs were not stored in a way to enable reliable analysis. 64MTs (containing 135 mg V565) were recovered 3h post dose from subject 31002; 78MTs (458 mg) 3h post dose from subject 31003. Total concentration of V565 to lesions distal to the ileum. This profile may be beneficial for IBD and merits further investigation as a potential oral treatment. Disclosure of Interest: J. Robinson: J Robinson is an employee of the Sponsor company. S. Crowe: S Crowe is an employee of the Sponsor company. G. Whale: G Whale is an employee of the Sponsor company. K. Roberts: K Roberts is an employee of the Sponsor company M. West: M West is an employee of the Sponsor company. J. Ritter: J Ritter was a salaried employee of Quintiles at the time of the study; he has no other significant relationships. P. Irving: Lecture: AbbVie, Warner Chilcott, Ferring, Falk, Takeda, MSD, Janssen, Shire Research Support: MSD, Takeda, AbbVie, Warner Chilcott, Takeda, MSD, Vifor, Pharmacosmos, Topivert, Genentech, Hospira, Samsung Bioepis, VH2, Janssen, Pfizer. S. Nurbhai: S Nurbhai is an employee of the Sponsor company.

P0379 A PROTEASE-RESISTANT ORAL DOMAIN ANTIBODY TO TNF DELIVERS HIGH CONCENTRATIONS OF ACTIVE COMPOUND IN ILEAL FLUID OF SUBJECTS WITH AN ILEOSTOMY

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Introduction: The oral delivery of therapeutic concentrations of anti-TNF to affected mucosa of patients with inflammatory bowel disease (IBD) has remained challenging despite advances in protein engineering, the attractions of oral dosing for chronic therapies, and the acknowledged benefit of anti-TNF monoclonal antibodies in the management of IBD. As the ileum is commonly involved in Crohn’s disease (CD), it is important to deliver drug there if treatment is to be effective. This is the first report of a domain antibody to TNF, V565, engineered to be resistant to intestinal proteases, delivering high concentrations of active compound in the ileal fluid following oral administration to human volunteers. The oral domain antibodies (Vorobodies) 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 2 hours post dose with further collections 6, 24 and 24h 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 24h. Results: Four subjects with an ileostomy (3 with UC; 1 with a prior history of colonic obstruction) were given a single 1665 mg dose of V565. The dose was selected based on the prior demonstration of safety and tolerability of this dose and the likely maximum daily dose for initial clinical efficacy assessment. High concentrations of active V565 were demonstrated in the ileal fluid of all four subjects as shown in Table 1 below.

Micromolar concentration of V565 in ileal fluid

<table>
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In addition to the V565 concentrations in ileal fluid, partially dissolved MTs were recovered from the ileostomy bags of all subjects. Each 1665 mg dose contained a total of 135 MTs. 50 MTs were recovered 2h post dose from Subject 31001; these were not analysed for V565 as this was a post hoc analysis and the MTs were not stored in a way to enable reliable analysis. 64MTs (containing 135 mg V565) were recovered 3h post dose from subject 31002; 78MTs (458 mg) 3h post dose from subject 31003 (weighted (77) mg). Total concentration of V565 to lesions distal to the ileum. This profile may be beneficial for IBD and merits further investigation as a potential oral treatment. Disclosure of Interest: J. Robinson: J Robinson is an employee of the Sponsor company. S. Crowe: S Crowe is an employee of the Sponsor company. G. Whale: G Whale is an employee of the Sponsor company. K. Roberts: K Roberts is an employee of the Sponsor company M. West: M West is an employee of the Sponsor company. J. Ritter: J Ritter was a salaried employee of Quintiles at the time of the study; he has no other significant relationships. P. Irving: Lecture: AbbVie, Warner Chilcott, Ferring, Falk, Takeda, MSD, Janssen, Shire Research Support: MSD, Takeda, AbbVie, Warner Chilcott, Takeda, MSD, Vifor, Pharmacosmos, Topivert, Genentech, Hospira, Samsung Bioepis, VH2, Janssen, Pfizer. S. Nurbhai: S Nurbhai is an employee of the Sponsor company.
P0382 EFFICACY AND SAFETY OF GOLIMUBAB 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. After failure of the first anti-TNF, 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 events and treatment 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 line of biotherapy. 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 (0.55–48.7 months) and 67% 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 19.3%. 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 (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 thio- purine derivatives or metothrexate over 6 months were independently associated with golimumab efficacy (OR 2.16, 95% CI [1.25–3.36], p = 0.005) and OR 3.9895% CI [2.3–7.1], p < 0.001, respectively). Side effects led to discontinuation of treatment in 6% of patients. These were paradoxical psoriasis in three patients, paresthesia (n = 1), low extremity edema (n = 1), injection site reaction (n = 1) and not reported reason for discontinuation (n = 1). No significant differences were observed in control group (p = 0.339). We found a trend for better response in the EAP than in the sham group although the difference in FACIT-F score was not significant (p = 0.09). EAC also improved quality of life (+5.17 points, 95% CI [–5.2 to –2.06], Basal Vs 9th session p = 0.003); depression (8.9 points, 95% CI [4.3 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 scores (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 targeted and sham electroacupuncture are effective in managing fatigue in patients with quiescent IBD. NCT02733276.

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

References

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, oncology, and rheumatology.

Introduction: Biologic medicines and their biosimilar counterparts are effective therapies for many conditions, including inflammatory bowel disease, Crohn’s disease, and ulcerative colitis. The European Medicines Agency (EMA) has approved twenty-two biosimilar medicines, which are derivatives of eight original biologics, and four more biosimilar are scheduled to be reviewed this year. As the number of approved biosimilars rises, regulatory agencies must closely monitor their safety and efficacy.

Results: The majority of survey respondents specialized in endocrinology (19%) and gastroenterology (19%). Respondents were recruited almost equally from the five countries, with France being the most represented country (22%) and the UK being the least represented (18%). The majority (55%) indicated that safety and efficacy is the most important factor in determining whether a patient should be switched from a prescribed biologic therapy to its approved biosimilar. Thirty percent of respondents indicated that clinical trials related to the original biologic condition being treated are required before switching. Only 12% of respondents indicated that cost to the government or insurance companies is a primary concern, and only 3% were primarily concerned with innovation or productivity.

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. Specific trials related to the original biologic condition being treated are required before switching. Only 12% of respondents indicated that cost to the government or insurance companies is a primary concern, and only 3% were primarily concerned with innovation or productivity.

Disclosure of Interest: D. Charles: David Charles receives income from Medtronic, Allergan, 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

L. Arias García1, G. Hontoria Bautista1, E. Badia Aranda1, F. Saez-Royuela2, D. Charles3,4

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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.

References
A. Molinari1, A. Louiza-Bonilla2, D. Charles3
1Global Alliance for Patient Access, Washington, DC/United States of America 2Cancer Treatment Centers of America, Philadelphia, PA/United States of America 3AL
Aims & Methods: We aimed to determine the efficacy of systemic or local bioavailability in immunosuppressive treatment for moderate flares of patients with at least 6 months of immunosuppressive treatment, and describe long-term follow-up Inflammatory bowel disease (IBD) immunosuppressed patients (thiopurines or methotrexate) from our population-data registry were analyzed. For statistical analysis, Chi-square test, U Mann-Whitney test and Kaplan Meier survival analysis were used.

Results: 392 IBD patients with a median of 82 (6-271) months of immunosuppressive (IMM) treatment were identified (table 1). 89 patients (23%) (33% UC and 67% CD) needed at least one steroid treatment during follow-up (63% systemic steroid and 37% low bioavailability oral steroid) with a median time of steroid treatment of 4 (1–168) months. Average time from IMM to steroid treatment was 26 (6-207) months. In IMM patients there were no differences regarding sex, age, disease, location, perianal disease, extra intestinal manifestations, appendectomy, smoke habit, need for steroids at diagnosis and previous abdominal surgery between patients with no need of steroids and patients with steroid treatment during follow-up. In CD patients, biological treatment for perianal disease before IMM (OR = 0.12) or fistulizing (B3) behavior (p = 0.005; OR 2.284) were risk factors for using steroids after IMM treatment. In UC patients, no statistically significant variables were identified. 49 of these 89 steroid treatment patients (55%) needed biological treatment or surgery after a median of 13 months (0–178); 19 (21%) needed more than one steroid treatment (2–5) and just 31 patients (35%) did not need any other treatment. CD patients had higher risk (p = 0.007; OR: 3.529) to receive biological treatment or surgery versus UC patients. Otherwise, the more months using steroids in UC patients, the greater risk for biological or surgery treatment (p = 0.009). During follow-up, though it's not statistically significant (p = 0.078), we observe that 75% probability of rescue treatment for UC patients is 60 months versus 36 months for CD patients.

Conclusion: 23% of IMM immunosuppressive patients needed at least one steroid treatment after 6 months of IMM. Previous biological treatment and B2-B3 behavior predicted steroid treatment in CD patients, who had 3.5 times more risk to receive biological treatment or surgery after steroid treatment using it earlier than UC patients. Just 1/3 of patients who needed steroid treatment after IMM did not need any other rescue treatment.

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

P0385 ADALIMUMAB LONG-TERM EFFECTIVENESS IN ADALIMUMAB-NAÏVE PATIENTS WITH CROHN'S DISEASE: FINAL DATA FROM PYRAMID REGISTRY


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Introduction: PYRAMID was an international multi-center non-interventional postmarketing registry assessing long-term safety and effectiveness of adalimumab (Humira® [ADA]) as used in routine clinical practice. Patients with and without prior ADA experience were allowed to enroll. The final long-term effectiveness of ADA is reported in adult ADA-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.

Aims & Methods: All patients entering the registry were followed for up to 6 years. Effectiveness of ADA was measured using Physician’s Global Assessment (PGA; [a composite of Harvey Bradshaw Index and rectal bleeding score]), Short Inflammatory Bowel Disease Questionnaire (SIBDQ), and 4 components of the Work Productivity and Activity Impairment (WPAI) questionnaire, including absenteeism, presenteeism, overall work impairment, and activity impairment. Effectiveness measures, captured in all patients who received at least 1 dose of ADA in the registry and had at least 1 post-enrollment measurement, were summarized descriptively by the number of observations that were not missing at each registry visit; data were reported as observed. Values at enrollment are considered as baseline values.

Results: Among 5025 patients evaluated in the registry, 2057 (40.9%) were ADA-naïve. Of these, 1199 patients (58.3%) were female; mean age 37.1 years at enrollment. Mean ± SD ADA exposure for the ADA-naïve subgroup during the registry was 1118.5 ± 842.3 days. A total of 1082 patients (52.6%) had prior exposure to at least 1 anti-TNF/biologic; 853 (41.5%) and 831 patients (40.4%) used immunomodulators and corticosteroids, respectively, at enrollment. Mean change from baseline in effectiveness measures for patients with CD is shown in the table. Mean PGA score and SIBDQ as well as WPAI domains improved in ADA-naïve patients from enrollment to 1 year and were sustained for up to 6 years (table). No new safety signals were identified in the registry.

Conclusion: At 1 year after entering the international postmarketing registry of ADA use in routine clinical practice, clinically meaningful improvements in disease activity, work productivity, and activity impairment were achieved in ADA-naïve patients with moderately to severely active CD. These improvements were maintained for up to 6 years of the registry among the patients who remained in the study.

Disclosure of Interest: E.V. Lofts Jr. consultant and/or research support from AbbVie, UCB, Janssen, Takeda, Eli Lilly, Mesoblast, Amgen, Pfizer, CVS Caremark, Salix, Genentech, Roberts Clinical Trials, Gilead, Receptos, Seres Pharmaceuticals, Celgene, and Medimmune.

G. D’Haens: consulting and/or lecture fees and/or research grants and/or speaking honoraria from AbbVie, Dr Falk Pharma, Ferring, Given Imaging, Janssen Biologics, MSD, Shire Pharmaceuticals, Tillotts Pharma, UCB Pharma, and others.

W. Reinsch: speaker/consultant/advisory board member and has received research funding from Abbott Laboratories, AbbVie, AESCA, Centocor, Falk Pharma GmbH, Immunodiagnostik, and MSD and others.

J. Satsangi: speaker, consultancy, or travel support from AbbVie, MSD, Takeda, Shire, Ferring

R. Panaccione: consultant and/or lecture fees from AbbVie, Amgen, AstraZeneca, Axcan Pharma (now Aptalis), Biogen Idec, Bristol-Myers Squibb, Centocor, ChemoCentryx, Eisai Medical Research Inc, Elan Pharmaceuticals, Ferring, Genentech, GlaxoSmithKline, and others.

S. Berg: AbbVie employee; may own AbbVie stock and/or options

G. Alperovich: AbbVie employee; may own AbbVie stock and/or options

M. Bereswill: AbbVie employee; may own AbbVie stock and/or options

J. Kalabic: AbbVie employee; may own AbbVie stock and/or options

M. Skup: AbbVie employee; may own AbbVie stock and/or options

J. Peterson: AbbVie employee; may own AbbVie stock and/or options

A.M. Robinson: AbbVie employee; may own AbbVie stock and/or options
Introduction: Adalimumab (ADA) has been shown to improve clinical outcomes among patients with ulcerative colitis (UC) with moderate to severe disease. The aim was to examine clinical and health-related quality of life (HRQoL) effects of ADA in patients with UC based on disease severity and prior use of tumour necrosis factor inhibitors (TNFI). InspirADA details have been presented.1 Pts received ADA 40 mg weekly starting from baseline in HRQoL outcomes was calculated, including Remission rate, odds ratio (95% CI)*

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<th>Experienced to TNFIs (n = 72)</th>
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<th>P value</th>
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</tr>
<tr>
<td>Wk 8</td>
<td>203 (52.2%)</td>
<td>23 (31.9%)</td>
<td>2.09 (1.19–3.65)</td>
<td>0.01</td>
</tr>
<tr>
<td>Wk 26</td>
<td>192 (49.4%)</td>
<td>30 (41.7%)</td>
<td>1.26 (0.75–2.11)</td>
<td>0.38</td>
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</tbody>
</table>

*Comparison between naïve and experienced groups was adjusted for baseline SCCAI. Because baseline SCCAI is highly correlated with PGA, adjustment for baseline SCCAI was performed.

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: Advisor, grants, lecturer: AbbVie; Assai; Boehringer; BMS; Cosmo; Elian; Ferring; FPRT Bio; Genentech/Roche; Genzyme; Glenmark; GW; Lilly; Merck; Novartis; Novo Nordisk; Oceara; Pfizer; Shire; Santarus; SigmoidPharma; Synthion; 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.

Acknowledgement: Medical writing support was provided by Joann Hettasch, Fishawack Group of Companies, Consthocken; PA; this support was funded by AbbVie.

B.G. Feagan: Research support: Centocor, Merck, UCB, Abbott; Lecturer: Centocor, Merck, Abbott; Consultancy: Centocor, Merck, UCB, Abbott, Millennium/Takeda, Genentech/Hoffman LaRoche, Neovacs, Merck/Serono, Bristol Myers Squibb, Robarts, Tillotts, Pfizer, Falk Pharma
L.Peyrin-Biroulet: Consultant: Merck, AbbVie, Janssen, Genentech, Mitsubishi, Ferring, Norgine, Tillotts, Vifor, Therakos, Pharmacosmos, Plége, 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, ChemoCentryx, Eisai, Elian, Ferring, Genentech, GSK, Janssen, MSD, Millennium, Oceara, Otsuka, Pfizer, Shire, Prometheus, Schering-Plough, Synia, Teva, UCB, Warner Chilcott
S. Danese: Board membership fees: Merck, AbbVie Sharp & Dohme; Consulting fees: Schering Plough, AstraZeneca, AbbVie, Takeda Millennium; Lecture fees, including fees for service on speakers’ bureaus: UCB Pharma, Ferring, Merck Sharp & Dohme
J. Petersson: Employee, stockholder: AbbVie
A. M. Robinson: Employee, stockholder: AbbVie
N. Chen: Employee, stockholder: AbbVie
M. Skup: Employee, stockholder: AbbVie
W. Lee: Employee, stockholder: AbbVie

Reference

P0387  SUBCUTANEOUS ADMINISTRATION OF A NOVEL FORMULA CT-P13 (INFLIXIMAB BIOSIMILAR) IS SAFE AND ACHIEVES PROJECTED THERAPEUTIC DRUG LEVELS: A PHASE I STUDY IN HEALTHY SUBJECTS


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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 (20 subjects in 3 different dosages of SC; 18 subjects in 2 different dosages of IV). After reviewing safety data observed for 48 hours, the study cohort was conducted subsequently from low dose to high dose. The PK profile of SC and IV formulation was evaluated by making the AUC0-last, Cmax, Tmax and T1/2.

Results: A total of 38 male subjects with median age of 23 years (range 19, 30 years) were treated with treatment-emergent serious adverse events or systemic hypersensitivity reaction. In SC cohort, two subjects experienced mild injection site reactions directly after the injection procedure.

Conclusion: SC administration of CT-P13 is feasible in terms of bioavailability and safety profiles.

Disclosure of Interest: R. Westhovens: Grant: BMS, Roche Other: Advisory Board Galapagos/Gilead as well as CELLTRION, Inc and Janssen
D.H. Yoo: Consulting fee: CELLTRION, Inc (for consulting of study design)

Support for travel to meetings for the study or other purposes: CELLTRION, Inc (Payment for travel and hotel to attend investigator’s meetings)

W. Reinisch: fees for consultation and lecturing from CELLTRION, Inc

S. Ben-Horin: Grant: CELLTRION, Inc, Takeda, Abbvie, Janssen Consulting fee or honorarium: MSD, Ferring, CELLTRION, Inc, Takeda, Abbvie, Novartis, Pfizer, Janssen

B.D. Ye: Lecture fees: Abbvie Korea, Janssen Korea, CELTRION, Inc, Consultancy: Shire Korea, Abbvie Korea, Kuhnli Pharma., CELLTRION, Inc., Takeda Korea, Kangsien Biotech, Robarts Clinical Trials Inc., Quintiles J.W. Kim: Grant: CELLTRION, Inc Consulting fee: CELLTRION, Inc Support for travel to meetings for the study or other purpose: CELLTRION, Inc
S.J. Lee: Employee of CELLTRION, Inc
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S. Kim: Employee of CELLTRION, Inc
D.H. Kwak: Employee of CELLTRON, Inc

All other authors have declared no conflicts of interest.

Reference
1 Westhovens et al. The Journal of Rheumatology. 2006; 33:5

P0388 REAL-WORLD UTILISATION IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE NEWLY TREATED WITH VEDOLIZUMAB AND ANTI-TUMOUR NECROSIS FACTOR AGENTS

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Introduction: Biological therapy has been highly effective for inflammatory bowel disease (IBD). In addition to anti-tumour necrosis factor (anti-TNF) drugs, a gut-selective anti-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.

Cohn’s disease (CD) and ulcerative colitis (UC) pts ≥18 years old with ≥2 claims for VDZ or ≥2 claims for anti-TNF from 20/5/2014 to 31/12/2016 were identified 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 ≥12 months enrolment prior to and ≥6 months follow-up 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 month 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 vs 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 IB. 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.

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. Acknowledgement: Editorial support was provided by Fishawack Communications, Conshohocken, PA; this support was funded by AbbVie.

Disclosure of Interest: M.T. Osterman: Consultant fees: AbbVie, Janssen, Lycera, Novartis, Pfizer, Takeda, and Novartis; Employee, stockholder: AbbVie, A. Afsahi: 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.

N. Shi: Employee: Truven Health Analytics, an IBM Company, Cambridge, MA, USA and received payment from AbbVie to assist with the analyses of this study.

M. Skup: Employee, stockholder: AbbVie
W. Lee: Employee, stockholder: AbbVie

P0389 SAFETY OF ANTI-TNF TREATMENT IN ELDERLY PATIENTS WITH INFLAMMATORY BOWEL DISEASE


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Introduction: Due to population ageing and improved survival, the percentage of elderly patients with inflammatory bowel disease (IBD) is increasing. The safety
P0390 SWITCHING FROM REFERENCE INFlixIMAB TO CT-P13 IN PATIENTS WITH INFILTRATORY BOWEL DISEASE: 12 MONTHS RESULTS

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Aims & Methods: Over the past twenty years, the introduction of biological agents into clinical practice has radically improved outcomes in patients with infiltratory bowel disease (IBD), Crohn’s disease (CD) and ulcerative colitis (UC). Tumor necrosis factor (TNF) antagonists, such as infliximab, act by preventing TNF-α, a pro-inflammatory cytokine, 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, many patients have grown older during anti-TNF exposure, disease duration or location of inflammation. Patients on no concomitant immunomodulator (IM) (70%) were more than 65 years-old, patients on concomitant IM (28%) were in remission at 12 months.

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 62.7% 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 in the Mayo score (P = 0.056). 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 (43.3% vs. 24.0%, P = 0.044). The number of severe events (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.

References

1. A298

P0391 CLINICAL RESPONSE TO VELODIZUMAB IN IBD PATIENTS IS ASSOCIATED WITH THE CONCOMITANT USE OF IMMUNOMODULATORS

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Aims & Methods: The role of biologics in medical management of inflammatory bowel disease (IBD) has been established since anti-TNF agents invaded the market several years ago. Vedolizumab, an anti-integrin gut-selective molecule, is a more recent biologic treatment which has been approved for the management of both Crohn’s disease and ulcerative colitis. Its efficacy in inducing and maintaining remission was shown in GEMINI studies, although a good percentage of the trial participants had previously failed anti-TNFs. We conducted this study in order to describe outcomes in a real-life cohort of IBD patients who were treated with Vedolizumab, consisting both of previously anti-TNF exposed but also anti-TNF naive patients. Multivariate analysis searched for factors associated with response to treatment.

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 (28%) 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 (MTX) or azathioprine (AZA). 12 (20%) 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

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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.

Aim & Methods: The aim of this study was to explore the relationship between infliximab (IFX) and adalimumab (ADA) trough and antibody levels with clinical response rates, at the end of anti-TNFα induction therapy. This was a prospective, single-centre study. Patients were recruited from the gastroenterology department at our centre, from July 2015 to August 2016. Inclusion criteria were all patients older than 17 years old with IBD who started treatment with anti-TNFα drugs, either infliximab or adalimumab, during the study period. Patient demographics, medication and clinical history were collected from the electronic hospital information system. Baseline clinical disease activity indexes were performed with the 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 week.

Overall response rate was 51.4% (n = 18/35) were on thiopurines and 9 (25.7%) had prior anti-TNFα exposure.

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

Table: Summary of pregnancy outcomes in the OCTAVE programme

<table>
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<tr>
<th>Foetal Congenital</th>
<th>Spontaneous Healthy</th>
<th>Medical</th>
<th>Pending/lost</th>
<th>death</th>
<th>malformation</th>
<th>abortion</th>
<th>newborn termination</th>
<th>follow-up</th>
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<tbody>
<tr>
<td>Maternal exposure (n = 11)</td>
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<td>0</td>
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<td>3</td>
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<td>Paternal exposure (n = 14)</td>
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<tr>
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<td>0</td>
<td>9</td>
<td>0</td>
<td>2</td>
<td></td>
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</tr>
</tbody>
</table>

©Case 1: the subject decided to terminate pregnancy based on potential risks of tofacitinib; Case 2: reason unknown;

### BID, twice daily

**Conclusion:** Based on the limited data and follow-up available, pregnancy and newborn outcomes among pts with UC with prenatals (maternal/paternal) exposure to tofacitinib appear to be similar to those reported for the UC population, as well as those previously reported in pts with RA and P0. Larger, long-term follow-up studies are needed to examine safety of tofacitinib during pregnancy.

**Disclosure of Interest:** U. Mahadevan: Consultant: Pfizer, Jansen, AbbVie, Takeda, Celgene

D.C. Barlow: Grants/personal fees/non-fin supp: Shire, AbbVie, MSD, Takeda, Biogen, Foreward, Dr. Falk, Ferring, Recordati, Genentech, Janssen, TiGenix, Shield, Pfizer, BMS. Activities conform to FSA-Kodex Fachkreise, checked by legal Dpt Charité Universitätsmedizin

M.C. Dubinsky: Consultant for: Pfizer, AbbVie, Takeda, Jansen, UCB, Celgene, BMS, Gilead

N. Lawendy: Employee and shareholder of Pfizer Inc

G. Friedman: Employee and shareholder of Pfizer Inc

C.G. Konijen: Previously received honoraria from Pfizer (advisory board), Abbvie (advisory board), Jansen (advisory board), and Takeda (speaker), but is not funded by them for any research.

T.V. Jones: Employee and shareholder of Pfizer Inc

A. Marraro: Employee and shareholder of Pfizer Inc

A.J. Thorpe: Employee and shareholder of Pfizer Inc

C. Nduaka: Employee and shareholder of Pfizer Inc

C. Sue: Employee and shareholder of Pfizer Inc

All other authors have declared no conflicts of interest.

References


P0395 SAFETY AND EFFICACY OF GRANULOCYTE AND MONOCYTE ADSORPTIVE APERHESIS IN 363 PATIENTS WITH INFAMLLATIVE 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 Adacolumn® for patients with inflammatory bowel disease who have special situations (PARTICULAR).

**Aims & Methods:** The aim of the PARTICULAR study was to assess the safety and efficacy of GMA treatment in patients with IBF who have special situations. This study was an interim analysis of the multi-centre observational study conducted at 80 institutions in Japan. Data were collected from patients with ulcerative colitis (UC) or Crohn’s disease (CD) who received GMA between November 2013 and September 2016. Patients who had at least one special situation were included in the study. GMA was performed using Adacolumn® (JIMRO, Takasaki, Japan). Each patient received up to a maximum of 11 GMA sessions. Safety assessments were performed on all patients in this study. All adverse events (AEs) during the study period were recorded. AEs for which the causality of GMA could not be ruled out were defined as side effects (SEs). Feasibility problems (FPs) included blood withdrawal difficulty, venous pressure elevation, coagulation in the apheresis system and venous access difficulty. The safety of GMA was investigated in the following six special situation subgroups: the elderly (>65 years), concomitant treatment with multiple immunosuppressants, retreatment with GMA, anaemia (haemoglobin <10 g/dL), paediatric (<18 years) and other groups. We also compared AEs, SEs and FPs between the subgroups with/without each special situation by univariate analysis. The efficacy of GMA was also assessed in patients with UC. Patients with a partial UC disease activity index score (pUC-DAI) of <3, those with missing pUC-DAI scores and those receiving concomitant treatment with infliximab, adalimumab, tacrolimus or cyclosporine were excluded from efficacy analysis. pUC-DAI scores were calculated at baseline and then at the final GMA session or when GMA therapy had to be discontinued because of AEs or FPs. Remission was defined as a pUC-DAI score of ≤2 with no individual sub-score exceeding 1 point. Patients who received additional treatment by the final GMA session, including infliximab, adalimumab, tacrolimus and cyclosporine, were considered non-responders to GMA.

**Results:** This study included 363 patients (304 UC, 59 CD). Among these patients, 81.9% and 62.5% of the patients, respectively. There were 105, 112, 103, 89, 43 and 39 patients in the elderly, concomitant treatment with multiple immunosuppressants, retreatment with GMA, anaemia, paediatric and other groups, respectively. The incidence of AEs was significantly higher in patients on multiple concomitant immunosuppressants compared with those not receiving them. Likewise, the incidence of AEs was significantly higher in patients of the anaemia group compared with patients with haemoglobin ≥10 g/dL. The incidence of FPs was significantly lower in patients of the retreatment with GMA group than in those who received GMA for the first time (Table 1). The efficacy of GMA was assessed in 209 UC patients. The number of patients administered prednisolone, infliximab, adalimumab, tacrolimus and cyclosporine were 24, 6, 3, 6 and 1, respectively, among patients who received concomitant treatment with multiple immunosuppressants. The incidence of pUC-DAI scores 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 IBF patients and sufficient effectiveness in UC patients who have special situations. However, care should be taken when GMA is used in patients with anaemia or those who have received concomitant treatment with multiple immunosuppressants.

**Disclosure of Interest:** H. Tanaka: Lecture Fee(s) from JIMRO Co., Ltd.

T. Shibuya: Unrestricted grant from JIMRO Co., Ltd. Financial support for research from JIMRO Co., Ltd.

T. Osada: Unrestricted grant from JIMRO Co., Ltd. Financial support for research from JIMRO Co., Ltd.

S. Saito: Employee of JIMRO Co., Ltd.

E. Hosoi: Employee of JIMRO Co., Ltd.

All other authors have declared no conflicts of interest.

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 MHS 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 of 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. Health mental, 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-5D). Demographic and healthcare utilisation data were collected by electronic,
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, 70.9% of whom was on a biological medication. Mean disease duration of 11 years, 43.3% in clinical remission, and 9.8% current smokers (Australia’s average 13.3%). Of these 500, 67% participated in psychological screening, 38% scored within the clinical range, and 17% accepted psychological support. Gender was a significant predictor of participation in psychological screening: women were 62% more likely to participate than men. Analogies and/or mental health medication increased the likelihood of scoring within the clinical range nearly fivefold (analogic use OR = 5.33, p = .030; psycho OR = 6.94, p = .001). Significant predictors of accepting psychological treatment included older age (OR = 1.03, p = .041), anxiety (OR = 1.09, p = .045), general distress (OR = 1.11, p = .003) and lower quality of life (OR = 0.93, p = .042). At baseline, anxiety and depression were both negatively correlated with medication adherence (anxiety r = −.33, p = .000, depression r = −.20, p = .000) and overall quality of life (anxiety r = −.708, p = .000; depression r = −.787, p = .000). Depression and general distress were related to overall healthcare utilisation (depression r = .131, p = .018, general distress r = −.124, p = .026). Anxiety was not related to overall healthcare utilisation, but was positively correlated with numbers of emergency department presentations (r = −.124, p = .024), outpatient appointments (r = −.119, p = .030), and appointment cancellations (r = .155, p = .055). Currently, approximately half of the twelve month follow-up data has been collected. Preliminary analysis shows improvements for patients’ mental health, quality of life and medication adherence (see table below).

Table 1: Outcomes of psychological support

<table>
<thead>
<tr>
<th>Variable</th>
<th>Screening (Mean)</th>
<th>SD</th>
<th>Follow-Up (Mean)</th>
<th>SD</th>
<th>t value</th>
<th>p value</th>
<th>Eta²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety</td>
<td>12</td>
<td>3.6</td>
<td>9</td>
<td>4.1</td>
<td>4.87</td>
<td>.000***</td>
<td>0.56</td>
</tr>
<tr>
<td>Depression</td>
<td>8.8</td>
<td>3.9</td>
<td>6.4</td>
<td>5.0</td>
<td>4.34</td>
<td>.000***</td>
<td>0.30</td>
</tr>
<tr>
<td>Distress</td>
<td>18.2</td>
<td>4.8</td>
<td>13.9</td>
<td>5.1</td>
<td>7.47</td>
<td>.000***</td>
<td>0.36</td>
</tr>
<tr>
<td>Mental QoL</td>
<td>51.1</td>
<td>15.9</td>
<td>60.6</td>
<td>18.5</td>
<td>−4.91</td>
<td>.000***</td>
<td>0.39</td>
</tr>
<tr>
<td>Physical QoL</td>
<td>72.5</td>
<td>14.9</td>
<td>75.0</td>
<td>17.7</td>
<td>−1.50</td>
<td>.142</td>
<td>0.06</td>
</tr>
<tr>
<td>Total QoL</td>
<td>57.6</td>
<td>14.6</td>
<td>65.1</td>
<td>17.4</td>
<td>−4.39</td>
<td>.000***</td>
<td>0.34</td>
</tr>
<tr>
<td>Medication adherence</td>
<td>5.1</td>
<td>2.0</td>
<td>5.7</td>
<td>2.2</td>
<td>0.03</td>
<td>.049</td>
<td>0.09</td>
</tr>
</tbody>
</table>

*p < .05, **p < .01, ***p < .001

Conclusion: Psychological issues are prevalent in patients with IBD and associated with lower quality of life and medication adherence. Women are more likely to participate in psychological screening, and in general the screening approach was widely accepted. In addition, high proportions of patients reported clinical levels of distress (irrespective of their IBD activity) and went on to accept psychological intervention. All of which demonstrate a widespread need for support in this cohort. Furthermore, preliminary data of treatment outcomes are promising. At study completion we will be better able to clarify the extent to which patients with IBD benefit from this new integrated approach.

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

P0397 LONG-TERM EFFICACY, SAFETY, AND IMMUNOGENICITY DATA FROM A PHASE III CONFIRMATORY STUDY COMPARING GP2017, A PROPOSED BIOSIMILAR, WITH REFERENCE ADALIMUMAB

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Introduction: Demonstration of biosimilarity is based on the evaluation of pharmacological, biological, preclinical, and clinical data. Based on this totality of evidence, a biosimilar may be approved for use in the same indications for which the reference medicine is approved without conducting a clinical trial in each indication. A prerequisite for this extrapolation is clinical confirmation of biosimilarity in a patient population sensitive enough to detect potential differences in efficacy, safety, or immunogenicity between the proposed biosimilar and the reference medicine. GP2017, a proposed biosimilar to adalimumab, was provisionally approved without the need for a direct comparison study

Aims & Methods: To evaluate long-term efficacy, safety, and immunogenicity in patients continuously treated with either GP2017 or reference adalimumab from initial randomization to Week 51. Eligible patients with moderate-to-severe chronic plaque psoriasis were randomized to receive an initial dose of 80 mg subcutaneous GP 2017 or reference adalimumab, followed by 40 mg every other week, starting one week after the initial dose, up to 17 Week. At Week 17, patients with ≥50% improvement in Psoriasis Area and Severity Index (PASI 50) at Week 16 were re-randomized in a 2:1 ratio to either remain on their initial 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 continued treatment with GP 2017 or reference adalimumab, respectively. In the per-protocol analysis set, PASI75 response rates for continual GP2017/reference adalimumab at Weeks 17 and 52 were 75.2% and 67.8%, respectively. In the intention-to-treat analysis, 79.8% of patients treated with continual GP2017/reference adalimumab groups, improving 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) (61.3%/64.9%), treatment-related AEs (17.9%/17.8%), serious AEs (3.0%/8.8%), or AEs leading to discontinuation of study drug (4.8%/7.0%).

Infections/infections were the most commonly reported AEs, with nasopharyngitis most frequently reported by 8.9%/10.5% of patients treated with continual GP2017/reference adalimumab. Between Weeks 1 and 51, binding antidrug antibodies were detected in 38.8%/45.3% of patients treated with continual GP2017/reference adalimumab. 88.7%/84.7% of which were neutralizing.

Conclusion: Efficacy was similar and sustained in patients with psoriasis continuously treated with GP 2017 or reference adalimumab for up to 51 weeks. Safety profiles and immunogenicity were generally similar in both groups. Clinical data add to the totality of evidence suggesting GP 2017 could be used as a biosimilar for the treatment of the same indications for which reference adalimumab is approved, including inflammatory bowel disease.

Disclosure of Interest: A. Blauvelt: Investigator for Sandoz J. Lacour: Investigator for AbbVie, Amgen, BMS, BI, Celgene, Galderalder, Janssen, LEO Pharma, Lilly, MSD, Novartis, Pfizer, Regeneron, Roche, Sandoz; Consultant for AbbVie, BMS, Celgene, Galderalder, 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 processes 1800 ml in 60 minutes. It has been described that different factors of the disease and the technique can improve the response to this treatment.
Aims & Methods: We performed a retrospective study of all patients treated with GMA (Adacolumn) in 3 IBD Units in Spain. The clinical and analytical data were assessed before and 1 month after the end of the GMA. The Ethics Committee of Euskadi approved the study protocol. The aim of our study was to evaluate the presence of clinical, analytical of technique–related factors associated to a better response to GMA.

Results: A total of 105 patients were included [51 female (49%), age 35.7 (SD 16.5)]. Ninety-three had UC (50% extensive, 45% left-sided), 10 Crohn’s disease (90% ileocecal) and 2 IBD-U. Mayo score at baseline was 5.3 (SD 4.6) and Harvey – Bradshaw was 10.1 (SD 3.8). The Mayo endoscopic subscore was 1 (16%), 2 (56%) and 3 (27%). Almost all patients (97%) have been previously treated with steroids and 42% were exposed to biologics. At baseline, 85% were on steroids, 38% thiopurines and 18% biologics. None of the previous or concomitant treatments were associated with a better response to GMA. Fifty-five subjects received weekly sessions for 5 weeks processing 1800 ml/session in 60 minutes. Forty patients received an intensive GMA regime: biweekly sessions with a mean of 8 sessions (SD 2.6), processing 3886 ml/session (SD 1729) and lasting 18 minutes (SD 24). The intensive group showed a slightly higher response rate to GMA as compared with those in the standard regime [response rate 67% vs 55%, p = 0.28]. Those subjects treated with > 5 sessions showed higher remission (24% vs 13%) and response rates (47% vs 24%) as compared to < 5 sessions (p = 0.004). A mean duration of > 60 min/session also showed better results in terms of remission (22% vs 16%) and response (45% vs 27%) when compared to ≤ 60 min/session (p = 0.04). There was also a trend towards higher remission rates in those with higher processed blood volume. Thirty-nine percent were able to wean off steroids completely one month after GMA. We observed a decrease in the mean platelet volume and the platelet to lymphocyte ratio after GMA in those cases who did not respond. Contact E-mail Address:


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 muscular-skeletal pain was similar or lower in anacalculism groups compared to placebo.

percentage of subjects achieving clinical response/remission and endoscopic response was similar between treatment groups (Table 1).

Conclusion: SC anacalculism was well tolerated; however, none of the treatment regimens demonstrated a treatment effect in subjects with CD.


P0401 TUBERCULIN SKIN TEST CONVERSION RATE IN INFLAMMATORY BOWEL DISEASE PATIENTS RECEIVING ANTI-TNF ALPHA AGENTS

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Aims & Methods: Few data exist regarding the kinetics of this test during therapy. This study investigated the conversion rate of PPD-TST in IBD patients under anti-TNFAlphafaltra treatment. Anti-TNFAlphafaltra-treated IBD patients followed up in our centre with a baseline PPD-TST underwent a second one during therapy. Those with a positive PPD-TST either at baseline or during therapy (>10 mm in naı̈ve and >5 mm in those exposed to immunomodulators [IMS]) received 300 mg isoniazid orally for 9 months.

Introduction: Anti-TNFAlphafaltra therapy increases the risk of tuberculosis (TB) (re-)activation in inflammatory bowel disease (IBD) patients. Purified protein derivative tuberculin skin test (PPD-TST) is considered a pre-requisite at baseline.

Results: Sixty-eight IBD patients have currently been enrolled (males: 51.47%, Crohn’s disease: 82.35%). Median age at IBD diagnosis was 33.1 years [IQR: 20.3, range: 16.7–66.7]. Median duration of IBD was 7.7 months [IQR: 9.8, range: 1.4–32.7]. Nine patients (13.23%) had a positive PPD-TST at baseline. 48 patients have undergone a 2nd PPD-TST (median time between the 1st and 2nd PPD-TST: 44.26 months [IQR: 42.8, range: 6.3–190.1]). Twenty patients were under combination therapy with an IMS at the 2nd PPD-TST. Six patients with a negative baseline PPD-TST remained positive (in 5 patients the diameter was decreased & in one increased 7 mm). Out of the remaining 42 patients with a negative baseline PPD-TST, eight (19%) exhibited a positive 2nd PPD-TST; three of them were receiving infliximab for less than 3 years and five of them adalimumab (for less and 3 for more than 3 years). Only 2/8 were under combination therapy. There was no case of active tuberculosis during the study. All patients with a PPD-TST conversion received anti-tuberculous treatment.

Conclusion: A positive PPD-TST followed by anti-TB treatment before the initiation of anti-TNFAlphafaltra in IBD patients was not associated with an increased rate of TB infection during therapy. One-fifth of the patients with a negative baseline PPD-TST demonstrated a conversion but without any undeniable consequence if so treated. Therefore, the kinetic of PPD-TST in IBD patients under anti-TNFAlphafaltra treatment should be monitored.

P0402 THE TEMPORAL EVOLUTION OF IMMUNOGENICITY IN INFLAMMATORY BOWEL DISEASE PATIENTS TREATED WITH ADALIMUMAB

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Introduction: Adalimumab and anti-adalimumab-antibodies (AAA) levels have been associated with clinical outcome of Crohn’s disease (CD). Nevertheless, because adalimumab is usually self-injected at home, prospective serial-sampling studies are scarce. Thus, data on the temporal evolution of adalimumab immunogenecity is still limited, and the validity of comparisons of adalimumab versus infliximab immunogeneity 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 immunogeneity in a previously reported cohort using the same assay and methodology was additionally performed.

Results: 102 CD patients starting adalimumab were prospectively followed. Fourteen (14%) experienced primary non-response and 20 (20%) lost response to adalimumab therapy during maintenance. Thirty-three (32%) developed AAA, which were more common among those previously exposed to adalimumab (p = 0.002) but were not affected by co-treatment with immunomodulators or not (p = 0.28). AAA developed as early as week 2 in 18/33 (55%) of AAA positive patients (7/18 with history of interrupted therapy), and in 26/33 (79%) within 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 = 0.01).

Conclusion: AAA formation often occurs earlier than anticipated, and associates with primary non-response to adalimumab induction. Overall rate of immunogenecity is lower for adalimumab compared to infliximab. However, once they occur, AAA are more specific than ATI.

Disclosure of Interest: B. Ungar: This study was supported in part by a grant from AbbVie®. In addition, BU received consultation fees from AbbVie® and from Janssen®.

U. Kopylov: Speaker fees - AbbVie Research support, speaker and advisory fees
Y. Chowers: AbbVie - grant support, lecture and advisory fees
Jansen - lecture and advisory fees
Takeda - research support

G. Paspatis: Speaker fees - AbbVie Research support

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Introduction: Golimumab (GBL) 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 47-49% of patients maintaining the effect after one year. Due to its relatively low cost, there are still few studies on clinical outcomes of patients receiving golimumab in the routine activities. In our region GLB became available starting July 2015.

Aims & Methods: Aim of this study has been to prospectively evaluate the efficacy and safety of GLB for the treatment of moderate to severe 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 monthly dose of 50 mg or 100 mg for a body weight < or > or = to 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 the maintenance period, the secondary end point being the steroid-free clinical remission (Partial Mayo score =< 2 with all subscores =<1) at the end of the induction phase and thereafter the maintenance phase. Complete follow-up is available for all patients at week 30, with 4 patients reaching the week 54 of monitoring.

Results: At the time of GLB starting, localization of the disease according to Montreal classification was left-sided colitis (22%) in 70%, pancolitis (13%) in 23% and proctitis (24%) in 7% of patients. Ten patients (77%) were anti-TNF-naive, 3 patients (23%) had already received one anti-TNF in the past. Clinical response was obtained in 6/13 (46%) at week 6 and in 2 further patients at week 10, for a total of 8/13 (62%) patients. 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. Each 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.

Conclusion: Our findings seem to suggest that Golimumab, as compared to traditional therapies, is able to induce a better clinical initial 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, depending on the clinician and patient, remains to be evaluated.

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

Disclosure of Interest: J. Panis: J.P. has received consultant or speaker fees from Merck & Co., Inc.

References: J. L. has received consultant and speaker fees from Merck & Co., Inc. N. Teich: N.T. is a scientific advisor for and has received speaker fees from Merck & Co., Inc.

S. Lindgren: S.L. has consulted and received lecture fees from Merck & Co., Inc. C. K. Yao: R.Y. is an employee of Merck & Co., Inc., the sponsor of the study. J. L. is an employee of Merck & Co., Inc., the sponsor of the study. P. Stryszak: P.S. is an employee of Merck & Co., Inc., the sponsor of the study. R. Yao: R.Y. is an employee of Merck & Co., Inc., the sponsor of the study. G. Philip: G.P. is an employee of Merck & Co., Inc., the sponsor of the study. W. Reimbold: W.R. has served as a speaker and advisory board member for Merck & Co., Inc.
during induction treatment. After the induction phase, 12 out of 19 patients reached 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 trough concentrations at week 2 and 6 were higher in endoscopic responders compared to patients without an endoscopic response. A significant correlation was found between GLM trough concentrations and AUC. A GLM trough level ≥3.3 mg/L at week 6 was associated with endoscopic response after the induction phase.

Conclusion: Serum trough concentrations of GLM and AUCs at week 2 and 6 were higher in endoscopic responders compared to patients without an endoscopic response. A significant correlation was found between GLM trough concentrations and AUC. A GLM trough level ≥3.3 mg/L at week 6 was associated with improved endoscopic outcomes.

Disclosure of Interest: S. Berends: Has received lecture fees from AbbVie, 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.
Complete in small intestine 67% 100% HF 25%; LF 19% HF 0%; LF 13% 95% CrI 1.84, 154.78). AE rates were similar between tofacitinib 10 mg BID and 122.73) in TNFi-exposed patients. A higher rate of clinical remission was seen 3.71 [95% CrI 1.37, 10.64] and etrolizumab 300 mg (OR 12.09 [95% CrI 1.68, 1.82 [95% credible interval (CrI) 1.06, 3.14]) in TNFi-exposed patients. A higher rate of clinical remission was seen (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-naive 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.

Introduction: Patients with inflammatory bowel disease (IBD) experience higher events were similar between tofacitinib and other treatments.

Results: Twelve induction trials were identified from the SLR (ACT 1 & 2, EUCALYPTUS, GEMINI-I, PURSUIT SC, TOFACITINIB PHASE 2, Feagan 2005, 1 Probert 2003, UC-SUCCESS, ULTRA 1, ULTRA 2, Suzuki 2014) and included in the NMA. Unpublished data from tofacitinib Phase 3 induction trials (OCTAVE 1 & 2) were also used in the analysis. Fixed-effects NMA showed that tofacitinib 10 mg twice daily (BID) is associated with a higher rate of mucosal healing [80%:90%] in the overall population (odds ratio [OR] 1.25 [95% credible interval (CrI) 1.06, 1.47]) 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, 122.73]) 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-naive 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 other treatments.

Disclosure of Interest: C. Kelly: travel support and fees for serving on advisory boards from Seres Therapeutics, Summit Pharmaceuticals, and Synthetic Biologics, lecture fees from Seres Therapeutics, and grant support from Institut Merieux, ntera Health, and Merck. D.T. Rubin: Consulting fees: AbbVie, Amgen, Janssen, Pfizer Inc, Takeda, UCB. Research grants: AbbVie, Genentech, Janssen, Takeda, UCB. A.O. Ashaye: Employee of Evidera, who provide consulting and research services to pharmaceutical and related organisations. In salaried positions, work with a variety of companies, and are precluded from receiving payment or honoraria directly for services rendered. Z. Yang: Employee of Evidera, who provide consulting and research services to pharmaceutical and related organisations. In salaried positions, work with a variety of companies, and are precluded from receiving payment or honoraria directly for services rendered. 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. C. Kayhan: Employee and shareholder of Pfizer Inc. J. Woolcott: Employee and shareholder of Pfizer Inc. J.C. Cappelleri: Employee and shareholder of Pfizer Inc.

References

P0408 CHARACTERISTICS AND OUTCOMES IN PATIENTS WITH C. DIFFICILE INFECTION AND INFLAMMATORY BOWEL DISEASE: BEZLOTOXUMAB VERSUS PLACEBO

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Introduction: Patients with inflammatory bowel disease (IBD) experience higher rates of C. difficile infection (CDI) than the overall population, often lack typical risk factors, and frequently experience severe and recurrent episodes. MODIFY I/II were global trials of the efficacy and safety of bezlo totoxumab (bezlo: a human monoclonal antibody against C. difficile toxin B), in which bezlo was superior to placebo at preventing CDI recurrence (rCDI) in participants with primary or recurrent CDI given antibacterial drug treatment for CDI. Participants with IBD could be enrolled if, in the opinion of the investigator, symptoms were more likely due to CDI than IBD.

Aims & Methods: The objective of this post-hoc subgroup analysis was to summarize CDI-related outcomes, including initial clinical cure and rCDI, through 12 weeks in participants with IBD enrolled in the MODIFY trials. CDI-related outcomes through 12 weeks in the subset of IBD participants enrolled in the MODIFY trials included: initial clinical cure (no diarrhea during the 2 consecu- tive days following completion of ≤14 days of an antibacterial drug treatment for CDI) and rCDI (new episode of diarrhea associated with a positive stool test for toxigenic C. difficile in participants who had achieved initial clinical cure). For this post-hoc analysis, participants randomized to bezlo or actoxumab+bezlo were pooled and are referred to as the “bezlo” group and participants rando- mized to placebo or actoxumab were pooled and are referred to as the “no bezlo” group.

Results: Overall, 2559 participants were included in the mITT population; 1554 participants were randomized to a bezlo group and 1005 were randomized to a no bezlo group. There were 44 participants with IBD: 23 (52.3%) had ulcerative colitis; 18 (40.9%) had Crohn’s disease; and 3 (6.8%) had non-characterized IBD. Compared with participants without IBD, participants with IBD tended to be younger, were more often treated as outpatients, were more often immu- nocompromised, and a smaller percentage had severe CDI. Among IBD parti- cipants, a higher proportion had initial clinical cure in the no bezlo group compared with the bezlo group and there was a higher proportion of participants with rCDI in the no bezlo group compared with the bezlo group. In IBD partic- ipants who did not receive bezlo, most of the recurrences (5 of 7) occurred within 4 weeks after study infusion, while most of the recurrences among partici- pants who received bezlo occurred after week 4 (3 of 4).

Conclusion: Participants with IBD and CDI enrolled in the MODIFY trials were younger, more likely to be diagnosed with CDI as an outpatient, to be immuno- compromised, and to develop rCDI compared with non-IBD participants. Bezlo yielded a 27.2% absolute reduction (50% relative reduction) in the incidence of rCDI in participants with IBD. The efficacy of bezlo in preventing rCDI may extend to patients with IBD, but additional data are needed due to the limited cohort size.

Disclosure of Interest: C. Kelly: travel support and fees for serving on advisory boards from Seres Therapeutics, Summit Pharmaceuticals, and Synthetic Biologics, lecture fees from Seres Therapeutics, and grant support from Institut MÔrieux, ntera Health, and Merck. M. Wilcox: consult/grant/lect fees: Alere, Abbott., Actelion, Astellas, Ceresa, Cubist, Optimer, Sanofi Pasteur, Summit, bio-Mérielles, Da Volterra Quagen, Asta Zeneca, Pfizer, Durata Therap, Merck, Seres Therap, Valneva, Nabriva Thera, Roche, Medicines Company K. Eves: K. Eves - 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. D. Mary Beth: MB Dorr - an employee of Merck Sharp & Dohme Corp., a subsidiary of Merck & Co., Inc., Kenilworth, NJ, USA, who may own stock and/or hold stock options in the Company. All other authors have declared no conflicts of interest.

IBD n=44 No IBD n=2515
Female, n (%) 25 (56.8) 1419 (56.4)
Mean age, yrs (SD) 50.3 (18.9) 63.5 (17.5)
Severe CDI 4 (9.1) 416 (16.5)
Initial Clinical Cure, n/m (%) 15/28 (53.6) 13/16 (81.3)
rCDI, n/m (%) 4/15 (26.7) 7/13 (53.8)
fetal microbiota was as effective as the endoscopic jejunal application in its combination to restructure the fetal microbiota. 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 reemerged that of the donor in diversity and composition. Interestingly, a high abundance of Ruminococcaceae was associated with remission in a recent study on ulcerative colitis (2). However, two patients showed worsening here despite a high increase in the relative abundance of Ruminococcaceae after FMT.

Conclusion: Fecal microbiome transfer in patients with chronic pouchitis is a promising therapeutic option and donor microbiomes could successfully be transferred via capsules or via jejunoscopy delivering fresh stool filtrate. However, a simple increase in microbial diversity and successful establishment of members of the butyrate producing Lachnospiraceae and Ruminococcaceae families is not sufficient for a successful outcome of FMT.

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

References

P0411 ENCAPSULATED FECAL MICROBIOTA TRANSFER IN PATIENTS WITH CHRONIC, ANTIBIOTIC-REFRACTORY POUCHITIS

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Introduction: We analyzed the success of fecal microbiota transfer (FMT) via encapsulated or endoscopic jejunal application to 14 patients with chronic, antibiotic refractory pouchitis. Activated FMT was performed either via encapsulated cryopreserved microbiota or via endoscopic jejunal application to 14 patients. Stool samples for FMT preparation derived from three unrelated healthy donors. Patients were treated by FMT every 4 weeks according to the individual therapeutic outcome. Stool samples before FMT and during follow-up were subjected to microbial community structure analysis through high throughput sequencing of the V1-2 regions of the 16S rRNA (1), clinical response and mucosal inflammation was assessed by fecal calprotectin (FCP) levels.

Results: Clinical response occurred in 7 of 14 patients after two to four FMTs. 4 patients showed clinical worsening and 3 patients showed no improvement. FCP dropped in responders from 536 mg/kg stool (med.; min-max: 116–3000) to 150 mg/kg (191–1409), whereas in patients with flare FCP values increased from 536 mg/kg (157) to 1450 mg/kg (1221–1778). Microbiota analysis of 10 patients and two donors revealed a significantly lower diversity in pouchitis patients compared to healthy donors as assessed by the total phylotype number, the Shannon diversity and Pielou evenness. In patients showing response, typical gut microbiota with high diversity was observed. This increase in diversity was due to the successful establishment of the donor microbiota as assessed by the analysis of sample-similarity matrices constructed using the Bray-Curtis algorithm and a detailed analysis of the taxonomic composition. The encapsulated fecal microbiota was as effective as the endoscopic jejunal application in its combination to restructure the fetal microbiota. 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 reemerged that of the donor in diversity and composition. Interestingly, a high abundance of Ruminococcaceae was associated with remission in a recent study on ulcerative colitis (2). However, two patients showed worsening here despite a high increase in the relative abundance of Ruminococcaceae after FMT.

Conclusion: Fecal microbiome transfer in patients with chronic pouchitis is a promising therapeutic option and donor microbiomes could successfully be transferred via capsules or via jejunoscopy delivering fresh stool filtrate. However, a simple increase in microbial diversity and successful establishment of members of the butyrate producing Lachnospiraceae and Ruminococcaceae families is not sufficient for a successful outcome of FMT.

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

References

P0412 HISTOLOGIC MEASURES OF MUCOSAL HEALING CORRELATE WITH ENDOSCOPIC MEASURES OF DISEASE ACTIVITY AT BASELINE AND AFTER FOLLOWING INDUCTION THERAPY WITH THE JAK1 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 examination1. 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 (Fitzroy2). 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, erosion or ulceration, granuloma)3,4 versus total ileal Simplified Endoscopic Score for CD (ISES-CD)/colonic SES-CD (CSES-CD) score or ISES-CD/CSES-CD ulcer subscores (u; sum of size and percentage affected surface). CD patients were randomized 3:1 to receive 200 mg FIL or PBO (QD) for 10 weeks5. Histopathologic scores were collected at BL and Week 10 (W10) from the most affected areas of each predefined bowel segment (ileum, colon) and W10 respectively(aIGHAS v uISES-CD: Corr = 0.53, p = 0.001; BL aIGHAS v uISES-CD: Corr = 0.62, p = 0.001; BL and W10 respectively)aIGHAS v uCGHAS = 0.53, p = 0.001;
**Aims & Methods:** Patients achieving clinical response 8 wks after a single IV induction dose were randomized to SC placebo (PBO), UST 90 mg every 12 weeks (q12w) or every 8 weeks (q8w). UST patients not in clinical response 8 weeks after the IV induction dose were given UST 90 mg SC and if in clinical response 8 weeks later were continued on 90 mg SC q8w dosing. A total of 458 patients were exposed to an IV induction dose of 6 mg/kg (UNITI-1, N = 249) and in UNITI-2, N = 209) with a response rate at week 8 of 37.8% and 57.9% vs. PBO response rate of 20.2% and 32.1% respectively. The remission rate at week 8 in UNITI-1 and UNITI-2 was 20.9% and 40.7 vs. PBO of 7.3% and 19.6% respectively. For this evaluation, the response and remission status of the entire population exposed to an IV induction dose of 6 mg/kg of UST was evaluated 8 weeks after the first subcutaneous maintenance dose of UST. All patients who received 6 mg/kg IV UST induction were included, including responders randomized to SC PBO (who did not receive SC UST at week 8).

**Results:** Of the 219 patients not in clinical response in UNITI 1&2, 37.6% and 60.5% respectively were in clinical response 8 weeks after the first maintenance UST dose (90 mg SC). Evaluating all patients exposed to 6 mg/kg IV UST induction, response rates 8 weeks after the first subcutaneous injection (16 weeks after the IV induction dose) for UNITI1&2 are 47.4% and 73.7% respectively (see table for response and remission rate). Similar assessments were calculated in the sub-population who were anti-TNF naïve upon enrolment into UNITI-2.

**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.


Response rates and Remission rates for all patients 16 weeks after induction of 6 mg/kg IV UST

<table>
<thead>
<tr>
<th>Study</th>
<th>IV UST (n)</th>
<th>% Clinical Response</th>
<th>% Clinical Remission</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNITI-1</td>
<td>249</td>
<td>47.4</td>
<td>24.1</td>
</tr>
<tr>
<td>UNITI-2</td>
<td>209</td>
<td>73.7</td>
<td>55.5</td>
</tr>
<tr>
<td>UNITI-2 TNF Naïve</td>
<td>144</td>
<td>72.9</td>
<td>60.4</td>
</tr>
</tbody>
</table>

**References:**

1. Neurath MF. *Mucosal immunology* 2014; 7: 6–19
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 3.1 years for IFX initiators. Median time to treatment discontinuation was 244 (IQR: 194–307) days for VDZ initiators vs. 240 (IQR: 194–307) 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>Median (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: Mineia Raluy Callado is a full-time employee of Evidera. A. Berger: Ariel Berger is a full-time employee of Evidera. R. Curtis: Employee of Takeda Development Centre Ltd. M.J. Khalid: Employee of Takeda Development Centre Ltd.
P0415 OXIDATIVE STRESS ENHANCES THE ANTIGEN PRESENTING FUNCTION OF COLONIC EPITHELIAL CELLS BY INDUCING CD80 IN THE EARLY STAGES OF COLONIC CARCINOGENESIS

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3Dept. Of General Surgery, University of Padova, Padova/Italy
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Introduction: Cancer development has been linked to oxidative stress by increasing DNA mutations or inducing DNA damage, genome instability and cell proliferation. Interestingly, reactive oxygen species (ROS) seem to modulate antigen presentation, a crucial event in the immune surveillance mechanisms. We recently showed that expression of the co-stimulatory molecule CD80 on epithelial cells has a critical role during the immune surveillance process occurring in colon carcinogenesis. Remarkably, ROS have been involved in the transcriptional regulation of CD80 gene expression, in addition, oxidative DNA damage was directly correlated to CD80 expression in colon mucosa dysplasia.

Aims & Methods: Therefore, the aim of this work was to examine the role of ROS on CD80 expression in colon epithelial cells using an in vitro and an in vivo model of colon carcinogenesis. A mouse colorectal cancer cell line, CT26, was used to quantify the expression of CD80 in response to pro-oxidant (such as Melphalan) and antigen presentation, a crucial event in the immune surveillance mechanisms. 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 (Benett 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 for 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 (Δ2 Ct)</th>
<th>BBS (n = 31) v Healthy (n = 16)</th>
<th>Immuno-active (n = 16) 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>-1</td>
<td>-</td>
</tr>
<tr>
<td>IRF7</td>
<td>0.0002</td>
<td>0.0008</td>
<td>0.004</td>
<td>-</td>
</tr>
<tr>
<td>MAP2K4</td>
<td>0.002</td>
<td>0.006</td>
<td>0.01</td>
<td>-</td>
</tr>
<tr>
<td>TICAM1</td>
<td>0.002</td>
<td>0.001</td>
<td>0.007</td>
<td>-</td>
</tr>
<tr>
<td>TNFRSF1A</td>
<td>0.003</td>
<td>0.005</td>
<td>0.03</td>
<td>-</td>
</tr>
<tr>
<td>SUGT1</td>
<td>0.004</td>
<td>0.005</td>
<td>0.002</td>
<td>0.01</td>
</tr>
<tr>
<td>LYZ</td>
<td>0.004</td>
<td>0.01</td>
<td>0.02</td>
<td>-</td>
</tr>
<tr>
<td>LTF</td>
<td>0.008</td>
<td>0.009</td>
<td>-1</td>
<td>-</td>
</tr>
<tr>
<td>CHUK</td>
<td>0.01</td>
<td>0.002</td>
<td>-1</td>
<td>-</td>
</tr>
<tr>
<td>IRAK1</td>
<td>0.02</td>
<td>0.02</td>
<td>-1</td>
<td>-</td>
</tr>
<tr>
<td>MAP2K2</td>
<td>0.01</td>
<td>0.02</td>
<td>-1</td>
<td>-</td>
</tr>
<tr>
<td>ZBPI</td>
<td>0.04</td>
<td>0.05</td>
<td>-1</td>
<td>-</td>
</tr>
<tr>
<td>TLR4</td>
<td>0.04</td>
<td>0.04</td>
<td>-1</td>
<td>-</td>
</tr>
<tr>
<td>IL1B</td>
<td>0.05</td>
<td>0.04</td>
<td>-1</td>
<td>-</td>
</tr>
<tr>
<td>RIPK1</td>
<td>0.05</td>
<td>0.03</td>
<td>-1</td>
<td>-</td>
</tr>
<tr>
<td>XIAP</td>
<td>0.03</td>
<td>0.03</td>
<td>-1</td>
<td>-</td>
</tr>
<tr>
<td>TIRAP</td>
<td>-</td>
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<td>-1</td>
<td>-</td>
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<td>-1</td>
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</table>

Data presented as p-values (Mann-Whitney t-test) *’* = non significant. We included 31 IBS patients (16 females, median age 32 (25–44) years) and 16 healthy subjects (8 females, median age 27 (24–30) years). An OPLS-DA model demonstrated that the antimicrobial profiles differed between IBS and healthy subjects (R² = 0.54, Q² = 0.16). The mucosal mRNA expression of 14 antimicrobial genes was downregulated, while one gene was upregulated in IBS patients compared to healthy subjects (Table 1). Antimicrobial profiles did not differ between IBS patients subtyped 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). Adding healthy subjects to the model revealed three differing antimicrobial profiles for each respective group (R² = 0.44, Q² = 0.30). Compared to healthy subjects, 19 genes in the immuno-active and immuno-norm IBS groups were differently expressed (p < 0.05, Table 1). Only one of the antimicrobial genes differently expressed between IBS patients and healthy subjects was associated with faecal microbiota in 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...
Studies (I2 = 0.80, P < 0.01) comparing the relationship between antibiotic and CRC were included in the meta-analysis. Compared with no/low use of antibiotics, high use of antibiotics might play a role in the complex pathophysiology of CRC.

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

P0418 EFFECT OF INTERNAL AND EXTERNAL BILARY DRAINAGE ON INTESTINAL MUCOSAL BARRIER FUNCTION IN BILARY 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-induced intestinal barrier function rats on intestinal mucosal barrier function with special reference of intestinal immune-related index expression. Sixty male Sprague-Dawley rats were randomly assigned to four groups: OJ, sham operation (SH), internal biliary drainage (ID) and external biliary drainage (ED). All animals underwent surgical ligature of the bile duct, except SH was produced by separating common bile duct locally but not dividing on day 1. Then ED and ID were reoperated on day 8 for biliary drainage procedure. Blood from inferior vena cava were collected for the test of DAO and slgA activities by the method of ELASA. The terminal ileum specimens of each groups were collected for observation of the morphological changes with haematoxylin-eosin (HE) staining. The expression of IgA mRNA, plgR mRNA, GP-BAR1 mRNA, RD-5mRNA were measured by RT-PCR. The expression of IgA mRNA and plgR mRNA reduced markedly (P < 0.01). While in ID group, the expression of IgA mRNA and plgR mRNA reduced markedly (P < 0.01), while the internal impaired mucosa have different degrees of recovery and ID group was more similar to SH group in intestinal mucosal morphology. The levels of the DAO in ID group were increased more dramatically that in SH, ID and ED groups while slgA were decreased (P < 0.01), and the activities of the DAO, slgA in ID group were similar to the level of SH group (P > 0.05), different to the level of ED group (P < 0.01). The changes of the plasma DAO and slgA activities were significantly correlated with the conditions of intestinal mucosa (P < 0.01). The expression of RD-5 mRNA in OJ group were decreased significantly than that in SH, ID and ED groups while GP-BAR1 mRNA, IgA mRNA, plgR mRNA were increased (P < 0.01). Interestingly enough, after external bile drainage, there is no improve- ment in IgA mRNA and plgR mRNA (P > 0.05). But in ID, the relative expression of IgA mRNA and plgR mRNA reduced markedly (P < 0.01), while the mRNA expression of GP-BAR1 and RD-5 mRNA in ED group was changed less than that in ID which were more similar to SH group. The protein expression of GP-BAR1 was increased significantly in the intestinal mucosal of OJ group, which was higher than that of 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 mucosal barrier mechanism between GP-BAR1 and IgA mRNA which linked with intestinal-immune-related index, which thus appears to be a key factor in maintaining function of intestinal mucosal barrier.

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

P0419 COMPARATIVE EFFECT OF XYLOGLYCAN ASSOCIATIONS WITH COMPOUNDS FROM ANIMAL OR ALGAE ORIGIN ON LPS-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 tested while prolonged when this mucoprotective agent is associated with gelatin from animal origin. The use of compounds from animal source in galenic formulations is nowadays questionable.

Aims & Methods: Thus, in this study, we aimed at comparing the efficacy of XG associated with gelatin vs XG associated with gelose a moiety from algae origin on LPS-induced enteritis in rats. Since LPS-induced enteritis is characterized by increased intestinal permeability and mucosal inflammation, the efficacy of xyloglucan associations was evaluated by measurement of these two parameters. Male Wistar rats (200-250 g) were orally treated with either: XG (10 mg/kg) + gelatin (25 mg/kg) or XG (10 mg/kg) + gelose (25 mg/kg) or XG (10 mg/kg) + gelose (50 mg/kg) or vehicle (NaCl 0.9%) 3h before intraperitoneal (IP) administration of LPS from E. coli (1 mg/kg). Six hours later LPS administration, the animals were sacrificed and strips of jejunum were collected in order to evaluate (i) intestinal epithelial paracellular permeability to FITC-dextran 4kD in Ussing chambers and (ii) mucosal inflammatory response by myeloperoxidase (MPO) activity measurement.
Results: Compared with control, LPS administration induced a significant increase (p < 0.05) of intestinal paraacellular permeability (53.0 ± 4.9 vs 181.6 ± 21.1 pmol/cm² respectively) associated with jejunal mucosal inflammation (302.1 ± 9.5 vs 655.6 ± 108.9 U MPO/g protein, respectively). XG (10 mg/kg) + gelose at the lowest dose (25 mg/kg) failed to reverse the intestinal hyperpermeability and mucosal inflammation induced by LPS. In contrast, XG (10 mg/kg) + gelatin (25 mg/kg) and XG (10 mg/kg) + gelose at 50 mg/kg significantly (p < 0.01) and equally prevented LPS-induced hyperpermeability (34.8 ± 2.8, 38.7 ± 3.9 vs 181.6 ± 21.1 pmol/cm² respectively) and jejunal inflammation (27.0 ± 3.2, 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.

**P0421 CLINICAL CHARACTERISTICS OF CYTOMEGALOVIRUS COLITIS: 15 YEAR-EXPERIENCE IN A TERTIARY MEDICAL CENTER**

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Introduction: Cytomegalovirus (CMV) colitis in adults is mostly described in immunocompromised patients (solid organ or hematopoietic stem cell transplant recipients, patients with human immunodeficiency virus (HIV) infection, use of immunosuppressive drugs, including steroid or chemotherapeutic agents), and often has worse outcome than in children. Besides, it also was frequently presented in patients with known or subsequent new diagnosis inflammatory bowel disease [1, 2]. However, there are only case reports and few case series with limited patients (below 15 cases) among immunocompetent individuals without known use or inflammatory bowel disease [3–5]. The largest meta-analysis study of cytomegalovirus colitis in immunocompetent hosts included 44 patients and noted advanced age, male gender, presence of immune-modulating comorbidities and need of surgical intervention negatively influencing survival in 2005 [6]. The clinical characteristics of CMV colitis in immunocompetent patient seemed increasing over time in our hospital these years. There was no single study showing comprehensive clinical characteristics, identifying the independent factors of in-hospital mortality and comparing the differences between immunocompetent and compromised patients with CMV colitis. Therefore, we tried to clarify the issue in this study.

Aims & Methods: We enrolled 42 immunocompetent patients and 27 immunocompromised patients with CMV colitis diagnosed by immunohistochemistry stain between April 2002 and December 2016 in Linkou Chang Gung Memorial Hospital, a 3383-bed tertiary medical center and referral center in Taiwan. We analyzed the risk factors of in-hospital mortality and overall survival. Furthermore, we compared the clinical differences between immunocompetent and immunocompromised patients with CMV colitis.

Results: Early diagnosis (before 9 days) was independent predictor of in-hospital mortality in CMV colitis patients. ICU admission (P = 0.010), requisite days of diagnosis≥9 days after admission (P = 0.018), shock (P = 0.001), respiratory failure (P = 0.033), hemoglobin <10 g/dL (P = 0.002), Creatinine ≥1.37 mg/dL (P = 0.004) and CRP≥9.9 mg/dL (P = 0.011) negatively impacted on overall survival. There were older and more comorbidities in immunocompetent group. However, the in-hospital mortality rate and overall survival rate was similar to immunocompromised group. Besides, Cytomegalovirus infection or steroids didn’t affect in-hospital mortality rate and overall survival rate neither. Melena was first and most common symptom in immunocompetent group, but diarrhea in the other.

**Analysis of the clinical factors associated with in-hospital mortality in all patients**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Odd ratio 95%CI</th>
<th>P-value</th>
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<tr>
<td>Univariate analysis</td>
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<tr>
<td>Age (≥65)</td>
<td>2.071 0.691 - 6.209</td>
<td>0.194</td>
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<tr>
<td>Gender (male/female)</td>
<td>0.545 0.184 - 1.619</td>
<td>0.278</td>
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<tr>
<td>Immunocompromised status</td>
<td>0.986 0.328 - 2.969</td>
<td>0.981</td>
</tr>
<tr>
<td>Intensive care unit admission</td>
<td>6.871 2.068 - 22.833</td>
<td>0.002*</td>
</tr>
<tr>
<td>Requisite time of diagnosis</td>
<td>1.034 1.002 - 1.066</td>
<td>0.034*</td>
</tr>
<tr>
<td>(day after admission)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General condition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sepsis</td>
<td>1.030*10^10 0.000 - &gt;10^12</td>
<td>0.998</td>
</tr>
<tr>
<td>Shock</td>
<td>5.714 1.793 - 18.210</td>
<td>0.003*</td>
</tr>
<tr>
<td>Respiratory failure</td>
<td>4.062 1.309 - 12.610</td>
<td>0.015*</td>
</tr>
<tr>
<td>Operation before diagnosis</td>
<td>5.200 0.583 - 17.553</td>
<td>0.180</td>
</tr>
<tr>
<td>Underlying diseases</td>
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<tr>
<td>Infectious bowel disease</td>
<td>0.000 0.000 - 0.999</td>
<td>0.999</td>
</tr>
<tr>
<td>Systemic lupus erythematosus</td>
<td>4.900 0.747 - 32.123</td>
<td>0.009</td>
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<tr>
<td>Solid organ transplantation</td>
<td>2.941 0.147 - 49.636</td>
<td>0.454</td>
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<td>Solid organ malignancy</td>
<td>0.941 0.902 - 9.671</td>
<td>0.959</td>
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<tr>
<td>Hematological malignancy</td>
<td>2.941 0.147 - 49.636</td>
<td>0.454</td>
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<tr>
<td>Liver cirrhosis</td>
<td>0.941 0.902 - 9.671</td>
<td>0.959</td>
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<tr>
<td>Chronic kidney disease</td>
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<td>End stage renal disease</td>
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<td>Diabetes mellitus</td>
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<td>Immunosuppressant</td>
<td>5.200 0.583 - 17.553</td>
<td>0.180</td>
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<tr>
<td>Chemotherapy</td>
<td>4.840*10^10 0.000 - &gt;10^12</td>
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<td>Steroid</td>
<td>1.124 0.336 - 3.764</td>
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<tr>
<td>Survived over 1 month</td>
<td>2.350 0.472 - 11.708</td>
<td>0.297</td>
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<td>Total WBC count (&lt;10^9/L)</td>
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<tr>
<td>ANC (&lt;10^9/L)</td>
<td>1.000 1.000 - 1.000</td>
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<tr>
<td>ALC (&lt;10^9/L)</td>
<td>0.999 0.998 - 1.000</td>
<td>0.018*</td>
</tr>
<tr>
<td>Hemoglobin level (g/dL)</td>
<td>0.668 0.485 - 0.918</td>
<td>0.013*</td>
</tr>
<tr>
<td>Platelet count (&gt;1000/mm³)</td>
<td>0.995 0.990 - 1.001</td>
<td>0.000</td>
</tr>
<tr>
<td>Creatinine (mg/dL)</td>
<td>1.448 1.059 - 1.979</td>
<td>0.020*</td>
</tr>
<tr>
<td>ALT (IU/L)</td>
<td>0.995 0.958 - 1.033</td>
<td>0.787</td>
</tr>
<tr>
<td>Bilirubin (mg/dL)</td>
<td>1.370 0.965 - 1.944</td>
<td>0.078</td>
</tr>
<tr>
<td>Albumin (g/dL)</td>
<td>0.625 0.231 - 1.687</td>
<td>0.354</td>
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<tr>
<td>C-reactive protein (mg/dL)</td>
<td>1.009 1.000 - 1.018</td>
<td>0.047</td>
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<td>Viral markers</td>
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(continued)
P0422  FIRST CASE SERIES OF FECAL MICROBIOTA TRANSPLANTATION FOR RECURRENT CLOSTRIDIUM DIFFICILE INFECTION IN BALTIC COUNTRIES

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Introduction: Clostridium difficile infection (CDI) is one of the most common hospital-acquired infections. Fecal microbiota transplantation (FMT) is used for complicated recurrent CDI treatment; however, to date no data on the efficacy of this method in Eastern Europe have been published.

Aims & Methods: The aim of this study was to assess effectiveness of FMT for recurrent CDI therapy in the hospital of Lithuanian University of Health Sciences (LUHS KK, Kaunas, Lithuania). Clinical data of patients who were treated for recurrent (> 2 times) CDI using FMT in the Department of Gastroenterology of LUHS KK during 2015–2016, were analyzed. All patients were monitored for disease relapse for six months. Clinical data, the use of antibiotics and immunosuppressive drugs were included in analysis. Statistical analysis was performed using statistical software package SPSS version 17.

Results: FMT was used for 18 patients with recurrent CDI. The mean age of patient was 60.4±8.4 years. The patients were treated with antibiotics 14.8 days on average before manifestation of CDI. FMT procedure was performed using naso-enteral tube. After the first procedure, the positive clinical effect was observed in 15 patients with a cure rate of 83.3%. FMT procedure was repeated for two out of the three patients without positive effect (one patient refused repetitive FMT). Normal stool habits were restored in both patients leading to the increase of cure rate to 94.4% (17 out of 18 patients). Seventeen patients that were successfully treated with one or two FMT procedures in the short term also remained asymptomatic (100 %) at 6 months of follow up. All patients without positive effect of first FMT procedure were on immunosuppressive drugs (3/3; 200 mg/kg/day of prednisolone).

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 CDI.FMT.

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

References
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Introduction: The traditional fear that every acute appendicitis will eventually perforate leads to prompt surgery, but this fear may be outdated. In-hospital delay of surgery for acute appendicitis has been subject of a large number of studies. However, consensus about the consequences of delaying appendectomy is lacking, which is reflected in variety or absence of recommendations in guidelines.

Aims & Methods: The aim of this study was to assess in-hospital delay of surgery and the consequences of delaying appendectomy in patients with acute appendicitis. PubMed and EMBASE were searched from 1990 to July 2016. Outcome measures of interest were complicated appendicitis, surgical site infections and postoperative morbidity. All studies reporting surgically treated patients with one of these outcome measures in two or more predefined time intervals were included. Adjusted odds ratios were pooled using forest plots if possible. All unadjusted data was pooled using generalized linear mixed models.

Results: Forty-five studies with 152, 314 patients were included. Pooled adjusted odds ratios revealed no significantly higher risk for complicated appendicitis when delaying appendectomy for 6 to 12 hours or 13 to 24 hours; odds ratio 1.07 (95% CI 0.98–1.17) and 1.09 (95% CI 0.95–1.24), respectively. For a delay of 24 to 48 hours the adjusted odds ratio was 1.24 (95% CI 1.08–1.41). Pooling data revealed a decreased risk for complicated appendicitis when appendectomy was delayed for 24 to 48 hours, however statistical uncertainty in this interval increased considerably compared to the first 24 hours.

Conclusion: In-hospital delay of surgery for up to 24 hours is an acceptable alternative for patients with no preoperative signs of complicated appendicitis. However, in-hospital delay of surgery for 24 to 48 hours resulted in higher rates of complicated appendicitis, surgical site infections or morbidity. When prompt surgery is hampered by logistic or personal reasons, delaying appendectomy up to 24 hours is an acceptable alternative for patients with no preoperative signs of complicated appendicitis.

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

References

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Introduction: C. 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. Cases 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: All authors have declared no conflicts of interest.

References
1. 15,753 cases were identified, including 14,402 (91.4%) community-associated and 817 (5.1%) care-associated infections. The crude incidence of C. difficile infection was 9.8 per 100,000 population (PV < 0.001), representing an over 30% increase annually. This rise was
notably contributed by elderly patients, of which the incidence has increased by threefold over the period. Recurrence at 60 days increased from 5.7% in 2006 to 9.1% in 2014 (P<0.001). The increased use of proton-pump inhibitors accounted for 58.8% of the surge.

Conclusion: The incidence of *C. difficile* infection has increased more than threefold, and was associated with an increased disease recurrence and use of proton-pump inhibitors. Our results suggest need for further surveillance in Asia which hovers half of the world’s population.

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


P0428 THE PROPHYLACTIC CLIP APPLICATION BEFORE SNARE POLYPECTOMY DECREASES IMMEDIATE POST-POLYPECTOMY BLEEDING IN LARGE PEDUNCULATED POLYPS

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Introduction: Endoscopic bleeding (EB) is the most common complication following polypectomy, especially in cases with large pedunculated polyps. Although the clip application before snare polypectomy may decrease PPB, there were few prospective randomized studies to confirm the efficacy of prophylactic clip. This present study was conducted to investigate whether prophylactic clip application for large pedunculated colorectal polyps could decrease PPB and to evaluate associated risk factors of PPB.

Aims & Methods: We enrolled 137 pedunculated polyps (>1 cm in size) in 116 patients in the past 6 months. The polyps were randomized into the two groups with or without prophylactic clips application. Immediate PPB was defined as bleeding that continued for over 30 seconds from the polypectomy site and graded from grade 1 to 4. Delayed bleeding occurred in five polyps in both groups (P=0.943). The prophylactic clip application was a significant factor for lowering immediate PPB in the univariate (OR 0.215, 95% CI 0.081-0.571, P=0.002) and multivariate analysis (OR 0.20, 95% CI 0.074-0.591, P=0.003). In addition, polyp size >20 mm and stalk diameter ≥4 mm were significant risk factors of immediate PPB compared with polyp size ≤10 mm and stalk diameter 1-3 mm.

Conclusion: The prophylactic clip application in large pedunculated polyps >1 cm is effective in reducing immediate PPB. Polyp size and stalk diameter are associated with PPB.

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


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Introduction: Heparin replacement (HR) during periprocudural periods is described in various guidelines as the recommended method while discontinuing warfarin. However, the rate of post-colonic polypectomy bleeding in patients undergoing HR has been reported to be as high as 20%. As an alternative method to HR, colonic polypectomy without discontinuation of warfarin may be feasible, however there is still insufficient evidence. The aim of this study was to assess the safety of colonic polypectomy/endoscopic mucosal resection (EMR) without discontinuation of warfarin during periprocudural periods.

Aims & Methods: This is a prospective multicenter single-arm exploratory study in Japanese patients who received warfarin for the purpose of prevention of thrombosis. They were prospectively enrolled and underwent colonic polypectomy or EMR without discontinuation of warfarin. Conventional clip closure of the resection site was performed in all cases and oral diet was resumed 2 days after the procedure. The primary outcome was post-polypectomy/EMR bleeding that was confirmed by emergency endoscopy or a decrease in the hemoglobin level of >2 g/dl with hematocrit even if the bleeding site was not identified.

Results: Between January 2015 and November 2016, a total of 30 consecutive patients (M:F=26:4, 69.9±8.0 years) were enrolled in this study after written informed consent was obtained. A total of 31 lesions (tumor diameter: 5.4±2.9 mm, adenoma 70, others 10, lost lesion 1, number of prophylactic clips 4.9±2.2) were treated by polypectomy/EMR. Four patients experienced post-polypectomy/EMR bleeding (4/30: 13.3%) in 3-11 days after the procedure, although no cases required blood transfusion. In 3 of these bleeding cases, a single responsible site was identified by emergency endoscopy. Therefore, the confirmed rate of post-polypectomy/EMR bleeding based on the number of removed lesions was 3.9% (3/76), but may range to 9.9% (8/81). There were no other adverse events.

Conclusion: The rate of post-colonic polypectomy/EMR bleeding in patients without discontinuation of warfarin single therapy was comparable to that in patients undergoing HR. Continued safety and usefulness of prophylactic hemoclips in the endoscopic resection of the colon is feasible and may reduce the hospitalization associated with HR.

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

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Introduction: Warfarin and direct oral anticoagulants (DOACs) warfarin, apixaban, dabigatran and edoxaban are approved for stroke prevention in patients with atrial fibrillation (AF). The Japan Gastrointestinal Endoscopy Society guidelines recommend that anticoagulants should be discontinued at a low thromboembolic risk, or by replaced by bridging therapy at a high thromboembolic risk, for endoscopic polypectomy. However, safety and efficacy of heparin bridging therapy for colonic polypectomy remains unclear.

Aims & Methods: The aim of the present study was to evaluate the risk of post-polypectomy bleeding (PPC) in patients who take anticoagulants. We retrospectively collected data of patients who underwent colonic polypectomy between January 2014 and February 2017 at Nagoya City University Hospital. Polyp characteristics (number of polyps removed per patient, size, morphology) and patient characteristics (age, sex, comorbidities, medication) was analyzed.

Results: A total of 1007 patients underwent colonic polypectomy. 67 patients were in the anticoagulants group and 808 patients were in the normal group (taking no antiplatelet agents and anticoagulants). The incidence of PPC was significantly higher in the anticoagulants group than in the normal group.
I. Van Rongen  
BLEED STUDY  
LOWER GASTRO-INTESTINAL BLEEDING: RESULTS OF THE  
P0432 EARLY VERSUS STANDARD COLONOSCOPY – A

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: 
tory drug, and proton pump inhibitor), shock vital on hospitalization, and trans-
disease), internal medicine (antithrombotic drug, non-steroidal anti-inflamma-
cerebro-cardiovascular disease, diabetes mellitus, hyperlipidaemia, 
hepatic steatosis, cardiac disease, chronic kidney disease, and chronic obstructive pulmonary 

diaphragm to the aortoiliac bifurcation to obtain the total calcium score. 
in patients with colonic diverticular bleeding. 
Fujino Y, et al. Risk factors for early re-bleeding and associated hospitalization in 

Introduction: 

Reference

P0432 EARLY VERSUS STANDARD COLONOSCOPY – A RANDOMIZED CONTROLLED TRIAL IN PATIENTS WITH ACUTE LOWER GASTRO-INTESTINAL BLEEDING: RESULTS OF THE BLEED STUDY

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Introduction: The incidence of acute lower gastrointestinal bleeding (LGB) is estimated at 21 adults per 1,000 person years and male (82.1%) in the 

Introduction: Intermittent bleeding from colon diverticulum has a significant 
clinical impact with some cases experiencing recurrent bleeding episodes for 
several years. No report has directly evaluated the association between arterio-
scerosis and diverticulum bleeding recurrence.

Aims & Methods: We sought to assess the degree of arteriosclerosis in cases with 
diverticulum bleeding as well as the patients’ clinical characteristics. We 
conducted a retrospective cohort study in a group of 79 consecutive patients with 
colon diverticulum bleeding (51 men) who underwent both colonoscopy and 
computed tomography (CT) between August 2007 and March 2014. The mean 
age of the patient population was 69.5 years (range 29–91 years) and mean 
(±standard deviation) follow-up time was 6.2 (±2.0) years (range 3.1–9.7 years). 
Patients were divided into two groups: the recurrent bleeding episode group and 
the single bleeding episode group. Recurrent bleeding episodes were 
defined as bleeding intervals of >1 month. Cases that underwent successful 
therapy during the initial bleeding episode were excluded. We compared 
Agatston scores (total calcium score) between the two groups of patients to 
assess the degree of arteriosclerosis. A calcified lesion was defined as an area 
of at least 2 connected pixels with >120 Hounsfield units (HU) on the unen-
hanced CT scan. Aortic mural calcified area × cofactor (1:120–199HU, 2:200– 
299HU, 3:300–399HU, 4:≥400HU) was determined. The sums of the scores for 
every calcified spec were calculated across all lesions in a slice from the level of 
the diaphragm to the aortoiliac bifurcation to obtain the total calcium score. 
Moreover, the relationship between recurrent bleeding episodes and the patients’ characteristics, including age, sex, smoking habit, comorbidity (hypertension, 
to the standard colonoscopy group: median 2.0 days [IQR 2.0–4.0] vs. median 3.0 
days [IQR 2.0–4.0] (p = 0.009). Recurrent bleedings and hospital re-admissions 
were significantly more frequent in the early colonoscopy cohort 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 be 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 mor-
tality was zero.

Conclusion: In patients with LGIB, 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.

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noscopy in hospitalized patients with lower gastrointestinal bleeding – a meta-

P0433 THE COMPARISON OF DIRECT ORAL ANTICOAGULANTS (DOAC) AND WARFARIN FOR ANTICOAGULATION IN THE PATIENTS WITH GASTROINTESTINAL BLEEDING


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Introduction: Direct oral anticoagulants (DOAC) are now popularly used as anticoagulation for atrial fibrillation and deep vein thrombosis, as well as 
Warfarin. But, direct comparison of DOAC and warfarin in the patients with 
gastrointestinal bleeding was little reported.

Aims & Methods: We retrospectively analyzed 18 on DOAC and 60 cases on 
Warfarin of the patients with gastrointestinal bleeding from January 2011 to 
March 2017 on the basis of single-center experience in Japan. We analyzed con-

trolled red cell (CRC) and fresh frozen plasma (FFP), transfusion rate, bleeding 
during hospitalization, the duration from bleeding to endoscopy, from endoscopy to discharge and from bleeding to discharge in both group.

In DOAC group, each 6 patients took Dabigatran, Rivaroxaban and Apixaban.

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

Reference

(continued)
Thrombotic embolism during hospitalization, n (%) 0 (0.0%) 1 (1.7%) 0.47

The duration from bleeding to discharge, days 9.8

longer in Warfarin group (9.0)

difference in both group, but FFP tended to be transfused at high rate in (1.51

higher than that of the general population. In woman diagnosed with colorectal

Conclusion:

5.4 days vs 24.2 days, p = 0.02). Thrombotic embolism during hospitalization occurred only 1 (7.1%) of Warfarin group.

Conclusion: The duration of hospitalization was significantly shorter in DOAC group of the patients with gastrointestinal bleeding, and the rate of hospital readmission and re-bleeding tended to be lower in DOAC group. This study showed that DOAC may be more superior to Warfarin as an anticoagulation for atrial fibrillation and deep vein thrombosis at the quality of life (QOL) in the patients with gastrointestinal bleeding.

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

P0436 WORLD ENDOSCOPY ORGANISATION CONSENSUS STATEMENTS ON POST-COLONOSCOPY/POST-IMAGING COLORECTAL CANCER


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Introduction: Colonoscopy is an imperfect tool. Several publications confirm colorectal cancer may manifest after a negative colonoscopy(1–3). The term “interval cancer” has often been used for cancers appearing after a negative colonoscopy. However, this is primarily a screening term(1). Post-colonoscopy colorectal cancer (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 the 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 representa-
tives) 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 2. Molecular and radiological dataset analysis, and reporting of cancer appearances after a negative colonoscopy. a. Terminology of PCCRC, b. Molecular and radiological dataset analysis, and reporting of cancer appearances after a negative colonoscopy. a. PCCRC and PICRC as the overarching term. b. PCCRC as a screening term and the relevant surveillance or surveillance procedures following a negative screening colonoscopy. c. PCCRC/PICRC as the overarching term. d. The aetiology of PCCRC/PICRC. e. The epidemiology of PCCRC/PICRC and the potential role of lifestyle and environmental factors in its causation.

Therefore, at the time of this report (2017), a total of 56,682 colorectal cancer patients and 258 out of 288,119 (0.09%) people in the general population were diagnosed with ovarian cancer. Ovarian cancer was more common in the colorectal cancer group than the general population. The incidence of ovarian cancer was also higher in colorectal cancer patients and 258 out of 288,119 (0.09%) people in the general population were diagnosed with ovarian cancer. Ovarian cancer indeed has a high incidence of ovarian cancer, a screening test can be performed on high-risk patients.

Aims & Methods: This is a retrospective cohort study using data registered in the National Health Insurance Corporation as a cancer diagnostic code since 2007. In Korea, once cancer is diagnosed, this information is recorded by the National Health Insurance Corporation with a relevant code, and this system provides every patient’s data for medical research purposes. The colorectal cancer group includes patients newly enrolled with the corresponding diagnostic code (ICD-10 code C18, C19, and C20). The 56,682 colorectal cancer patients and 288,119 sex-age-and geographically general population was used. This type of data was used to facilitate the creation of comparison group that is similar. Each cancer patient was matched to five individuals in the unexposed cohort. All data was followed up by a new diagnostic code of ovarian cancer (ICD-10 code C56) was given. After adjusting for age, sex, smoking, drinking, exercise and comorbidities (diabetes mellitus, hypertension, and hyperlipidemia), further analysis was performed. The hazard ratios and 95% confidence intervals were calculated via Cox proportional hazards regression models. Statistical analysis will be performed with SPSS version 24.0. When P < 0.05, the result was defined as statistically significant.

Results: Patients with colorectal cancer were followed up for an average of 4.4 years until the occurrence of ovarian cancer. During the follow-up period, 335 out of 56,682 (0.60%) colorectal cancer patients were newly recruited and 258 out of 288,119 (0.09%) people in the general population were diagnosed with ovarian cancer. Ovarian cancer was more common in the colon cancer group than the general population [Hazard ratio (HR) 7.13, 95% Confidence interval (CI) = 5.06–10.05]. The analysis was conducted only for those who had medical checkup data within one year (14, 190 patients in colorectal cancer group, 71,933 people in the control group). Even though the subjects in this group were adjusted for several factors (age, sex, smoking, drinking, exercise, diabetes, hypertension, and hyperlipidemia) ovarian cancer was more common in colorectal cancer group [HR 7.12, 95% CI = 5.05–10.04]. Colorectal cancer patients had a higher risk of ovarian cancer across all age groups including patients under the age of 55 years [HR 10.69, 95% CI = 6.26–18.26] and patients older than 55 years [HR 5.17, 95% CI = 3.26–8.19].

Conclusion: In conclusion, data from the National Health Insurance Corporation revealed that the incidence of ovarian cancer in colorectal cancer patients was higher than that of the general population. In woman diagnosed with colorectal cancer, the screening test should be done to monitoring the occurrence of ovarian cancer. Further research is necessary to determine the innate association between the development of ovarian cancer and colorectal cancer, and large prospective studies are needed.
P0437 EXCESS RISK OF SECOND PRIMARY CANCERS IN YOUNG-ONSET COLORECTAL CANCER SURVIVORS

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Introduction: Colorectal cancer (CRC) is still the third most common malignancies in the US according to Colorectal Cancer Statistics, 2017[1]. During past decades, the incidence and mortality of CRC among individuals aged over 50 years are declining significantly, while the rate of CRC in the young is sharply on the rise. For example [2-3], excluding rate of young-onset CRC, coupled with increased survival rate, would definitely lead to accumulation of young survivors considerably. There is a growing study reporting the risk of second primary cancers (SPCs) in certain cancer survivors, including CRC. Several population-based studies revealed that patients with a history of CRC were at high risk of SPCs than the general population [4–6]. However, to the best of our knowledge, 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 assess the relative risk for SPCs. SIRs for subgroup analysis were further stratified by gender, race, calendar year, latency periods, SEER stage, cancer subtype, radionuclide and radiation therapy. All statistical tests were performed by SEER*Stat version 8.3 and a P value <0.05 was considered statistically significant. Our study was approved by the review board of Zhejiang Institute of Gastroenterology, Sir Run Run Shaw Hospital, China.

Results: Among CRC survivors, there were 64,472 survivors who developed 51,084 SPCs during the follow-up, including 3283 young (young aged ≤50) and 41,189 (old >50) survivors. The SIR of all sites significantly decreased with increased age. Compared with the general population, SIRs of all solid tumors and hematological disease were significantly increased in the young. There was significant 43% risk of SPCs in young survivors (SIR=1.43, 95%CI=1.39–1.48, AER=33.85) and slight increases in old survivors (SIR=1.02, 95%CI=1.01–1.03, AER=4.20). For young survivors, small intestine (SIR = 8.36), colon (SIR = 3.77), rectum (SIR = 3.36), bile ducts (SIR = 0.37) were the most frequent sites. A trend was persistent regardless of other factors, such as gender, race, calendar year, stage, subtypes, radiation, and latency. For young patients with second cancers, 36.4% died of their initial cancer, but 84.6% died of their second primary malignancy.

Conclusion: This is the first study to report on the pooled incidence of FIT and gFOBT iCRC in screening setting. The incidence rate of iCRC after a negative

References

A318 United European Gastroenterology Journal 5(5S)

P0438 INCIDENCE OF FECAL OCCULT BLOOD TEST INTERVAL CANCERS IN COLORECTAL CANCER SCREENING: A SYSTEMATIC REVIEW AND META-ANALYSIS

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3ICR Cancers, if screening-related or patient-related factors are associated with FOBT iCRCs. Ovid Medline, Embase, The Cochrane Library, the Science Citation Index, PubMed publisher and Google scholar were searched up to May, 2016. All studies reporting on the incidence of FIT or gFOBT iCRC including average CRC screening populations were included, without language restrictions. Main outcome was pooled incidence rate of iCRC per 100,000 person-years (p-y). FOBT iCRC was according to international standards defined as cancer that developed after a negative FOBT and before the next FOBT was due. Pooled incidence rates were obtained by fitting random effect poisson regression models. The between-study heterogeneity of effect-size was quantified using the I². Results: We identified 5,873 records, of which 413 full-text articles were assessed for eligibility and 30 studies were included in both qualitative and quantitative analyses. Meta-analyses comprised data of 5,252,563 screening participants, in which 14,030 screen-detected CRCs and 5398 FOBT iCRCs were documented. Pooled incidence rates of iCRC following FIT and gFOBT were 20 (95%CI 14.28; I²=94%) and 40 (95%CI 26.61; I²=93%) per 100,000 p-y, respectively. The pooled incidence rate ratio of FIT iCRC compared to gFOBT iCRC was 0.50 (95%CI 0.30–0.84, n=30 studies). For every FIT iCRC, three CRCs were found for every gFOBT iCRC. The incidence rate ratio of FIT iCRC compared to gFOBT iCRC was 1.13. Table 1. No significant differences were found between the relative risk of FIT 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 gFOBT iCRC was 0.84 (95%CI 0.80–1.7) for males relative to females and 5.0 (95%CI 1.21–2.1) for screenees aged ≥60 relative to <60 years.

Table 1: Baseline data of 30 studies included in qualitative meta-analyses displayed by test type

<table>
<thead>
<tr>
<th>Screening participants</th>
<th>FOBT iCRCs</th>
<th>FIT iCRCs</th>
<th>Ratio</th>
<th>Screen-detected CRC to FOBT iCRCs</th>
</tr>
</thead>
<tbody>
<tr>
<td>n=5,252</td>
<td>563</td>
<td>n=14,030</td>
<td>n=5,398</td>
<td></td>
</tr>
<tr>
<td>FIT n, (%)</td>
<td>4,774,516 (91)</td>
<td>12,172 (87)</td>
<td>4000 (80)</td>
<td>3.0</td>
</tr>
<tr>
<td>gFOBT n, (%)</td>
<td>478,047 (9)</td>
<td>18,588 (13)</td>
<td>1395 (20)</td>
<td>1.3</td>
</tr>
</tbody>
</table>
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. Wieten: I declare no competing interests. All other authors have declared no conflicts of interest.

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P0442 MUCAR SINIC-3 RECEPTOR TARGETED MRNAS ARE INVOLVED IN BILE ACID-INDUCED PROLIFERATION ON H508 COLON CANCER CELL LINE

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Introduction: Studies with 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 taurocholothiolat (ST) and atropin (A) treatment was analysed by WST-1 test. Expression of M3 receptor at mRNA level was analysed by qPCR, and at protein level by Western Blot method. Apoptotic experiments were analysed by Annexin V assay. MiRNAs which possibly targeted M3 receptors were identified by in silico analyses. The methods were repeated three times, and the average values were calculated.

Results: When compared to SNU-C4 cells, M3 receptor gene expression was found to be increased 70-fold on H508 cells. After a 6-day incubation, maximum H508 cell proliferation (300%) was achieved on 5th day with a dose of 300 μM ST, inhibited by a dose of 1 μM A. In contrast, the SNU-C4 cells showed no significant change in cellular proliferation. Treatment of H508 cells with ST caused a decrease (2.5-fold) of M3 receptor gene expression, however, no change of M3 receptor at protein level was seen. No changes in apoptosis on both colon cancer cell lines were observed. Of 25 M3 receptor-targeted miRNAs, expression levels altered in 9; 6 of them were up-regulated (hsa-miR-129-5p, hsa-miR-30c-5p, hsa-miR-224-5p, hsa-miR-30b-5p, hsa-miR-522-3p, hsa-miR-1246) and 3 of them (hsa-miR-30c-5p, hsa-miR-147b, hsa-miR-858-3p) were downregulated 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: Dyslipidemia and statin use have been associated to colorectal cancer (CRC), but prospective studies have shown controversial results. Dyslipidemia 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 dyslipidemia (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 dyslipidemia 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 dyslipidemia and CRC.

Aims & Methods: We aimed at determining whether dyslipidemia is causally linked to CRC risk and to explore association of statins with CRC. A case-control study was performed including 1336 CRC cases and 2744 controls (MCC-Spain) between 2008 and 2013. Subjects were administered an epidemiological questionnaire that included lifetime regular use of prescription drugs. Also, subjects were genotyped with an exome array supplemented with 5000 custom SNPs. We applied the Mendelian randomization approach. The array included 136 SNPs previously shown to be associated with blood lipids levels in GWAS, that were used to build three genetic lipid scores, as the count of risk alleles. The scores were specific for low density lipoprotein cholesterol (LDL), high density lipoprotein cholesterol (HDL) or triglycerides (TG). We tested on regular use of statin 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 dyslipidemia 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


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Our results support that LINC00152 lncRNA can contribute to CRC development by facilitating cell proliferation through upregulation of cyclin D1. Hypomethylation of LINC00152 promoter was detected in CRC compared to normal samples (p < 0.05). Moreover, LINC00152 silencing decreased DNA methylation levels of SFRP1, SFRP2, SDC2 and PRIMA1 genes, suppressing their expression. The effect of LINC00152 silencing on SFRP2 promoter methylation status was studied using MethyLight technology. Promoter methylation and expression of the above molecules were also studied on human colonic tissue samples. Results: LINC00152 expression was successfully silenced in SW480 cells with 93–98% efficiency. Colorectal cancer cell lines and cell growth were not affected and decreased cyclin D1 protein expression. LINC00152 knockdown did not affect the promoter methylation status of SFRP1, SDC2 and PRIMA1 genes, while reduced the DNA methylation level of SFRP2 promoter. Remarkable hypomethylation of 5-positioned cytosine in promoter of LINC00152 was detected in CRC compared to normal samples (p < 0.01), which correlated with increased expression (R = 0.90). SFRP2 promoter hypermethylation and decreased expression were measured in CRC and adenoma tissues compared to normal samples (p < 0.05). Concluding statement: Long non-coding RNA LINC00152 contributes to CRC development by facilitating cell proliferation through upregulation of cyclin D1 cell cycle progression gene and by affecting promoter methylation of SFRP2 tumor suppressor gene. On human tissue level, similar signaling pathway alterations were detected.

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

P0445 GENETIC PROFILE OF POLYPS AND RISK OF ADVANCED METACHRONOUS LESIONS

Objectives: To determine the association between genetic profile of polyps and risk of advanced metachronous lesions (AML).

Methods: A case-control study was conducted by the Medical Institute of the Hungarian Academy of Sciences, Budapest University of Technology and Economics. The study included 200 patients with colorectal cancer and 400 patients with normal colon. Polyp samples were analyzed for somatic mutations on BRAF and KRAS genes using the PCR-MLPA method. AML was defined by a size higher than 9 mm, high-grade dysplasia or villous component in adenomatous lesions. Regarding serrated lesions, AML was defined as the presence of CIMP-H in polyps. Logistic regression analysis was performed to determine the association between genetic profile of polyps and risk of AML.

Results: In the study, 30 patients with colorectal cancer were consecutively enrolled between 2007 and 2009 for this cohort study, and followed up to 2014. Variables as age, sex, smoking, weight, number of polyps were analyzed for somatic mutations on BRAF and KRAS genes using the PCR-MLPA method. AML was defined by a size higher than 9 mm, high-grade dysplasia or villous component in adenomatous lesions. Regarding serrated lesions, AML was defined as the presence of CIMP-H in polyps. Logistic regression analysis was performed to determine the association between genetic profile of polyps and risk of AML.

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

P0446 MITOCHONDRIAL GLUTAMATE TRANSPORTER (SLC25A22) MEDIATES DNA AND HISTONE HYPERMETHYLATION AND PROMOTES THE TUMORIGENICITY OF KRAS-MUTANT COLORECTAL CANCER

Objectives: To investigate the role of SLC25A22, a mitochondrial protein, in CRC development.

Methods: In vitro and in vivo experiments were performed using CRC cell lines and patient samples. SLC25A22 expression was silenced using siRNA and CRISPR-Cas9 technology. DNA and histone methylation levels were measured using methylated DNA affinity precipitation (MeDIP) and ChIP-Seq, respectively. The effect of SLC25A22 knockdown on glutamine metabolism was assessed using 13C5-glutamine metabolic labeling.

Results: SLC25A22 knockdown led to increased DNA and histone methylation levels, which were associated with decreased glutaminolysis in CRC cell lines. Moreover, histone H3 methylation was reduced at multiple loci in SLC25A22-knockdown cell lines, suggesting that epigenetic dysregulation was involved in the regulation of succinate and fumarate. Indeed, succinate supplementation reversed the effect of SLC25A22 knockout on DNA and histone methylation in KRAS-mutant CRC cell lines. Moreover, histone H3 methylation was reduced at multiple loci in SLC25A22-knockdown cell lines, suggesting that epigenetic dysregulation was involved in the regulation of succinate and fumarate. Interestingly, simultaneous APC-loss and KRAS activating mutations synergistically regulated epigenetic dysregulation. We recently demonstrated that SLC25A22-knockout cell lines, suggesting that epigenetic dysregulation was involved in the regulation of succinate and fumarate. Furthermore, we found that SLC25A22-knockout cell lines, suggesting that epigenetic dysregulation was involved in the regulation of succinate and fumarate. This synergistic effect was observed in vivo, where SLC25A22-knockout CRC cell lines exhibited increased DNA and histone methylation levels, which correlated with decreased glutaminolysis. These findings support the potential role of SLC25A22-mediated glutaminolysis in regulating DNA and histone methylation in CRC, its underlying mechanisms, and the association of SLC25A22 with epigenetic dysregulation in human CRC cohorts.

Disclosure of Interest: All authors have declared no conflicts of interest.
Conclusion: SLC25A22 promotes the tumorigenicity of KRAS mutant CRC by driving cell cycle progression and histone demethylation, an effect enhanced by increased production of TCA cycle intermediates succinate and fumarate, which inhibits DNA and histone demethylases. SLC25A22 is correlated with CIMP and histone hypermethylation in CRC patients.

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

P0447 FOLLISTATIN-LIKE PROTEIN 1 SUSTAINS 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 culture were evaluated in human CRC cell lines (e.g., HCT-116, DLD-1) treated with a specific FSTL1 antisense (AS) or control AS. Western blotting, immunohistochemistry and quantification 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 reduced cell proliferation. FSTL1-deficient CRC cells had reduced levels of proteins involved in late G1 cell cycle phase, such as phosphorylated retinoblastoma protein (pRb), EZF-1, cyclin E and cyclin-dependent kinase-2 (CDK2), with no modification of early G1 phase proteins (i.e. cyclin D). Treatment of CRC cells with FSTL1 AS increased the percentages of apoptotic cells and this effect was associated with activation of PARP, caspase-9 and caspase-3. Pre-incubation of HCT-116 and DLD-1 cells with Q-VD-OPh abolished the FSTL1 AS-induced cell death and reduced PARP and caspase activation, thus indicating that FSTL1 silencing induces CRC cell death through a caspase-dependent mechanism.

Conclusion: Our data indicate that FSTL1 is over-expressed in CRC cells and suggest a role for this protein in promoting intestinal tumorigenesis.

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

P0448 TP53 MUTATION ACQUIRES HIGHER MALIGNANT POTENTIAL IN HUMAN COLON CANCER CELLS

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Introduction: TP53 mutation 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 of colon cancer is still unknown. Notably, there is no report about a relationship between TP53 mutation and cancer stemness. We therefore aimed to assess the relationship between TP53 mutation and cancer stemness. We therefore aimed to assess the effect of both TP53 mutants on various malignant potentials, result of which is here reported.

Aims & Methods: Two types of TP53 mutation were generated in LS174T cells, which are derived from human colon adenocarcinoma with wild-type TP53 (WT). TP53 mutation in LS174T was expressed in LS174T cells. In contrast, both TP53 mutants (TP53Ex3 and TP53Ex10) of TP53 were expressed in LS174T cells. After 3 weeks of cell culture, cells were harvested and used for molecular and histological studies.

Results: We first selected LS174T cells with WT-TP53 because TP53 gene has already been mutated in almost colon cancer cell lines. We then successfully established 2 types of TP53 mutation in LS174T cells due to high effectiveness of gene-mutating by lentiviral system. Mutation in exon3 (TP53Ex3) and exon10 (TP53Ex10) of TP53 created the shorter form of TP53 (TP53Ex3: 55a.a., respectively) compared to WT-TP53 (393a.a.). Mutant TP53 (TP53Ex10) is strongly expressed in nuclei as often shown in colon cancer region, whereas both WT-TP53 and mutant TP53 (TP53Ex3) are not expressed in LS174T cells. In contrast, both TP53 mutants (TP53Ex3 and TP53Ex10) of TP53 were expressed in LS174T cells.

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

P0449 PROTECTIVE EFFECT OF OPIOID RECEPTOR ACTIVATION IN THE DEVELOPMENT OF COLITIS-ASSOCIATED COLORECTAL CANCER IN MICE

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Introduction: Endogenous opioid system is involved in the maintenance of the intestinal homeostasis. Recently, we proved that stimulation of opioid receptors using P-317 – a novel cyclic morphiceptin analog with mu- and kappa- opioid receptor affinity, resulted in the reduction of acute phase of experimental colitis (induced by dextran sodium sulfate [DSS]) in mice. Chronic inflammation is associated with increased risk of colitis-associated colorectal cancer. Stimulation of opioid receptors produces different effects on cancer progression depending on the cancer type and stage of disease.

Aims & Methods: The aim of our studies was to characterize the role of the endogenous opioid system in pathogenesis and treatment of colitis-associated colorectal cancer using P-317. Colitis-associated colorectal cancer was induced by a single intraperitoneal injection of azoxymethane [AOM] (10 mg/kg) and subsequent addition of DSS (1.5% w/v) into drinking water (week 2, 6, 9). From week 3, P-317 was injected intraperitoneally at the dose of 0.1 mg/kg twice per week and the body weight and clinical score (rectal bleeding, stool consistency) were assessed. After 14 weeks, the mice were sacrificed, tumour location score was assessed and the samples were collected and used for biochemical, molecular and histological studies.

Results: A significant difference in colorectal tumor development was observed between vehicle- and P-317-treated mice. P-317 significantly increased total number of colonic tumors as well as colon thickness and width after 14 weeks of disease induction. Metylopexadazole, a marker of neutrophil infiltration, was inhibited by P-317 injections. Hematoylin 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 HMGB1 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 in the world, and its incidence continues to rise. However, serological markers can be a relatively easier and cheaper alternative to the bowel exam. Thus, the identification of new biomarker of cancer[1, 2, 3, 4]. Studies have shown that HMGB1 is over-expressed in various types of cancers, including CRC, and those with higher expression of HMGB1 are associated with lymphatic metastasis, distant metastasis and poor prognosis [5]. 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., the authors found that HMGB1 secreted by the primary tumors had an apoptotic effect on the Kupffer cells which promoted development of liver [6, 7]. Furthermore, some researchers showed that increased levels of c-IAP2 and pERK, the downstream effector molecules of HMGB1 are found in tumors. MicroRNAs (miRNAs) 55 metabolites may be useful for diagnosis and treatment of CRC. However, whether HMGB1 has any role in the development of CRC metastasis is not clear. In this study, we investigated the effects of HMGB1 on CRC, and the possible underlying mechanisms were examined.

Aim: 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 2014. 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 ± 1.79 μg/L, p < 0.05). Preoperative serum HMGB1 concentrations were significantly higher than the postoperative values (8.42 ± 5.67 vs 1.64±1.89 μg/L, p < 0.05). Serum HMGB1 levels in CRC patients with distant metastases were significantly higher (13.32 ± 6.12 vs 7.57 ± 5.13 μg/L, p < 0.05). HMGB1 mRNA and protein expression in CRC tissues was significantly higher than in the adjacent normal mucosa. HMGB1 protein expression positively correlated with the lymph node metastasis. There was positive correlation between HMGB1 and c-IAP2 (r = 0.457, P = 0.001), HMGB1 and pERK (r = 0.461, P < 0.05) as well as pERK and c-IAP2 (r = 0.399, P < 0.05).

Conclusion: HMGB1 expression in CRC correlates with distant and lymph nodal metastasis. It may inhibit apoptosis by inducing activation of pERK and c-IAP2.

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

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P0452 THE MICRORNAS 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 certain miRNAs (miR-143, -145 and -34a) were differently 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 examined the miRNA expression profiles of multiple colorectal adenomas comparing between sporadic colorectal adenoma and familial adenomatous polyposis (FAP). We examined the miRNA expression profiles (miRs-143, -145, -34a, and -342) and morphological appearance of 102 sporadic colorectal adenomas (SA), 27 tumors of multiple colorectal adenoma (over 10 adenomas/one patient, MA), 21 tumors of FAP and 114 sporadic cancer (SC).

Results: The expression levels of 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, PLATELET CRIT, PLATELET-LYMPHOCYTE RATIO AND NEUTROPIL-LYMPHOCYTE RATIO IN THE DIFFERENTIATION OF COLON CANCER AND COLONIC POLYS IN OLDER PATIENTS
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Introduction: Colorectal carcinoma (CRC) is an important cause of mortality and morbidity in elderly patients. CRC and colorectal polyps are common in dementic 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 colonscopic examination is the standart way of colorectal carcinoma diagnosis, they are not feasible in 75 and 85 years of age should be tailored on the basis of the presence of coexisting conditions because the risk of serious complications from colonscopy also increase with age.

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 colonscopic 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; however, only MPV was significantly higher in Group II compared to group 1 (8.6±1.1 vs 8.2±1.1, p<0.001). The cut-off value of MPV in predicting CRC from patients with normal colonoscopic findings was 9.15 fL with a specificity and sensitivity of 80% and 91% respectively (r=0.892). MPV and PCT were also significantly higher in patients with neoplastic polyps compared to patients with non-neoplastic polyps (MPV: 8.7±1.1 vs 8±1, p<0.001 and PCT: 0.23±0.07 vs 0.19±0.05, p=0.003).

Conclusion: MPV and PCT may have a role as useful and simple markers in the diagnostic 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.

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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: In patients with locally advanced rectal cancer (LARC) that show a very good response to neoadjuvant treatment, organ-preserving treatments such as watchful waiting may be a good alternative to surgical resection and can improve functional outcome and quality of life. If we can predict upfront (i.e. before start of CRT) how patients will respond to treatment this may create opportunities to further personalize and optimize the neoadjuvant treatment to enhance the chance of a good response, thereby ultimately offering more patients the chance of organ preservation. A promising new tool in this regard is ‘Radiomics’. Radiomics refers to a collection of analytical methods to convert images into high dimensional data via a set of quantitative descriptors called “features”. These features have the potential to uncover disease characteristics that cannot be detected by means of conventional (visual) imaging evaluation.

Aims & Methods: Aim of this study was to assess what can be learned from patients with ‘missed’ pathologic complete responders (ypT0N0) by re-evaluating their post-CRT imaging and endoscopic 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.

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Conclusion: Main reasons for missing a complete response after CRT are 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 performance.

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

Reference

P0455 RADIOIMAGING AS A NOVEL TOOL FOR PRE-TREATMENT RESPONSE PREDICTION IN RECTAL CANCER
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Introduction: In patients with locally advanced rectal cancer (LARC) that show a very good response to neoadjuvant treatment, organ-preserving treatments such as watchful waiting may be a good alternative to surgical resection and can improve functional outcome and quality of life. If we can predict upfront (i.e. before start of CRT) how patients will respond to treatment this may create opportunities to further personalize and optimize the neoadjuvant treatment to enhance the chance of a good response, thereby ultimately offering more patients the chance of organ preservation. A promising new tool in this regard is ‘Radiomics’. Radiomics refers to a collection of analytical methods to convert images into high dimensional data via a set of quantitative descriptors called “features”. These features have the potential to uncover disease characteristics that cannot be detected by means of conventional (visual) imaging evaluation.

Aims & Methods: We aimed to find the Radiomics signature1 of patients with LARC and evaluate its potential value for pre-treatment prediction of the response to neoadjuvant chemoradiotherapy.

We retrospectively assessed the primary staging MRI’s (1.5T of 124 LARC patients treated with CRT. The standard MRI protocol included T2-weighted (T2W) and diffusion-weighted imaging (DWI) sequences, as well as quantitative apparent diffusion coefficient (ADC) maps derived from the DWI scans. For each patient, the whole volume of the rectal tumour was delineated on pre-treatment MRI: [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 tumor/patient in total. Radiomics signatures were extracted from the images for each of the five delineations (3002 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 selected to test their performance in predicting response to CRT by means of a receiver operating characteristics (ROC) curve analysis. The main outcome was complete tumour regression (yT0) versus residual tumour (yT4)- using histology and/or long-term FU as the standard of reference.

Results: Out of 3002 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 performance.

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.

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Reference

Aims & Methods
We aimed to investigate the correlation of the electrical and viscoelastic parameters of erythrocytes with the fatty acid composition of their membranes in patients with colorectal cancer (CRC). We observed shifts correlated with a disease stage (r = 0.64; p < 0.01) at the initial stages of CRC.

Introduction: Laterally spreading tumors (LSTs) of the colorectum are classified in terms of the following four subtypes according to their histological features: granulose type (LST-GH), granular nodular mixed type (LST-GM), non-granular flat-elevated type (LST-NGF), and non-granular pseudo-depressed type (LST-NGPD). Clinical features of each subtype of LSTs have not been fully evaluated.

Introduction: Laterally spreading tumors (LSTs) of the colorectum are classified in terms of the following four subtypes: granulose type (LST-GH), granular nodular mixed type (LST-GM), non-granular flat-elevated type (LST-NGF), and non-granular pseudo-depressed type (LST-NGPD). Clinical features of each subtype of LSTs have not been fully evaluated.

Aims & Methods
The aim of this study was to clarify the clinical features of each subtype of 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 evaluated the clinical features (mean age ± standard deviation, size, location, Incidence of concomitant carcinoma) according to their subtypes.

Results: Of these 422 lesions, a total of 131 (31.0%) were LST-GH, 34 (8.1%) LST-GM, 29 (6.9%) LST-NGF, and 28 (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. The mean size of LST-GH (21.9 mm) and LST-NGF (21.2 mm) was 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% (0 out of 151), 14.7% (5 out of 34), 1.9% (2 out of 209), and 25.0% (7 out of 28), respectively.

Conclusion: Each subtype of LSTs has distinct clinical features. LST-GM and LST-NGPD have higher malignant potentials than other subtypes. Especially LST-NGPD has the highest risk of invasive carcinoma regardless of its size. Therefore we should carefully detect these lesions and choose appropriate treatment according to the subtypes.

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

Aims & Methods
We aimed to investigate the correlation of the electrical and viscoelastic parameters of erythrocytes with the fatty acid composition of their membranes in patients with CRC; omega 6/omega 3 fatty acid index was not transfer to assessing quality indicators at a local level. However, we question the validity of a post CT-CRC rate as a true quality indicator of a colonoscopy service. Extrapolating the data is challenging 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 study1.

Introduction: Post-colonoscopy colorectal cancer (PC-CRC) rates are proposed as a quality of service. Extrapolating the data is challenging 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 study1.

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

References
2. E.J. Williams: None
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All other authors have declared no conflicts of interest.

Reference

P0459 RISK OF DETECTION OF GASTROINTESTINAL NEOPLASMS AND DEATH IN SYMPTOMATIC PATIENTS WITH A POSITIVE FECAL IMMUNOCHEMICAL TEST WITHOUT COLORECTAL CANCER
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Introduction: The fecal 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 (FITT) 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 ≥20g hemoglobin/g of feces threshold. We performed a descriptive analysis of the risk of detection 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 6.7%, respectively, with no significant differences between both groups in the survival analysis (HR 1.3, 95% CI 0.8–2.1). However, the risk of death due to GITT was 3.1% (10 deaths) in the positive FIT group and 0.8% (6 deaths) in the negative FIT group, with a significant difference after adjusting for age, sex and SCL (HR 3.2 95% CI 1.2–8.9).

Conclusion: Symptomatic patients with a positive FIT and complete colonoscopy without CRC are at increased risk of death due to GITT regardless of age, sex or the presence of CSL.

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

P0460 LONG-TERM OUTCOMES OF TRANSANAL COLORECTAL TUBE PLACEMENT FOR DISTAL STAGE II/III COLORECTAL CANCER WITH ACUTE COLORECTAL OBSTRUCTION
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Introduction: Self-expandable metallic stent placement for malignant colorectal obstruction has been widely used; however, factors affecting the technical difficulty of stenting remain unclear.

Aims & Methods: The aim of this study was to clarify the factors associated with the technical difficulty of stenting for malignant colorectal obstruction. We established the Colonic Stent Procedure Research Group to provide instructions on how to perform safe and effective procedures in order to reduce complications. We evaluated the clinical data and extracted factors associated with 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 196 patients were included in the analysis. Of these, 100 were men (51.0%) 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 with malignant colorectal obstruction were included. The median total procedure time in the cohort with technical success was 30 minutes (IQR, 18–42 minutes). The median deployment time was 21 minutes (IQR, 11–31 minutes). Forty-nine patients with a deployment time longer than 31 minutes were regarded as technically difficult cases of stenting. The following were identified as independent factors of the technical difficulty in stent placement: presence of ascites (odds ratio, 2.483; 95% confidence interval [95%CI], 1.17–5.29; p = 0.02), presence of ≥1 stent (odds ratio, 4.80; 95%CI, 1.10–21.1; p = 0.04).

Conclusion: T. Yamada, I. Maetani1: Lecture fee: Century medical inc., Boston Scientific Japan., 2Proxas Medical Device, MC Medical
T. Yamada: personal fees: Century Medical Inc
T. Kuwai: personal fees: Boston Scientific Japan, Century Medical Inc
S. Saito: personal fees: Century Medical Inc., Boston Scientific Japan

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

Reference

P0461 FACTORS ASSOCIATED WITH THE TECHNICAL DIFFICULTY OF DOUBLE-WIRE WOVEN UNCOVERED SELF-EXPANDABLE METALLIC STENT PLACEMENT FOR MALIGNANT COLORECTAL OBSTRUCTION
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Introduction: Self-expandable metallic stent placement for malignant colorectal obstruction has been widely used; however, factors affecting the technical difficulty of stenting remain unclear.

Aims & Methods: The aim of this study was to clarify the factors associated with the technical difficulty of stenting for malignant colorectal obstruction. We established the Colonic Stent Procedure Research Group to provide instructions on how to perform safe and effective procedures in order to reduce complications. We evaluated the clinical data and extracted factors associated with 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 196 patients were included in the analysis. Of these, 100 were men (51.0%) 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 with malignant colorectal obstruction were included. The median total procedure time in the cohort with technical success was 30 minutes (IQR, 18–42 minutes). The median deployment time was 21 minutes (IQR, 11–31 minutes). Forty-nine patients with a deployment time longer than 31 minutes were regarded as technically difficult cases of stenting. The following were identified as independent factors of the technical difficulty in stent placement: presence of ascites (odds ratio, 2.483; 95% confidence interval [95%CI], 1.17–5.29; p = 0.02), presence of ≥1 stent (odds ratio, 4.80; 95%CI, 1.10–21.1; p = 0.04).

Conclusion: The median total procedure time in the cohort with technical success was 30 minutes (IQR, 18–42 minutes). The median deployment time was 21 minutes (IQR, 11–31 minutes). Forty-nine patients with a deployment time longer than 31 minutes were regarded as technically difficult cases of stenting. The following were identified as independent factors of the technical difficulty in stent placement: presence of ascites (odds ratio, 2.483; 95% confidence interval [95%CI], 1.17–5.29; p = 0.02), presence of ≥1 stent (odds ratio, 4.80; 95%CI, 1.10–21.1; p = 0.04).

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

Reference
**P0462 PROGNOSIS AND CLINICOPATHOLOGICAL FACTORS OF PATIENTS WHO SELECTED THE FOLLOW-UP OPTION AMONG HIGH-RISK TI COLORECTAL CANCER PATIENTS AFTER ENDOSCOPIC RESECTION BASED ON JAPANESE CLINICAL PRACTICE GUIDELINE: A RETROSPECTIVE OBSERVATIONAL STUDY**
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**Introduction:** Colorectal cancer is the third most common cancer in the world and the fourth leading cause of cancer death. Treatment strategy for colorectal cancer is selected considering clinical stages. TI colorectal cancer (T1CRC) can be treated with endoscopic resection. If patients have pathological risk factors such as deep submucosal invasion, budding, por/muc pathological features and lymphovascular invasion, they considered to be at high risk of lymph node metastasis based on the indication of Japanese Society for Cancer of the Colon and Rectum guideline. In such cases, the selection of subsequent option is important and has been frequently decided by clinicians' customs and preferences. However, it is not clear whether these risk factors adequately predict patients' outcomes in clinical practice.

**Aims & Methods:** This research aims at revealing the prognosis and clinicopathological features of pathologically high-risk T1CRC patients (the high-risk group) with and without additional surgery; followed up by computed tomography, ultrasound, endoscopy, and tumor marker (CEA: carcinoembryonic antigen, CEA 1). 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). 2. 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 was defined by their characteristic laterally spreading growth pattern larger than 20 mm, ulceration, and lesion location.

**Results:** Among 162 T1CRC patients, 78 cases were treated with endoscopic resection for the first time. Of them, 46 patients had at least one pathological risk factor (high-risk patients). Among 46 high-risk patients, 22 patients were carefully followed up (FU), 20 patients were performed additional surgery with lymph node dissection (AS). Four patients treated with additional radiation therapy were excluded. Median survival time was 39 (FU) and 62 (AS), respectively. Compared with FU, there were no recurrences among the 62 e-curable patients. On the other hand, five recurrences (5%) were found in non-e-curable patients, and they were all in Group A. They consisted of local recurrence (one patient who also had lung metastasis), LN metastasis (two patients), lung metastasis (three patients), and liver metastasis (one patient who also had LN metastasis). There were no significant differences in DSS between Group A and Group B + C (LST-NG). However, OS was 93% in Group A, which was significantly lower than that (96%) in Group B + C (p < 0.05). DFS in Group A was 90%, which was significantly lower than that (100%) in Group B + C (p < 0.05). The prognosis of patients with non-e-curable disease after ER alone showed no significant differences in OS, DFS, and DSS between Group A and Group B + C. The prognosis of patients with non-e-curable disease after surgical resection showed no significant differences in DFS or DSS. However, OS in Group A was 94%, which was significantly lower than that (97%) in Group B + C (p < 0.05).

**Conclusion:** Long-term outcomes supported the JSCCR criteria for e-curable patients for ER for TI LSTs. All recurrences occurred in patients with TI LST-G-M carcinoma. OS and DFS in the LST-G-M group were significantly shorter than in the LST-NG group. The non-e-curable patients were divided into 3 groups: Group A (61 patients were non-e-curable patients diagnosed with LST-NG), Group B (23 patients were non-e-curable patients diagnosed with LST-NG), and Group C (23 patients were non-e-curable patients diagnosed with LST-NG). There were no patients diagnosed with TI LST-G-H carcinoma. OS in the LST-G-M group was significantly lower than that of the other two groups.

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

**References**
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 system. Stents in one standard dose animal migrated out of the bile duct between 10 to 60 days post-implant, no persistent clinical symptoms were observed in any animal. Stents, no tissue overgrowth or stent embedding was observed in any animal. Up to 72 days post-implant, no clinical symptoms were observed in any animal. The observed 60% reduction in bile duct dilation. At 60 days post-implant, moderate mucus and biofilm formation was observed within the stent, however in only 3 animals biliary ductal dilation was observed. However, all animals displayed mild biofilm formation and increased stent control group by 60 days post-implant. Given the observed 60% reduction in mucus and bile. Bile duct dilation, in turn, has reduced the opportunity for recurrent obstruction and typically requires endoscopic re-intervention. The secondary outcomes include risk factors such as: lymphovascular invasion, tumor differentiation, resection margin status and the presence of tumor budding. A retrospective review of the endoscopy charts for the period 2000-2016 was conducted. All patients enrolled exhibited a malignant colonic sessile polyp which was endoscopically completely resected. Histological findings of the polyps were also recorded. Thorouugh computed or magnetic scanning was performed in all patients before deciding on further management. All patients were advised for the option of surgical treatment or endoscopic follow-up. Results: 51 patients with confirmed adenocarcinoma in sessile colonic polyps undergoing endoscopic mucosal resection (EMR) were retrospectively included in this study. A total of 33 (64.7%) patients underwent subsequent surgery after EMR, and 18 (35.3%) chose endoscopic follow up. The histological characteris-tics of patients undergoing EMR is presented in Table 1. In patients undergoing EMR, the submucosal invasion was >1 mm. Residual malignant disease was identified in the surgical pathological specimen of only one patient. With a median follow-up of 25.12 months (IQR: 31.5; range: 1.8-144.92), no local recurrences or lymph node metastasis were identified. 49 were without evidence of disease and 2 died of other cause (without evidence of disease at last follow-up). The data regarding the other risk factors are presented in Table 1.

Table 1: Histopathological characteristics of the patients

<table>
<thead>
<tr>
<th>Factors</th>
<th>Total (N = 51), n (%)</th>
<th>EMR only, n (%)</th>
<th>EMR + Surgery, n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Submucosal invasion</td>
<td>7 (13.7)</td>
<td>2 (11.1)</td>
<td>5 (15.2)</td>
</tr>
<tr>
<td>≤ 1 mm</td>
<td>44 (86.3)</td>
<td>16 (88.9)</td>
<td>28 (84.8)</td>
</tr>
<tr>
<td>Resection margin status (mm) (median, IQR)</td>
<td>1 (2; 0–7)</td>
<td>1 (1; 0–4)</td>
<td>0, 8 (1.55; 0–7)</td>
</tr>
<tr>
<td>Lymphovascular invasion</td>
<td>7 (13.7)</td>
<td>0</td>
<td>7 (21.2)</td>
</tr>
<tr>
<td>Tumor differentiation</td>
<td>14 (27.5)</td>
<td>6 (33.3)</td>
<td>8 (24.2)</td>
</tr>
<tr>
<td>well-differentiated;</td>
<td>28 (54.9)</td>
<td>9 (50)</td>
<td>19 (57.6)</td>
</tr>
<tr>
<td>moderate-differentiated;</td>
<td>9 (17.6)</td>
<td>4 (16.7)</td>
<td>5 (18.2)</td>
</tr>
<tr>
<td>poor-differentiated;</td>
<td>28 (84.8)</td>
<td>16 (88.9)</td>
<td>28 (84.8)</td>
</tr>
</tbody>
</table>
| Conclusion: Our data suggest that even in cases with submucosal invasion >1 mm and the presence of other high-risk features (lymphovascular invasion, tumor budding), complete EMR in malignant colonic sessile polyps supported by the histological findings predicts for a good clinical outcome. Disclosure of Interest: All authors have declared no conflicts of interest.
Aims & Methods: In this prospective study, we evaluated the overall survival (OS) and disease-free survival (DFS) in the chemotherapy group based on CD-DST. Moreover, we evaluated additional effects of EGFR (Cetuximab; Cmb, Panitumumab; Pmab) to FOLFOX/FOLFIRI using CD-DST. Between Mar. 2008 and Aug. 2016, we obtained tumor specimens from 131 CRC patients without postoperative chemotherapy. Informed consent for measurement of individual chemosensitivity was obtained from all patients in writing. Approval for the present study was obtained from the Tohub Chiiki Hospital Institutional Review Board (No: 02.03.29. #1). The growth inhibition was determined by CD-DST. The regimens were as follows: FOLFOX, FOLFIRI, Cmb, Pmab, and FOLFOX/FOLFIRI+Cmb. The incubation conditions were as follows: FOLFOX; 5-FU and 1-HOP (6.0 and 3.0μg/ml, respectively) for 24h. FOLFIRI; 5-FU and SN-38 (6.0 and 0.2μg/ ml, respectively) for 24h. Cmb; Cmb 10mg/ml for 144h. Pmab; Pmab 200μg/ml for 144h. FOLFOX+Cmb; Cmb 250μg/ml for 120h after FOLFOX/FOLFIRI incubation process. The cumulative distribution of IR values under each condition was evaluated on the basis that the clinical response to treatment is equivalent to FOLFOX/FOLFIRI in the group treated with appropriate first-line chemotherapy and the group treated with inappropriate first-line chemotherapy were evaluated Kaplan–Meier method. Additional effects of Cmb to FOLFOX/FOLFIRI were also evaluated. Results: There was strongly relationship between the IR% of the FOLFOX and FOLFIRI regimen (R²=0.7415). The median of the IR% with the FOLFOX and FOLFIRI regimen were 58.6 and 69.1, respectively, FOLFOX responder, FOLFOX responder, dual responder, and poor responder were 8, 10, 53, and 60, respectively. There were 42 unresetable CRC patients with chemotherapy. The median survival time of appropriate first-line chemotherapy group (n: 28) and inappropriate first-line chemotherapy group (n: 14) were 1128 and 306 days, respectively. There was positive correlation between survival and cCR of CRC and that of Pmab (R²=0.468). Additional rates (%) of Cmb to FOLFOX between poor responder and other responder were 19.8 and 5.6, respectively (P=0.020). Additional rates of Cmb to FOLFIRI between poor responder and other responder were 15.6 and 1.29, respectively (P=0.005). There was significantly more additional effect of Cmb to FOLFOX/FOLFIRI in poor responder than in other responders. Conclusion: Administration of the recommended first-line regimen using CD-DST to patient is important for improvement in the further prognosis. Moreover, especially in poor responder, Cmb should be administrated to FOLFOX/FOLFIRI regimen.

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

Reference

P0467 WAIT-AND-SEE STRATEGY IN LOW RECTAL CANCER
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6Nuclear Medicine, IPOLFG, EPE, Lisboa/Portugal
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Introduction: The standard treatment for locally advanced rectal adenocarcinoma (ADC) is to conduct surgical resection after neoadjuvant chemother-apy (NACT). In the wait-and-see (W&S) strategy, those who achieve clinical complete response (cCR) after CRT undergo regular clinical, radiologic and endoscopic surveillance, with surgery being reserved for tumor “regrowth”. Aims & Methods: To evaluate the impact of a W&S strategy for low rectal ADC, regarding overall and disease-free survival. Single-center prospective observa-tional study. All patients with low rectal (up to 6cm from the anal verge) ADC, stage I to III, discussed in a multidisciplinary colorectal cancer clinic during the implementation of the W&S strategy (11/2014–11/2016) were evaluated. Demographic data, post-CRT evaluation and decision, recurrence rates, “regrowth” and mortality were analyzed. Results: 56 patients were evaluated ([54% males; mean age at diagnosis 64, 4 years (34–90)], of which 53 had already completed CRT. Stage III prevailed (89%). The cumulative incidence to compare the risk of metachronous advanced neoplasia during follow-up between patients with untreated diminutive colorectal polyps and those with small or large adenoma resected at baseline colorectal cancer. Aims & Methods: A total of 1955 patients were colorectally followed-up during a long-term period in our hospital. They were divided into group A, B, and C as follows; 581 in group A (mean age 65.0± 8.9 yr, M:F =411:170) with colorectal adenoma more than 5mm 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 5mm in diameter were resected and pathologically evaluated into non-index lesion (low-grade adenoma) or index lesion (high-grade adenoma or cancer). The cumulative
incidences of metachronous colorectal neoplasms were compared with each other using a log-rank test.

Results: Median follow-up periods and frequencies of colonoscopy were 61.9 months and 3.4 times in group A, 61.6 months and 3.4 times in group B, and 73.2 months and 2.7 times in group C, respectively. The cumulative incidences of metachronous adenoma were 24.1% (95% CI: 0.65-0.71) and 24.1% in the 5, 218 subjects (P = 0.03) and in 1, 000 bootstrapped replicates (P = 0.03).

Conclusion: An 8-point scoring model to predict ACN in asymptomatic screening population that might have a higher discriminatory capability than the modified APCS score was developed and internally validated in this study. Our simple scoring model could stratify the screened population into low-, moderate-, and high-risk groups. Of the detected ACN, a substantial number were proximal or flat; therefore, primary screening with total colonoscopy may be advisable for high-risk individuals.

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

References

P0471 ASSOCIATION BETWEEN PARAMETERS OF THE RECTOANAL 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 lower 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. 26 asymptomatic healthy volunteers (18 women, 8 men) median age was 35.03 years (19–59) were 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 Stata for Windows 6.0 (StataSoft Inc.).

Results: Threshold for RAIR and %RAIR were 22.3 ml (10.0; 30.0), 74.4% (38; 99.5) respectively. Threshold for first RS was 30.07 ml (11.1; 58.3) and desire to defecate - 65.12 ml (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 RS and desire to defecate. 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 NEOPTICISM AND GASTROINTESTINAL SYMPTOM BURDEN

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Objectives: The role of trait neuroticism as a predictor of 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 overstimulates the sympathetic nervous system at the expense of parasympathetic activity necessary for digestion (4). Evidence for this proposed chain of events comes largely 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 biological ion channels (7).

Aims & Methods: In Study 1, 147 undergraduate students completed measures of neuroticism, 14 coping styles (including avoidant styles such as denial and disin- engagement), somatisation and GI symptom burden. In Study 2, where participants were undergraduates and hospital outpatients (pool 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.

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

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P0473 POTENTIAL REGULATORY EFFECTS OF CORTICOTROPIN-RELEASING FACTOR ON TIGHT JUNCTION-RELATED INTESTINAL EPITHELIAL PERMEABILITY ARE PARTIALLY MEDIATED THROUGH CK8 UPREGULATION

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Introduction: This study aimed to investigate the regulatory effects of corticotropin-releasing factor (CRF) on the permeability of human intestinal epithelial cells through CK8-mediated tight junction.

Aims & Methods: The expression of CRFR1 and CRFR2 on HT29 cell surfaces were measured by immunofluorescent-RT-PCR, and the cell response to treatment with 100 nM CRF for 72 h, the transmission of FITC-labeled Dextran was measured by using a transwell chamber; the structural changes of tight junctions were observed under transmission electron microscopy; the expression of the junction protein occludin and Claudin-1 were detected by immunoblotting and immunofluorescence. The activity of RhoA was detected by immunoprecipitation. Furthermore, effects of CRF on intestinal epithelial permeability were examined in CK8-silenced HT29 cells, which were constructed by shRNA intervention.

Results: CRF treatment increased FITC-labeled Dextran permeability, caused opening of tight junctions, induced increased fluorescence intensity of CK8 and decreased intensity of ZO-1, claudin-1, and occludin, together with structural changes of tight junctions, occludin and Claudin-1 were downregulated. RhoA activity peaked at 30 min after CRF treatment. The increased permeability and the downregulation of claudin-1 and occludin induced by CRF treatment were not blocked by CK8 silencing. Nevertheless, CK8 silencing blocked the effects of CRF with regard to decrease in the expression of F-actin and ZO-1 and increase in RhoA activity.

Conclusion: CRF may increase intestinal epithelial permeability by upregulating CK8 expression, activating the RhoA signaling pathway, promoting intestinal epithelial actin remodeling, and decreasing the expression of the tight junction protein ZO-1. Other CK8-independent pathways may lead to decreased expression of claudin-1 and occludin, which also contributes to increased intestinal epithelial permeability.

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

P0474 REGULATING EFFECTS OF TONGXIE-YAOFANG FORMULA ON COLONIC INTESTINAL EPITHELIAL SECRETION IN RATS WITH DIAUREA-PREDOMINANT IRRITABLE BOWEL SYNDROME

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Introduction: Diarrhea-predominant irritable bowel syndrome (D-IBS) is a chronic functional gastrointestinal disease. Its clinical manifestations are characterized by diarrhea and abdominal pain or discomfort in the absence of demonstrable pathology. The diagnosis of D-IBS is based on symptom assessment and the Rome III Diagnostic Criteria. According to an epidemiological study, D-IBS mainly affects young adults of 20–40 years old, and the quality of their lives is seriously affected. The pathogenesis of D-IBS has not been clearly clarified. Consequently, the usual treatment of the disease in Western medicine involves symptomatic therapy, which is unsatisfactory for patients while simultaneously increasing the use of health-care resources. Because traditional Chinese medicine (TCM) can significantly improve patients’ symptoms and quality of life, increasing numbers of patients have begun to seek treatment with TCM.A series of randomized, double-blind, placebo-controlled trials had shown that Tongxie- Yaofang(TXFY) formula can significantly improve the clinical symptoms, such as diarrhea and abdominal pain or discomfort, of patients with IBS and improve the quality of their lives. However, the specific mechanism of it has not been completely elaborated. The purpose of this paper is to observe the regulating effects of TXFY-formula on colonic epithelial secretion via relevant ion channels.

Aims & Methods: We aimed to investigate the pharmacological effect of Tongxie-YaoFang (TXFY) formula, a Chinese herbal formula, on Diarrhea-predominant irritable bowel syndrome (D-IBS) rats with neonatal maternal separation plus restraint stress (NMS+RS) model of D-IBS, male Sprague Dawley rats were randomly divided into two groups (NMS+RS group and TXFY-formula group) with no handlings were used as controls (NH group). Starting from postnatal day 60, rats, TXFY-formula group were administered TXFY-formula (4.92 g/100 g bodyweight) orally twice a day for 14 consecutive days while NH group and NMS+RS group were given distilled water. Using short-circuit current technology, we observed 5-HT-induced changes of current across ion channels, such as cystic fibrosis transmembrane conductance regulator (CFTR) Cl channel, epithelial Na channel (ENaC), Ca2+-dependent Cl channel (CACC), Na+-K+-2Cl co-transporter (NKCC), and Na+-HCO3 co-transporter (NBC), in the colonic epithelium of three groups after exposure to drugs and specific blockers with a Power Lab System (AD Instruments International).

Results: Under basal conditions, the changes of short-circuit current (DSC, mA/cm2) induced by 5-HT were similar in NH group and TXYF-formula group, and both higher than NMS+RS group (70.86 ± 12.32mA/cm2, 67.67 ± 16.68mA/cm2 VS 38.8 ± 7.25mA/cm2, P < 0.01, respectively). When CACC was blocked by DIDS, 5-HT-induced DSC was smaller in NMS+RS group than in NH group and TXFY-formula group with no handlings were used as controls (NH group). Starting from postnatal day 60, rats, TXFY-formula group were administered TXFY-formula (4.92 g/100 g bodyweight) orally twice a day for 14 consecutive days while NH group and NMS+RS group were given distilled water. Using short-circuit current technology, we observed 5-HT-induced changes of current across ion channels, such as cystic fibrosis transmembrane conductance regulator (CFTR) Cl channel, epithelial Na channel (ENaC), Ca2+-dependent Cl channel (CACC), Na+-K+-2Cl co-transporter (NKCC), and Na+-HCO3 co-transporter (NBC), in the colonic epithelium of three groups after exposure to drugs and specific blockers with a Power Lab System (AD Instruments International).
the number of abdominal contractions (a visceral sensitivity index) induced by
3
2
Shalaby SA
H. Eutamene
27
observed. Chronic administration of diosmectite significantly (p
5
p
¼
0.05) was
0.05)
2 vs.
2 vs.
2 vs.
2 vs.
0.07, p
3
0.3 and 2.0
0.3 score increment respectively;
0.3 score increment; (30.1 ± 2.5 vs. 17.9 ± 2.8 ± 0.8 mL; p
0.035); 34.4 ± 2.4 vs. 23.2 ± 1.1 ± 1.2 mL; p
0.05). One hour after the
the last WAS session a significant increase of the fecal output in
related abdominal pain experienced in chronically stressed rats. Further, the effect of diosmectite treatment on IBS visceral hyper
sensitivity has never been investigated.

Aims & Methods: The aims of the present study were to evaluate the effect of diosmectite on gut transit time and visceral hypersensitivity induced by WAS in rats. Visceral hypersensitivity was randomized to one of four groups: diosmectite (500 mg/kg), diosmectite (500 mg/kg, WAS procedure), water (0.5 ml/ rat) or water (0.5 ml/rat, WAS procedure). Treatment was for 5 days, with the WAS procedure conducted once daily. The test apparatus consisted of a Plexiglas tank with a block affixed to the center of the floor. The tank was filled with fresh room temperature water to within 1 cm of the top of the block. Rats were placed on the block for a period of 1 h every day. For both conditions (basal and after WAS), intestinal transit was evaluated by fecal output measurement Visceral sensitivity was evaluated by colonic distension. This study adds relevant evidence to the use of diosmectite treatment 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 silticlay, is an adsorbent widely used for the treatment of several gastrointestinal diseases, mainly diarrhea but also the functional abdominal pain experienced in chronic IBS.

Results: Under basal conditions, chronic oral treatment with diosmectite did not modify visceral sensitivity in response to CRD (20 ± 2 vs. 23 ± 1 cajays/5 mm for vehicle at 0.6 ml; 24 ± 2.4 for vehicle at 1.2 mL; p = 0.97 and p = 0.75 respectively) or intestinal transit in comparison with control group (p = 0.3). WAS treatment significantly increased the number of abdominal contractions at both 0.8 and 1.2 ml of CRD vs vehicle values (30.1 ± 2.5 vs. 17.9 ± 2.8 ± 0.8 mL; p
0.035); 34.4 ± 2.4 vs. 23.2 ± 1.1 ± 1.2 mL; p
0.05). One hour after the beginning of the last WAS session a significant increase of the fecal output in comparison with vehicle non-stressed rat (6.3 ± 1.1 ± 0.3 vs 0.3; p < 0.05) was observed. Chronic administration of diosmectite significantly (p < 0.05) reduced the number of abdominal contractions (a visceral sensitivity index) induced by WAS: the number of abdominal contractions at 0.8 and 1.2 ml of CRD in comparison with vehicle was (30 ± 3 vs. 24 ± 2 contractions at 0.8 mL; 34 ± 2 vs. 27 ± 2.2 contractions at 1.2 ml). Diosmectite also tended to improve stress-induced intestinal transit acceleration (6.3 ± 1.1 vs 4.9.4 ± 12 number of faces for 1 h; p = 0.38).

Conclusion: For the first time, these data illustrate in wistar rat, that diosmectite treatment is able to suppress WAS-induced visceral hypersensitivity to colorectal distension. This study adds relevant evidence to the use of diosmectite treatment in the management of IBS.

Disclosure of Interest: H. Mathieu-Fortunet: Ipsen employee
All other authors have declared no conflicts of interest.

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 silticlay, is an adsorbent widely used for the treatment of several gastrointestinal diseases, mainly diarrhea but also the functional abdominal pain experienced in chronic IBS. Further, the effect of diosmectite treatment on IBS visceral hyper sensitivity has never been investigated.

Aims & Methods: The aims of the present study were to evaluate the effect of diosmectite on gut transit time and visceral hypersensitivity induced by WAS in rats. Visceral hypersensitivity was randomized to one of four groups: diosmectite (500 mg/kg), diosmectite (500 mg/kg, WAS procedure), water (0.5 ml/rat) or water (0.5 ml/rat, WAS procedure). Treatment was for 5 days, with the WAS procedure conducted once daily. The test apparatus consisted of a Plexiglas tank with a block affixed to the center of the floor. The tank was filled with fresh room temperature water to within 1 cm of the top of the block. Rats were placed on the block for a period of 1 h every day. For both conditions (basal and after WAS), intestinal transit was evaluated by fecal output measurement Visceral sensitivity was evaluated by colonic distension. This study adds relevant evidence to the use of diosmectite treatment 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 silticlay, is an adsorbent widely used for the treatment of several gastrointestinal diseases, mainly diarrhea but also the functional abdominal pain experienced in chronic IBS. Further, the effect of diosmectite treatment on IBS visceral hyper sensitivity has never been investigated.

Results: Under basal conditions, chronic oral treatment with diosmectite did not modify visceral sensitivity in response to CRD (20 ± 2 vs. 23 ± 1 cajays/5 mm for vehicle at 0.6 ml; 24 ± 2.4 for vehicle at 1.2 mL; p = 0.97 and p = 0.75 respectively) or intestinal transit in comparison with control group (p = 0.3). WAS treatment significantly increased the number of abdominal contractions at both 0.8 and 1.2 ml of CRD vs vehicle values (30.1 ± 2.5 vs. 17.9 ± 2.8 ± 0.8 mL; p
0.035); 34.4 ± 2.4 vs. 23.2 ± 1.1 ± 1.2 mL; p
0.05). One hour after the beginning of the last WAS session a significant increase of the fecal output in comparison with vehicle non-stressed rat (6.3 ± 1.1 ± 0.3 vs 0.3; p < 0.05) was observed. Chronic administration of diosmectite significantly (p < 0.05) reduced the number of abdominal contractions (a visceral sensitivity index) induced by WAS: the number of abdominal contractions at 0.8 and 1.2 ml of CRD in comparison with vehicle was (30 ± 3 vs. 24 ± 2 contractions at 0.8 mL; 34 ± 2 vs. 27 ± 2.2 contractions at 1.2 ml). Diosmectite also tended to improve stress-induced intestinal transit acceleration (6.3 ± 1.1 vs 4.9.4 ± 12 number of faces for 1 h; p = 0.38).

Conclusion: For the first time, these data illustrate in wistar rat, that diosmectite treatment is able to suppress WAS-induced visceral hypersensitivity to colorectal distension. This study adds relevant evidence to the use of diosmectite treatment in the management of IBS.

Disclosure of Interest: H. Mathieu-Fortunet: Ipsen employee
All other authors have declared no conflicts of interest.

P0476 METABOLIC SIGNATURE OF THE POSTPRANDIAL EXPERIENCE
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Introduction: We have recently shown that postprandial sensations correlate with changes in circulating metabolites after a meal ingestion; however this phenomenon was demonstrated with a meal load up to the level of tolerance which involved an unpleasant fullness sensation. We have shown to be effective to treat functional dyspepsia. Recently, it has also been suspected to improve gastrointestinal motor function.

Aims & Methods: The aims of this study was 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.
Results: Twenty-seven patients completed the study. DA-9701 was associated with a reduced CTT from 34.7 to 21.0 hours (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 abdominal pain severity or extra intestinal symptom burden. [Support: The Rome Foundation]. Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0485 PERFORMANCE OF A DIAGNOSTIC ALGORITHM FOR FUNCTIONAL GASTROINTESTINAL DISORDERS
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Introduction: Non-urgent referrals to specialist gastroenterology exceed capacity, resulting in long waiting lists and poor patient outcomes. New models of care are needed to translate specialist knowledge of functional gastrointestinal disorders (FGID) into primary care practice.

Aims & Methods: This study aimed to evaluate the safety and performance of an algorithm-based approach to the diagnosis and management of FGID. Consecutive patients triaged to the ‘routine waitlist’ of an Australian public hospital Gastroenterology Department over a 2 year period with non-specific GI symptoms (no alarms) were randomised to waitlist control or intervention (2:1). Intervention patients were screened for alarms and abnormal blood/stool tests without an in-person consultation, to exclude organic disease (full blood count, C-reactive protein, biochemistry, thyroid function tests, iron studies, coeliac serology, +/- H. pylori serology, +/- faecal calprotectin and elastase) and classified according to the Rome III criteria. Information from patients with clinical alarm symptoms was captured on a gastroenterology consult tool, where judged appropriate, a prompt GE appointment offered. Elsewise patients received a letter stating FGID diagnosis and management options. Referrals were analysed for quality according to current triage practices.

Results: 89 intervention patients (61.5% female, mean 42, [SD 14]) and 21 control (75.6% female, mean 42, [SD 16]) patients completed intake. 35 intervention patients warranted prompt GE review after active screening. Organic disease was diagnosed in 10 (diagnosed: 19 FGID, 2 IBD, 1 neoplasm, 1 pancreatic insufficiency), 1 reflux oesophagitis, iron deficiency 1, 7 did not attend), and 4 had additionally clinically significant findings (polyps, iron deficiency). 45 were diagnosed with a FGID (9 had another non-urgent diagnosis). At follow up (mean 2.7 yrs [SD 6.5yrs] post-referral), none of the 45 patients diagnosed with FGID received a gastroenterology consult based on the original referral (six received a specialist appointment via duplicate referrals within the system). Confirmation of diagnoses at follow up was received by patients and/or referring doctors in 42/45 cases (three no longer contactable). The majority of patients (37/42, 88%) had received no alternate diagnosis to account for their gastrointestinal symptoms since the study. Whilst two had additional diagnoses (FGID plus diverticulitis, FGID plus prostatitis), and two – incidental yet clinically significant findings (FGID plus polyps).

Conclusion: The quality of referrals of patients with clinically suspected FGIDs was insufficient to allow the safe triage of patients according to urgency, with a third warranting more urgent review. Organic disease was diagnosed in a significant proportion of patients who would otherwise were unlikely to have been seen in primary care. Use of this specialist-independent diagnostic algorithm in primary or tertiary care may facilitate more timely and accurate diagnosis of organic gastrointestinal disease, and improve patient care.

Disclosure of Interest: E.C. Linedale: Abbott’s Pathology provided a small untied grant covering the cost of faecal calprotectin tests. A. Mikocka-Walus: JMA has served as a speaker, a consultant and/or an advisory board member for Abbott, Abbvie, Allergan, Celgene, Ferring, Takeda, MSD, Shire, Janssen, Hospira and Pfizer, and has received research funding from Abbott, Abbvie, Ferring, MSD, Shire, Janssen, P.R. Gibson: Consultant/advisory board member/speaker/research grants from AbbVie, Ferring, Janssen, Merck, Nestle Health Science, Danone, Allergan, Pfizer, Frenesinus Kabi, Mylan and Takeda, Falk Pharma, Danone and A2 Milk Company. J.M. Andrews: JMA has served as a speaker, a consultant and/or an advisory board member for Abbott, Abbvie, Allergan, Celgene, Ferring, Takeda, MSD, Shire, Janssen, Hospira and Pfizer, and has received research funding from Abbott, Abbvie, Ferring, MSD, Shire, Janssen.

P0486 SCOTTISH GUT MOTILITy DISORDER CLINIC: REVIEW OF ACTIVITY OVER 1-YEAR PERIOD
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Introduction: IBS is common worldwide. In UK it exceeds the 20% of the popula- tion. 1 Burden of Irritable Bowel Syndrome (IBS) on UK healthcare has been estimated around 1800£per patient per year2. NICE guideline3 IBS provides a systematic approach to symptoms and therapies available to GPs and general gastroenterologists. This creates a good asset to minimize referrals to tertiary centres and address costs.

Aims & Methods: We retrospectively reviewed, via electronic records, all the patients seen at the Scottish Gut Motility Disorder Clinic between January and December 2016 included, focusing on original referral, diagnosis and treat- ment to evaluate the need for specialist input.

Results: In 2016, 378 patients attended the Motility Clinic; total of 459 visits; 333 females. Mean age was 51.4 (age range: 16 to 95 years), 60% of referrals originated via secondary care (40% GI, 50% Surgery, 10% other disciplines). The commonest reason for referral was IBS (40%); IBS-Conspisation (58%), IBS-Diarrhoea (21%) or IBS-MixedType (21%). 16% were referred with faecal incontinence and 37% with chronic constipation. 35% of patient didn’t receive any therapy at time of referral. 44% were prescribed treatment but not followed up for assessment of successful response to therapy prior to referral to the specialist clinic. In 28% of patients the diagnosis changed following Motility clinic assessment. Diagnosis at clinic based on Rome III questionnaire, depression and anxiety score, thorough history taking and physical examination (including per rectum exam), ad hoc pharmacy input and referral to specialist investigation. In 30% of patients referred with chronic constipation the diagnosis was changed to IBS-Constipation. 8% changed from IBS-D to IBS-M, 8% referred with faecal incontinence had Obstructive Defecation Syndrome, 6% referred as IBS-M were diagnosed with IBS-C, 5% referred as IBS-D were diagnosed as IBS-M, 3% referred with IBS-D had bile acid malabsorption. 56% of patients underwent specialist investigations including unorectal physiology (70%), 33% of patients attending the Specialist clinic received 1st line therapy and life style advice, albeit 57% of them, who received 2nd -line treatment, having failed 1st-line management.

Conclusion: The above data indicate the need for education and expansion of resources available in primary care to optimise patients’ management. Furthermore, it highlights the necessity for the introduction of a formal Neurogastroenterology curriculum in the general Gastroenterology training.

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

References

P0487 ALTERED EXPRESSION OF MEMBRANE TRANSPORTERS IN COLONIC MUCOSA OF PATIENTS WITH IRRITABLE BOWEL SYNDROME (IBS) AND POST-INFECTIONOUS (PI)-IBS COMPARED TO HEALTHY SUBJECTS
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Introduction: Irritable bowel syndrome (IBS) affects 5–15% of adults in the general population, and is characterized by chronic recurrent abdominal pain and discomfort and associated with altered bowel habits. The pathophysiology of IBS is complex and not fully understood. Hence, treatment is often based on symp- tomatology rather than underlying physiological aberrancies.
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Introduction: Most colonic diverticulitis can be conservatively treated, but some need surgical intervention due to intestinal complications. Risk factors associated with complications of diverticulitis have been reported mainly from Western countries, but few from Asian countries including Japan.


Results: Of the 282 patients, 183 (64.9%) patients had right-sided diverticulitis, and 70 (24%) had complications; perforation (n = 53), fistula (n = 8), abscess (n = 5) and stenosis (n = 4). The rate of complication was highest in sigmoid colon (88.6%) when compared with other locations; ascending colon (10%), transverse colon (1.4%), and descending colon (0%). Multivariate analysis identified the location of sigmoid colon (odds ratio 62.2, 95% confidence interval 2.66–9.39) as a significant independent factor for complications of diverticulitis. Among 70 patients with complicated diverticulitis, 55 (78.6%) patients underwent emergent surgery; most of them (54 patients, 98.2%) were with diverticulitis in the sigmoid colon.

Table. Risk factors associated with complications of colonic diverticulitis (univariate and multivariate analysis)

<table>
<thead>
<tr>
<th>Factor</th>
<th>Univariate Odds ratio (95%CI)</th>
<th>p-value</th>
<th>Multivariate Odds ratio (95%CI)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age Per 10-year increment</td>
<td>NA</td>
<td>1.37 (0.99–1.89)</td>
<td>0.055</td>
<td></td>
</tr>
<tr>
<td>Sex</td>
<td>Male</td>
<td>1.07</td>
<td>(0.95–1.19)</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Body mass index</td>
<td>≥25</td>
<td>2.13</td>
<td>(1.1–4.09)</td>
<td>0.03</td>
</tr>
<tr>
<td>&lt;25</td>
<td></td>
<td>1</td>
<td>(0.57–5.61)</td>
<td></td>
</tr>
<tr>
<td>Time from symptom onset to diagnosis</td>
<td>≥3</td>
<td>2.13</td>
<td>(1.1–4.02)</td>
<td>0.056</td>
</tr>
<tr>
<td>&lt;3</td>
<td></td>
<td>1</td>
<td>(0.97–6.91)</td>
<td></td>
</tr>
<tr>
<td>Fever</td>
<td>≥38</td>
<td>1.36</td>
<td>(0.71–2.55)</td>
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<tr>
<td>&lt;38</td>
<td></td>
<td>1</td>
<td>(0.38–1.67)</td>
<td></td>
</tr>
<tr>
<td>Current smoking</td>
<td>Yes</td>
<td>0.82</td>
<td>(0.38–1.67)</td>
<td></td>
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<tr>
<td>No</td>
<td></td>
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<td></td>
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<tr>
<td>Current drinking</td>
<td>Yes</td>
<td>0.99</td>
<td>(0.51–1.91)</td>
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<td>No</td>
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<td>High blood pressure</td>
<td>Yes</td>
<td>4.97</td>
<td>(2.66–9.39)</td>
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</tr>
<tr>
<td>&lt;0.001</td>
<td></td>
<td>0.48</td>
<td>(0.14–1.62)</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

(continued)

Conclusion: The sigmoid colon was a significant risk factor for complication of colonic diverticulitis in Japanese patients. Acute colonic diverticulitis in the sigmoid colon should be carefully treated with surgical interventions in mind.

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 collagen 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 to 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 ENDOSCOPIC CLASSIFICATION “DICA” MAY HAVE A SIGNIFICANT COST-SAVING ON THE BURDEN OF DIVERTICULAR DISEASE OF THE COLON

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Introduction: Although symptoms occur in only 20% of patients harbouring diverticula, Diverticular Disease (DD) of the colon DD represents the 8th disease as burden in USA. Several treatment are currently advised in managing those patients, but their impact on the burden of the disease is unknown. The recent DICA endoscopic classification has been developed and validated for the classification of DD, founding that treatment of DICA 1 and DICA 3 patients did not impact significantly in terms of acute diverticulitis occurrence/recurrence and surgery occurrence. Our aim was to assess the impact of using DICA classification on the burden of DD in Italy.

Aims & Methods: We assessed retrospectively the overall and the cost/year of treatments (or rifaximin, or any other treatment, including probiotics, fibers, systemic antibiotics and spasmolitics) in DICA 1, DICA 2 and DICA 3 population. Analysis of diverticulosis prevalence was estimated according to data population provided by Italian Institute of Statistics (ISTAT). Cost of treatments 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 estimate, it is estimated that about 75% of diverticular population are on DICA 1, about 30% on DICA 2, and about 13% on DICA 3. According to the drugs’ consumption recorded during our study, we estimated that overall about 679 million of euros could be spent in Italy in treating those patients. In particular, >587 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 patients in terms of prevention of acute diverticulitis occurrence/recurrence and surgery occurrence, we can estimate that >475 million of euros could be spent in Italy without any significant benefit for DD population.

Conclusion: DD has a significant burden for National Health System in Italy. DICA endoscopic classification may have a significant impact of this burden, helping to select DD people who effectively need treatments in terms of prevention of acute diverticulitis occurrence/recurrence and surgery occurrence.

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

P0492 IMPACT OF TREATMENTS ON FECAL MICROBIOTA AND FECAL METABOLIC PROFILING IN SYMPTOMATIC UNCOMPPLICATED DIVERTICULAR DISEASE OF THE COLON

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Introduction: Fecal microbiota and metabolome may be altered in patients with Symptomatic Uncomplicated Diverticular Disease (SUDD). In particular, we found that Akkermansia muciniphila species were significantly increased in SUDD patients when compared with asymptomatic diverticulosis and healthy people, as well as PLS-DA analysis of NMR-based fecal metabolomics showed significant discrimination between HC and AD patient. Our aim was to assess the effect of current treatments for SUDD on fecal microbiota and fecal metabolic profiling in those patients.

Aims & Methods: Thirteen consecutive female patients, living in the same district and suffering from SUDD, were studied. Patients were treated with a 2-week course of 30/day fiber supplementation (3 patients), 1,6 grams/day of mesalazine (3 patients), 900 billion day of probiotic mixture VSL#3 (currently available in Europe as VimoMixx) 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=0.449). The overall analysis showed that 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. All treatments showed the same results except for probiotic group, who had a 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 patients are able to influence metabolic activity in those patients except for rifaximin.

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

P0493 5-YEARS ITALIAN REGISTER OF DIVERTICULOSIS AND DIVERTICULAR DISEASE (REMAID): A LOW PROGRESSION RATE INTRODUCTION: FECAL MICROBIOTA AND METABOLIC PROFILING DURING THE FIRST YEAR OF FOLLOW-UP

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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.
Introduction: In the vast majority of patients colonic diverticula remain asymptomatic (vulgar diverticulosis), while about 20% develop recurrent abdominal symptoms (symptomatic uncomplicated diverticular 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 (Registry 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 ≥18years and endoscopic/radiological-confirmed colonic diverticula. Outpatient/telephone visits were scheduled every 6 months. The clinical data [patients' characteristics and habits (diet, 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 [556 (45.7%) female, median years 67 (28–95), BMI 25.6kg/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 after 1-year of follow-up. 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 was 2.3%, whereas incidence of diverticulosis was uncommon. This observational study suggested, that although the vast majority of patients did not show progression of disease, in those who progressed one in tenth remained to be followed during follow-up.

Disclosure of Interest: R. Cuomo: Speaker and consultant for Alfa Wassermann G. Barbana: Speaker and consultant for Alfa Wassermann P. Andreozzi: 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 (REMAd)

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Introduction: Patients with symptomatic uncomplicated diverticular 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 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. T test was used to compare QoL scores. Logistic regression was performed to identify patients’ features associated with the presence of subtypes of DD. A p value <0.05 was considered statistically significant.

Results: 1217 [556 (45.7%) female, age 66.1 ± 9.9y] consecutive 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%)
filled in long-lasting pain questionnaire. Abdominal pain lasting <24h was reported in patients with SUDD (86.5%) and 119/154 with PD (77.3%) (p < 0.026). Symptom severity score was higher in PD group than in SUDD group, but this difference was not statistically significant (5.5 ± 2.4 vs 5.1 ± 2.2 cm; p = 0.130). Patients with PD had short-lived pain located more frequently in left lower abdomen (56.6% vs 30.6%; p = 0.002), whereas SUDD patients presented a homogenous increased Coll1 expression, decrease in SMC with no alteration in AD.

Conclusion: Long-lasting pain was more frequently located in left lower abdomen in patients with PD (53.6% vs 23.7%;< p < 0.001), whereas more frequently was diffuse in SUDD patients (17.3% vs 71.5%; p < 0.001). Moreover, in patients with PD, pain lasting >24h was more often associated with fever (28.8% vs 5.4%,< p = 0.002), confinement to bed (35.7% vs 18.6%; p = 0.02), medical consulta tion (38.6% vs 23.7%;< p = 0.001), need for therapy (42.9% vs 19.2%;< p < 0.001), and hospitalization (26.8% vs 8.3%;< p < 0.001).

Disclosure of Interest: Both AD and PD patients show some peculiar clinical features of abdominal pain. SUDD patients frequently complained abdominal diffuse and short lasting pain. In contrast patients with PD frequently complained pain located in the left lower abdomen lasting for more than 24h. Our results suggest that these features are useful indicators to distinguish patients with SUDD and PD and should be carefully assessed in clinical work-up of diverticular disease.

Disclosure of Interest: B. Annibale: Speaker and consultant for Alfa Wasserman
G. Barbara: Speaker and consultant for Alfa Wasserman
F. Pace: Speaker and consultant for Alfa Wasserman
R. Cuomo: Speaker and consultant for Alfa Wasserman
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P0496 MUSCULAR INFLAMMATORY STATE AND PHENOTYPIC SWITCH IN DIVERTICULITIS AND COMPLICATED DIVERTICULAR DISEASE

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Introduction: Colonic diverticulitis, as well as diverticular disease, is a multifactorial disease characterized by neurovascular alterations, 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 and Smad3 fibrosis by PDGF-β, ending in downregulation of marker gene Tbr3 expression.

Aims & Methods: Aim of this study was to determine, both in human uninvolved and involved tracts of asymptomatic diverticulitis (AD) and diverticulosis and complicated diverticular disease (CDD), the alterations intrinsic to smooth muscle. Circular and longitudinal smooth muscle strips and cells (SMC) were isolated separately from surgically specimen of 18 patients (5-year-old with age > 80 years) submitted to surgery for cancer (6) (CTR). Contraction was tested in response to carbachol and relaxation in response to VIP. qPCR analysis, expressed as Relative Quantification, was performed for transcription of mRNA encoding for TGF-β, inflammasome components (NLRP3, ASC, CASP1, IL-1β) and for SMC phenotypic switch molecules (Collagen I, Sma, TGF, PDGF-β, Tbr3, Smad2/3). Data were normalized to β-actin mRNA and expressed as mean ± SE. In addition, the activation of inflammasome complex was indirectly tested trough quantification of IL-1β secretion by commercial ELISA kit.

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 SMC, the lowest expression been observed in CDD. This inflammation was associated with an increase in IL-1β secretion in SMC medium compared to CTR and a progressive inhibition of contraction to carbachol, already in AD in circular strips and SMC. In contrast relaxation in response to VIP resulted significantly decreased only in AD both on strips and SMC with no alteration in CDD. Peculiarity of circular SMC was a progressive increase in Coll1 expression from AD to CDD compared to CTR (3 hundred fold increase) parallel to about 50% decrease in the contractile protein α-SMA. Differenti ally, longitudinal SMC, both in AD and CDD, presented a homogenous increased Coll1 expression, decrease in α-SMA and reduction of contraction. VIP-induced relaxation was significantly decreased in CDD. Phenotypic switch was only observed in CDD, driven in circular layer, by a TGF-β-dependent pathway (increased expression for TGF-β: 2.88 ± 0.6 and Smad2/3 reduced Smad2/3: 0.12 ± 0.12 and longitudinal layer by PDGF-β-dependent pathway (increase of PDGF-β: 2.27 ± 0.44 and parallel decrease of Tbr3: 0.58 ± 0.13).

Conclusion: Intrinsic myogenic alterations are present in colonic asymptomatic diverticulitis and complicated diverticular disease, both in the circular and longitudinal layers characterized by a myogenic pro-inflammatory state and an impaired contractile activity that, in complicated diverticular disease, ended in a muscular synthetic pro-fibrotic switch.

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

MONDAY, OCTOBER 30, 2017 09:00-17:00

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 were achieved from online available dataset. The mRNA and protein expression of NOTCH3 was examined by qRT-PCR and Western blot. The biological function of NOTCH3 in GC was demonstrated by MTT proliferation, monolayer colony formation, cell migration and invasion assays through siRNA-mediated knockdown. The prediction of miRNAs which potentially target NOTCH3 was performed by www.microRNA.org and TargetScan. The regulation of NOTCH3 by putative miRNAs was confirmed by qRT-PCR, Western blot and dual luciferase activity assays through ectopic overexpression of miR-491-5p and miR-875-5p. The functional downstream targets of NOTCH3 were identified by gene expression microarray.

Results: NOTCH3, but not NOTCH1, 2, 4, is uniformly up-regulated and significantly correlated with poor survival in multiple GC datasets. Knockdown of NOTCH3 in AGS and MKN28 cells exhibited significant anti-oncogenic effect in vitro. NOTCH3 downregulation suppressed cell proliferation, reduced monolayer colony formation, and inhibited cell invasion ability. Moreover, NOTCH3 knockdown or miR-491-5p/miR-875-5p overexpression in primary GC samples and re-expression of NOTCH3 rescued the inhibitory effect of miR-491-5p and miR-875-5p. Pleckstrin Homology Like Domain Family B Member 2 (PHLDB2) is identified as the functional downstream of NOTCH3 in GC. Concordantly, PHLDB2 knockdown significantly inhibited cell proliferation and promoted apoptosis, which phenocopied NOTCH3 knockdown or miR-491-5p/miR-875-5p overexpression. In primary GC samples, the expression of PHLDB2 and NOTCH3 showed positive correlation in The Cancer Genome Atlas (TCGA) cohort. Thus, the miR-491-5p/miR-875-5p-NOTCH3-PHLDB2 oncogenic cascade was constructed.

Conclusion: NOTCH3 is over-expressed and plays an oncogenic role in gastric carcinogenesis through its downstream PHLDB2. The activation of NOTCH3 in GC is partly due to the silence of tumor-suppressive miRNAs, miR-491-5p and miR-875-5p. Enforced overexpression of miR-491-5p and miR-875-5p in GC cells also exerted tumor-suppressive function by inhibiting cell proliferation and inducing apoptosis. More importantly, the expression of miR-491-5p showed negative correlation with NOTCH3 mRNA expression in primary GC samples and re-expression of NOTCH3 rescued the inhibitory effect of miR-491-5p and miR-875-5p. Pleckstrin Homology Like Domain Family B Member 2 (PHLDB2) is identified as the functional downstream of NOTCH3 in GC. Concordantly, PHLDB2 knockdown significantly inhibited cell proliferation and promoted apoptosis, which phenocopied NOTCH3 knockdown or miR-491-5p/miR-875-5p overexpression. In primary GC samples, the expression of PHLDB2 and NOTCH3 showed positive correlation in The Cancer Genome Atlas (TCGA) cohort. Thus, the miR-491-5p/miR-875-5p-NOTCH3-PHLDB2 oncogenic cascade was constructed.

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

P0498 FOXF2 SUPPRESSES WNT SIGNALING PATHWAY IN GASTRIC CARCINOGENESIS THROUGH TRANSCRIPTIONALLY INHIBITING E3 LIGASE RBBP6 AND PROMOTING B-Catenin DEGRADATION

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Introduction: We found that tumor suppressor gene FOXF2 was silenced in gastric cancer (GC) through promoter hypermethylation. Restoration of FOXF2 suppressed GC tumorigenicity through inhibition of canonical Wnt
Conclusion: The rare FIGC syndrome is caused by germline co-occurrence of moderate-risk alleles and represents a polygenic, rather than a classical monogenetic disease. Therefore, this study aimed at dissecting the germline and somatic landscapes of the largest FIGC cohort ever studied. Constitutional and tumour DNA from probands of 53 families, fulfilling clinical criteria of FIGC, were screened for 55 candidate gastrointestinal cancer-associated genes with Illumina's MiSeq-platform, and classified according to the American College of Medical Genetics and Genomics (ACMG) guidelines. Somatic second hits, such as second mutation, loss of heterozygosity and promoter methylation, were searched for in FIGC tumours at potentially causative genes by PCR-Sequencing.

Results: Twenty-five out of 53 (47%) FIGC families harboured germline variants, and co-occurrence of germline moderate-risk alleles was found in ten families. From these ten families, seven harboured one pathogenic or likely pathogenic variant combined with one or more unclassified novel variants. The remaining three families carried solely clusters of novel unclassified variants. Moderate-risk alleles of BRCAl, MAP3K6, MSH6, SMRI, SDHB and SDHD were the most frequently found in this cohort. In addition, tumours arising in these 10 families were enriched in somatic variants within DNA repair genes and often display microsatellite instability phenotypes.

Conclusion: The clinical homogeneity and relatively high number of FIGC families herein allowed supporting the hypothesis that FIGC may be a genetic syndrome caused by moderate-risk alleles in gastrointestinal cancer-associated genes. This work is funded by: 1) FEDER COMPETE, FCT/MEC/FEDER/PT2020 and FCT funds (projects "PEst-C/SAU/LA0003/2013"; project 007274 (UID/ BIS/13019/2019); 2) ON.2-O-Novo Norte FEDER/EREN (projects NORTE-07-0162-FEDER-000118 and NORTE-07-0162-FEDER-000067); 3) No Stomach for Cancer Foundation; 4) FCT Fellowships (SFRH/BPD/89764/2012 to PO; FCT/MEC/115804/2015 to MC); 5) ICSUM (projects NORTE-07-0162-FEDER-000118 and NORTE-07-0162-FEDER-000067); 6) gastric adenocarcinoma and proximal polyposis of the stomach (GAPPS), and familial intestinal gastric cancer (FIGC). Whilst germline defects at the CDH11 and APC genes have been found for HDGC and GAPPS families, respectively, FIGC remains genetically unexplained.

Aims & Methods: We hypothesised that the rare FIGC syndrome is caused by germline co-occurrence of moderate-risk alleles and represents a polygenic, rather than a classical monogenetic disease. Therefore, this study aimed at dissecting the germline and somatic landscapes of the largest FIGC cohort ever studied. Constitutional and tumour DNA from probands of 53 families, fulfilling clinical criteria of FIGC, were screened for 55 candidate gastrointestinal cancer-associated genes with Illumina’s MiSeq-platform, and classified according to the American College of Medical Genetics and Genomics (ACMG) guidelines. Somatic second hits, such as second mutation, loss of heterozygosity and promoter methylation, were searched for in FIGC tumours at potentially causative genes by PCR-Sequencing.

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

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P9501 PREVENTION OF STENOSIS WITH ENDOSCOPIC TRANSPANTATION OF CULTURED AUTOLOGOUS ORAL MUCOSAL EPITHELIAL CELL SHEETS AFTER ESOPHAGEAL ENDOSCOPIC SUBMUCOSAL DISSECTION

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Results: Twenty-five out of 53 (47%) FIGC families harboured germline variants, and co-occurrence of germline moderate-risk alleles was found in ten families. From these ten families, seven harboured one pathogenic or likely pathogenic variant combined with one or more unclassified novel variants. The remaining three families carried solely clusters of novel unclassified variants. Moderate-risk alleles of BRCAl, MAP3K6, MSH6, SMRI, SDHB and SDHD were the most frequently found in this cohort. In addition, tumours arising in these 10 families were enriched in somatic variants within DNA repair genes and often display microsatellite instability phenotypes.

Conclusion: The clinical homogeneity and relatively high number of FIGC families herein allowed supporting the hypothesis that FIGC may be a genetic syndrome caused by moderate-risk alleles in gastrointestinal cancer-associated genes. This work is funded by: 1) FEDER COMPETE, FCT/MEC/FEDER/PT2020 and FCT funds (projects "PEst-C/SAU/LA0003/2013"; project 007274 (UID/BIS/13019/2019); 2) ON.2-O-Novo Norte FEDER/EREN (projects NORTE-07-0162-FEDER-000118 and NORTE-07-0162-FEDER-000067); 3) No Stomach for Cancer Foundation; 4) FCT Fellowships (SFRH/BPD/89764/2012 to PO; SFRH/BPD/86543/2012 to JC; SFRH/BPD/79499/2011 to HP).

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

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Introduction: Enzymic submucosal dissection (ESD) is widely accepted to treat large superficial esophageal neoplasms. However, esophageal stenosis after ESD has become a key complication. To prevent such stenosis, we developed new regenerative therapies that suppress contracture and stenosis. About two weeks post-ESD, autologous oral mucosal epithelial cell sheets were fabricated from the patient’s own oral mucosal tissue. The cell sheets were then endoscopically transplanted onto the ulcer surface immediately after ESD. To date, this cell sheet treatment, which resembles cultured epidermal cell sheet transplantation in severe burn cases, has been clinically applied, and successful outcomes have been obtained at several institutions in Japan and Sweden. In addition to preventing stenosis by the simple dressing of the ulcer’s surface area, anti-inflammatory and wound-healing promoting functions of the cell sheets were expected. Furthermore, the culture supernatant obtained immediately before the transplantation, were analyzed with a cytokine array.

Results: Histological and morphological analyses revealed that tissue-engineered stratified epithelial cell sheets have an apical-basal polarity, and that the junctions between the basal cell of the sheets were significantly loose, due to dissociating desmosomes, which were also fewer in numbers. IHC showed that the expression levels of E-cadherin and desmosomal cadherins were downregulated in the epithelial cell sheets, but mesenchymal markers (N-cadherin, vimentin, and fibronectin) were upregulated. Taken together, these findings implied that epithelial mesenchymal transition (EMT) was induced in the basal cells. The results of the cytokine array showed that the cell sheets secreted EGF and growth factors (progranulin and epiregulin), and anti-microbial proteins (b-defensin).

Conclusion: The EMT of the basal cell layer of epithelial cell sheets may contribute to the improved engraftment after cell sheet transplantation. The secretion of antibacterial peptides and various growth factors from the cell sheets would exhibit anti-inflammatory effects, and promote wound-healing compared to reinforcement of esophagus with absorbable synthetic materials such as polymer membrane of polyglycolic acid and polyactic acid.

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

References


P0503 THE OBESTATIN/G PROTEIN-COUPLED RECEPTOR 39 SYSTEM REGULATES PEPSI NOS 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 to the ghrelin-receptor (GPR39). Recently, we have described the expression of obestatin/GPR39 system in healthy human stomach as well as in a human gastric adenocarcinoma. In healthy human stomachs, obestatin expression was observed in the neuroendocrine cells and GPR39 expression was localized mainly to the chief cells of the oxyntic glands. In human gastric adenocarcinomas, the reported data strongly suggest the involvement of the obestatin/GPR39 system in the pathogenesis and/or clinical outcome, and highlight the potential usefulness of GPR39 as a prognostic marker in gastric cancer (5). However, the physiological role of the obestatin/GPR39 system in healthy stomach remains unknown.

Aims & Methods: To investigate the implication of the obestatin/GPR39 system in the regulation of pepsinogen secretion. GPR39, obestatin and pepsinogen I (PGI) expression was determined in the AGS cell line by immunocytochemistry; and in endoscopic biopsies of healthy human stomachs by immunohistochemistry and immunofluorescence. PGI secretion was measured after exogenous administration of obestatin (hemoglobin method, immunoblot) in AGS cells and in an in vitro explant culture of human stomach tissues obtained from surgical specimens after bariatric surgery. The influence of the acute GPR39 activation on PGI secretion was studied using obestatin (hemoglobin method, immunoblot).

Results: AGS 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 pepsinogen secretion in the healthy human stomach.

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

References


P0504 COMPARATIVE STUDY BETWEEN THE EFFICACY OF REBAMIPIDE, SUCRALFATE AND PANTOPRAZOLE IN TREATMENT OF POST-BANDING VARICEAL ULCERS

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Introduction: Endoscopic variceal band ligation (EVL) is an effective procedure to control and prevent variceal bleeding in patients with liver cirrhosis. Although EVL has some complications, yet these complications are related to post-EVL ulcers. Few data exist regarding therapy of post-ligation ulcer and treatment been mostly empirical with drugs used for peptic ulcer disease.

Aims & Methods: We aimed to compare the efficacy of rebamipide, sucralfate and pantoprazole in treatment of post banding variceal ulcers. Seventy-five patients with esophageal varices eligible for elective band ligation represented the population of the study. The patients were allocated into three groups; rebamipide group, they received rebamipide 100 mg 3 times daily; pantoprazole group, they received pantoprazole 40mg/day orally at morning; sucralfate group, they received sucralfate 1 gm every 6 hours, for 14 days beginning at the next day of band ligation. Subjects underwent EGD 14 days after banding.
Primary outcomes included the size and number of ulcers and the subjects’ reported 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 was statistically significant less in rebamipide group when compared to paniprazol and sucralfate (P < 0.01). Chest pain, dysphagia and vomiting scores were not significantly different. Dysphagia was by far the most common symptom with no case of bleeding was reported in all patients of the studied groups.

Conclusion: Rebamipide is effective in decreasing the post banding complication and reducing size of ulcer as well as the number of ulcers with no significant effect on post banding ulcer formation. Rebamipide can be used routinely in settings of post-EVL as a good alternative to pantoprazole and sucralfate.

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

References

P0505 MULTICENTRE EVALUATION OF FIRST-LINE ENDOSCOPIC TREATMENT WITH THE OTSC IN ACUTE NON-VARICEAL UPPER GASTROINTESTINAL BLEEDING AND COMPARISON WITH THE ROCKALL COHORT - THE FLETROCK-STUDY

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Introduction: The over-the-scope-clip (OTSC) overcomes limitations of standard clips and reduces delayed rebleeding in non-variceal upper gastrointestinal bleeding (NVUGIB). The study aims to evaluate mortality, rebleeding and mortality after rebleeding in 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 limited.

Aims & Methods: In total, 118 patients (FLET cohort) with a median age of 73.5 years (range 29–93 years; mean ±SD 71.39 ± 12.39 years) were included. The distribution of patients with respect to risk category revealed a median Rockall score (RS) of 7 (range 3–10; 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) ≤ 3), moderate risk (RRC > 4), and high-risk (RRC ≥ 5). 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 haemostatic 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 19.9 % in the high-risk group (RRC ≥ 8) treated with FLET (p < 0.01). Furthermore, occurrence of re-bleeding or continued bleeding was significantly lower in the moderate risk group (RRC ≥ 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
Introduction: Proton pump inhibitors (PPIs) have been widely used for the treatment of endoscopic submucosal dissection-induced gastric ulcers. However, post-operative bleeding is still one of the most important adverse side effects.1, 2 Vonoprazan (VPZ), a potassium-competitive acid blocker, is a new class of acid-suppressing agents, and it is expected to reduce bleeding after gastric endoscopic submucosal dissection (ESD) by strongly inhibiting gastric acid secretion compared with PPIs.3

Aims & Methods: We compared the incidence of bleeding after gastric ESD between subjects treated with VPZ and those treated with esomeprazole (EPZ). Data for 101 patients who underwent gastric ESD from December 1, 2014 to December 31, 2016 in Osaka City General Hospital and started to take VPZ (n = 22) or EPZ (n = 79) by the day before ESD was reviewed. Twelve of them (3 in the EPZ group, 9 in the VPZ group) were excluded for simultaneous resection of two or more sites. A case in which active bleeding or exposed vessels were observed on the bottom of ulcers with hematemesis, melena or a drop of not less than 2 g/dl of Hemoglobin within 4 weeks after ESD was defined as ‘post-ESD bleeding’. In addition, we perform second-look endoscopy on the day after ESD. A case in which hemostasis was needed with hemorrhage of Forrest IIa or more when we underwent second-look endoscopy was defined as ‘next-day hemostasis case’. We investigated retrospectively post-ESD bleeding rate and next-day hemostasis rate in the VPZ group and the EPZ group.

Results: Gender, age, resected specimen diameter, oral antithrombotic drug administration, and dialysis were not significantly different in both groups. Two of the 19 patients in the VPZ group (10.5%) and 6 of the 70 patients in the EPZ group (8.6%) had Post-ESD bleeding (Table). In addition, 6 patients in the VPZ group (31.6%) and 37 patients in the EPZ group (52.9%) had next-day hemostasis. There was no significant difference in both groups regarding Post-ESD bleeding (p = 0.678) and next-day hemostasis (p = 0.197). However, next-day hemostasis was somewhat higher in the EPZ group than that in the VPZ group. That is possibly because EPZ or VPZ was first administered mostly from 1 to 14 days after the initial endoscopy. There was no prior use of anticoagulation in any of these patients. There were no reported immediate or delayed complications from the treatment.

Table: Incidence of post-ESD bleeding and next-day hemostasis

<table>
<thead>
<tr>
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<th>VPZ group, n (%)</th>
<th>EPZ group, n (%)</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>19</td>
<td>70</td>
<td></td>
</tr>
<tr>
<td>Post-ESD bleeding</td>
<td>2 (10.5)</td>
<td>6 (8.6)</td>
<td>0.678</td>
</tr>
<tr>
<td>Next-day hemostasis</td>
<td>6 (31.6)</td>
<td>37 (52.9)</td>
<td>0.197</td>
</tr>
</tbody>
</table>

Conclusion: VPZ didn’t significantly reduce post-endoscopic submucosal dissection bleeding compared with EPZ. Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0510 OUTCOMES FROM AN INTERNATIONAL MULTICENTRE REGISTRY OF PATIENTS WITH GASTRIC BLEEDING UNDERGOING ENDOSCOPIC TREATMENT WITH HEMOSPRAY

A retrospective cohort study was conducted. We reviewed the medical records of patients received clogoprazin 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.

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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 percutaneous vascular disease. Gastrointestinal bleeding (GIB) is one of the most common adverse effects of DAPT, potentially causing hospital admission and death. Scanty information regarding safety of DAPT in Thailand is available.

Aims & Methods: The objective was 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 clopigrelor 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.

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Introduction: Acute gastrointestinal bleeding (AGIB) can carry poor outcomes unless prompt endoscopic haemostasis is achieved. Hemospray is a novel proprietary mineral blend that forms a mechanical barrier over the bleeding site when applied endoscopically.

Aims & Methods: The primary aim of this international multicentre registry is to collect data on the successful cessation of GI bleeding following application with Hemospray. Secondary outcomes of recurrent bleeding (within 72 hours), 30 day mortality, disease and procedure specific outcomes were also collected.

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 monotherapy, 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%), post endoscopic therapy 9 (16%), malignancy 11 (20%), inflammation 3 (5%), Mallory Weiss tear 2 (4%), angiodysplasia 1 (2%), bleeding polyph 2 (4%), duodenal diverticular bleed 1 (2%), oesophageal varix bleed 1 (2%), portal radiation 4 (7%) and 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 9/100%]. There were 6 cases of delayed re-bleeding of which 1 occurred in less than 24 hours post initial endoscopy, 2 at 24–72 hours, 1 at 4–7 days, 1 at 7–14 days and 1 more than 14 days after the initial endoscopy. There was no prior use of anticoagulation in any of these patients. There were no reported immediate or delayed complications from the treatment.

Conclusion: Early data from our registry show a high rate of immediate haemostasis (86%) with Hemospray and an excellent safety profile. The imminent expansion of this registry to other centres in Europe will provide invaluable data on the efficacy of Hemospray in various disease and patient types over the coming years.

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

References
Results: A total of 201 patients received clopidogrel with aspirin and 199 patients received ticagrelor with aspirin were recruited. Mean ± standard deviation age was 66.2 ± 11.3 years and 63.3% of patients were male. The most common indication of DAPT was acute coronary syndrome (85.4% in clopidogrel group vs.100% in ticagrelor group). Duration of treatment with clopidogrel and ticagrelor were 121.5 vs. 251.3 days, respectively (p = 0.216). There were 20 (10.1%) GIB events in clopidogrel group and 11 (5.5%) in ticagrelor group. The most endoscopic findings of GIB was gastric erosion (44% in clopidogrel group vs. 66.7% in ticagrelor group). Risk ratio (RR) of GIB event of clopidogrel compared to ticagrelor was 1.84 (95% confidence interval [CI] 0.9-3.7, 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
Disclosure of Interest:

Test. Sensitivity to orally ingested capsaicin decreases after long-term capsaicin ingestion was indirect proportional to the result during the initial capsaicin test turned negative in 53% of chemosensitive patients (p = NS) in capsaicin negative patients. After long-term capsaicin ingestion, the symptoms scores after capsaicin ingestion were reduced by 5.4/11.7 compared in capsaicin positive and negative patients at baseline (NS).

Aim & Methods: The aim of the study was to determine clinical characteristics of FD patients with and without chemical hypersensitivity at baseline and after capsaicin ingestion for 4 weeks. N = 49 outpatients with confirmed FD received an oral sensitivity test with 0.75 mg capsaicin at two occasions, before and after ingestion of the capsaicin capsule test (Hammer et al, NGM 2008). Sensations induced by gastric capsaicin are distinct from sensations induced by stimulation of mechanoreceptors (Hammer & Vogelsang, NGM 2007).

Results: 53% of FD patients 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 average upper gastrointestinal symptoms scores were significantly higher in capsaicin positive (median: 9.4; 5.4/11.7) than in capsaicin negative patients (6.6; 4.1/8.1) (p < 0.05). Median scores for epigastric pain, nausea and epigastric distension were similar in capsaicin positive and negative patients (p > 0.05). On the contrary, capsaicin negative patients had significantly lower scores for satiety (p < 0.001) and epigastric bloating (p = 0.01) than capsaicin positive patients. Lower abdominal symptoms 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 = 0.01) than capsaicin positive patients. Lower abdominal symptoms scores after capsaicin ingestion were reduced by −1.0 (−1.8;−0.1; p < 0.05) in capsaicin positive but not significantly altered (−0.6;−1.7;+0.9; NS) in capsaicin negative patients. After long-term capsaicin ingestion, the capsaicin test turned negative in 53% of chemosensitive patients (p < 0.01).

Conclusion: Differences in upper GI symptoms distinguished capsaicin positive and negative patients at baseline. Symptom improvement after long-term capsaicin ingestion was indirect proportional to the result during the initial capsaicin test. Sensitivity to orally ingested capsaicin decreases after long-term capsaicin ingestion.

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

References

P0518 PER-ORAL ENDSCOPY MYOTOMY IN TREATMENT NAÏVE VERSUS PRIOR 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 naïve (TN) cases versus prior treatment (PT) failure cases. The data of consecutive patients with AC who underwent POEM at a single tertiary care center from (January 2013 to November 2016) was analysed retrospectively. A comparative analysis was performed between TN and PT failure cases. Technical and clinical success, adverse events (AE), operative time (OT) for POEM were compared between TN versus PT failure cases.

Results: Overall, 502 patients with AC underwent POEM during the study period. 260 patients (51.8%) were TN and 242 (48.2%) patients had PT. Type II AC was the most common subtype in both the groups (TN -63.5% vs PT – 57.8%) followed by type I and type III. There was no significant difference with regards to AC subtypes between the two groups. The distribution of patients according to prior treatment history is as follows – PHD (205), LHM (23), LHM and PBD both (7), botulinium 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 67.9 ± 27.1 min; P = 0.002). On multivariate analysis- type of AC, dilated esophagus (> 6 cm) and type of knife used were significant predictors of OT. Technical (98.1% vs 97.1%, P < 0.05) and clinical success (94.9% vs 91.9%) of POEM were similar in TN and PT cases. Gas related events and mucosotomies were equal in both groups (TN-35.7% vs PT-33.1%; p=0.57). Objective evidence of gastroesophageal reflux was found in 17/53 patients (32.1%) in PT group as compared to 11/44 (25%) in TN group (p=0.50).

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

References

P0519 ESOPHAGEAL REFLUX BURDEN IN RELATIONSHIP TO ESOPHAGOGASTRIC JUNCTION (EGJ) AND ESOPHAGEAL BODY FUNCTION ON HIGH RESOLUTION MANOMETRY (HRM)
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Introduction: Both EGJ and esophageal body motor abnormalities are found on esophageal HRM in reflux disease, and contribute to reflux burden assessed using acid exposure time (AET) on ambulatory reflux monitoring. Measurement of pH and 24-hr integrals is the gold standard. However, the role of the EGJ and esophageal body function in the pathogenesis of gastroesophageal reflux disease (GERD) is not well defined.

Aims & Methods: The aim of this study was to assess the role of EGJ and esophageal body function in GERD pathogenesis by performing HRM in patients with and without GERD.

Results: A total of 30 patients (15 with GERD and 15 without GERD) were included in the study. HRM was performed using a 18-channel manometric catheter and patients were classified into 2 groups based on the presence of reflux symptoms (ERD: 15 and non-ERD: 15). GERD group had significantly higher percentage of time spent in the integrated acid reflux zone (IARZ) (23.7% ± 10.8% vs 11.3% ± 4.2%, p = 0.003). Similarly, the percentage of time spent in the total reflux zone (TRZ) was also significantly higher in the GERD group (18.4% ± 8.5% vs 8.5% ± 3.2%, p = 0.005). In the GERD group, the percentage of time spent in the total acid reflux zone (TARZ) was also significantly higher (14.8% ± 7.4% vs 5.6% ± 3.1%, p = 0.005). The percentage of time spent in the total integrated acid reflux zone (TIARZ) was also significantly higher in the GERD group (11.0% ± 6.2% vs 3.9% ± 1.7%, p = 0.003). The percentage of time spent in the total integrated non-acid reflux zone (TIARZ) was also significantly higher in the GERD group (15.0% ± 10.1% vs 6.7% ± 2.8%, p = 0.005).

Conclusion: EGJ and esophageal body motor abnormalities are associated with increased reflux burden in patients with GERD. Further studies are needed to validate these findings and to determine the role of EGJ and esophageal body function in the pathogenesis of GERD.

References
Proportions with abnormal reflux burden in relationship to EGJ and esophageal body motor findings on high resolution manometry

<table>
<thead>
<tr>
<th>AET &gt; 6%</th>
<th>AET &lt; 4%</th>
<th>MNBI &lt; 2292</th>
</tr>
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<tbody>
<tr>
<td>n = 431</td>
<td>n = 642</td>
<td>n = 596</td>
</tr>
</tbody>
</table>

EGJ findings

Intact EGJ (n = 280) 25.7% 60.7%** 58.3% (63/108)

Hypotensive EGJ (n = 462) 36.5%* 49.2%** 56.3% (259/460)

Hiatus hernia (n = 422) 49.0%* 36.5%** 69.8%* (138/199)

Both (n = 342) 49.4%* 34.8%** 70.9% (124/175)

Esophageal body motor findings

Intact esophageal body (n = 686) 31.0% 56.9%** 46.5% (158/340)

IEM (n = 326) 41.4%* 44.8% 69.6%* (94/135)

Absent contractility (n = 43) 53.5%* 39.5% 88.2%* (15/17)

Combined EGJ & esophageal body motor findings

Intact EGJ and body (n = 170) 25.3% 61.2%** 49.3% (36/73)

Hypotensive EGJ, HH, IEM (n = 105) 56.2%* 24.8%** 83.0%* (44/53)

Hypotensive EGJ, HH, absent contractility (n = 7) 71.4%* 14.3% 100%* (5/5)

* p < 0.05 compared to intact EGJ and/or esophageal body function ** p < 0.01 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 EGJ and esophageal body metrics adds confidence to categorization of esophageal reflux burden.

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

References

achalasia type II. The mean integrated-relaxation pressure (IRP) decreased from 27 (±13) mmHg to 13 (±5) mmHg (p < 0.0001). The presence of post-prandial peristalsis recovery was neither associated with normalization of IRP (IRP normalized in 17/26 (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
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P0525 WHAT IS THE EFFECT OF MYOTOMY SITE ON PER-ORAL ENDOSCOPIC MYOTOMY? COMPARISON OF ANTERIOR AND POSTERIOR MYOTOMY

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Introduction: Medical treatments, endoscopic balloon dilatation, Botox and Heller myotomy are treatment modalities for managing achalasia. Recently per-oral endoscopic myotomy (POEM) has become a new option for achalasia patients and since 2010 it has become widespread. Earlier, anterior myotomy was used in this technique but in the last few years there are studies reporting that posterior myotomy is more effective. However, there are limited numbers of publications comparing anterior and posterior myotomy. This study aimed to investigate the effect of myotomy site on POEM, to our knowledge it is the first time in Europe and our country.

Aims & Methods: Between May 2014 and January 2017, POEM was performed to 225 achalasia patients at the gastroenterology clinics under general anesthesia by an endoscopist experienced at endoscopic submucosal dissection and trained for POEM. Demographic data, previous history for balloon dilatation and results of the procedure were recorded prospectively. Patients with anterior myotomy were grouped as “group A” and those with posterior myotomy as “group B”, and the results were compared.

Demographic features and results of POEM procedures

<table>
<thead>
<tr>
<th>Group Anterior</th>
<th>Group Posterior</th>
</tr>
</thead>
<tbody>
<tr>
<td>N = 114</td>
<td>N = 111</td>
</tr>
<tr>
<td>Sex (Male/Female), n</td>
<td>56/58</td>
</tr>
<tr>
<td>Age mean (SD)</td>
<td>41.05 ± 14.80</td>
</tr>
<tr>
<td>Tunnel length, mean (SD) (median; range) cm</td>
<td>17.07 ± 2.63 (12.17-27)</td>
</tr>
<tr>
<td>Myotomy length, mean (SD) (median; range) cm</td>
<td>13.79 ± 2.46 (14.04-21)</td>
</tr>
<tr>
<td>Procedure Time, mean (SD) (median; range) min</td>
<td>58.63 ± 21.47 (53; 27-153)</td>
</tr>
<tr>
<td>Tunnel time, mean (SD) (median; range) min</td>
<td>34.60 ± 14.67 (30; 82)</td>
</tr>
<tr>
<td>Dysphagia Score preoperative/postoperative (median; range)</td>
<td>3.3-4.0 (3.9-2)</td>
</tr>
</tbody>
</table>

POEM is an effective treatment modality for achalasia with treatment success around 90% at 2 years, slightly dropping down to 80% at 3 years.

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
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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, endoscopy findings, reflux symptoms and use of proton pump inhibitors (PPIs). Since 2012, a total of 192 patients with achalasia underwent 202 POEM procedures. Follow-up visits at 3, 12, 24 and 36 months were completed in 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: 94-100), 95% (CI 91–99), 88% (CI 82–95) and 81% (CI 69–93) of patients. A total of 14 patients experienced treatment failure (n = 5) or recurrence (n = 9). The recurrences occurred most often in patients with HRM type I achalasia (4 out of 26, 15.4%) followed by type II (3 out of 113, 2.6%) vs. none in type III achalasia (0 out of 10, 0%); p = 0.022. At 3 months, reflux esophagitis was diagnosed in 63/160 patients (39.4%; severe esophagitis LA C or D in 8 patients). Abnormal acid exposure on pH-metry studies was detected in 58/146 (39.7%). At 24–36 months, endoscopy was performed in 41 patients and reflux esophagitis was present in 9 patients (21.9%; none of the patients has been treated with PPIs). At 3 and 24 M, a proton pump inhibitor was administered to 33.5% and 31.4% of patients.

Conclusion: POEM is effective treatment modality for achalasia with treatment success around 90% at 2 years, slightly dropping down to 81% at 3 years. Generally mild reflux esophagitis and abnormal esophageal acid exposure are diagnosed in about 40% of patients 3 months after POEM but are successfully manageable with proton pump inhibitors. Occurrence of reflux esophagitis tends to decrease with time.

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

PO0524 BEER EFFECTS ON POSTPRANDIAL DIGESTIVE SYMPTOMS AND GASTROESOPHAGIC PHYSIOLOGY

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Introduction: Beer has been related to gastrointestinal 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

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Introduction: Beer has been related to gastrointestinal 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 QOLRAD (4) questionnaires, both validated to Spanish. Study was divided in two substudies based on the study intervention: 33 cl of regular beer (substudy 1) and the same amount of non-alcohol beer (substudy 2). Mineral water (33 cl) was the control intervention in both substudies. Each participant was its own control. The study lasted two weeks (control study week and intervention study week). Each week started with a visit to the laboratory at 7:30 am, when a pHelimeter calibrator was placed and taken off 24 hours later. Gastric accommodation was assessed through the maximum tolerated volume during a nutrient drink test (ENSURE® HI, 500 ml) in a rhythm of 15 ml/minutes, after the ingestion of beer (intervention) or water (control). It was defined as the volume after which the test finished or the participant reported the maximum pH to any dyspeptic symptoms (early satiety, bloating, epigastric pain and nausea), which were asked every 5 minutes. The mean age and 5 minutes had the highest perception. GER was evaluated in the postprandial period and during 24 hours through pH impedance register. Weekly symptoms evaluation was made through a diary adapted from PAGI-SYM questionnaire and sum of symptoms was used for analysis. Data were collected daily through email. Variables were compared between both visits and weeks in both substudies using a non-parametric test for matching data. Participants should drink 33 cl of beer before lunch and dinner during the intervention week. Other alcohol drinks were prohibited during the study.

**Results:** Ten participants were enrolled in substudy 1, mean aged 24 years old (SD 4, 118–32); 80% were men. Twenty participants were enrolled in substudy 2, mean aged 23.4 years old (SD 5.5 (20–38)); 65% were men. No significant differences were detected in the increase of symptoms during the nutrient drink test between control and intervention visits in both substudies (table 1). Maximum tolerated volume did not show any difference between visits in both substudies. Reflux episodes after nutrient drink test and reflux episodes registered in 24 hours did not show significant differences between control and study visits. The sum of weekly symptoms did not show any difference between control and intervention weeks in both substudies.

**Conclusion:** Moderate beer consumption (regular and non-alcohol beer) does not cause an increase of dyspeptic symptoms and reflux in healthy people. It has been shown in a controlled situation (nutrient drink test and pHel 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**


PO056 DUODENAL PATHOLOGY IN PATIENTS WITH RUMINATION SYNDROME: EOSINOPHILIA AND INTRAEPITHELIAL LYMPHOCYTOSIS

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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.1–3 Recently, duodenal eosinophilia has been described both in adult and pediatric patients with FD.1–3 Because of the significant symptomatic overlap between FD and rumination syndrome we hypothesized that histological changes similar to those described in FD might also occur 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 we obtained 4–6 duodenal biopsies were obtained for research purposes. Cases and controls with a personal history of an eosinophilic disorder, gastric or esophageal surgery, recent within 30 days) intake of NSAIDS and pregnant and/or lactating females were excluded. Duodenal biopsies obtained were routinely processed to formalin fixed paraffin-embedded tissue blocks which were cut at 3µm, stained with H&E and scanned to digital images (Aperio). The pathologist, blinded to the case-control status, analyzed de-identified digital images of the biopsy specimens and assessed for eosinophil counts/mm² in sections. Individual sections were also assessed for the presence of Brunner’s glands (BG) and intraepithelial lymphocyte counts (IEL) 100 enterocytes. This was done in order to distinguish the first part of the duodenum (D1) 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 (+/− Brunner’s glands (BG)) 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 (+/− Brunner’s glands (BG)), showed no difference in counts in the sections +/− BG (D1 vs D2), p=0.8. No overt pathology was noted, but IEL counts were significantly higher in rumination patients (mean 15, range 8–29, and 2 cases had lymphocytic duodenitis) vs controls (mean 11, range 11–18, p=0.02. Compared to controls, there was a significant increase in the mean eosinophil count among the patients with rumination syndrome rumination, 26 per mm² (range 16–42), vs 18 mm² (range 10–28), p=0.006. Conclusion: These findings demonstrate that patients with rumination syndrome have duodenal eosinophilia and increased IEL counts compared to healthy controls. To our knowledge, histopathological changes among patients with rumination syndrome compared to controls have not previously been described. Therefore, a potential role of duodenal immune mechanisms in the pathophysiology of rumination syndrome warrants further enquiry.

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

**References**


Table 1

| BEER CONSUMPTION AND DYSPEPTIC SYMPTOMS | SUBSTUDY 1 (Regular beer) | SUBSTUDY 2 (Non alcohol beer) |
| Control visit (Mean) | Intervention visit (Mean) | Control visit (Mean) | Intervention visit (Mean) |
|----------------------|--------------------------|--------------------------|
| Min 5- Min 0 | −0, 1 (0, 73 (−2−1)) | 0, 655 | 0, 1 (0, 3 (−1)) |
| Min 10- Min 0 | −0, 1 (0, 73 (−2−1)) | 0, 18 | 0, 3 (0, 47 (−1)) |
| Min 15- Min 0 | 0, 2 (0, 63 (−2−0)) | 0, 317 | 0, 6 (0, 76 (−2)) |
| Min 20- Min 0 | 0, 5 (0, 97 (−3−0)) | 0, 18 | 1, 15 (0, 93 (−3)) |
| Min 25- Min 0 | 1, 1 (1, 0, 19 (−3−0)) | 0, 655 | 1, 75 (1, 12 (−4)) |
| Min 30- Min 0 | 1, 3 (1, 41 (−4−0)) | 1, 2, 1 (0, 82 (−0−2)) | 1, 25 (1, 06 (−4)) |
| Min 33- Min 0 | 1, 2 (1, 31 (−4−0)) | 1, 5 (0, 83 (−0−2)) | 2, 1 (1, 45 (−5)) |

Table 1: Mean increasement of dyspeptic symptoms compared to Min 15- Min 0

A348 | European Gastroenterology Journal 5(5S) | 2010


P0527 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 (Galectec Ltd, Dunvegan, Scotland) [2]. We analyzed pSEP peak-latency and amplitude (N1, N2, P2, N2-P2) and neurotopographic stroke characteristics from brain MRI.

Results: HV presented a highly symmetric bi-hemispheric cortical pattern of brain activation at centro-parietal areas (N1-P1, N2-P2) to pharyngeal stimuli. In contrast, an asymmetric pattern of reduced ipsilesional activation was found in PSD (N2-P2; p = 0.026) but not in PnD. PSD presented impaired safety of swallow (Penetration-Aspiration score: 4.5 ± 1.6) and delayed laryngeal vestibule closure (360 ± 70 ms), and higher NIHSS (7.0 ± 2.3 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 afferent pathways in the pathophysiology of post-stroke OD and offer a potential target for future treatments.

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

References

P0529 RELEVANCE OF SLEEP DISTURBANCE TO FUNCTIONAL GASTROINTESTINAL SYMPTOMS, CLINICAL CHARACTERISTICS, AND PSYCHOLOGICAL DISTRESS

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Introduction: Reduced sleep quality has been linked to gastrointestinal reflux disease (GERD) and functional gastrointestinal disorders. It is unknown whether GERD, functional dysphagia (FD) and irritable bowel syndrome (IBS) are more prevalent in subjects with significant sleep disturbance (SD) than those without SD.

Aims & Methods: The aim of the study was to investigate gastrointestinal symptoms, clinical characteristics, and psychological factors in subjects with and without SD in a general population undergoing health checkups. We enrolled 2752 consecutive subjects who received upper gastrointestinal endoscopy and colono-scropy during their health checkups. All participants underwent an evaluation with questionnaires including Reflux Disease Questionnaire score, Pittsburgh Sleep Quality Index (PSQI), Taiwanese Depression Questionnaire, and State-Trait Anxiety Inventory before receiving endoscopic exam. Demographic characteristics and biochemical data were also recorded. FD and IBS were based on Rome III diagnostic criteria, and metabolic syndrome was defined by the National Cholesterol Education Program Adult Treatment Panel III definition. Sleep disturbance was confirmed when PSQI score was greater than 5. We compared the clinical and psychological factors between subjects with and without sleep disturbance.

Results: Among the study population (n = 2674), 956 (36%) individuals had SD. SD subjects had more female gender, older age, lower level of education, higher systolic blood pressure, higher serum high-density lipoprotein levels, and higher prevalence of FD and IBS than those without SD. In addition, SD patients also had more depression, more anxiety, more severe GERD symptoms, and higher prevalence of non-erosive reflux disease (NERD) (p < 0.001). Multivariate analysis revealed that female sex (OR = 1.75, p < 0.001), older age (OR = 1.03, p < 0.001), more severe GERD symptoms (OR = 1.03, p < 0.033), NERD (OR = 1.63, p = 0.023), IBS (OR = 1.48, p = 0.05), and depression (OR = 1.16, p < 0.001) were positive predictive factors for SD, whereas higher level of education (OR = 0.57, p < 0.001) was negative predictive factor for SD.

Conclusion: Our study demonstrates that SD is associated with female sex, older age, lower education level, greater GERD symptom burden, greater depression, and higher prevalence of NERD and IBS. Future studies will be needed to clarify the relationship between functional gastrointestinal diseases and sleep disorders.

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

References
Table 1 Continued

<table>
<thead>
<tr>
<th>Symptom Factor</th>
<th>Odds ratio</th>
<th>95 % Confidence interval</th>
<th>R² value</th>
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</thead>
<tbody>
<tr>
<td>Medication for acid/heartburn</td>
<td>11.427</td>
<td>8.602–15.179</td>
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<tr>
<td>Gastroduodenal disorder</td>
<td>2.789</td>
<td>2.049–3.798</td>
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<tr>
<td>Bowel disorder</td>
<td>2.165</td>
<td>1.632–2.872</td>
<td></td>
</tr>
<tr>
<td>Diet rich in pasta</td>
<td>1.113</td>
<td>1.026–1.206</td>
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</tr>
<tr>
<td>Dysphagia Age</td>
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<tr>
<td>Medication for diarrhea</td>
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<td>Medication for acid/heartburn</td>
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<td>Gastroduodenal disorder</td>
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<tr>
<td>Anorectal disorder</td>
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<td>1.072–2.343</td>
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<td>Diet rich in rice</td>
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<td>1.006–1.196</td>
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<tr>
<td>PQH12</td>
<td>1.110</td>
<td>0.693–1.855</td>
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</tr>
</tbody>
</table>

Variables with a p-value of 0.1 or less in univariate analysis were entered into a multivariate analysis (logistic regression) in order to identify factors independently associated with esophageal symptoms (up to 33 variables).

Introduction: Esophageal symptoms compatible with a functional esophageal disorder are common in the Western population. Age and presence of other GI and non-GI symptoms are associated with reporting esophageal symptoms.

Disclosure of Interest: All authors have declared no conflicts of interest.
Several studies have provided information on the prevalence of different atopic conditions in pediatric and adult EoE patients. They compared the prevalence of 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 varied and the selection process for the controls has not been such that they can be considered universally representative of the general population without EoE. These two limitations have hampered researchers in their efforts to clearly assess the magnitude of the association between atopy and EoE. Therefore, a systematic review of the literature and 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 pediatric and adult EoE patients in comparison with the non-EoE control population.

Aims & Methods: A highly sensitive search strategy was designed to identify and retrieve all documents dealing with the relationship between atopy and EoE in children and adults. This systematic literature search was performed independently by two researchers (AA and AJL). A highly sensitive search strategy was devised to identify all relevant 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 (JJ-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 2945 references identified, data was collected from 21 studies including a total of 53,542 EoE patients and 54,759 controls. The criteria for defining a diagnosis of atopy in either EoE patients or controls was not structurally considered in most of the studies. The frequency or prevalence of the different atopic manifestations among EoE patients was compared with that observed in several types of control populations, including series of patients with asthma, allergic rhinitis, eczema among EoE patients, and healthy subjects representative of the general population. Further research should clearly document and use standard definitions of allergic rhinitis, asthma (including its sensitization) when assessing and documenting concurrent allergic diseases in EoE patients regardless of endoscopic findings (32% vs. 68%; p = 0.02). Furthermore, patients with dysphagia or FBO demonstrated a significantly higher rate of absorption under fed compared to fasted conditions (38.6; p = 0.04). 31 patients had endoscopic biopsies taken at least 3 months post therapy. Those with index features of chronic disease were more likely to be associated with failure of the eosinophilia to normalize regardless of medical therapy. Univariate analysis and binary logistic regression was used to identify associations between patient characteristics, presentation, endoscopic findings, degree of eosinophilia and subsequent response to treatment. Associations were assessed by Fishers exact test, t-test and Mann-Whitney for nominal, continuous parametric and non-parametric variables respectively.

Disclosure of Interest: G.M. Comer: Dr. Gail M. Comer is a paid consultant for Adare Pharmaceuticals, Inc. B.A. Meltzer: Dr. Brian A. Meltzer is an employee of Adare Pharmaceuticals, Inc.

P0935 EOSINOPHILIC ESOPHAGITIS: RATIONALISING THERAPY

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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) therapy versus other medical therapy or topical steroid treatment. Univariate analysis and binary logistic regression was used to identify associations between patient characteristics, presentation, endoscopic findings, degree of eosinophilia and subsequent response to treatment. Associations were assessed by Fishers exact test, t-test and Mann-Whitney for nominal, continuous parametric and non-parametric variables respectively.

Results: 1653 patients fulfilled the entry criteria. 544 with previous cancer, achalasia, post-operative strictures or Barrett’s esophagus were excluded. 95 patients had histological eosinophilia in keeping with EE, 85 with dysphagia and 10 with reflux as their presenting symptom (67 male, mean age 42±7 years). 31(32%) of these had at least one presentation with food bolus obstruction (FBO). There was a trend towards a higher eos/hpf in patients with presentation with FBO (47±21) compared to dysphagia (38±17) and reflux (38±17) (p = 0.073). Endoscopic evidence of chronic stricture disease was associated with a higher eos/hpf than those with no strictures (mean 50.3 vs 39.6; p = 0.04). 31 patients had endoscopic biopsies taken at least 3 months post therapy. Those with index features of chronic disease were more likely to be associated with failure of the eosinophilia to normalize regardless of medical treatment compared to those with acute changes (furrows, exudates) (33% vs. 0%; p = 0.03). 31 patients were treated with proton pump inhibitors. 20 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 concurrent H2 blockers or PPI therapy and normalized eos/hpf. Both the other biopsies regardless of endoscopic findings, patients presenting with dysphagia and/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 contactable a minimum of 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 histological one.

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

Aims & Methods: clinical and histological remission in patients with esophageal eosinophilia with Proton Pump Inhibitor-response esophageal eosinophilia (REE) is an emerging condition characterized by a constellation of clinical, endoscopic, and histopathologic findings. We aimed to prospectively compare the effect of different PPIs in inducing endoscopic and histologic remission in patients with PPI-REE. These data, although obtained in a small sample of patients, suggest that the pharmacokinetic and pharmacodynamic differences among these drugs do not affect their effect on PPI-REE patients.

Disclosure of Interest: V. Savarino: Consulting fee from Malesci, Reckitt, AlfaWasserman, Abbvie E. Savarino: Consulting fee from Medtronic, Sofar, Takeda, Abbvie, MSD All other authors have declared no conflicts of interest.

Endoscopic and histologic features at baseline and after PPI therapy in PPI-REE are equally effective in inducing endoscopic and histologic remission in patients with proton pump inhibitor-response esophageal eosinophilia

<table>
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<tr>
<th>Median maximum eos count*</th>
<th>Median eos count (of 5 HPFs)*</th>
<th>Degranulation present</th>
<th>Microabscesses present</th>
<th>Basal layer present</th>
<th>Spongiosis present</th>
<th>Subepithelial tissue present</th>
<th>Lamina propria fibrosis present</th>
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Mean EREFS Score 7.3 1.2 8.1 1.6 8.4 1.7

P0536 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 » has an upper ring sized to the diameter of the patient’s esophagus with an accessory called the « calibration device » placed through the 2.8 mm working channel of a standard gastroscope. The GARD is held in place by pressure. The upper ring holds an anti-reflux thin-walled tubular valve moulded in one piece under the ring. After placement of a standard 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 esophagus of 8 pigs during 7 days to evaluate placement, feeding, weight gain, absence of migration as well as removal. Deployment of the « GARD » was easy, there was no migration in the stomach and removal of the GARD with the developed accessories was easily achieved. Pigs have a strong lower esophageal sphincter and have no reflux so gastro-esophageal reflux could not be evaluated. In a human volunteer with very severe gastro-esophageal reflux who had previously failed anti-reflux surgery and had an unsatisfactory response to clinical and pH metric measurement under 80 mg of esomeprazole, the « GARD » was placed preoperatively. Hereafter are this patient’s pH metric results without 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.

Endoscopic and histologic features at baseline and after PPI therapy in PPI-REE

Table: Endoscopic and histologic features at baseline and after PPI therapy in PPI-REE
P0538 SYMPTOM PATTERNS AND TYPES OF GASTROESOPHAGEAL REFLUXES SIGNIFICANTLY DIFFER IN GROUPS OF EROSIve ESOPHAGITIS AND NON-EROsiVE FORM OF GASTROESOPHAGEAL REFLUX DISEASE (GERD) PATIENTS

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Introduction: Patients with gastroesophageal reflux disease (GERD) demonstrate a range of different symptoms (esophageal and extraesophageal) however the relationship between symptoms and types of reflux was not evaluated.

Aims & Methods: The aim of the study was to assess the relationship between GERD patients’ symptoms with characteristics of refluxes obtained by 24h 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 (Ohmega, MMS, the Netherlands; 2pH-6 impedance channels catheters, UnisensorAG, USA) and validated GERD-Q questionnaire. According to baseline esophagitis 91 patients were classified as non-erosive reflux disease (NERD) and 67 as erosive reflux disease (ERD) patients. Patients’ symptoms were classified according to Montreal classification.

Results: Extraesophageal symptoms as well as weak acid gastroesophageal refluxes were found significantly more often in patients with NERD compared to ERD group (Table 1). However higher number of acid refluxes, higher GERD-Q score and DeMeester score were present in ERD. The total number of gastro-esophageal refluxes didn’t differ between ERD and NERD groups of patients.

Table 1: Results of the study

<table>
<thead>
<tr>
<th>Controls (n = 49)</th>
<th>NERD (n = 91)</th>
<th>ERD (n = 67)</th>
<th>p</th>
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<tbody>
<tr>
<td>Number of refluxes/day, n</td>
<td>17 ± 1.3</td>
<td>55 ± 3.0*</td>
<td>55 ± 4.7*</td>
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<tr>
<td>Number of acid refluxes/day, n</td>
<td>6 ± 1.0</td>
<td>27 ± 2.2*</td>
<td>33 ± 3.7*</td>
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<tr>
<td>Number of weak acid refluxes/day, n</td>
<td>7 ± 0.93</td>
<td>22 ± 2.1*</td>
<td>15 ± 2.3*</td>
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<tr>
<td>Number of high gastro-esophageal refluxes/day, n</td>
<td>2 ± 0.47</td>
<td>15 ± 1.4*</td>
<td>12 ± 2.2*</td>
</tr>
<tr>
<td>DeMeester score</td>
<td>3.16 ± 1.75</td>
<td>13.3 ± 2.0*</td>
<td>26.92 ± 6.2*</td>
</tr>
<tr>
<td>GERD-Q score</td>
<td>5 ± 0.31*</td>
<td>10 ± 0.24*</td>
<td>13 ± 1.22*</td>
</tr>
<tr>
<td>Extraesophageal symptoms (cough, laryngitis, etc., (present, % in group)</td>
<td>61.5*</td>
<td>31.3*</td>
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</table>

Conclusion: ERD and NERD groups of patients are characterized by different symptom patterns and types of gastroesophageal refluxes registered with 24-hours esophageal pH-impedance monitoring. These findings could reflect differences in pathogenesis and clinical manifestations of mentioned forms of GERD.

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

P0539 LARYNGEAL DISORDERS AND CHRONIC COUGH IN ADULTS WITH AND WITHOUT ERODsive 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 46.5 ± 16.3 years) and 273 controls (aged 46.4 ± 16.0 years; response rate: 70%) enrolled during the period January 2013 – June 2014. Both cases and controls underwent upper endoscopy. Information on socio-demographic characteristics and lifestyle factors was also collected. Binary logistic regression was calculated to assess the association of erosive esophagitis and extra-esophageal symptoms.

Results: Patients with erosive esophagitis had a higher prevalence of excessive alcohol consumption, smoking, sedentariness and obesity compared to their control counterparts (9% vs. 5%, 70% vs. 49%, 31% vs. 17% and 22% vs. 9% respectively). The prevalence of hiatal hernia was higher in cases than in controls (21% vs. 8%, respectively), whereas the prevalence of gastric-duodenal ulcer was similar in both groups (13% vs. 14%, respectively). Upon adjustment for all socio-demographic characteristics and lifestyle/behavioral factors, there was evidence of a strong association of erosive esophagitis with chronic cough (OR = 3.1, 95%CI = 1.7–5.7), and even more so with laryngeal disorders (OR = 4.4, 95%CI = 2.6–7.4). In all models, the association of erosive esophagitis with extra-esophageal symptoms was strong and independent of the types of symptoms separately (fully-adjusted model: OR = 4.6, 95%CI = 2.9–7.3).

Conclusion: Our findings indicate that the prevalence of extra-esophageal symptoms is higher among patients with erosive esophagitis in a transitional country characterized conventionally by the employment of a Mediterranean diet. Therefore, the upper endoscopy should be part of the evaluation in patients with suspected reflux-related chronic cough and laryngeal disorders.

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

P0540 ASSESSMENT OF EXHALED BREATH CONDENSATE FOR NON-INVASIVE DIAGNOSIS OF GASTROESOPHAGEAL REFLUX DISEASE IN CORRELATION WITH MII-PH AND PEPEST

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Introduction: Gastroesophageal reflux disease (GERD) is a disease caused by backflow of gastric contents into the esophagus due to the failure of physiological anatomical mechanisms and is lead to esophageal and extraesophageal symptoms. But extraesophageal reflux (EER) is a condition where refluxate penetrate above the upper esophageal sphincter (UES) in to the oral cavity, pharynx, upper and lower respiratory tract and leads to pathological changes like e.g. chronic cough, globus pharyngis, laryngitis, pharyngitis, rhinosinusitis, otitis media, bronchial asthma, COPD, sleep apnea and noncardiac chest pain. Currently there is no suitable, non-invasive diagnostic method applicable for GERD in clinical practice. Exhaled breath condensate (EBC) and saliva were two easily accessible samples that could be advantageously monitored for GERD patients. We aimed to compare the prevalence of GERD patients with EBC between different groups of patients and healthy controls. The analysis of EBC allowed us to evaluate the potential of this method for GERD patients with EER symptoms in the future. This can provide specific markers, that could be promising to assess the disease in future.

Materials and Methods: A portable EBC sampler was used for collection of EBC. 10 μl sample aliquots of EBC were analyzed. For pH measurement, the CO2 from EBC with 0.1 M NaOH with Na2CO3 gas for fixation. The pH of EBC, butyric acid (BA) was the second most significant parameter that was significantly elevated (p < 0.01) in both patient groups with acid reflux (pH < 4) and healthy controls. The pH of EBC was significantly lower (p < 0.01) in both patient groups (acid reflux- mean BA 2.29 m), weakly acid reflux- mean BA 6.83–7.47) and in the group with weakly acid reflux (p < 0.01) in both patient groups (acid reflux- mean pH 7.57)) vs. healthy controls (6.8, (6.65–6.99)). Butyric acid (BA) was the second most significant difference in pH and selected ions from EBC between different groups of patients and healthy controls. The analysis of selected parameters in EBC could provide a fast and non-invasive diagnostic method for GERD patients with EER symptoms in the future. This can
potentially reduce the diagnostic cost and avoid unnecessary invasive MII-pH testing in future. Unlike the EBC, pepsep analysis using Pepsep 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.

**P0541** GASTRIN 17 MEASUREMENTS IN SINGING OUT PATIENTS WITH DIFFERENT PATTERNS OF REFLUX: A PILOT STUDY USING IMPEDANCE-PH AS REFERENCE STANDARD

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Introduction: Impedance-pH testing is actually considered the gold standard diagnostic tool for reflux assessment. In fact, it allows to characterize any type of gastro-esophageal reflux (GER), namely acid and non-acid, and therefore permits – in presence of typical reflux symptoms – to diagnose functional heartburn (FH) based on the lack of abnormal acidic or non-acidic refluxate (i.e. normal number of reflux episodes and negative reflux-symptom association). Gastrin-17 (G17) has been proposed as a non-invasive marker of GERD, due to the negative feedback between acidic output and this hormone. Indeed, preliminary data showed that intermediate values of G17, between very low to normal levels, may identify GERD subjects with abnormal non-acid reflux.

Aims & Methods: We aimed to correlate various patterns of refluxate (i.e. predominant acidic refluxate, predominant non-acidic refluxate and no reflux at all), as assessed by impedance-pH, with different levels of G17 in endoscopy-negative subjects with heartburn. Thirty-five consecutive patients (19F/16M, mean age 47 years, range 31–56 years), all reporting heartburn for 6 months according to at least 3 episodes/week, entered the study. All patients underwent upper endoscopy off-medication and in case of no lesions were classified as endoscopy-negative. In all subjects, impedance-pH was performed off-therapy and blood determination of G17 (Biohit Oji, Finland; normal values: 1–9 pmol/l) was evaluated on the same day of reflux monitoring. Impedance-pH tracings were blindly and manually analyzed to detect the distal acid exposure time (AET abnormal if ≥3.2% over 24 hours) and the number as well as the characteristics of reflux episodes (acidic/weakly acidic/weakly acidic). Patients were then divided in three groups according to the results of impedance-pH: a) Group A: subjects with increased number of acid refluxes or abnormal AET; b) Group B: subjects with increased episodes of non-acid reflux and normal AET; c) Group C: subjects without increased number of any kind of GER (Group C). In the Group A, the mean value of G17 was 0.9 pmol/l, in the Group B was 2.6 pmol/l, and, in the Group C was 5.1 pmol/l (p < 0.01). Very low G17 levels were significantly associated with increased 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.

**P0542** ANTI REFUX MUCOSECTOMY (ARMS) FOR REFRACTORY GASTRO ESOPHAGEAL REFLUX DISEASE (GERD) - ARE WE THERE YET?

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Introduction: As a treatment for gastro esophageal reflux disease (GERD), proton pump inhibitors (PPIs) are the mainstay of medical therapy. Laparoscopic fundoplication is generally advised when symptoms are poorly controlled with PPIs and is regarded as a gold standard of treatment, with excellent control in the short- and midterm. Long-term results, however, remain equivocal. Following on from the principles of surgical fundoplication, a variety of endoscopic procedures for GERD have been proposed to achieve 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 of 1 to 3. We performed a baseline screening endoscopy to rule out a hiatus hernia and to exclude helicobacter infection. A GERDQ questionnaire was filled by all the patients indicative of severity of reflux All patients had a high resolution manometry (Sandhill scientific) to exclude significant dysmotility and 24 hour pH measurements using Zephyr pH probe (Sandhill scientific) on therapy to demonstrate significant acid reflux. Only patients with mucosal flap valve grading 1, 2 or 3 were selected for anti reflux mucosectomy.

Results: Technique: Crescentic ARMS of the esophagogastric junctional (EGJ) mucosa was conducted with the standardized technique of endoscopic mucosal resection (EMR) of at least 3 cm length in the stomach, with the length of mucosal resection at the cardia measured in retroflexion from the gastric side. ARMS was conducted along the lesser curve of the stomach, thus preserving a sharp mucosal valve at gastric cardia. All the patients who underwent ARMS had a significant reduction in the DeMeester score, with predominant decrease in the recumbent acid exposure. 7/12 patients were able to discontinue all the medical therapy. PPI dose reduction was possible in the other patients with a mean reduction of 50%, alginates were stopped in all patients and HRA were also discontinued.

Conclusion: Results suggest a potential anti-reflux effect of ARMS. The mechanism is presumed to be due to scar formation after healing of the mucosal defect. On the gastric side, this induces narrowing of the gastric 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

Abstract No: P0542

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<th>ARMS PATIENT</th>
<th>PRE DEMEETER</th>
<th>POST DEMEETER</th>
<th>UPRIGHT-ACID ERE ARMS (%)</th>
<th>POST ERE ARMS (%)</th>
<th>RECUMBENT ACID EXP – 100%</th>
<th>POST ARMS (%)</th>
<th>LONGEST REFLUX EPISODE (PRE ARMS (minutes))</th>
<th>POST ARMS (minutes)</th>
<th>TOTAL REFLUX TIME – PRE ARMS (ARMS (minutes))</th>
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of the EGI is shortened with scar formation, and greater curve of EGI (this angle sits further cephalad and therefore retains mucosal 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. Also, with the extent and type of mucosal resection (EMR 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 parathyroid hormone were not statistically different vs DEX and 22% (8% vs. 11%) for ESO. 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, TFCA, or serum or urine mineral levels. ESO increased TFCA 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 REDUCTION EFFECTS OF PPI-INDUCED MONITORING COMBINED WITH STOMACH PH MONITORING IN REFUX PATIENTS
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Introduction: Ral-folding alginates can reduce the acidity of the stomach head and therefore inhibit gastroesophageal reflux; however, remains unexplored of effect on alginates on postprandial processes in the stomach.

Aims & Methods: 25 patients (17 F; age 23–69) with typical GERD symptoms, participated in this study. All patients were on a 3-hour combined gastroesophageal pH-impedance monitoring with standardized breakfast (muffin and coffee). To determine the effect of alginates on postprandial reflux and pH in the esophagus and stomach, all patients underwent a repeat of similar monitoring the next day after taking the respective 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 ral-folding alginates 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 ± sd) 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. 0.05 during 2nd postprandial hour] gastroesophageal reflux, but increased of number low acid reflux [2.52 ± 0.46 vs. 3.91 ± 0.82 during 1st postprandial hour and 2.00 ± 0.42 vs. 2.16 ± 0.45 during 2nd postprandial hour; P > 0.05]. Also noted is a significant (P < 0.05) increase in the pH in the esophagus for 120 minutes after ingestion [average pH values 6.04 ± 0.27 vs. 4.86 ± 0.23 during 0–60 min., and 5.93 ± 0.25 vs. 4.15 ± 0.26 during 60–120 min.]. In the gastric cardia (a typical place of formation of postprandial acid pocket) showed significantly (P < 0.05) higher values for the first 60 minutes after intake of 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 ral-folding alginates is an effective method for the prevention of postprandial acid and gas reflux and to reduce the injurious effect of acid in the esophagus. At the same time alginate showed no effect on stomach content in the postprandial period, it means that the main mechanism of action is through the movement of postprandial acid contents from the lower esophageal sphincter, but not the neutralization of stomach acid, unlike non-folding antacids and PPIs.

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

P0545 EFFICACY OF S-PANTOPRAZOLE 10 MG IN THE SYMPTOM CONTROL OF NON-EROUS REFUX DISEASE: A PHASE III PLACEBO-CONTROLLED TRIAL
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Introduction: S-isomer (S) pantoprazole is more bioavailable and less dependent on cytochrome 2C19 than is racemic pantoprazole.

Aims & Methods: We aimed to evaluate the efficacy and safety of 10 mg S-pantoprazole for treatment of non-erosive reflux esophagitis (NERD). This study was designed as a multicenter, randomized, double-blind, placebo controlled trial.NERD was defined as reflux symptoms and normal endoscopy findings. Patients were allocated to take either 10mg S-pantoprazole or placebo once daily for 4 weeks, after which reflux symptoms were reassessed. Recurrence of symptoms was assessed at 4 weeks after cessation of medication. The efficacy endpoints were complete relief of symptoms, improvement of reflux symptoms, and safety. Results: Eighty-eight: patients were randomly assigned 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 (39% vs. 14%, P < 0.001). In patients under treatment, symptoms of heartburn, acid regurgitation and epigastric discomfort were 0.66, 1.82, and 0.57. The factors associated with poor symptom responsiveness to PPI were older age, female sex, greater body mass index and symptom severity in both groups.

Conclusion: S-pantoprazole (10 mg) was more efficacious than placebo in providing reflux symptom relief in patients with NERD, especially acid regurgitation.

Disclosure of Interest: All authors have declared no conflicts of interest.
Disclosure of Interest:
itoring, demonstrated to be effective, independently from disease subtype.
Conclusion: A tailored approach to refractory NERD, guided by MII-pH mon-
P0547 STW5 MODULATES TIGHT-JUNCTION GENE AND PROTEIN EXPRESSIONS IN REFUX-ESOPHAGITIS - POSSIBLE RELEVANCE FOR TUMORGENESIS
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Introduction: Refractory non erosive reflux disease (NERD) is defined by absence of clinical response to a 12-week course of proton pump inhibitors (PPI) at full dose in absence of esophagitis. It accounts for about 20% of all NERD cases. 24-hour multichannel intraluminal impedance (pH-MII) monitoring should give useful pathophysiological information about refractory NERD. Therefore, our aim was to assess whether this technique could be useful to guide a “tailored” therapy to refractory NERD patients.

Aims & Methods: We retrospectively recruited patients undergoing MII-pH mon-
itoring for refractory NERD. All patients had undergone upper endoscopy, and cases of esophagitis were excluded. No patient received PPI during MII-pH monitoring. Subjects were subgrouped into 3 categories according to Zerbib’s classification: i) Acid reflux (exposure to pH < 4 for at least 1.1% of record time), ii) Non acid reflux (symptom association probability to pH >4 reflux episodes >95%) and iii) Functional heartburn (no pathologic reflux, with symp-
tom association probability <50%). MII-pH guided therapy was performed as follows: patients with acid reflux received PPI at double dose, patients with non acid reflux PPI at full dose plus alginates and patients with functional heartburn levosulpride 75 mg/day for 4 weeks. A visual analogue scale (VAS) ranging 0–
100 was administered before and after such tailored therapy to evaluate overall symptom relief. Responders were defined by VAS improvement of at least 10%.

Results: Thirty-four patients with refractory NERD were selected (female:male ratio 20:14, mean age 47 ± 12.8). Twelve had acid reflux, 7 non acid reflux and 15 functional heartburn. Overall effectiveness of tailored therapy was 82.3% (28 out of 34), and it did not differ between subgroups (91.7% acid reflux, 71.4% non acid reflux, 80.0% functional heartburn, p = 0.31). At univariate analysis, therapy failure directly correlated with dysphagia (OR = 0.15, p = 0.10) and in combination with sensation of slow digestion (OR = 7.78, p = 0.005). However, at multivariate analysis, these parameters were not statistically significant. We found a mean VAS reduction of 30.2 ± 24.9, which was similar between acid reflux (36.7 ± 22.7), non acid reflux (30.0 ± 27.7) and functional heartburn (22.5 ± 26.0, p = 0.22).

Conclusion: A tailored approach to refractory NERD, guided by MII-pH mon-
itoring, demonstrated to be effective, independently from disease subtype. Therefore it should be advised to patients who complain of symptom persistence despite PPI therapy.

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

References
Aims & Methods: Stem cells residing in the esophageal mucosa (e.g., in submucosal glands) or Barrett's esophagus (BE) is a metaplastic abnormality in patients with gastro-esophageal reflux disease in which the normal stratified squamous epithelium in the esophagus is replaced by columnar epithelium. BE predisposes for squamous cell carcinoma. One underlying mechanism of BE is that gut columnar stem cells residing in the esophageal mucosa (e.g., in submucosal glands) or Barrett's esophagus (BE) is a metaplastic abnormality in patients with gastro-esophageal reflux disease in which the normal stratified squamous epithelium in the esophagus is replaced by columnar epithelium. BE predisposes for squamous cell carcinoma. One underlying mechanism of BE is that gut columnar stem cells reside in the esophageal mucosa (e.g., in submucosal glands) or Barrett's esophagus (BE). These continuously replicate and form a columnar epithelium. Bone Morphogenic Proteins (BMPs) are a family of growth factors that control tissue architecture, homeostasis and stem cell differentiation. In BE, BMP4 is upregulated in columnar cells.

Conclusion: Gastric cardia gland epithelial cells in both human and mouse exhibit HOXA13 expression. All physiological upper gastrointestinal tract tissues are HOXA13 negative in line with HOX gene collinearity 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 stomach and might be indicative of Barrett's not being a true transdifferentiation.

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

References

P0550 GASTRIC CARDIA GLANDS MANIFEST APPARENT BROAD DIFFERENTIATION POTENTIAL, AS EVIDENCED BY HOXA13 EXPRESSION, IMPLICATIONS FOR THE ORIGIN OF BARRETT’S ESOPHAGUS

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Introduction: Metaplastic phenomena in the upper gastrointestinal tract are still poorly understood. A prominent theory is that Barrett’s esophagus originates from gastric cardia glandular epithelium. However, in absence of evidence that the gastric stem cell has broad differentiation potential, this theory remains controversial. The gastroesophageal junction is a high prevalence area for metaplasia and subsequent cancer. Characteristic of this area are the gastric cardia glands which are the most proximal part of the anatomic gastric cardia. Recent evidence from human and mouse studies has shown Barrett’s esophagus can originate from these gastric cardia glands.1-3 If it can be shown that gastric cardia glands contain elements associated with positional mispecification, this theory could be substantially bolstered. HOX genes are a family of transcription factors that convey positional information. The 3’ to 5’ sequence of HOX genes corresponds to the sequence in which they act along the anterior to posterior axes of the gut. This property is termed collinearity and links clustering to function. In gastrointestinal physiology, HOX4, a 5’ member of the HOX4 cluster, has an expression pattern restricted to the colonic epithelium. However, pathological metaplastic lesions of the esophagus and stomach are also characterized by HOX4A2 expression. This in parallel with the similarities of these lesions with physiological gastric epithelium. Hence, investigating HOX4 expression in gastric cardia glands appears a rational strategy in assessing the potential of this gastric cardia epithelium to serve as the origin of Barrett’s esophagus.

Aims & Methods: We aimed to determine HOX4A2 expression in physiological gastric cardia glands. Firstly, strips of tissue from surgical specimens containing squamous esophageal epithelium, gastric cardia glands, and oxyntic stomach glands, were collected. These were continuous strips, from proximal to distal, to preserve morphological information. Material from three patients was selected, they suffered from either a neuroendocrine tumor, or decompensated achalasia, or an adenocarcinoma. Antibodies against HOX4A2 were found not to be specific. Therefore, in situ hybridization by RNA-scope was performed to visualize HOX4A2 RNA. Secondly, a HOX4A2GFP x C57BL/6 J heterozygous mutant mouse model was used. In these animals, the cardiac glands showed nuclear GFP signal. Rectal squamous epithelium was negative as well as ileal epithelium, in accordance with HOX4A2 colinearity in mouse and human. A littermate negative for HOX4A2GFP was analyzed and showed no nuclear GFP signal in either gastric cardia gland or in ileal epithelial glands.

Conclusion: Gastric cardia gland epithelial cells in both human and mouse exhibit HOX4A2 expression. All physiological upper gastrointestinal tract tissues are HOX4A2 negative in line with HOX gene collinearity 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 stomach and might be indicative of Barrett's not being a true transdifferentiation.

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

References

P0551 ACTIVE HUMAN PAPILLOMAVIRUS INVOlVEMENT IN BARRETT’S DYSPLASIA AND OESOPHAGEAL ADENOCARCINOMA IS CHARACTERIZED BY WILD-TYPE P53 MUTATIONS AND ABERRATIONS OF THE RETINOBLASTOMA PROTEIN PATHWAY

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Introduction: We have demonstrated transcriptionally active high-risk HPV (hr-HPV) is strongly incriminated in Barrett’s dysplasia (BD) and oesophageal adenocarcinoma (OAC) using mainly fresh frozen tissue.1-4 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: Prospectively, BM (n=81) BD (n=72) OAC (n=65) FFPE specimens were subjected to IHC staining for pRb, p16INK4A, cyclin D1, p53 and RNA in-situ hybridization (ISH) for E6/E7 transcripts. HPV DNA was determined via PCR in fresh frozen specimens. Viral load measurement (real-time PCR) and Next Generation Sequencing of TP53 was also performed.

Conclusion: Of 218 patients, 56 were HPV DNA positive (HPV16 (n = 42), 18 (n = 13), 6 (n = 1)). Viral load was low. Transcriptionally 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 p16INK4A high (14/21, 66.7%), pRb low (15/21, 71.4%) and p53 low (20/21, 95%) and was significantly different to controls [combination of HPV DNA- RNA- (n = 94) and HPV DNA- RNA+ cohorts (n = 22)] p53low had the strongest association with DNA- RNA- lesions (OR = 23.5, 95% CI = 8.0, 65). Seventeen HPV DNA- RNA+ BD/OAC identified as p53low, were sequenced and all but one exhibited wild-type status. Seventeen HPV DNA+ RNA- BD/OAC identified as pRblow, showed nuclear GFP signal. RNA in-situ hybridization (ISH) for E6/E7 transcripts. HPV DNA was determined via PCR in fresh frozen specimens. Viral load measurement (real-time PCR) and Next Generation Sequencing of TP53 was also performed.

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

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Introduction: Barrett’s Oesophagus (BE) is an acquired condition resulting from oesophageal reflux that causes gastric metaplasia. BE is known to progress to dysplasia and eventually to oesophageal adenocarcinoma. Although the incidence of oesophageal adenocarcinoma (EAC) continues to rise, recent findings show that the incidence of oesophageal squamous cell carcinoma (ESCC) is also increasing. This study aims to define the incidence of ESCC in BE patients, in order to identify any potential risk factors for ESCC in BE patients. Methods: BE patients undergoing endoscopy at our hospital were included in the study. Biopsies were taken from the esophagus and assessed for BE and ESCC. Results: A total of 1000 endoscopic procedures were performed on 800 patients, of whom 488 patients were included in the study. The incidence of ESCC in BE patients was found to be 1.28%, which is significantly higher than the incidence of ESCC in the general population. Conclusion: The incidence of ESCC in BE patients is significantly higher than in the general population. Further studies are needed to identify potential risk factors for ESCC in BE patients.

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Introduction: Barrett’s oesophagus (BE) is characterized by the presence of columnar epithelium in the lower oesophagus. BE is associated with increased risk of esophageal adenocarcinoma (EAC). The aim of this study was to investigate the incidence of EAC in patients with BE.

Methods: A retrospective chart review was conducted of all patients with BE seen at a single tertiary care center from January 1, 2010 to December 31, 2018. The incidence of EAC in patients with BE was determined using the Surveillance, Epidemiology, and End Results (SEER) database.

Results: A total of 1000 patients with BE were identified. The incidence of EAC in patients with BE was 1.28%, which is significantly higher than the incidence of EAC in the general population.

Conclusion: The incidence of EAC in patients with BE is significantly higher than in the general population. Further studies are needed to identify potential risk factors for EAC in patients with BE.
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 dysplasia 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.

**References**


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

**P0557 A DEDICATED BARRETT’S OESOPHAGUS ENDOSCOPY LIST IMPROVES THE ACCURACY OF ENDOSCOPIC REPORTING AND QUALITY OF BIOPSY**

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**Introduction:** The importance of skilled endoscopic assessment of Barrett’s oesophagus (BO) has been clearly established and forms part of the British Society of Gastroenterology guidelines. Use of Prague classification when reporting on areas of BO improves standardisation, and adherence to the Seattle biopsy protocol (quadrant biopsies every 2 cm) when sampling Barrett’s mucosa is thought to improve dysplasia detection. In East Kent Hospitals NHS Foundation Trust we have created a dedicated nurse-led BO surveillance endoscopy list with the aim of improving compliance with guidelines and the quality of biopsies taken. Here we present a retrospective observational study of patients who underwent upper GI endoscopy on a general endoscopy (GE) list compared with the dedicated BO endoscopy (DBO) list.

**Aims & Methods:** We searched our endoscopy software for patients who had an indication for gastroscopy documented as BO and who had an endoscopy on a GE list from 2012–2013. The same search was performed for patients who were scoped on the DBO list from 2014–2016. Endoscopy reports were reviewed to assess the use of Prague classification and determine numbers of biopsies taken. Biopsy results were recorded on our electronic pathology database.

**Results:** One hundred procedures for BO surveillance on GE lists were audited, comprising 65% male patients with median age 68 years; 60% were performed by a consultant gastroenterologist and the remainder were performed by other operators including general and gastroenterology registrars. Of the 105 procedures on the DBO lists, 63% of patients were male, median age 70 years. Prague classification was used in 94% of endoscopy reports on the DBO lists compared with 5% on the GE lists. The Seattle biopsy protocol was observed in 70% of cases on the DBO lists as opposed to 30/100 (30%) on the GE lists. Dysplasia detection rate (low grade, high grade or indefinite) was similar in both groups: 8/105 (7.6%) on the DBO list and 6/100 (6%) in the GE group. All (100%) of the dysplasia detected on the GE lists occurred in procedures performed by consultant gastroenterologists.

**Conclusion:** Our comparison shows that observance of Prague classification is significantly higher on the DBO lists when compared with GE lists (94% vs 5%), and this compliance with the Seattle biopsy protocol is similarly higher (74% vs 30%) when compared. Both of these are indicative of higher quality endoscopic surveillance on DBO lists. However, this did not translate to a different dysplasia detection rate which appeared to be more influenced by the endoscopy operator since all of the dysplasia detected on the GE lists was identified by consultant gastroenterologists. We therefore recommend that all Barrett’s oesophagus patients have their surveillance endoscopies performed on dedicated BO endoscopy lists.

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

**References**


**P0556 THE EFFICACY OF ENDOSCOPIC MUCOSAL RESECTION IN MANAGING EARLY NEOPLASIA IN BARRETT’S EOSPHAGUS, 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 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 resection endoscopy 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 have had their EMR longer than 3 years ago, along with causes of death.

**Results:** Our study included a total of 99 patients underwent 134 EMR procedures and 250 EMR. 84% were male, the mean age at first EMR was 71 years (SD = 8.2). 24 patients underwent 2 EMR procedures, 2 patients underwent 3 EMR procedures and 2 patients underwent 4 EMR procedures. The median length of the circumferential and maximum extent of the BO segments were 2.8 cm and 4 cm, respectively. The median follow-up period was 7.6 years.

**Conclusion:** In this moderately sized retrospective study EMR has been proven to be an effective tool in managing early neoplasia within BO. It not only allows the potential complete resection of the visible early neoplasia (61.7% for en bloc and 51.4% for piecemeal EMR), but also gives a histological specimen with a more accurate grading of the neoplasia (upgraded in 57%, downgraded in 14% and unchanged only in 23 patients (28%). The EMR histology resulted in altered grading in 59 (72%) patients, with 47 (57%) upgraded and 12 (14%) downgraded from the pre EMR histology and unchanged only in 23 patients (28%). The EMR histologies in the 82 patients showed HGD in 16 (19.5%) patients, intramucosal adenocarcinoma in 33 (40.2%), adenocarcinoma with submucosal invasion in 20 (24.4%) and LGD in 13 (15.9%). The remaining 52 EMRs were performed for visible lesions within BO with clear deep margins on histologic assessment and 38 (51.4%) had no visible residual neoplasia on the follow up endoscopy. Pre EMR histology was available in 82 patients and it showed high-grade dysplasia (HGD) in 49 (59.8%), mucosal adenocarcinoma in 24 (29.2%) and low-grade dysplasia in 9 patients (11%). However the EMR histology resulted in altered grading in 59 (72%) patients, with 47 (57%) upgraded and 12 (14%) downgraded from the pre EMR histology and unchanged only in 23 patients (28%). The EMR histologies in the 82 patients showed HGD in 16 (19.5%) patients, intramucosal adenocarcinoma in 33 (40.2%), adenocarcinoma with submucosal invasion in 20 (24.4%) and LGD in 13 (15.9%). The remaining 52 EMRs were performed for visible lesions within BO with clear deep margins on histologic assessment and 38 (51.4%) had no visible residual neoplasia on the follow up endoscopy. Pre EMR histology was available in 82 patients and it showed high-grade dysplasia (HGD) in 49 (59.8%), mucosal adenocarcinoma in 24 (29.2%) and low-grade dysplasia in 9 patients (11%). However the EMR histology resulted in altered grading in 59 (72%) patients, with 47 (57%) upgraded and 12 (14%) downgraded from the pre EMR histology and unchanged only in 23 patients (28%). The EMR histologies in the 82 patients showed HGD in 16 (19.5%) patients, intramucosal adenocarcinoma in 33 (40.2%), adenocarcinoma with submucosal invasion in 20 (24.4%) and LGD in 13 (15.9%). The remaining 52 EMRs were performed for visible lesions within BO with clear deep margins on histologic assessment and 38 (51.4%) had no visible residual neoplasia on the follow up endoscopy. Pre EMR histology was available in 82 patients and it showed high-grade dysplasia (HGD) in 49 (59.8%), mucosal adenocarcinoma in 24 (29.2%) and low-grade dysplasia in 9 patients (11%). However the EMR histology resulted in altered grading in 59 (72%) patients, with 47 (57%) upgraded and 12 (14%) downgraded from the pre EMR histology and unchanged only in 23 patients (28%). The EMR histologies in the 82 patients showed HGD in 16 (19.5%) patients, intramucosal adenocarcinoma in 33 (40.2%), adenocarcinoma with submucosal invasion in 20 (24.4%) and LGD in 13 (15.9%). The remaining 52 EMRs were performed for visible lesions within BO with clear deep margins on histologic assessment and 38 (51.4%) had no visible residual neoplasia on the follow up endoscopy. Pre EMR histology was available in 82 patients and it showed high-grade dysplasia (HGD) in 49 (59.8%), mucosal adenocarcinoma in 24 (29.2%) and low-grade dysplasia in 9 patients (11%). However the EMR histology resulted in altered grading in 59 (72%) patients, with 47 (57%) upgraded and 12 (14%) downgraded from the pre EMR histology and unchanged only in 23 patients (28%). The EMR histologies in the 82 patients showed HGD in 16 (19.5%) patients, intramucosal adenocar
SQUAMOUS CELL CARCINOMA VERSUS SURGICAL RESECTION FOR MM-SM1 ESOPHAGUS

P0561 LONG-TERM OUTCOMES OF ENDOSCOPIC RESECTION FOR IMMUNE-MEDIATED DYSPLASIA IN THE ESOPHAGEAL MUCOSA: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction: Barrett esophagus (BE) is a premalignant condition for esophageal adenocarcinoma (EAC), where recommended guidelines aim to reduce treatment variation and improve quality of care. Data on the extent to which level BE surveillance guidelines are followed are scarce.

Aims & Methods: The objectives of this systematic review and meta-analysis were to (1) summarize guidelines in BE surveillance and (2) identify factors that are associated with adherence. A systematic literature research was performed using EMBASE, MEDLINE, PubMed, and Web of Science up to September 2016. Studies reporting adherence in at least one of the following four domains were selected: surveillance interval, biopsy protocol, landmark identification and histopathological information. Relevant publications were assessed using the STROBE statement for observational studies (http://strobe-statement.org/). Adherence was considered a prevalence ratio and reported as a prevalence ratio for the associated factors were reported as odds ratios with analysis of heterogeneity (I² statistic).

Results: From a total of 373 studies, 49 were eligible for this meta-analysis. For BE surveillance in non-dysplastic BE patients a prevalence ratio for adherence of 54% (95% confidence interval (CI) 45%-63%) was found and 41% (95% CI 37%-45%) in patients with low-grade dysplasia, but with large heterogeneity (I² = 98% and I² = 100%). Adherence to the Seattle protocol was 47% (95% CI 33%-61%, I² = 100%), length of BE was reported according to the Prague classification in 34% (95% CI 23%-44%, I² = 98%) and in 51% (95% CI 27%-75%, I² = 99%) of patients with a dysplastic BE the histology samples were reviewed by a second pathologist. Shorter BE length, an academic practice setting, a younger age and the involvement of the clinical set-up incorporating a multifaceted intervention program were associated with better adherence. Endoscopists following the Seattle protocol detected more dysplasia.

Conclusion: Adherence to guidelines for the surveillance of BE is far from optimal and multifaceted intervention programs were associated with better adherence. Longitudinal studies are needed to determine the interval to development of esophageal cancer.

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

References


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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 submucosal dissection (ESD) by the Japan esophageal society guideline. Although additional surgical treatment after ESD is recommended, long-term outcomes of ESD compared with surgery has not been clarified.

Aims & Methods: This study aimed to evaluate the long-term outcomes of ESD and survival of patients with MM-SM1 ESD. Between 2006 and 2016, patients with relative indication lesions of ESCC treated endoscopically or surgically in Okayama University hospital were retrospectively analyzed. We evaluated risk factors for mortality using cox regression analysis, adjusted hazard ratios for ESD compared with surgery, the survival curves stratified with risk factor, and perioperative complication rate.

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 chemoablation in the ESD group. 8 patients underwent additional chemoradiation in the surgery group. Lymphovascular invasion, submucosal invasion, and ASA-PS was significantly associated with mortality using Cox analysis. Adjusted for lymphovascular invasion, submucosal invasion, and ASA-PS, propportional hazard ratio of mortality for ESD compared with surgery was not significantly different (hazard ratio [HR], 0.76; 95% confidence interval [CI], 0.26-2.2; P = 0.61). The survival curves for ESD and surgery stratified with each risk factor were not significantly different. Perioperative complication rate were significantly low in ESD compared to surgery (29.6% vs 49.1%; P = 0.047).

Conclusion: ESD dose 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 dysplastic squamous epithelium in the esophagus. Lugol voiding lesion (LVL) was graded into 3 categories (A = no lesion; B = 1 to 9 lesions; C = ≥ 10 lesions per endoscopic view). Endoscopic images obtained from eligible patients at study entry were centrally reviewed in a blinded fashion by three endoscopists to determine the grade of LVL. ALDH2 status was determined by questionnaire facial flushing after alcohol drinking (present and past flushing), inactive ALDH2 (never flushing = active ALDH2). Lifestyle surveys were conducted using a self-assessment questionnaire. Data collected between July 2000 and Dec 2001 from a different cross-sectional cohort (n = 1104; M/F = 610/432) were used as an historical control.

Results: Between Sep 2005 and May 2010, 330 patients (M/F = 278/52) were registered. The proportions of the different grades of LVLs 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), and 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 and moderate alcoholic drinkers compared to non-temperance group. 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 dysplastic squamous epithelium in the esophagus was associated with the amount of alcohol consumption and genetic trait of inactive ALDH2.

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

Reference
they were not recommended additional therapy. The remaining eight patients had synchronous or metachronous adjacent adenocarcinoma. In total 33 cases were treated only by ER without additional therapy. Besides 97% (32/33) of those cases had no recurrence except for one case with a lymph node recurrence, which was successfully treated by additional CRT. The other 12 cases with lymph node involvement or SM2 were recommended additional therapy. They underwent CRT (n = 4), radiotherapy (n = 3), or esophagectomy (n = 3). No recurrence was observed after the abovementioned treatments. At the end of the follow-up, the 3-year overall and disease-specific survival rates were 100% (95% CI: 0.977–1.000) and 100%, respectively. Considering ER alone for MM/MM1, 76% of all cases were completed their treatment only with ER, and 24% of high risk case for metastasis were treated appropriately with additional therapy.

Conclusion: Conclusions: Our study suggests that ER is a valid treatment for esophageal SCC with a preoperative predicted invasion depth of MM/MM1. Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0566 TRIAMCINOLONE INJECTION AND SHIELDING WITH POLYGLYCOLIC ACID SHEETS AND FIBRIN GLUE FOR THE PREVENTION OF POSTOPERATIVE STRICTURE AFTER ENDOSCOPIC SUBMUCOSAL DISSECTION: 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-endoscopic submucosal dissection (ESD) stricture; however, deep infiltration and wide resection area especially for esophageal submucosal dissection (ESD) are a strong risk factor for postoperative stricture. The aim of our study was to evaluate the efficacy of combining this method with the shielding method with polyglycolic acid (PGA) sheets and fibrin glue, 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 (UMIN000010158), performed July 2014 to September 2014, immediately after the endoppled patients underwent esophageal 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 (UMIN000011058), performed July 2013 to September 2013, immediately after the enrolled patients underwent esophageal ESD, only adhesion of a PGA sheet to the post-ESD defect with fibrin glue was performed. As control, 11 cases 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 extracted. After exclusion of patients who did not undergo follow-up for at least 3 months, and patients who underwent salvage surgery after non-curative ESD, statistical analysis was conducted 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 extracted as group C. After exclusion, 11 cases in group A (2 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. Although postoperative stricture occurred in all circumferential cases in group C, it was successfully prevented in 1 case of circumferential ESD and in 100% of 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 ± 13.3 mm) and operation times (A: 95.4 ± 23.8, B: 108.2 ± 33.1, 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: 11.0%, B: 36.4%, C: 55.6%), and the number of EBD sessions required (median A: 0, B: 35.0 mm in the ESD group (p = 0.013), resection by EMR (p = 0.001), piecemeal resection (p = 0.016), and microscopic positive margins (p = 0.044). In multivariate analysis, risks factors for recurrence were: resection by EMR (OR = 7.315; IC [1.685–31.762]; p = 0.008), piecemeal resection (OR = 2.635; IC [1.105–6.199]; p = 0.036). At 24 months, recurrence-free survival rate was 95.2% in ESD group, versus 59.8% in EMG group (p = 0.001). For infiltrating tumors ≥3 m, metastasis free survival rate at 24 months was 100% after complementary treatment by radiotherapy, and 62.2% without complementary treatment (p = 0.042).

Conclusion: Endoscopic resection of superficial esophageal SCC is safe and effective. According to our results, ESD should be preferred to EMR because it is associated with a higher curative rate and an increased recurrence free survival rate.

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

P0568 CURATIVE CONDITIONS AFTER ENDOSCOPIC RESECTION FOR MM/MM1 OESOPHAGEAL SQUAMOUS CELL CARCINOMA BASED ON LONG-TERM OUTCOMES
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Introduction: Oesophageal squamous cell carcinoma (ESCC) with invasion into the submucosa up to the lamina muscularis mucosae (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 metastasis, (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.

Aims & Methods: We recruited 98 patients with MM/MM1 ESCC who underwent ER between August 1992 and October 2013 and were followed up for more than 3 years at Hiroshima University Hospital. As per the JES guidelines, the e-curable group was characterised by en bloc resection lesions with pathological MM, tumour invasion infiltration pattern (INF) of 0, c1 (0 mm), V0, L0, and Y0. We evaluated the clinicopathological characteristics of patients and lesions over the rates of overall survival, disease-specific survival, recurrence-free survival, lymph node recurrence and local recurrence in the e-curable and non-e-curable groups.

Results: We enrolled 98 consecutive MM/MM1 ESCC patients (88 males; mean age, 67.9±9 years; e-curable group, 39 patients; non-e-curable group, 59 patients; mean follow-up period, 75.4±44 months). There were no significant differences in the clinicopathological characteristics of the patients and lesions between the 2

United European Gastroenterology Journal 5(5S)
groups. The proportion of patients with additional treatment after ER was significantly higher in the curable group (38%, 39/99) than in the e-curable group (23%, 9/39) (p < 0.05). Operation, radiotherapy, and chemotherapy were administered to 38%, 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 curable group. The 5-year overall survival rates in the e-curable and non-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 (3 cases), heart failure, 4 cases; pneumonia, 3 cases; and others, 11 cases.

The 5-year disease-specific survival rates in the e-curable and non-e-curable groups were 100% and 98%, respectively. The lymph node recurrence rates in the e-curable and non-e-curable groups were 3% (1/33) and 7% (4/59), respectively. The local recurrence rate in the e-curable and non-e-curable groups were 0% (0/39) and 7% (4/59), respectively. The 5-year recurrence-free survival rates in the e-curable and non-e-curable groups were 100% and 87%, respectively. The recurrence-free survival rate was significantly higher in the group with INFa and no lymphovascular invasion than in the group with INPb, INFc or lymphovascular invasion.

Conclusion: Our data support the clinical validity of the curative conditions after ER for MM/M1 ESCC of the JES guidelines. However, MM/M1 ESCC with INFa and no lymphovascular invasion may have more possible curative conditions after ER without additional treatment.

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

Table 1

<table>
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<th>Parameters</th>
<th>Lap Gastrectomy</th>
<th>ESD</th>
<th>p value</th>
</tr>
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<td>Male (%)</td>
<td>0.317</td>
<td>0.59</td>
<td></td>
</tr>
<tr>
<td>Age (mean ± SD)</td>
<td>61.1 (± 10.4)</td>
<td>61.7 (± 10.4)</td>
<td>0.89</td>
</tr>
<tr>
<td>ASA (1/III)</td>
<td>10.0</td>
<td>5.85</td>
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<tr>
<td>Comorbidity (Median)</td>
<td>6.98 (± 2.0)</td>
<td>5.85</td>
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<tr>
<td>Smoker (No/Ex/Current)</td>
<td>10/3/3</td>
<td>11/3/4</td>
<td></td>
</tr>
</tbody>
</table>

(continued)
or those in which the biopsies were still taken from the different anatomical areas were excluded. A total of 331 patients were enrolled. 214 patients were classified into four groups: Group A: Hp (-) PG (-), Group B: Hp (+) PG (-), Group C: Hp (+) PG (+) and Group D: Hp (+) PG (+). PG positive was defined as PG I ≥ 70 μg/L and PGR ≥ 70. According to the range and degree of atrophy/intestinal metaplasia, patients were divided into five groups on the basis of OLGA/OLGIM staging system. The levels of Hp infection rate, PG I, PG II and PGR were compared between groups. Group A and Group B both showed significant lower Hp infection rate (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 = 0.001), with a total positive rate (CI 40.7-56.6, 95%).

Conclusion: Pre-malignant conditions and lesions of the stomach (PCLS) can show as normal mucosa or gastritis during endoscopic procedure. 39.9% of patients who underwent endoscopic procedure with presumptive gastritis had PCLS. PCLS may be under-diagnosed if random biopsies are not taken. Therefore, taking biopsies from areas without suspected PCLS causes a change in the clinical management of patients, both for the initial diagnosis and for the staging according to OLGA and OLGUM systems.

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

References


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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, 0.23% for IM and 6% for high-grade dysplasia, which were much higher than those in other tissues. In addition, long-term follow-up studies have shown that the extent/topography of mucosal atrophy parallels the risk of GC and it is on this ground that a system for staging gastritis, known as the ABC method, has been suggested as a predictive marker for patients with GC. We aimed to discuss the correlation between the combination of Helicobacter pylori antibody and pepsinogen and OLGA/OLGIM 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 Zhejiang Chinese Medical University, Hangzhou/China.

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Introduction: Endoscopic treatment of sporadic duodenal adenoma is mainly performed in tertiary centers because it is technically challenging and associated in multivariate analysis with major complications (perforation 15–5% and delayed bleeding 10–15%). The aim of this study was to evaluate the safety and efficacy of the endoscopic treatment for non ampullary sporadic duodenal adenomas (SDA) in two tertiary centers in a large series and to determine the predictive factors of outcomes with a long follow-up.

Aims & Methods: This retrospective study was conducted in two tertiary centers between 12/2003 to 03/2016. All the patients who underwent at least one endoscopic treatment for SDA histologically proven were included. Patients with PAF and ampullary adenoma were excluded. All the following outcomes were systematically recorded in both centers: complete endoscopic resection, resection with negative lateral and vertical margins, recurrence, success of the endoscopic treatment by EMR for SDA histologically proven were included. Patients with a long follow-up.

Conclusion: Endoscopic treatment of sporadic duodenal adenoma is mainly performed in tertiary centers because it is technically challenging and associated in multivariate analysis with major complications (perforation 15–5% and delayed bleeding 10–15%). The aim of this study was to evaluate the safety and efficacy of the endoscopic treatment for non ampullary sporadic duodenal adenomas (SDA) in two tertiary centers in a large series and to determine the predictive factors of outcomes with a long follow-up.

Aims & Methods: This retrospective study was conducted in two tertiary centers between 12/2003 to 03/2016. All the patients who underwent at least one endoscopic treatment for SDA histologically proven were included. Patients with PAF and ampullary adenoma were excluded. All the following outcomes were systematically recorded in both centers: complete endoscopic resection, resection with negative lateral and vertical margins, recurrence, success of the endoscopic treatment by EMR for SDA histologically proven were included. Patients with a long follow-up.

Conclusion: Endoscopic treatment of SDA appears to be effective and relatively safe in tertiary centers. Perforation is rare. Recurrence rate is frequent and associated with piecemeal resection but can be endoscopically managed.

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.
P0573 CAN BE THE PATIENT WITH NON-CURATIVE ESD FOR EARLY GASTRIC CANCER RESCUED BY SURGERY AFTER RECURRENCE?


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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 been often hesitated according to patient condition such as advanced age or comorbidities. After the recognition of recurrence, the salvage surgery has been considered difficult. However, little has been reported on it.

Aim of this study was to clarify the results of salvage surgery for recurrence after non-curative ESD for EGC using data from multicenter retrospective study (EAST study)15. Of 15,785 patients who underwent ESD for EGC at 19 participating institutions from January 2000 to August 2016, 1,385 cases (11.3%) were included to meet the current curative criteria for ESD15 were retrospectively reviewed. Among 1,069 patients enrolled into EAST study, 1,064 patients underwent additional surgery, and 905 patients were observed without any additional treatment. We evaluated first site of recurrence, clinical course after salvage surgery, and long-term survival on non-treatment group. Recurrence was classified regional LNM, and distant metastasis.

Results: Over a median follow-up period of 64 months, recurrence was detected in 27 patients. Among them, 2 patients were excluded from this study due to missing data. The recurrences were only local site (intra-gastric recurrence in 7 patients, regional LNM 7), and distant metastasis 15 (60%). The first treatments for recurrence were endoscopic treatment 1, surgery 7 (28%), chemotherapy 6, and selective vascular embolization 1 patient. 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 31 months after salvage surgery. And one patient died of acute myocardial infarction just one month after salvage surgery. In the remaining 5 patients who underwent salvage surgery was only 7 months from salvage surgery.

Conclusion: More than half of recurrence after non-curative ESD without additional surgery were distant metastasis, and the survival rate after salvage surgery was quite poor.

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

Reference


P0574 BLEEDING AFTER ENDOSCOPIC RESECTION FOR EARLY GASTRIC LESIONS IN PATIENTS ON ANTIHITHROMBOTIC THERAPY

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12Internal Medicine, Catholic Medical Center, the Catholic university of Korea, College Of Medicine, Seoul/Korea, Republic of
13Surgery, Catholic Medical Center, the Catholic university of Korea, College Of Medicine, Seoul/Korea, Republic of
14College Of Medicine, Seoul ST. Mary’s Hospital, Seoul/Korea, Republic of

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Introduction: Since population-based screening for gastric cancer in Korea was implemented in 2002, endoscopic treatment of early gastric cancer (EGC) has been popularized. Most patients with early neoplasm have no alarming symptoms/signs. In addition, the strategy for detecting factors predicting curative endoscopic resection of EGC is becoming important because the general population is aging and considering the quality of life after treatment.

Aims & Methods: This study investigates factors affecting curative endoscopic resection of EGC in the era of population-based screening for gastric cancer. The subjects consisted of patients newly diagnosed with stomach cancer at Seoul St. Mary’s Hospital between May 2011 and May 2016. All patients completed questionnaires about symptoms, social history, family history, knowledge of national cancer screening program, the reason for screening, and the interval between endoscopy screening examinations for gastric cancer.

Results: Of a total of 469 patients, 147 (31.3%) had a curative surgical resection and 62 (13.3%) were in non-curative surgical resection or an inoperable state. The patients with curative endoscopic resection had minimal abdominal symptoms and few alarm symptoms/signs (a family history of gastric cancer, anemia, and clinically important weight loss), whereas alarm symptoms were more common in patients with advanced cancer. In multivariate logistic analysis, regular surveillance endoscopy was only the factor predicting the curative endoscopic resection [Odd ratio (95% CI) 6.099 (2.532–14.933), p = 0.000]. In addition, the proportion of curative endoscopic resection was significantly higher in the 1-year surveillance interval groups [Odd ratio (95% CI) 10.381 (4.081–26.405), p < 0.0000]. The 2-year endoscopy interval groups [Odd ratio (95% CI) 3.161 (1.106–9.035), p = 0.032] than patients who had no endoscopy within 2 years.

Conclusion: Most patients with the curative endoscopic resection have minimal abdominal symptoms and no alarming symptoms/signs. Regular surveillance endoscopy was the only factor predicting the curative endoscopic resection of gastric cancer. In addition, more frequent endoscopic surveillance could help to early detect gastric cancers with curative endoscopic resection.

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

Reference

Abstract No: P0576

<table>
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<th>Gastric cancer patients (n = 607)</th>
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<th>Diffuse-type (n = 233)</th>
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<td>Male</td>
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<td><strong>Age(year, mean±sd)</strong></td>
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<td>&lt;40</td>
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<td>2.044–3.864</td>
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<td>≥60</td>
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<td>high risk</td>
<td>3.778</td>
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References:
P0578 RISK FACTORS FOR LYMPH NODE METASTASIS OF ULCERATIVE TYPE INTRACUMLAR EGC

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Introduction: Endoscopic submucosal dissection (ESD) is not currently accepted as an alternative treatment to surgery in ulcerative type EGC due to relatively higher probability of lymph node metastasis (LNM). This present retrospective analysis examined the correlation of various histologic factors with the presence of lymph node metastasis in ulcerative type EGC.

Aims & Methods: A retrospective analysis on 200 patients with ulcerative type EGC who underwent radical gastrectomy with D2 lymph node dissection. Several clinicopathologic factors were investigated to identify predictive factors for LNM: tumor size, histopathologic type of tumor, lymphovascular invasion and death of invasion. Multivariate logistic regression analysis was performed to evaluate the risk factors for LNM.

Results: The total rate of LNM was 15.5% (31/200). The rate of LNM was 2.1% (2/95) in the lesions confined to the mucosa and 27.6% (27/105) in those that had infiltrated the submucosa. On univariate analysis, depth of invasion (p = 0.047) and lymphovascular invasion (p < 0.001) were significant associated with LNM. However, there was no significant association between tumor size, histopathologic type of tumor and LNM. On multivariate analysis, only lymphovascular invasion (p < 0.001) was significantly associated with LNM. There was no significant association between tumor size and lymph node metastasis in ulcerative type EGC.

Conclusion: Ulcerative EGC confined to the mucosa could be considered for candidate for curative ESD due to the low risk of LNM. This finding should be confirmed by more data from other centers, which focus on LNM after ESD in ulcerative type intramuscular EGC.

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

P0579 THE FEASIBILITY STUDY USING KUMC ROBOTIC MANIPULATOR IN ENDOSCOPIC SUBMUCOSAL DISSECTION

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Introduction: Gastrointestinal cancers are one of the most common malignancy worldwide. Especially endoscopic submucosal dissection (ESD) for early gastrointestinal cancers have been considered as the current standard cancer treatment. However, lack of counter traction during ESD procedure is one of major difficulty. To overcome this problem, we developed new endoscopic technique using robotic manipulator and conducted study about efficacy and safety in vitro animal study.

Aims & Methods: A novel robotic suture manipulator is composed of control panel and a working arm, which grasp and move objects at the end of scope. A total of 10 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). Both endoscopic experts and novice endoscopists completed the ESD procedure for an blee resection of target lesions using KUMC robotic manipulator. There was no difference in complete resection rates between two groups. No complication such as perforation was occurred in both groups during the procedures. There was no difference depending on resected location in stomach.

Conclusion: The robotic manipulator, which can perform ESD more easily showed feasible result comparing with conventional ESD. ESD using robotic manipulator could be helpful, especially in novice endoscopists. This research proposes a novel approach for safe and feasible method during ESD.

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

P0580 DEVELOPMENT OF NOVEL ENDOSCOPIC IRREVERSIBLE ELECTROPOORATION ABLATION DEVICE

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Introduction: Irreversible electroporation (IRE) is a promising novel technique for the ablation of tumors. An advantage of IRE is its ability to remove undesired cells by affecting the cell membrane without thermally destructing blood vessels, nerves and the surrounding tissues. Several clinical trials for applying IRE to human organs such as liver, pancreas and kidney are conducted and 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 cathether works with single channel of endoscope. A pair of dipolar electrodes consist of pre-shaped f 0.63 mm nitinol wire and the distance between each electrode is 10 mm. The electrodes are loaded within braided tube for stent delivery system then deployed within IRE cathether 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 cathether. 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 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.

Abstract No: P0577

Dietary cancer mortality associated with baseline BMI according to BMI ranges

<table>
<thead>
<tr>
<th>BMI (kg/m²)</th>
<th>All participants (per 5 kg/m²)</th>
<th>12-24.9 kg/m²</th>
<th>25-47 kg/m²</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>increase in BMI</td>
<td>decrease in BMI</td>
<td>increase in BMI</td>
</tr>
<tr>
<td>Digestive cancer</td>
<td>Deaths</td>
<td>P-value</td>
<td>HR* (95% CI)</td>
</tr>
<tr>
<td>Esophagus</td>
<td>310</td>
<td>&lt;0.001</td>
<td>0.53 (0.43-0.65)</td>
</tr>
<tr>
<td>Stomach</td>
<td>2,032</td>
<td>&lt;0.001</td>
<td>0.77 (0.72-0.83)</td>
</tr>
<tr>
<td>Colon and rectum</td>
<td>1328</td>
<td>0.845</td>
<td>1.01 (0.92-1.11)</td>
</tr>
<tr>
<td>Colon</td>
<td>835</td>
<td>0.347</td>
<td>1.06 (0.94-1.19)</td>
</tr>
<tr>
<td>Rectum</td>
<td>493</td>
<td>0.366</td>
<td>0.93 (0.80-1.08)</td>
</tr>
<tr>
<td>Small intestine</td>
<td>61</td>
<td>0.049</td>
<td>0.64 (0.41-1.00)</td>
</tr>
<tr>
<td>Liver</td>
<td>2365</td>
<td>0.601</td>
<td>1.02 (0.95-1.09)</td>
</tr>
<tr>
<td>Pancreas</td>
<td>929</td>
<td>0.937</td>
<td>1.00 (0.90-1.12)</td>
</tr>
<tr>
<td>GB and Biliary tract</td>
<td>749</td>
<td>0.012</td>
<td>1.16 (1.03-1.31)</td>
</tr>
</tbody>
</table>

BMI, body mass index; CI, confidence interval; GB, gallbladder; HR, hazard ratio. *Hazard ratios were calculated using Cox proportional hazards models after adjustment for age at baseline (continuous variable), smoking status (current smoker, former smoker, never-smoker, and missing smoking status), alcohol consumption (frequency; five or more times/week, one to four times/week, less than one times/week, past drinker [no alcohol for a year], never-drinker, or missing information), monthly household income (Korean won [KRW], 1 United States dollar = 1170 KRW as of August 1, 2004), < 500, 000, 500, 000-990, 000, 1, 000, 000-1, 490, 000, > 1, 500, 000, missing information), and physical activity (yes, no). HRs were not presented for causes with less than 10 deaths.
Consistent with the mechanism of action of IRE on the cell membrane only, there was complete collapse within the IRE lesions without intervening live cells. But there was no difference in histology depending on gastric part in which ablation was applied. During the study, no complication was observed in pigs in 24 hours after ablation.

Conclusion: The new endoscopic IRE device, which can perform IRE ablation on gastrointestinal tract using endoscopy showed safe and feasible result.

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

References


P0582 ENDOSCOPIC SMALL CAPACITY FORCEPS INCREASE THE PATHOLOGICAL DIAGNOSIS OF GASTRIC INDEFINITE NEOPLASIA

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Introduction: Endoscopic forceps biopsy (EFB) is the gold standard for gastric epithelial tumor diagnosis. However, definitive diagnosis is often difficult, and some cases are diagnosed as gastric indefinite neoplasia (GIN), which corresponds to category 2 in the revised Vienna classification. GIN lesions require short periods of follow-up. The most appropriate forceps size for gastric biopsy has yet to be determined. In the Japanese Classification of Gastric Cancer, diagnoses of GIN are attributed, at least partly, to the small 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 (StF) were used (April 2010-March 2011), and the second comprised patients evaluated during the period when small biopsy forceps (SmF) were used (April 2011-March 2013). Standard caliber endoscopy was used for all esophagogastroduodenoscopy (EGD). We counted the number of GIN and gastric carcinoma lesions. Patient characteristics, lesion characteristics (e.g., size, macroscopic appearance, and color tone), endoscopic experience level, biopsy sample size, and biopsy groups diagnosis at 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 StF. Among the 15,908 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 StF and SmF groups, respectively (P = 0.556). GIN was diagnosed in 2.98% (77/2584) and 1.94% (81/4204) of the StF and SmF groups, respectively (P = 0.048). The difference in significance was significant (P = 0.048). The two groups diagnosed as GIN did not differ significantly in terms of the patient characteristics, the lesion characteristics, endoscopic experience level, biopsy related hemorrhage. The mean minor-axis lengths of the biopsy samples were 1.50 ± 0.50 mm and 1.38 ± 0.40 mm in the StF 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. The SmF use may increase the rate of GIN. Thus, SmF use should be avoided with a standard caliber endoscopy.

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

References

P0583 THE ROLE OF STRESS AND NITROSAMINES IN THE DEVELOPMENT OF GASTRIC CANCER: A NEW MODEL OF ADENOCARCINOMA FORMATION WITH METASTASES IN RATS

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Introduction: Stress is an important factor that may lead to the formation of cancer. The role of stress for the role of stress in cancer initiation is contradicted and debatable. Other natural factors such as nitrates, which are widely presented in daily food, are actively discussed as carcinogenic to humans. But, there is no clinical and epidemiological evidences that nitrosamines alone can induce the stomach cancer.

Aims & Methods: For the better understanding of carcinogenic effects of daily stress and nitrates in development of stomach cancer, here we studied the role of these factors in adenocarcinoma in stomach of rats. The experiments were carried out with male adult rats (n = 200). To examine the role of stress and nitrosamines in gastric mucosal injuries we used: 1) the model of chronic social stress (over-population during 9 months); 2) the daily using of toluidine (2 g/kg) in food and water with nitrates (2 g/l); 3) the combined effects of stress + 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 3 months. In the third month 35% (7 of 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 nitrides in 75% of rats. These rats showed symptoms of atrophic gastritis. Other 25% (5 of 20) of animals did not develop 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. A similar protocol of the first and second parts of experiments, we observed the changes in the stomach tissues during 9 months. The same scenarios of typical gastric injuries induced by stress and nitrosamines were observed in rats, i.e. they showed development of peptic ulcers and atrophic gastritis. But, 7 months after the start of experiment, these pathological changes of gastric tissues were associated with intestinal metaplasia of goblet cells, which is the pre-cancer symptom. In 9 months of study, symptoms of gastric adenocarcinoma were observed in 82% of rats (n = 131 of 160). This 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 factors, stress and nitrosamines, is able to cause development of gastric cancer with metastasis in the liver while the presence of these factors alone contribute mucosal injuries without oncological changes in the stomach.

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

**References**


together with lower levels of phosphoserine, ethanolamine phosphate and urea (Table 1). The 14 GJFAAs revealed diagnostic values with AUC from 0.666 to 0.868, and the combined AUC of them reached to 0.902 (95% CI, 0.846–0.959) for the diagnosis of GC. Importantly, their AUCs were from 0.649 to 0.857, and the combined AUC reached to 0.880 (95% CI, 0.792–0.969) for the diagnosis of early GC. Particularly, leucine, threonine and serine are the most altered three GJFAAs between the two groups, whose fold change more than 2 and AUC value greater than 0.8. Moreover, the combined AUC of the 3 non-AAAs was 0.869 (95% CI, 0.805–0.934) for the diagnosis of GC. It was slightly higher than the combination of 3 AAAs 0.841 (95% CI, 0.773–0.908). Additionally, the pathway of aminoacyl-tRNA biosynthesis metabolism was excessively activated, which significantly responsible for the above alteration metabolomics in GC patients.

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>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>
</tr>
<tr>
<td>AA02</td>
<td>Prolyl</td>
<td>0.075</td>
<td>0.018</td>
<td>&lt;0.001</td>
<td>1.028</td>
<td>0.606</td>
<td>0.715–0.820</td>
</tr>
<tr>
<td>AA04</td>
<td>Urea</td>
<td>0.178</td>
<td>0.164</td>
<td>&lt;0.001</td>
<td>1.058</td>
<td>0.484</td>
<td>0.729–0.880</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>
</tr>
<tr>
<td>AA07</td>
<td>Ser</td>
<td>0.016</td>
<td>0.003</td>
<td>&lt;0.001</td>
<td>1.420</td>
<td>2.671</td>
<td>0.831–0.903</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>0.783–0.966</td>
</tr>
<tr>
<td>AA15</td>
<td>Val</td>
<td>0.025</td>
<td>0.013</td>
<td>&lt;0.001</td>
<td>1.025</td>
<td>1.763</td>
<td>0.621–0.814</td>
</tr>
<tr>
<td>AA17</td>
<td>Met</td>
<td>0.017</td>
<td>0.007</td>
<td>&lt;0.001</td>
<td>1.178</td>
<td>1.248</td>
<td>0.797–0.863</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>
</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>0.880–0.933</td>
</tr>
<tr>
<td>AA20</td>
<td>Tyr</td>
<td>0.066</td>
<td>0.026</td>
<td>&lt;0.001</td>
<td>1.580</td>
<td>2.916</td>
<td>0.833–0.902</td>
</tr>
<tr>
<td>AA21</td>
<td>Phe</td>
<td>0.068</td>
<td>0.032</td>
<td>&lt;0.001</td>
<td>1.745</td>
<td>2.671</td>
<td>0.820–0.887</td>
</tr>
<tr>
<td>AA31</td>
<td>Lys</td>
<td>0.044</td>
<td>0.015</td>
<td>&lt;0.001</td>
<td>1.091</td>
<td>2.321</td>
<td>0.884–0.725</td>
</tr>
<tr>
<td>AA32</td>
<td>Arg</td>
<td>0.036</td>
<td>0.008</td>
<td>&lt;0.001</td>
<td>1.332</td>
<td>2.722</td>
<td>0.772–0.866</td>
</tr>
</tbody>
</table>

Table 1: Relationship between the expression levels of MMP-2 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>
</thead>
<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>0.417***</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 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

PO5758 THE ASSOCIATION BETWEEN MMP-2/9 AND TYPE IV COLLAGEN LEVELS OF AMINO ACIDIC 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 explorations on the reasons to cause such phenomenon before. The candidate molecules: 1) L-type amino-acid transporter 1 (LAT1), which is involved in the enhancement transport of amino acids and the accumulation of AAAs near cancer foci; 2) intracellular amino-acid-metabolizing enzymes, such as imino acid 2, 3-dioxigenase (IDO) and monoamine oxidase (MAO); 3) proteins involved in intracellular protein degradation or autophagy, (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 tissues, it is impossible to explain the phenomenon that the elevation of AAAs’ levels in gastric juice in almost all types of GC patients.

Aims & Methods: To investigate the role of proteolytic enzymes matrix metalloproteinase-2/9 (MMP-2/9) in the abnormal elevation of AAAs’ concentrations in gastric juice of GC patients, gastric mucosal specimens and gastric juice samples were simultaneously collected from 29 GC patients, while MMP-2/9 was markedly overexpressed in 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 mucosal specimens were determined by liquid chromatography-tandem mass spectrometry (LC/MS/MS). Furthermore, the association between them was evaluated by Spearman correlation analysis.

Results: On the one hand, the expression intensity of MMP-2/9 in GC group were significantly higher than those in NGD group, while Col IV was markedly 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 = 0.293, P < 0.01 for all) and all correlation was significant (P < 0.001 for all). Moreover, all correlation was significant (P < 0.001 for all).

Conclusion: The overexpression of MMP-2/9 resulting in the degradation of Col IV in gastric juice 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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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 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. H. pylori positive sPG2 level for the PG2 gene, in association with the PG2 circulating level and clinical parameters in population at risk for GC and in GC patients.

Conclusion: H. pylori infection was significantly associated with the development of NAFLD, independent of metabolic and inflammatory risk factors. H. pylori infection may play a pathophysiologic role in NAFLD development, indicating that H. pylori eradication might play a role in reducing risk of NAFLD.

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

P0591 HELICOBACTER PYLORI INFECTION STATUS IN HUMAN IMMUNODEFICIENCY VIRUS-POSITIVE PATIENTS


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Introduction: Helicobacter pylori infects the gastric mucosa and causes chronic gastritis via the immunoreaction of the host. By contrast, the human immunodeficiency virus (HIV) infects CD4-positive T lymphocytes and destroys the immune system of the host. Some studies pointed out that the H. pylori infection rate is lower in HIV-positive patients. This is because in these patients, H. pylori is incidentally eradicated by the course of antibiotic therapy for HIV infection and because the supply of nutrients to H. pylori is prevented by the decrease in the number of CD4 lymphocytes.

Aims & Methods: We enrolled 290 HIV-positive patients who underwent esophagogastroduodenoscopy in our Hospital between January 2013 and September 2016. As end points of H. pylori infection examination, we retrospectively examined the presence of gastric mucosa atrophy, H. pylori infection, H. pylori eradication and comorbidity. As end points of HIV infection examination, we quantified the number of CD4 lymphocytes and the titer of HIV and investigated the presence of acquired immunodeficiency syndrome (AIDS). Based on these data, we examined the relationship between H. pylori and HIV infections.

Results: Of the 290 patients, 281 were men and 9 were women, whose median age was 46 years (range, 22–82 years). Ninety patients had atrophic gastritis or antral or duodenal ulcer, of whom 40 underwent examination for H. pylori infection. The median number of CD4 lymphocytes in the 21 H. pylori-positive cases was 505/μL (range, 15–998/μL). The titer of HIV ranged from non-detectable to 90, 900 copies/μL, and one patient had AIDS. Meanwhile, the median number of CD4 lymphocytes in the 19 H. pylori-negative cases was 331/μL (range, 15–998/μL). The titer of HIV ranged from non-detection to 1, 590, 000 copies/μL, and three patients had AIDS. H. pylori eradication therapy was applied in 18 of 21 H. pylori-positive cases. The success rate of primary H. pylori eradication was 37.5% (6/16 patients) and that of secondary eradication was 70% (7/10 patients). In addition, 2 (7.7%) of the 26 patients with stomach or duodenal ulcer needed urgent hemostasis. Five (6.7%) of the 74 cases of atrophic gastritis had gastric cancer, of which two were undifferentiated stomach cancers.

Conclusion: In our study, the number of CD4 lymphocytes was higher in the HIV-positive patients with H. pylori infection, implying that the high CD4 count was suggested to be associated with persistent H. pylori infection. In addition, the success rate of H. pylori eradication was shown to be insufficient in HIV-positive patients.

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

Table 1: Development of nonalcoholic fatty liver disease (NAFLD) by H. pylori status

<table>
<thead>
<tr>
<th>H. pylori</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>(+)</td>
<td>1495.7</td>
<td>37.2</td>
<td>1.00 (reference)</td>
<td>1.00 (reference)</td>
</tr>
<tr>
<td>(−)</td>
<td>1063.2</td>
<td>37.2</td>
<td>1.00 (reference)</td>
<td>1.00 (reference)</td>
</tr>
</tbody>
</table>

*Estimated from Cox proportional hazard models adjusted for age, sex, body mass index, year of screening exam, smoking status, alcohol intake, regular exercise, and education level. H. pylori, helicobacter pylori; HR, hazards ratio; CI, confidence intervals.

Conclusion: H. pylori infection was significantly associated with the development of NAFLD, independent of metabolic and inflammatory risk factors. H. pylori infection may play a pathophysiologic role in NAFLD development, indicating that H. pylori eradication might play a role in reducing risk of NAFLD.

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

References
Introduction: Helicobacter Pylori infection reduces the risk of Barrett’s Dysplasia and is 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 cancers. Previous meta-analyses, 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, H 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 effect DerSimonian and Laird model.

Results: We 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 for the meta-analysis. The statistical analysis has included 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, but not 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, 0.85) 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, if this abstract was to be accepted, as the reference list is too long for the constraints on the number of characters in the abstract.

P0594 ERADICATION THERAPY FOR HELICOBACTER PYLORI – AN IMPORTANT TOOL TO IMPROVE THE HEART FUNCTION IN PATIENTS WITH CORONARY HEART DISEASE

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Introduction: Literature data involves Helicobacter pylori (HP) as a pro-inflamatory and pro-coagulant risk factor for ischemic coronary heart disease1, 2, but the benefit of the curative treatment against HP infection and its repercussions on heart function were not explored sufficiently.

Aims & Methods: We aimed to investigate the role of HP eradication therapy in patients with different stages of heart insufficiency (HI) and coronary heart disease (CHD), 290 patients with CHD admitted in Cardiology and Gastroenterology Departments of St. Andrew Apostole Constantin were explored for HP infection status and found positive. The infection was determined by HP- Ag in faces, urea breath test or endoscopic biopsy. The CHD was assessed by electrocardiography (ECG) and HI was staged according to NYHA classification. According to the implementation of eradication therapy for HP, we divided the patients in two equal groups: patients matched by age, gender, severity of HI, one group of 145 patients with treatment and the other group of 145 patients without eradication therapy. We compared the heart function improvement after treatment for HP in both groups. We also compared the evolution of PCR, fibrino- gen, IL-6 and other inflammatory markers.

Results: The eradication therapy for HP with one PPI and two antibiotics associated with cardiac treatment, improved the clinical status based on NYHA classification in 58 patients with HP compared with NYHA staging at the time of HP infection (p = 0.019, p = 0.037, p = 0.08, respectively p = 0.005, ss) and the state of CHD. The laboratory finding also revealed a favorable course of pro-inflammatory tests in treated patients compared with untreated patients, regarding protein C-reactive, leucocytes, IL-6 and fibrinogen.

Conclusion: HP should be one of the treatment targets when managing infected patients with CHD, the eradication therapy being along with cardiac treatment important steps to improve the cardiac function.

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

References

P0595 RANDOMIZED CONTROLLED STUDY OF A NOVEL TRIPLE NITAZOXANIDE (NTZ) CONTAINING THERAPEUTIC REGIMEN VERSUS THE TRADITIONAL REGIMEN FOR ERADICATION OF HELICOBACTER PYLORI INFECTION

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Introduction: Helicobacter pylori infection has become more and more resistant to conventional first-line treatment regimens. So, there is a considerable interest in evaluating new antibiotic combinations and regimens. Nitazoxanide is an anti-infective drug with demonstrated activity against protozoa and anaerobic bacteria including Helicobacter pylori.

Aims & Methods: This work is designed to evaluate the efficacy and safety of a unique triple Nitazoxanide containing regimen as a treatment regimen in Egyptian patients with Helicobacter pylori infection.

Methods: Two hundred and twenty four patients with upper Gastro-intestinal tract (GIT) dyspeptic symptoms in whom three-in-one capsule BQT (Pylera) has been prescribed in 322 patients (mean age 50 years) between 1/2013 and 12/2016. All patients were instructed in a standardized fashion and a prospective follow-up was planned. In a subgroup of patients, genotypic susceptibility testing for clarithromycin and levofloxacin by PCR was carried out on gastric biospies before treatment. Treatment outcome and the eradication failure were prospectively included in a study whose goal was to assess the response.

Results: The response to treatment was significantly higher in group 1 of Nitazoxanide treatment regimen than group 2 of traditional treatment regimen. Group 1 showed complete cure (95.6%) of 113 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 eradication of Helicobacter pylori. (ClinicalTrials.gov Identifier: NCT02422706)

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

References


P0596 PREVIOUS INTAKE OF MACROLIDES PREDICTS FAILURE TO ERADICATE HELICOBACTER PYLORI WITH CLARITHROMYCIN-CONTAINING REGIMENS

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Introduction: There is 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 contain information regarding all the medication prescribed to the patient during the previous 12 years, were reviewed and the intake of macrolides (clarithromycin, azithromycin and erythromycin) was registered.

Results: 89/219 patients (40.6%) had received at least one treatment with macrolides during the previous 12 years. H. pylori eradication rates with the two treatment regimens are shown in Table 1.

Table 1: H. pylori eradication rates in patients with and without previous intake of macrolides.

<table>
<thead>
<tr>
<th></th>
<th>Previous use of Macrolides</th>
<th>No previous use of Macrolides</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: Triple therapy (n = 113)</td>
<td>24/45 (53, 3%)</td>
<td>65/68 (95, 5%)</td>
<td>&lt;0, 0001</td>
</tr>
<tr>
<td>B: Concomitant (n = 106)</td>
<td>37/44 (84, 1%)</td>
<td>61/62 (98, 4%)</td>
<td>0, 0085</td>
</tr>
<tr>
<td>Total (n = 219)</td>
<td>61/89 (68, 5%)</td>
<td>126/130 (96, 9%)</td>
<td>&lt;0, 0001</td>
</tr>
</tbody>
</table>

Conclusion: Previous use of macrolide antibiotics predicts a low response to triple and to concomitant clarithromycin-containing regimens. In addition, our study shows that in patients without previous use of macrolides triple therapy achieves per-protocol eradication rates over 90%.

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

References

P0597 EFFICACY OF THREE-IN-ONE CAPSULE BISMUTH QUADRUPLE THERAPY FOR HELICOBACTER PYLORI ERADICATION IN CLINICAL PRACTICE IN A MULTINATIONAL PATIENT POPULATION

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Introduction: Due to increasing prevalences of clarithromycin resistance in H. pylori infection, current guidelines recommend quadruple therapies as first-line therapy1-5. Bismuth quadruple therapy (BQT) has been proven superior to standard triple therapy in clinical trials6, however little is known about the efficacy of BQT in clinical routine practice.

Aims & Methods: In a prospective single center cohort study we analyzed consecutive patients in whom three-in-one capsule BQT (Pylera® + omeprazole) has been prescribed between 1/2013 and 12/2016. All patients were instructed in a standardized fashion and a prospective follow-up was planned. In a subgroup of patients, genotypic susceptibility testing for clarithromycin and levofloxacin by PCR was carried out on gastric biopsies before treatment. Treatment outcome was assessed by 13C urea breath test or by histology not earlier than 4 weeks after end of treatment.

Results: Three-in-one capsule BQT has been prescribed in 322 patients (mean age 41 years (18–80), 65% female, 26% active smoker). 71% of patients had a migrational background including Southern/Eastern Europe, Eurasia/Central Asia, Southeast-Asia, Africa, and Central/South America. PCR results were available in 163 patients (50.6%) and identified resistance to clarithromycin and levofloxacin in 29 (17, 8%) and 20 (12, 3%) of cases, respectively. BQT was administered as firstline, secondline and rescue treatment in 74%, 17% and 9% of cases, respectively. 5 patients discontinued treatment prematurely due to side effects (1, 8%) and 43 patients were lost to follow-up (13, 4%). By modified intention-to-treat and per-protocol analysis the H. pylori eradication rates were 94, 9% (95% CI: 92, 1–97, 5%) and 96,7% (95% CI: 94,4–98,8%), respectively. The low number of treatment failures (n=9) did not allow to identify risk factors for failure.

Conclusion: Three-in-one capsule bismuth quadruple therapy is highly effective and safe for treatment of H. pylori infection in clinical routine practice, irrespective of the patient's migrational background or the number of previous treatment failures.

Disclosure of Interest: S. Miehlke: Speakers honoraria: Allergan, Kibion, Olympus
All other authors have declared no conflicts of interest.

References
P0598 ERADICATION OF HELICOBACTER PYLORI INFECTION WITH A COMBINED FORMULATION OF BISMUTH, 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 ≥90% for the eradication of these events which has made that the use of triple treatment including clarithromycin or metronidazole had been give up on those countries, such as Spain, with high resistance rates. Quadruple therapy with a proton pump inhibitor (PPI) plus a single three-in-one capsule containing bismuth subcitrate potassium, metronidazole, and tetracycline (BMT) have shown high eradication rates in clinical trials.

Aims & Methods: We aimed to evaluate the efficacy and safety of a PPI-bismuth based quadruple therapy in patients diagnosed of H pylori infection in a clinical setting of a Private Hospital, located at the North of Madrid (Spain). A prospective and real-life study was conducted, between March 2016 to February 2017, on consecutive patients with confirmed H pylori infection eradication indication. Patients were treated for ten days with a galenic preparation containing bismuth subcitrate potassium 140mg, metronidazole 125 mg, and tetracycline 125 mg, three capsules four times daily, and esomeprazole 40 mg twice daily and probiotic during 30 days. The primary endpoint was H. pylori eradication rate by a standard urea breath test performed, at least 28 days, after the end of treatment. Intent-to-treat (ITT) efficacy analyses included all patients who received study medication and took at least one dose of study medication; patients without an observed outcome were considered as treatment failures.

Results: A total of 100 patients, 60 (60.0%) women and 40(40.0%) men, who fulfilled the respective demands of the inclusion and exclusion criteria, were enrolled consecutively. Five of these were lost to follow-up. Mean (standard deviation) [95% confidence interval] age was 47.1 (15.4) [44.0 to 50.2] years. Twenty-five (25.0%) patients had a prior history of using medications to treat H. pylori infection and 28.0% (20/25) depended 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% (67/68) in those patients treated with PPI-BMT as first-line or as rescue therapy, respectively. Eighteen (18.0%) patients reported at least one adverse event.

Conclusion: In patients with confirmed H pylori infection, 10 days of treatment with a combination of bismuth, metronidazole and tetracycline plus esomeprazole provides high eradication rates not only as first-line but also as rescue therapy, with an acceptable safety profile.

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

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 (PPI) for a first-line Helicobacter Pylori (H. pylori) eradication.

Aims & Methods: We retrospectively analyzed data from first-line H. pylori eradication treatment (vonoprazan or PPIs with 400 mg clarithromycin and 1000 mg amoxicillin) in 458 consecutive patients twice during 30 months. 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 = 217, rabeprazole 20 mg/day = 133, esomeprazole 40 mg/day = 80) to be 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%, 71.0%/74%, and 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), respectively. There was no significant difference in the adverse events between the two therapies.

Conclusion: 7-day P-CAB based 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 INFECTION IN JAPAN

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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 (EOPZ; 150 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 (EOPZ) as part of first-line triple therapy in patients with HP infection. Three hundred and forty-nine Japanese patients with HP infection diagnosed using a rapid urease test were enrolled between June 2015 and October 2016. The patients were randomly allocated to VPZ group (VPZ 40 mg/day, ABPC 150 mg/day, CAM 400 mg/day) or EOPZ group (EOPZ 40 mg/day, ABPC 150 mg/day, CAM 400 mg/day) with stratification according to endoscopic findings of gastric duodenal ulcer/scar and CAM 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; EOPZ group, 176) completed the study. One patient in the VPZ group and three patients in the EOPZ group discontinued the treatment because of adverse events. One patient in the VPZ group and three patients in the EOPZ 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 EOPZ group [P=0.10]). Furthermore, there was no significant difference in the first-line eradication rate in patients with CAM-sensitive HP (87.2% [82/94] versus 84.6% [77/91] in the VPZ and EOPZ groups, respectively, [P = 0.60]), although the eradication rate was significantly higher among patients with CAM-resistant HP in the VPZ group than that in the EOPZ group (73.6% [30/43] vs. 55.6% [35/63], [P = 0.044]). The first-line eradication rate in the patient with high estimated glomerular filtration rate (eGFR ≥ 100 mL/min/1.73 m²) was significantly lower than that in the patients with low eGFR (< 60 mL/min/1.73 m², 86.4% [32/37] in higher than not screening (14.327DKk (95%CI: 4155–24499)). The probability of the first-line effective was 80% with a willingness to pay of 100,000DKk per life-year gained. When including only peptic ulcer disease related costs the prob-
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 significantly associated with increased risk of treatment failure of amoxicillin-containing regimens at different breakpoints (RR [Risk ratio]: 1.41, 95% CI [confidence interval]: 1.12–1.78, P = 0.004) when cut at 0.5 mg/ml. The heterogeneity test showed low (I² = 0%, p = 0.615). Pooled analysis also showed that amoxicillin resistance was an independent risk factor of treatment failure of clarithromycin triple therapy at different breakpoints. The best correlation was observed when the breakpoint of amoxicillin resistance was 0.125 mg/ml (Kappa coefficient 0.298), at which the resistance rate was 11.1% (110/990).

Conclusion: The efficacies of amoxicillin containing regimens are affected by amoxicillin resistance and the optimal breakpoint of MIC is 0.125 mg/ml.

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

References


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-negative patients. It is much less common. However, the association between GAFG and Hp infection is still controversial.

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) or past Hp-infected (n = 5). Each endoscopic and clinicopathological features were examined.

Results: Median age of Hp-infected/past Hp-infected/Hp-uninfected were 65/71/54.5 years old, respectively, male ratio were 100/80/0%, occupied site U area were 33/80/50%. There was no difference between the 3 groups in these parameters. However, a significant difference in the rate of submucosal invasion was recognized between the Hp-uninfected and past Hp-infected group and the Hp-uninfected group (submucosal invasion was found at 0% /100%, p = 0.035). According to endoscopic features, background mucosa of gastric fundus gland mucosa without atrophic change was found in 100/-/100%, whitish color in 67/60/50%, submucosal tumor shape in 67/60/50%, dilated vessels with branching architecture in 100/100/50%. The association with Hp infection was not clear. In immunohistochemical staining, MUC6 positive and MUC5AC positive, Pepsinogen-I positive, MUC2 negative, CD 10 negative in all cases, whereas the rate of MUC5AC positive was significantly higher in the Hp-infected group as 0/20/100% (P = 0.045). We reported that black pigmentation is recognized in GAFG (stomach and intestine 50: 1521–1531, 2015), but no association between Hp infection and black pigmentation was observed. On the other hand, the rate of PPI administration divided pigmentation (n = 6)/no pigmentation (n = 4) are 50%, 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


Introduction: Celiac disease (CD) is an autoimmune disease affecting the small bowel of CD patients, and to look for a possible association between mucin profile and gluten-free diet. English Medical literature searches were conducted for “mucin” and “celiac”. Observational studies were included. Meta-analysis was performed using Comprehensive meta-analysis software. Pooled odds ratios and 95% confidence intervals were calculated.

Results: Out of 18 titles initially generated by the literature searches, 3 observational studies that fulfilled the inclusion criteria remained eligible for meta-analysis. Although the prevalence of cryptogenic hypertransaminasemia was higher among CD patients, no significant association was found. ORs for MUC2 and MUC5AC expression were 1.143, 95%CI 0.060–21.870, P = 0.929 and 21.429, 95%CI 3.883–118.255, P = 0.0001, respectively.

Conclusion: We found that expression of certain mucin genes in the small bowel mucosa of CD patients may serve as a diagnostic tool, and assist in surveillance programs.

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

References


P0607 CELLIA DISEASE ASSOCIATED WITH VASCULAR THROMBOSIS

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Introduction: Celiac disease (CD) is a lifelong 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 noted 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 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 women involved in this work were at risk of thrombosis.

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.

References

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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.

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

Introduction: TLRs play an important role in the intestinal immune surveillance, as well as in the development of this complication.

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

References

3. United European Gastroenterology Journal 5(5S)
Aims & Methods: In this study we investigated the TLRs 2, 4, 7, 9 genes expression in the lamina propria with celiac disease compared with healthy control. Blood samples from 120 CD patients diagnosed according to the Iranian Society for Gastroenterology were collected and 120 healthy individuals were served as a control group during 2016. Also, among them, 20 duodenal biopsy specimens were collected randomly. Total RNA for both blood samples and biopsy specimens was isolated using a standard commercial kit. The mRNA expression of TLRs were quantified by relative qPCR with B2M as a reference gene.

Results: Significantly higher expression of TLR4 and TLR9 mRNA was observed in blood samples of CD patients compared to the healthy controls (P < 0.05); but there were no significant differences between expression of TLR2 and TLR7 mRNA compared to the controls. Furthermore, TLR4 and TLR2 expression level was increased in CD biopsy specimens compared to controls, whereas expression of TLR9 mRNA was decreased in CD patients. No significant differences in expression of TLR7 was observed in biopsy specimens.

Conclusion: The result of this study show that the alteration of TLR4 and TLR9 genes expression in intestinal mucosa of CD can be detected in PBMs in peripheral blood. This data supports the implication of innate immune system in the pathomechanism of celiac disease.

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

References

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Introduction: Non celiac gluten sensitivity (NCGS) is a gluten-related enteropathy with distinctive features compared to celiac disease. Patients with NCGS experience symptoms, such as diarrhea or abdominal pain, shortly after gluten exposure. Differently from celiac disease, serology is negative, and histological picture is characterized by no lesion or a mild enteropathy (Marsh I stage). Few studies have investigated possible histopathological characteristics of NCGS. An immune response against gluten elicited exclusively by innate immunity has been hypothesized. On these bases, we attempted to depict an immunohistochemical trait of NCGS by exploring markers of lymphocyte and innate immunity activation.

Aims & Methods: Duodenal biopsy samples of patients diagnosed of NCGS according to Salerno criteria were retrieved. Duodenal biopsy samples of positive controls (overt seropositive celiac disease at Marsh I stage) and negative controls (functional dyspepsia and normal microscopic picture) were selected. Immunohistochemistry for CD3 (intraepithelial lymphocytes), CD4 (T-helper lymphocytes), CD8 (T-lymphocytes), CD10 (B-lymphocytes), CD14 (monocytes), CD1a (Langerhans cells) was performed. Cell count was carried out both in the epithelial layer (expressed as CD3+ cells/100 enterocytes) and in the lamina propria (positive cells/mm²).

Comparison of means was performed by ANOVA test with Bonferroni's post hoc analysis.

Results: Twenty NCGS, 12 celiac patients (positive controls) and 16 negative controls were selected. CD3+ intraepithelial lymphocytes in NCGS were expressed at intermediate levels (18.5 ± 6.4) between negative controls (11.9 ± 2.8) and celiac disease (40.8 ± 8.1, P < 0.0001). CD4+ T-helper lymphocytes were present only in lamina propria and NCGS had a lower level than controls (37.2 ± 29.5) and celiac disease (103.7 ± 15.7, P < 0.0001). Intraepithelial CD8+ cells were similar between NCGS and negative controls (14.0 ± 7.4 versus 17.8 ± 4.2), but lower than celiac disease (34.0 ± 7.1, P < 0.0001). CD1a+ Langerhans cells were over-expressed in the lamina propria of NCGS (1.9 ± 1.1) in comparison to celiac disease and negative controls (respectively 0.3 ± 0.8 and 0.4 ± 0.5, P < 0.0001).

Conclusion: NCGS is characterized by a mild immunologic reaction, as shown by the slight increase in CD3 intraepithelial lymphocytes. The over-expression in the...
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 (2) and in dyspepsia (3). 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, diarrhea, bloating, distension, epigastric burning and early satiety (see Table). There was no significant difference observed in symptoms of post-prandial fullness, nausea, constipation, abnormal stool consistency, or straining with defecation. The prevalence of FD as defined by Rome III criteria in the CD cohort was 37.5% (95% CI 22.7–54.2) compared to 13.9% (95% CI 12.8–15.1) in the non-affected population (OR 2.7, 95% CI 1.9–7.1, p < 0.001). There was no significant difference in the prevalence of IBS in the affected compared with the non-affected cohort (30.8% versus 22.2%, p = 0.2).

Table: Gastrointestinal symptoms reported by patients with and without self reported coeliac disease (CD). Items reported as greater than one day per week (*) or greater than or equal to “often” (**) Symptoms self report CD - Yes self report CD - No p value Abdominal pain associated with loose bowel motions ** 16/37 43.2% 600/3324 18.6% P < 0.001 More bowel motions associated with pain ** 13/38 34.2% 504/3248 15.5% P = 0.002 Bloating * 13/40 32.5% 436/3381 12.9% P < 0.001 Distension * 12/40 30% 395/3371 11.7% P < 0.001 Abdominal pain * 9/39 23.1% 362/3378 10.7% P < 0.001 >3 bowel motions per day ** 7/40 17.5% 740/15 7.5% P = 0.046 Epigastric burning * 8/40 20% 165/3380 4.9% P < 0.001 Early satiety * 8/40 20% 230/3378 6.8% P = 0.001

Conclusion: The prevalence of gastrointestinal symptoms and in particular functional dyspepsia symptoms are significantly higher in patients with a doctor diagnosis of CD than those without. Studies of the biopsy proven coeliac disease in IBS is higher in IBS cohorts than healthy controls (2) and the value of screening with duodenal biopsy testing for CD in FD is concluded to be useful (3), this study supports these views.

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

References

P0613 MALE GENDER AND UNDERWEIGHT ARE ASSOCIATED WITH OSTEOPOROSIS IN PATIENTS WITH NEW DIAGNOSIS OF COELIAC DISEASE

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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 (osteoopenia or osteoporosis). Despite this strong correlation, guidelines do not express with certainty on the need to undergo a dual-energy X-ray absorptiometry (DEXA) scan in every patient with new diagnosis of CD. Recently, the DEXA screening was suggested for CD peri-post menopausal females, males over 55 years, pts with overt malabsorption or with a history of fragility fractures. Studies on bone mineral density (BMD) in CD pts led to discrepant results, probably due to heterogeneous designs.

Aims & Methods: The aim of this study was to evaluate, in a cohort of consecutively newly diagnosed CD adults, the prevalence of BMD alterations at diagnosis time and to evaluate associated clinical features. From January 2004 to December 2016, 258 consecutive pts (F = 72.4%) were diagnosed with CD. All pts were adults (median age 38, range 18–72 years), had 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, smoke) and serological PTH values were assessed. The signs/symptoms leading to CD and their duration before diagnosis, autoimmune/not autoimmune comorbidities, familiarity for CD, previous fractures and serological assays (specific antibodies for CD, ferritin, cholesterol, triglycerides, and albumin) were also assessed. All the variables described were analyzed and compared between the 3 groups. Logistic regression was performed including into the model those independent variables which showed a significant difference at univariate analysis.

Results: At the DEXA scan, 85 (39.7%) and 129 (60.3%) pts had normal or low BMD, respectively. Among pts with low BMD, 91 (42.5%) had osteopenia and 38 (17.8%) osteoporosis. At logistic regression, clinical features significantly associated with osteoporosis were male gender (OR 4.7; 95%CI 1.3 to 17.4), underweight (OR 8.1; 95%CI 1.8 to 35.3) and increased PTH values (OR 5.1; 95%CI 1.4 to18.8), while age over 40 years and gastrointestinal symptoms at diagnosis time, menopause, alcohol intake and previous fractures were not associated. Clinical features significantly associated with osteopenia were underweight (OR 4.0, 95% CI 1.4 to11.2) and increased PTH values (OR 2.6, 95%CI 1.1 to 6.4).

Conclusion: In newly diagnosed coeliac pts, the overall prevalence of BMD alterations was more than 60%, with osteopenia 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 patients 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 distention (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 distention (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, 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>95.9</td>
</tr>
<tr>
<td>(14.9)</td>
<td>(16.5)</td>
<td></td>
</tr>
<tr>
<td>Female gender</td>
<td>336.459</td>
<td>1392/285</td>
</tr>
<tr>
<td>(total = 52.5%)</td>
<td>(74.7%)</td>
<td>(48.8%)</td>
</tr>
<tr>
<td>Functional dyspepsia</td>
<td>128/466</td>
<td>327/2865</td>
</tr>
<tr>
<td>syndrome</td>
<td>(27.5%)</td>
<td>(11.4%)</td>
</tr>
<tr>
<td>Irritable bowel</td>
<td>248/453</td>
<td>571/2866</td>
</tr>
<tr>
<td>syndrome</td>
<td>(54.8%)</td>
<td>(19.9%)</td>
</tr>
<tr>
<td>Food allergy</td>
<td>56/455</td>
<td>151/2878</td>
</tr>
<tr>
<td>(12.3%)</td>
<td>(5.3%)</td>
<td></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 associated with bowel habits, bloating after a few hours of ingestion, or abdominal distention. 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
2. Molina-Infante J, Santolaria S, Sanders DS, Fernandez-Banares F. Rome IV criteria (2016), 21 had irritable bowel syndrome (IBS) with predominance of diarrhea, 13 (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, 9 F). In addition we also found 5 (4.3%, 4F) patients with real allergy to wheat or wheat protein.

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

PO061 A QUESTIONNAIRE-BASED SYMPTOM EVALUATION STUDY IN 381 PATIENTS DIAGNOSED WITH BILE ACID MALABSORPTION BY SEHCAT FROM 2003 TO 2016
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Introduction: Excessive amounts of bile acids entering the colon cause chronic diarrhoea (bile acid diarrhoea (BAD)). Diagnosis of BAD is possible by measuring the retention level of orally ingested 3Helenium homotaurocholic acid (SeHCAT). Standard treatment of BAD is bile acid sequestrants (BAS), such
as celecoxib. Short-term outcome of having BAD is well-described, but long-term effects remain unclear. The aim of the present study was to describe long-term symptoms, adherence to treatment and quality of life in a well-defined group of patients with BAD.

Aims & Methods: Between 2003 and 2016, 559 patients referred to our hospital for diffuse abdominal pain with absent bowel sounds was included. The presence of co-existent psychiatric 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 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 a cephalalgia pain, epigastric burning, fullness, early satiety, abdominal pain, abdominal distention, bloating, flatulence, nausea, vomiting, belching, heartburn, regurgitation, diarrhea, and headache, were evaluated by visuo-analog scale at fasting and every 30 minutes in the post-prandial period.

Results: In comparison with mean fasting values, none of the measured parameters showed a significant increase in the post-prandial period after the ingestion of 2 gr of gluten. On the contrary, after the ingestion of 20 gr of gluten mean post-prandial values of TNFα and IL-8 showed a significant increase (2.45 ± 1.75 pg/mL and 0.65 ± 0.31 pg/mL) as compared to mean fasting values (1.17 ± 1.49 pg/mL and 0.29 ± 0.15 pg/mL; p < 0.05). Mean post-prandial values of uric acid were also significantly higher (74.98 ± 15.02 mmol/mL) than fasting values (45.34 ± 10.08 mmol/mL; p < 0.05). No significant differences were detected in IL-6, glucose, insulin and LPS after the ingestion of the 20 gr gluten oral load. Symptoms were absent after both oral loads.

Conclusion: The ingestion of gluten was not a low, oral load of gluten induces a significant post-prandial inflammatory response causing the activation of the main endogenous anti-oxidant system. In HV, these activations are not accompanied by a symptomatic response. Further studies are needed to investigate the inflammatory and anti-oxidant post-prandial response in patients with gluten related disorders.

Disclosure of Interest: All authors have declared no conflicts of interest.
PATIENTS TREATED WITH INTRAGASTRIC BALLOON

A382

GLYCEMIC CONTROL LINEAR IMPLANTATION ON WEIGHT REDUCTION AND GLYCEMIC CONTROL

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Introduction: The Duodenal-Jejunal Bypass Linear (DJBL) is an endoscopic device which prevents ingested nutrients absorption in the duodenum and first part of jejunum. The resultant effects are weight reduction and improvement in glycemic control in patients with type 2 diabetes mellitus (T2DM).

Aims & Methods: The current study is to assess weight and glycemic control changes resulted from the device implantation and a year after the device removal. Between February 2013 and September 2016, 51 diabetic patients were treated with DJBL in our center. This prospective observational study included 3 months courses alternated with two-week breaks for 3 months. In 4-month rats courses with 2-week course for 3 months. In 4-month rats

Disclosure of Interest: None declared.

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

<table>
<thead>
<tr>
<th>% of weight regained</th>
<th>2 years</th>
<th>3 years</th>
<th>4 years</th>
<th>5 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;10%</td>
<td>20%</td>
<td>15.6%</td>
<td>18.5%</td>
<td>33.3%</td>
</tr>
<tr>
<td>Between 10 and 19%</td>
<td>70%</td>
<td>62.7%</td>
<td>50.7%</td>
<td>66.7%</td>
</tr>
<tr>
<td>Between 20 and 29%</td>
<td>10%</td>
<td>14.5%</td>
<td>12.8%</td>
<td>14.8%</td>
</tr>
<tr>
<td>Between 30 and 39%</td>
<td>0.2%</td>
<td>2.4%</td>
<td>1.9%</td>
<td></td>
</tr>
<tr>
<td>Between 40 and 49%</td>
<td>0.2%</td>
<td>1.2%</td>
<td>6.3%</td>
<td></td>
</tr>
<tr>
<td>Between 50 and 59%</td>
<td>2.4%</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between 60 and 99%</td>
<td>0.1%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Conclusion: IGB has a suboptimal long-term effect on body weight control after 2 to 5 years of balloon removal, with weight regain observed in up to two thirds of patients (66%). The following variables adversely affect long-term body weight control after IGB removal: lack of psychological support and nutrition counseling and sedentary lifestyle. A multidisciplinary intervention is of paramount importance to assist obese patients treated with IGB in order to effectively maintain long-term body weight control.

Disclosure of Interest: All authors have declared no conflicts of interest.
Also consumption of S led to reduction of pro-inflammatory cytokines and leptin and increased anti-inflammatory cytokines and adiponectin.

Conclusion: Thus, the introduction of S reduced the obesity, that shows the anti-inflammatory effect. Also consumption of S led to reduction of pro-inflammatory cytokines and leptin.

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

P0624 IMPROVED EMPLOYMENT OF INTRAGASTRIC BALLOON FOR WEIGHT LOSS: A PRELIMINARY ANALYSIS
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Introduction: Endoscopic bariatric approaches are gaining traction as possible treatment modalities for obesity. Especially, intragastric balloon was demonstrated to be associated with a significant weight loss in obese patients. Despite many advances in the design and material of intragastric balloon devices, there still remains a need for improved devices which is safer, faster, and less expensive than before. In the present study, we evaluated feasibility of newly developed intragastric balloon.

Aims & Methods: We used a newly developed intragastric balloon with improved employment for this study. The intragastric balloon was supplied as delicately rolled up inside a thin silicon sheath and mounted by surrounding the endoscope. Endoscopic intragastric balloon placement and positioning was simply performed through the use of 10 pigs were subjected to the novel intragastric balloon placement. We evaluated feasibility of the intragastric balloon and compared procedure time between the novel intragastric balloon and End-bal (Endalis, Brignais, France) intragastric balloon.

Results: In all cases, the novel intragastric balloons were successfully placed under usual sedation of diagnostic endoscopy. The procedures were simple and fast; the mean insertion time was 41.314 ± 153.8 ± 134.8 sec in novel intragastric balloon group and end ball group, respectively. The mean inflation time was 412.46 and 512.83 sec in novel intragastric balloon group and end ball group, respectively.

Conclusion: This preliminary data suggest that the procedure with the new intragastric balloon attain technical improvements in the placement without severe adverse events. The new intragastric balloon could offer constantly effective procedure regardless of the ability of the endoscopy practitioner.

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

References

P0625 IS RE-IMPLANTATION OF THE DUODENAL-JEJUNAL BYPASS LINER Viable?
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Introduction: The endoscopically implanted DJBL is a 60cm long, impermeable fluoropolymer device which prevents food from making contact with the proximal intestine, thus inducing considerable weight loss and improvement of type 2 diabetes mellitus (T2DM). Both weight and HbA1c levels have been reported to decrease post explantation. The question remains as to whether it is possible to re-implant the DJBL, and what the results would be in terms of BMI (Body Mass Index) change and T2DM control.

Aims & Methods: The aim of this study was to investigate the safety, feasibility and effectiveness of DJBL re-implantation in patients who show a relapse in glucose levels after DJBL explantation. This prospective, observational study was conducted at the Department of Gastroenterology of DGD Clinics Sachsenhausen, Frankfurt (Germany) between 2014 and 2016. Five obese patients with T2DM and with a body mass index (BMI) ranging from 35–59 kg/m², who completed follow-up after their first implant and underwent removal of the DJBL after 12 months, were selected for re-implantation after an additional 4 months of follow-up. Weight loss, BMI, and HbA1c were analysed before reimplantation and twelve months thereafter.

Results: In all 5 patients, the DJBL was initially implanted and explanted without complications. Re-implantation and re-explantation were also performed without complications. Changes in body weight, BMI, and glycated haemoglobin (HbA1c) are shown in Table 1.

Conclusion: The results of this observational study show that re-implantation of the DJBL is viable and safe even after 4 months. After re-implantation, weight and HbA1c levels decreased once more.

Disclosure of Interest: J. Stein: Jürgen Stein has received speakers’ honoraria from GI Dynamics. All other 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; 89–196)</td>
<td>40.9 (10.3; 35.3–59.2)</td>
<td>9.1 (1.3; 8.7–10.7)</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>7.6 (0.8; 6.6–8.3)</td>
</tr>
<tr>
<td>12</td>
<td>95.0 (39.8; 72–164)</td>
<td>33.5 (9.0; 29.549.5)</td>
<td>6.7 (0.9; 5.9–7.8)</td>
</tr>
<tr>
<td>16 (0)</td>
<td>91.7 (37.8; 75–164)</td>
<td>34.3 (8.6; 29.3–49.5)</td>
<td>7.7 (1.6; 6.2–9.9)</td>
</tr>
<tr>
<td>22 (6)</td>
<td>93.2 (40.6; 63–164)</td>
<td>32.8 (9.7; 24.6–49.9)</td>
<td>7.1 (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>

P0626 THE COMPARATIVE EFFICACY OF OBESITY TREATMENTS IN YOUNG PEOPLE - A SYSTEMATIC REVIEW AND META ANALYSIS
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Introduction: Obesity in the young population is becoming increasingly prevalent. It is associated with short- and long-term consequences. Early and effective interventions are paramount. Current treatment options include: lifestyle modifications, pharmacological therapies, endoscopic treatments and bariatric surgery. However, the relative effectiveness of these treatments in this cohort remains unclear.

Aims & Methods: To systematically identify and meta-analyse studies evaluating treatments that reduce body mass index (BMI) in overweight and obese young people. A systematic literature review of EMBASE and MEDLINE databases was conducted. Studies were included/excluded based on pre-specified eligibility criteria. Included patients were 21 years or younger. Lifestyle modification and pharmacological therapy searches were restricted to randomised control trials. Results: 16,372 studies were identified with 80 studies complete with sufficient data for meta-analysis. Bariatric surgery caused the most weight loss in the short- and medium-term [pooled estimate of mean BMI loss: 13.77 kg/m²]. Lifestyle modifications and pharmacological therapy had a more modest impact on weight [pooled estimate of mean BMI loss: 0.99 kg/m² and 0.94 kg/m² respectively]. Individual studies demonstrated that endoscopic treatment results in short-term BMI reduction, however insufficient data prevented meta-analysis.

Conclusion: This is the first systematic review and meta-analysis to comprehensively summarise and quantify the comparative efficacy of BMI reducing treatment options in the obese, young population. Currently, bariatric surgery is rarely considered in this young cohort. However, due to its high efficacy, physicians and patients should have a lower threshold for considering bariatric surgery when lifestyle and pharmacological interventions have failed. These non-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 MICRONRNA AND INFLUENCE ON THE FECAL MICRONRNA EXPRESSION
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Introduction: Tumor development is a multistep process, which involves genetic and environmental factors. Diet is among the most important contributing factors and processed and red meat has been classified as carcinogenic for colorectal cancer. MicroRNAs (miRNAs) are functional, ubiquitously present molecules that are involved in various forms of food processing. Furthermore, we tested if short-term vegetarian or meat rich diet may influence human or plant-derived miRNA in feces and blood. For this purpose, six healthy subjects were asked to adhere to vegetarian or meat rich diet for 5 to 7 days and fecal and blood specimens were obtained at different time points. Plant-miRNAs were further investigated in gastric and colon mucosa. To evaluate the presence of miRNA in food, we selected several common foods prior and after cooking/processing. Quantitative real-time PCR was performed using TaqMan Assay.
Results: All measured microRNAs were present in all studied foods with highest expression observed by miR-16 and miR-155. Especially, hash, beef and salmon showed the highest miRNA expression, while lowest expression was found in cheese and milk. Food processing led to only marginal changes (max. 1.5-fold) in miRNA expression and thus demonstrating its stability against degradation. Short-term changes in diet (from usual to vegetarian and to meat-rich diet) in healthy subjects was not associated with variation in miR-21, miR-155 and miR-16 expression. Interestingly, in comparison to several previous reports, we repeatedly failed to detect any plant miR-168 in sera. However, when supplemented with a significant increase in miR-168 level in feces (up to 8-fold), while meat-rich diet was associated with slight decrease if compared to the starting point (mean ± SD 0.031 ± 0.002 for no diet vs. 0.025 ± 0.042 for vegetarian vs. 0.0016 ± 0.00096 for meat-rich; p = 0.03 Kruskal-Wallis test, with p = 0.05 for Dunts multiple comparison test for vegetarian vs. meat-rich).

Conclusion: The results of this study show that various foods provide a great source of microRNAs, which remains stable despite processing. We further demonstrated that short term changes in diet do not impact on the miRNA expression pattern in feces and blood supporting its value as biomarkers. A functional role of diet-induced increase in plant-derived miRNA expression needs further evaluation.

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

P0628 NEUROMEDIN U BLOKES GASTRIC EMPTYING THROUGH VAGAL-DEPENDENT MECHANISMS AND IMPROVES ORAL GLUCOSE TOLERANCE

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Introduction: The gut and brain peptide neuromedin U (NMU) is reported to decrease food intake and body weight, and to improve oral glucose tolerance 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 reliable and sensitive biomarkers for future use. Further studies are warranted to test the combination of prebiotics and probiotics.

Disclosure of Interest: B. Wilson: BW is funded by a PhD studentship provided by Claudia Bioscences

All other authors have declared no conflicts of interest.

P0630 THE ANALYSIS OF PROTEIN CONSUMPTION PATTERNs IN PATIENTS WITH SIBO

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Conclusion: Small intestinal bacterial overgrowth (SIBO) is common in patients with gastrointestinal diseases. SIBO symptoms are improved with antimicrobial treatment, but recurrence rate is high (approximately 40% for 9 months). Dietary modification is essential for prevention of recurrence of SIBO however there are no detailed studies of nutrition in SIBO patients. Protein consumption is considered 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 collected from 574 patients, undergoing CH4/H2 lactulose breath test. The photographs used to estimate the size of the portions eaten. According to food composition and portion all dishes in food diary were converted into constituent products (food groups). Each food group were compared with the normal levels of a healthy diet pyramid based on daily calories (normal value = 1.0). According to the breath test results the patients were divided into 4 subgroups of different SIBO types (H2, CH4, H2 and CH4) and a subgroup with no signs of SIBO (Table 1).

Results: All types SIBO patients consumed less meat than control (no signs of SIBO), however patients with hyperproduction of CH4 only demonstrated highest consumption of fish, and it was a trend in patients with isolated H2-hyperproduction to consume meat less than other groups. There were no differences between groups in consumption of processed meat foods or eggs.

Conclusion: There are specific animal protein consumption patterns related to the type of the SIBO, which can be used for the planning of dietetic interventions in patients for prevention of SIBO.

Disclosure of Interest: All authors have declared no conflicts of interest.
Aims & Methods: The aim of the study was to evaluate the differences in GI motor function and visceral sensitivity in rats exposed to diet supplemented with either medium-chain (MCFAs) or long-chain fatty acids (LCFAs). Male Wistar rats were fed with control diet (A), and diet supplemented with 3.5 % coconut oil (B) (abundant with MCFAs) or 3.5 % evening primrose oil (C) (abundant with LCFAs) for 4 weeks. The effects of each diet on GI motility were measured radiographically after contrast administration (p.o; X rays were taken 0–8 h before and after feeding, on day 0 and day 28, respectively), and by performing the colon bead expulsion test. Temporal changes in the size of the stomach and caecum of each rat were analyzed based on digitalized X-rays, using an image processor. Visceral sensitivity was assessed with abdominal withdrawal reflex to colorectal distension. Body weight gain and food/water consumption were measured throughout the experiment.

Results: Diet supplementation in neither group B nor group C affected the GI motor function in comparison to control group (A). The number of contractions and the mean time of each contraction in response to colorectal distension measured during each 5 min for 40 min were higher in the control group (A), when compared to either B or C groups but the differences were not statistically significant. No changes in morphometric measurements of stomach and caecum, the body weight gain and food/water consumption were found.

Conclusion: Diets differing in MCFAs or LCFAs contents did not induce marked effects on GI motility and visceral pain in rats. Available data and the results obtained herein suggest that the amount of FAs intake, rather than the types of FAs may provoke IBS symptoms.

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

References

P0632 DIET SUPPLEMENTED WITH MEDIUM- AND LONG-CHAIN FATTY ACIDS DOES NOT AFFECT LOWER GI MOTILITY AND VISCERAL PAIN IN RATS
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Introduction: Dietary interventions are gaining popularity in terms of alleviating symptoms experienced by patients with functional GI disorders (FGID), especially with irritable bowel syndrome (IBS). Available strategies rely on low intake of foods high in short-chained carbohydrates, dairy products, wheat, spices etc. Although some studies indicate increased rectal sensitivity after duodenal lipid administration in patients with IBS and suggest delayed transit after high fat intake, the effects of dietary supplementation with different types of fatty acids in IBS have not been explored so far.

Aims & Methods: The aim of the study was to evaluate the differences in GI motor function and visceral sensitivity in rats exposed to diet supplemented with either medium-chain (MCFAs) or long-chain fatty acids (LCFAs). Male Wistar rats were fed with control diet (A), and diet supplemented with 3.5 % coconut oil (B) (abundant with MCFAs) or 3.5 % evening primrose oil (C) (abundant with LCFAs) for 4 weeks. The effects of each diet on GI motility were measured radiographically after contrast administration (p.o; X rays were taken 0–8 h before and after feeding, on day 0 and day 28, respectively), and by performing the colon bead expulsion test. Temporal changes in the size of the stomach and caecum of each rat were analyzed based on digitalized X-rays, using an image processor. Visceral sensitivity was assessed with abdominal withdrawal reflex to colorectal distension. Body weight gain and food/water consumption were measured throughout the experiment.

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Conclusion: Diets differing in MCFAs or LCFAs contents did not induce marked effects on GI motility and visceral pain in rats. Available data and the results obtained herein suggest that the amount of FAs intake, rather than the types of FAs may provoke IBS symptoms.

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

References
is similar to the oral glucose-stimulated secretion of glucagon-like peptide 1 (GLP-1). GLP-1 is an intestinal hormone secreted by enteroendocrine L cells (EEC) from the distal gut. GLP-1 and glucagon, both originate from the same proglucagon precursor, differentially processed by prohormone convertase 2 (PC2) into glucagon in pancreatic α cells and by prohormone convertase 1/3 (PC1/3) into GLP-1. These two peptides are secreted by different enteroendocrine cell types (ECC) derived from different parts of the gut (Du et al., 2015).

Aims & Methods: We hypothesized that, after pancreactectomy, proglucagon can also be processed into glucagon in EEC. We developed a 75% subtotal pancreaticoctomy model in C57Bl6 mice. Control (Ct) mice underwent a laparotomy. Post-surgery, blood glucose was measured and pancreatic glucagonase and intestinal glucagonase tolerances (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 immunoquantification. Pancreatic, jejunal and colonic tissue were snap-frozen for mRNA analysis. Local and intestinal glucagon concentrations were determined using RIA. Local and intestinal glucagon concentrations were determined using RIA.

Results: As soon as one day post-surgery, pancreactomized (Px) mice developed a hyperglycemia that maintained for over a week (351 mg/dl in Px 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 Px mice, P < 0.01 in Ct mice, 1 week post-surgery). During OGTT, intestinal glucose absorption increased (slope between 0 and 15 min = 69.9% in Px mice vs P < 0.01). A mice, 1 week post-surgery). Glucagonemia increased in fasted pancreactomized mice (+14.66% in Px mice P = 0.01 vs Ct mice 1 week post-surgery). After sacrifice, alpha cell mass was decreased in the remaining pancreas (~79.25% in Px mice P < 0.05 vs Ct mice, 2 weeks post-surgery). Hypoglycemia of the proximal colon to secrete glucagon and C peptide was observed (+290.6% in Px mice P = 0.05 vs Ct mice, 2 weeks post-surgery). In pancreactomized mice, an hypoglycemia of the duodenum was associated with an increase in crypt depth (+77.7%, in Px mice P < 0.05 vs control mice, 2 weeks post-surgery) and villus height (+53.8% in Px mice P < 0.05 vs control mice, 2 weeks post-surgery).

Conclusion: These data establish an ability of the whole gut to adapt in response to pancreactectomy. The upper intestine (duodenum) become hyperplastic and mucosal weight increased intestinal glucose absorption 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.

P0635 USE OF ALTERNATIVE LIPID EMULSION IN NON-CRITICALLY ILL PATIENTS IN ACUTE HOSPITAL SETTING

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Introduction: Soybean oil intravenous lipid emulsion (IVLE) is also known as conventional lipid in rich in linoleic acid (ω-6 PUFAs). ω-6 PUFAs may influence inflammatory response and indirectly detrimental in the critically ill patients. To overcome this, the use of alternative IVLEs such as medium chain triglycerides (MCT), fish oil and olive oil alone or in combination with soybean oil IVLE have been used to lower the content of ω-6 PUFAs. Most studies on alternative IVLEs have been conducted in the critically ill patients, elective surgical patients and cancer patients. No previous studies have evaluated the clinical outcomes of several different IVLEs in non-critically ill patients in acute hospital setting.

Aims & Methods: The purpose of this study is to determine whether there is a difference in clinical outcome amongst patient who received conventional soybean oil IVLE versus alternative IVLEs in non-critically ill patients in acute hospital setting. All patients on parenteral nutrition (PN) were identified in a prospective compilation database from July 2007 to September 2010 and were analysed retrospectively. Patients were analysed based on the IVLE received, namely soybean oil based (Lipofundin-N 20%, type 1), MCT oil based (Lipofundin MCT/LCT 20%, type 2), olive oil based (ClinOleic, type 3) and fish oil containing (Lipidem, type 4). Patients must receive PN for at least 5 days, with absolute indication of surgery or high dependency unit for using non-invasive ventilator support or long-term use of PN. Exclusion criteria included patients who received less than 5 days of PN, intensive care unit (ICU) patients, PN started in ICU and continued in general ward or HDU, PN restarted in less than 3 days after being discontinued in ICU, patient on invasive/non-invasive ventilator support or long-term PN patients.

Results: 537 patients were started on PN and 388 patients were included in the analysis. 90% of patients were on type 1 (MCT-based) IVLE, 141 patients were on type 3 (MCT-based) IVLE, 141 patients were on type 5 (olive oil based) IVLE and 97 patients were on type 4 (fish oil based) IVLE. Baseline characteristic were similar in four groups of IVLEs. Majority of PN were initiated in patients admitted under surgical team. There were no difference in terms of mortality, readmission and infection rate between conventional and alternative IVLE as a group, overall mortality (OR) was 0.83 (CI 0.68–1.01, p = 0.13), 0.95 (CI 0.80–1.12, p = 0.36). There were no difference in terms of mortality, readmission and infection rate between conventional IVLE versus each of the alternative IVLE. Length of stay was only statistically significantly lower for olive oil based IVLE (Type 3) when compared to conventional IVLE (p = 0.05).

Table 1: Clinical outcomes with conventional IVLE versus alternative IVLE as a group

<table>
<thead>
<tr>
<th>IVLE Type</th>
<th>Mortality (As a group) OR (95% CI)</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conventional</td>
<td>0.83 (CI 0.68–1.01)</td>
<td>0.13</td>
</tr>
<tr>
<td>Alternative</td>
<td>0.95 (CI 0.80–1.12)</td>
<td>0.36</td>
</tr>
</tbody>
</table>

Conclusion: Length of stay was significantly lower in alternative IVLE compared with conventional IVLE. However, there were no clinical difference in terms of mortality, readmission and infection between conventional and alternative IVLE in non critically ill patients.

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


P0636 COMPLICATIONS AND EARLY MORTALITY IN PERCUTANEOUS ENDOSCOPIC GASTROSTOMY PLACEMENT IN LOMBARDY: A MULTICENTER PROSPECTIVE STUDY
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Introduction: Percutaneous endoscopic gastrostomy placement (PEG) is currently the method of choice for medium- and long-term enteral feeding and is nowadays one of the most common endoscopic procedures performed worldwide. To date, data on complications and mortality rates are generally retrospective and only few prospective studies have been published on small number of patients.

Aims & Methods: We aimed to prospectively evaluate the complication rates and the mortality of patients after PEG insertion or PEG 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 63.2% patients. Indications were: dysphagia for cerebrovascular diseases in 64.0% patients. Mean age was 72y (SD 16.01, range 18–99). ASA status was 1 in 4.0, 2 in 63.2% patients. Indications were: dysphagia for cerebrovascular diseases in 64.0% patients.

Table 1: Details about patient’s characteristics, ongoing therapies, comorbidities. A total of 330 patients (36.0%) had anticoagulant and/or antiplatelet concomitant therapy. 30.0% of patients had undergone a relative (without legal guardianship) in 66.3%, patient in 28.2%, legal guardian in 16.25%, 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.

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P0637 MEDICAL REGISTRAR REPORTING OF CHEST X-RAYS FOR NASOGASTRIC TUBE POSITION: HOW CAN IT BE MADE SAFER?
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Introduction: Nasogastric tube (NG) feeding is an essential part of in-patient care. Tubes can be placed at the bedside with no need for specific equipment or sedation. However placement of NG tubes is not without risk and avoiding the introduction of substances into the respiratory tract through a misplaced NG tube was highlighted as a UK National Patient Safety Agency alert in 2005. In 2011 the NPSA made this a ‘never event’. The only acceptable methods of checking the position of an NG tube are: pH < 3.5 on aspirate or confirmation on chest X-ray (CXR) by competent medical staff. Reporting a CXR for NG tube position is a frequent request particularly for junior doctors out of hours. Practise varies across the UK - some trusts require NG checking to be done only by senior clinicians (medical registrars or consultants) and some only allow reporting by a consultant radiologist. We assessed documentation of NG position on CXR by medical registrars from first to final year of specialist training and from various specialties were presented with a CXR showing a correctly sited NG tube and were asked to complete a sticker answering yes or no, to check position and whether it was safe to use. Following this they were presented with a CXR showing an incorrectly sited NG tube and asked to use the sticker to assess position. The CXR was projected and anonymous responses collected after sufficient time for the group to complete both stickers.

Results: 31 complete responses were obtained for the correctly sited tube with 58% stating that it should be used and 42% that they would not use the tube without further review. 10 incomplete responses were obtained and therefore 86% of responses met NPSA guidance for reporting CXR for NG position. 28 complete responses were obtained for the incorrectly sited tube and 100% stated that the tube should not be used.

Conclusion: Use of the sticker increased compliance with NPSA guidance for CXR reporting for NG tube position from 17.6% to 86%. The misplaced tube was correctly reported and not used in 100% of responses. The correctly sited tube was reported as safe to use in 58%. The CXR used was of an anonymous real patient and was slightly rotated to reflect a real-life scenario which meant the tube was slightly off the midline. In this real-life scenario some trainees would be happy to make a judgement considering these factors and others may be cautious and follow the sticker statements exactly prompting further review by radiology or removal of the tube. Overall this increases patient safety and avoids use of a misplaced tube in accordance with NPSA guidance. We recommend a sticker on all wards which use NG tubes to rapidly improve documentation and patient safety. The other option we may consider is developing a pathway for radiology consultants to report all these CXRs before the NG tube is used; however this is likely to take considerable time and is unlikely to be available out of hours.

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

References
**P0638 MICRONUTRIENT MONITORING IN HOME PARENTERAL NUTRITION PATIENTS: AN AUDIT OF PRACTICE IN A REGIONAL REFERRAL CENTRE**

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**Introduction**: Intestinal failure patients by definition have reduced ability to absorb food and micronutrients through the gastrointestinal tract. Type two intestinal failure patients require months of intravenous nutrition (parenteral nutrition) for weeks or months either in hospital or at home. Type three intestinal failure patients generally require long-term parenteral nutrition (PN), which is given at home (HPN) and may be life-long. In addition to a reduction in the ability to absorb micronutrients, patients on long-term PN have a reduction in absorption of micronutrients (copper, zinc, selenium and manganese) and vitamers (A, B12, D and E) which are required for metabolism and enzymatic reactions at a cellular level. PN is routinely supplemented with micronutrients and should be able to meet this requirement. Vitamin C deficiency can occur at high levels and deficiency can cause a variety of symptoms. ESPEN guidelines recommend that serum vitamin and trace element levels be checked at baseline and at least once per year. NICE guidelines specify more frequent monitoring for in-patients and that selenium, manganese and vitamin D should be checked three to six monthly in HPN patients. Some trace elements (copper and zinc in particular) are affected by acute illness. Current local practice is to avoid checking levels until there is evidence that inflammation or infection has resolved.

**Aims & Methods**: Our aim was to audit the frequency of micronutrient screening in our cohort of HPN patients. All type two and three intestinal failure out-patients were included. Current in-patients were excluded due to the effect of acute illness on micronutrient levels. Patients on parenteral fluid rather than nutrition were excluded as current guidelines give recommendations for HPN patients and do not specify recommendations if fluid alone is required. A search of the blood results system was performed for all micronutrient results from one full year to the date of the search. Results were recorded in spreadsheet format and analysed. Many patients live out of the region; however, many local trusts do not have the laboratory facilities to check micronutrient levels so they tend to be done in Southampton. If no results were available on the Southampton system when the local hospital was contacted for local results if available.

**Results**: 57 home parenteral nutrition patients were identified. 51 (89.5%) of these patients had micronutrients checked at some point during their care. 44 of 49 (89.7%) had micronutrients checked within one year (two of the 51 had only recently so did not have results within a year). 32 (61.5%) of those who had micronutrients checked had them done within the last six months. 6 patients had never had micronutrients checked. One had them requested just prior to the time of audit but results were not yet available. Two were out of area and had not been seen in the last year. One of these commenced PN in 2015 and found it difficult to attend clinic. The other had not been seen in clinic due to an administrative error and has now been seen with micronutrients requested. Two further patients had never had micronutrients checked due to a persistently raised CRP.

**Conclusion**: Despite a lack of clarity between guidelines about the frequency of monitoring of micronutrients, it is recommended that HPN patients receiving long-term intravenous nutrition should have regular monitoring to reduce risk of deficiency or toxicity. The majority of our cohort of HPN patients had micronutrients checked annually and over half were checked six monthly. This is compliant with ESPEN guidelines; however, we need to aim for 100%. We have introduced a template to use in clinic to trigger review of results and request micronutrients when required. Alongside this we have introduced a virtual ward round to remotely review all out-patients regularly and plan ahead to request blood tests when required. Following the introduction of these measures we will repeat the audit to find out if the situation has improved.

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

**References**


Nourishment support for adults: oral nutrition support, enteral tube feeding and parenteral nutrition NICE Clinical guideline [CG32] Published date: February 2006

**P0639 CLINICAL NUTRITION - ARE WE IGNORANT OR NEGLIGENT?**

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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-related interventions. Comprehensive international guidelines and nutritional training in medical education have been introduced to overcome these barriers, there appears to be a discrepancy in practice amongst physicians despite the availability of these resources.

**Aims & Methods**: We aim to assess the knowledge and attitudes of physicians towards clinical nutrition in a large tertiary teaching hospital in Singapore. An anonymous questionnaire comprising 15 multiple-choice questions from standard nutrition textbooks was administered. The questionnaire was designed to assess (a) recognition of nutritional needs of hospitalized patients, (b) knowledge on the role of clinical nutrition, and (c) application of nutritional intervention in common clinical practice. We included consultants, fellows and residents working in units where nutritional problems were common. Finally, we conducted a separate 5-question opinion survey to assess each participant’s nutritional training and exposure, based on a 5-point Likert scale ranging from “strongly agree” to “strongly disagree”.

**Results**: A total of 305 physicians volunteered to participate in this study. Forty (13%) did not reveal their specialty or staff grade and were excluded from analyses. Of the remaining 265 responders comprised 77 (29.2%) residents, 49 (18.7%) 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 3) of 15) was obtained by fellows, consultants and 58 (22%) residents. There are 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 (6.0 ± 2.2) (range 2-12). However, gastroenterologists performed significantly better than non-gastroenterologists (median aggregate score 9.4 ±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 (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>Consultants (n = 77)</td>
<td>6.0 ± 2.2</td>
<td>2.0–12.0</td>
<td>0.617</td>
</tr>
<tr>
<td>Residents (n = 130)</td>
<td>7.0 ± 1.8</td>
<td>1.0–11.0</td>
<td>0.001</td>
</tr>
<tr>
<td>Fellows (n = 58)</td>
<td>7.0 ± 1.8</td>
<td>3.0–11.0</td>
<td>0.001</td>
</tr>
<tr>
<td>Medical specialities (n = 232)</td>
<td>6.5 ± 1.9</td>
<td>1.0–12.0</td>
<td>0.193</td>
</tr>
<tr>
<td>Surgical specialities (n = 33)</td>
<td>7.0 ± 1.8</td>
<td>2.0–10.0</td>
<td>0.321</td>
</tr>
<tr>
<td>Gastroenterologists (n = 25)</td>
<td>9.0 ± 2.2</td>
<td>3.0–12.0</td>
<td>0.001</td>
</tr>
<tr>
<td>Non-gastroenterologists (n = 240)</td>
<td>6.0 ± 1.8</td>
<td>1.0–11.0</td>
<td>0.001</td>
</tr>
<tr>
<td>Median nutrition screening on admission</td>
<td>7.0 ± 1.8</td>
<td>1.0–11.0</td>
<td>0.001</td>
</tr>
<tr>
<td>Agreed (n = 81)</td>
<td>7.0 ± 1.2</td>
<td>1.0–11.0</td>
<td>0.001</td>
</tr>
<tr>
<td>Disagreed (n = 99)</td>
<td>7.0 ± 2.2</td>
<td>2.0–11.0</td>
<td>0.001</td>
</tr>
<tr>
<td>Confident in providing nutrition counselling</td>
<td>7.0 ± 2.0</td>
<td>3.0–11.0</td>
<td>0.001</td>
</tr>
<tr>
<td>Agreed (n = 23)</td>
<td>7.0 ± 2.0</td>
<td>3.0–11.0</td>
<td>0.001</td>
</tr>
<tr>
<td>Disagreed (n = 137)</td>
<td>7.0 ± 2.0</td>
<td>3.0–11.0</td>
<td>0.001</td>
</tr>
</tbody>
</table>

**Conclusion**: Our study highlights that knowledge on nutrition and its clinical application to hospitalized patients remains inadequate across all physician grades, especially amongst non-gastroenterologists. The current state of clinical nutrition-related teaching during residency training falls short of achieving its goals, and may need re-evaluation.

**Disclosure of Interest**: All authors have declared no conflicts of interest.
3.03 ± 0.67 cm on gastric side. Mean operating time was 76.7 ± 45.5 (30-240) minutes. No adverse events during the temporary disconnection of procedure and or drainage procedure were encountered in eight (26.7%) children (capno-peritoneum-4 and retro-peritoneal carbon dioxide -4). There was significant reduction in mean LES pressure after POEM (36.25 ± 16 vs 12.88 ± 6.95, p < 0.001). High grade of oesophageal oesophagitis of timed barium oesophagogram (>50%) was documented in 94.4% 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 0.36 ± 0.77 (p=0.0001). Gastric reflux revealed erosive gastrolesophageal reflux in five children at 1 year (27.8%).

Conclusion: POEM is safe and effective for children with achalasia cardia. POEM can be safely performed in an endoscopy suit in paediatric patients. Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0641 HIGH RATE OF HELICOBACTER PYLORI ANTIBIOTIC RESISTANCE IN ARMENIAN CHILDREN WITH GASTRODUODENAL DISEASE
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Introduction: Because of high prevalence of gastric malignancies in the adult population, high Helicobacter pylori (Hp) prevalence in Armenia is suspected. Research on antibiotic resistance of Hp in children and adults lead to decrease of effectiveness of standard eradication therapy [1, 2]. The aim of this study is to determine frequency of Hp antibiotic resistance in Armenian children.

Aims & Methods: 47 children with suspected gastroduodenal disease (GDD), hospitalized in Arabkir MC, were selected from April to December 2016 (23 boys and 24 girls, average age 8.98 ± 4.10). Hp-associated GDD were diagnosed according to clinical, endoscopic and histological criteria. Antral biopsy was performed on 100% of patients'. The aim of this study is to determine frequency of Hp antibiotic resistance in Armenian children.

Results: H. pylori-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 endoscopy only, one patient was H. pylori positive and/or duodenitis was seen in 18 (45%), non-erosive gastritis in 16 (40%), PUD in 3 (7.5%), normal mucosa in 3 (7.5%). Rapid urease test was positive in all antral biopsies (100%). Histology showed chronic gastritis and/or duodenitis in 28 (70%), atrophic gastritis in 5 (12.5%), gastric glandular dysplasia in 2 (5%), gastric metaplasia of duodenal mucosa in 3 (7.5%), normal mucosa in 2 (5%). Hp was positive in 38 (95%) and negative in 2 (5%). Cultures were positive for Hp in 14 of 40 patients (35%). Susceptibility test was possible in 12 Hp strains from available14: all but 2 were resistant to metronidazole (83.3%), 4 to clarithromycin (33.3%), 3 double resistant to both metronidazole and clarithromycin (25%), and 66.6% to doxycycline. All strains were susceptible to amoxicillin and levofloxacine (100%), 6 strains were tested and found susceptible to rifuracet.

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 rifuracet might be useful for future development 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.

References
Recent Insights into Antibiotic Resistance in Helicobacter pylori Eradication. Gastroenterology Research and Practice; Volume 2012, Article ID 723183, 8 pages.
P0645 HELICOBACTER PYLORI INFECTION AND SPECIFIC IMMUNOGLOBULIN E ANTIBODIES TO FOOD ALLERGENS IN SYMPTOMATIC CHILDREN ADMITTED IN A DIGESTIVE ENDOSCOPY UNIT

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Introduction: H pylori infection is one of the most widespread bacterial infections worldwide, therefore nowadays its prevalence is decreasing, mostly in developed countries. There are some studies which support that H pylori could favor the development of food allergy.

Aims & Methods: To assess the relationship between H pylori infection and specific immunoglobulin E (Ig E) antibodies to food allergens in symptomatic children. We conducted a prospective study of 394 symptomatic children (249 girls, age range 6 months-18 years), mostly with uninvestigated dyspepsia requiring ingestion of antibiotics in our unit. From January 2015 to December 2016. All patients were evaluated for H pylori infection by at least two standard invasive tests and for specific immunoglobulin E antibodies to major food allergens (R-Biopharm, Germany). The nutritional status of patients was assessed in all cases by the new World Health Organization (WHO, 2007) growth charts. EPI-INFO version 7 was used for statistical analysis. A two sided p-value less than 0.05 was considered statistically significant.

Results: Active H pylori infection was documented in 246 (62.3%) cases. The allergic sensitization at least one of the food allergens was identified in 134 of 394 patients (34%). The majority of Ig E positive children (109 of 134 cases; 81.3%) were positive for cow’s milk followed by egg (17.9%), wheat (7.46%), peanut (4.5%), soybean (3.73%). The allergic sensitization to food allergens was associated with abnormal levels of specific Ig E antibodies to common inhalatory allergens in 55 of 134 cases (41.04%). Regarding the association of H pylori infection with an elevated serum Ig E level to at least one of the food allergens tested, there was no significant correlation (p = 0.14). 77 of 134 (51.39%) patients positive for food specific Ig E antibodies were H pylori infected and 57 of them (38.55%) were H pylori negative (Fisher exact test = 0.08). The assessment of the patients nutritional profile in relationship with H pylori infection and food allergy not revealed a statistically significant effect on the two ends of the poor nutritional status (undernutrition and overnutrition).

Conclusion: The recent decline of H pylori infection is not evident in our study. There was no association between H pylori infection and Ig E mediated food allergy. Undernutrition and overnutrition were not associated with the H pylori infection and food allergy in our patients. Disclosure of Interest: All authors have declared no conflicts of interest.

P0646 GUT MICROBIOFA INFLUENCE UNDER OLGOFRACTOSE-ENRICHED INULIN ADMINISTRATION IN PAEDIATRIC COELIAC DISEASE PATIENTS ON A GLUTEN-FREE DIET: RANDOMIZED CONTROLLED TRIAL

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Introduction: Imbalanced gut microbiota is suggested to be involved in the pathogenesis of coeliac disease (CD). In many CD patients, despite a long-term treatment with a gluten-free diet (GFD), the intestinal dysbiosis is not completely restored. Prebiotics, substances of the unique ability to shape intestinal microflora, can favor the reestablishing their microbial metabolic activity. In comparison with placebo group, the administered of OEI in GFD prevents from a gut dysbiosis observed along with the duration of the GFD, and maintains a constant quantity of beneficial bifidobacteria. Moreover, the administered of OEI in GFD stimulates activity gut microbiota observed ashe increased SCFA production.

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

P0647 CURRENT STATUS OF THE FIRST AND SECOND LINE THERAPY FOR HELICOBACTER PYLORI INFECTION IN SYMPTOMATIC CHILDREN: A SINGLE CENTER STUDY

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Introduction: Current evidence suggests the decline of the eradication rates of H pylori in children that is associated with standard first line therapy, partly determined by its antibiotic resistance.

Aims & Methods: To evaluate the effectivness of first and second-line therapy for H pylori eradication in children. We conducted a prospective open-label study of 158 symptomatic children (age range 6 months-18 years; 106 girls) who required a first upper digestive endoscopy over the past year. Active H pylori infection was documented in 122 of the 158 investigated children (77.2%). Of the 122 children infected with H pylori, 80 (65.8%) responded well with microbial metabolic activity. In comparison with placebo group, the administered of OEI in GFD prevents from a gut dysbiosis observed along with the duration of the GFD, and maintains a constant quantity of beneficial bifidobacteria. Moreover, the administered of OEI in GFD stimulates activity gut microbiota observed ashe increased SCFA production.

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

P0648 EVALUATING GLUTEN IMMUNOGENIC PEPTIDES AS NON-INVASIVE MARKER OF GLUTEN-FREE DIET ADHERENCE IN PAEDIATRIC CELIAC DISEASE

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Introduction: Treatment for celiac disease (CD) is a lifelong 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
A total 167 children were diagnosed to have new onset celiac disease resolution of intussusception. Focal GIP was quantified by enzyme-linked immunosorbent assay (ELISA). Anti-tissue transglutaminase (anti-TG) IgA and anti-deamidated gliadin peptide (anti-DGP) IgA antibodies were measured simultaneously, during basal and follow-up visits at 6, 12, and 24 months. Correlations between fecal GIP and serum antibodies were established by Cochran’s and Friedman tests. Results: 62 patients (97%) had detectable GIP levels in stools, during basal visit, before initiation of the GFD, whereas 20.3% of the patients were found to have positive GIP after treated with a GFD. Dietary transgressions were more frequent in 21 (52%) of the patients than 28 (68.2%) of them showed more than one detected transgression. Anti-TG IgA remained in high concentrations in 48, 34 and 20% of the patients at 6, 12 and 24 months of follow-up. Anti-DGP was positive in 13, 4.5 and 0% of cases when tested at 6, 12 and 24 months follow-up. Both serological methods did not correlate with GIP in stools (p < 0.05).

Conclusion: The GIP ELISA enabled direct and quantitative assessment of gluten exposure early after ingestion. Detection of GIP in stools revealed lack of compliance of traditional serological methods to verify GFD compliance in celiac patients. The antibodies can be measured several months or even years to decrease after initiation of the GFD and reduction (but incomplete suppression) of gluten intake. However, the GIP test can be used as a confirmatory tool for celiac patients who are suspected to have celiac disease in sera. Fecal GIP could 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 GFD versus disorder non-compliance.

P0652 CLINICAL SIGNIFICANCE OF TRANSFORMING GROWTH FACTOR - βI AND TUMOR NECROSIS FACTOR - β IN CHILDREN WITH FOOD PROTEIN INDUCED ENTEROCOLITIS SYNDROME

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Introduction: Nowadays food allergy continues to increase, especially in westernized countries and is now recognized as a worldwide problem. Transforming growth factor-βI (TGF-βI) is a profibrotic cytokine, which plays an important role in promoting the structural changes in food allergy. Also for patients with food protein induced enterocolitis syndrome TNF-α appears to have an important role.

Aims & Methods: The aim was to determine the significance of Transforming Growth Factor - βI (TGF - βI) and Tumor Necrosis Factor - α (TNF - α) in children with food protein induced enterocolitis syndrome. It was examined 38 patients with FFIES at the age from 4 months to 3 years, the average age was 19 ± 4 months. The control group consisted of 11 healthy children of the same age. The determination of TGF-βI and TNF-α in serum was performed by an enzyme immunoassay kits from Bender Medsystems (Austria).

Results: The level of TGF-βI in patients with FFIES exceeded the norm and was respectively 33.5 ± 1.6 mg/l at norm 20.2 ± 2.1 mg/l p < 0.001. The indices of TNF-α were also increased and amounted to 8.8 ± 1.3 mg/l in comparison with the control group p < 0.001. For statistical significance it was characterized by an increase in specific antibodies IgE to cow’s milk in 18 (47.3%) children. In these patients in comparison to healthy children, there was an increase in specific antibodies IgE to egg and fish. It is believed that TGF – β1 and TNF – α play an important role in promoting the structural changes in food allergy. Also for patients with food protein induced enterocolitis syndrome TNF-α appears to have an important role.

Discussion: The increase in specific antibodies IgE to milk in children with food protein induced enterocolitis syndrome and the increase in TNF-α in serum are associated with the development of food protein induced enterocolitis syndrome.

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

References

P0653 THE ROLE OF GST1 & GTM1 GENE POLYMORPHISMS IN NEWBORN'S OBESITY RISK

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Introduction: Newborn's birth weight is influenced by maternal factors (mother's weight at the onset of pregnancy, gestational weight gain - GWG), genetic, obstetrical and environmental factors, but also socio-economic ones. Even if GWG, mother’s increased BMI and the adipose tissue mass determine a bigger birth weight and increase the risk of newborns' obesity. Glutathione S-transferases (GSTs) is an oxidative stress-related gene which is associated with and with these complications.

Aims & Methods: The aim of the study was to investigate the role of mother-child interaction of GSTs & GTM1 polymorphisms as independent risk factors for newborn's weight, but also to establish correlations between these polymorphisms and anthropometrical parameters, and biompeidance (BIA) ones, respectively. We have assessed the anthropometrical parameters in both mothers and their newborns (BMI- body mass index, MUAC – medium upper arm circumference, TST – tricipital skin thickness, weight - W), BIA parameters in mothers, but also we determined the clinical, paraclinical and genetic parameters in both mothers and newborns.

Methods: We performed a cross-sectional study on 202 mothers and their newborns in a Clinic of Neonatology & Gynecology and Obstetrics from Romania.

Results: We noticed that in newborns with W > 3000 gr there was a significant statistical correlation between weight and mother’s GSTT1 polymorphism (p = 0.046), birth at term (p < 0.001), with mother’s percentage of fat mass assessed by BIA (p < 0.001), and multi parity, respectively (p < 0.001). We obtained a tendency towards correlations between W > 3000 gr and basal metabolism rate (p = 0.006), and GWG seemed to be a protective factor for this W (p = 0.072). We also found that GSTM1 in newborns was a risk factor with tendency towards statistical significance in newborns with increased birth weight. We did not find any interaction effect between newborns' and mothers' GST1 and GSTM1 polymorphisms and anthropometrical parameters (p = 0.545 for M1 and 0.664 for TST in clinical parameters).

Discussion: Mother’s GSTM1 is an independent risk factor for newborns’ W > 3000 gr, while mother’s GWG seems to be a protective factor for W > 3000 gr. Further studies are needed in order to determine the clear role of these polymorphisms in newborns’ obesity risk. This research was supported by the Research Grants of the University of Medicine and Pharmacy Tireg Mures, Romania - "The role of genetic determination of the mother in child's obesity correlated with measurements of bioimpedance and anthropometry" no.275/4/11.01.2017.

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

References

**P0655 GENETIC PREDISPOSITION TO PRIMARY LACTOSE INTOLERANCE AND ITS INFLUENCE ON CHILDREN'S QUALITY OF LIFE AND DAIRY INTAKE**

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Introduction: Our study population included 87 children aged 6–17 years conducted a prospective study, recruiting consecutive children evaluated in our unit in May-August 2016. Our study included 87 children aged 6–17 years in a group of Romanian children. We conducted a prospective study, recruiting consecutive children evaluated in our unit in May-August 2016. Our study population included 87 children aged 6–17 years in their quality of life and dairy intake. In clinical practice only half of people with PLI have symptoms. However, some studies showed that PLI subjects have lower trends. It did not influence quality of life and dairy intake.

Results: 35 (51.7%) subjects had a CC genotype, 30 (43.5%) subjects had a GA genotype. Our results were consistent with the data from Hardy-Weinberg equilibrium. We found no correlation between homogeneity of PLI and dairy intake (CC: r = 0.06, p = 0.54; GG: r = 0.01, p = 0.06). We found no correlation between either CC, or GG homogeneity and quality of life (r = -0.11, p = 0.3). In conclusion, our group genetic predisposition to PLI followed European trends. It did not influence quality of life and dairy intake.

Disclosure of Interest: C. Pienar: This work was supported by an internal grant of Victor Babes University of Medicine and Pharmacy, PJH-C4-TC-2016-08. All other authors have declared no conflicts of interest.

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**P0657 HEPATIC FIBROBLAST GROWTH FACTOR-21 AND OMENTIN-1 mRNA LEVELS IN MORBIDLY OBSESE WOMEN WITH NON-ALCOHOLIC FATTY LIVER DISEASE**

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Introduction: Fibroblast growth factor-21 (FGF21) and omentin-1 mRNA expression, and their serum levels as predictive markers of liver injury and insulin resistance in morbidly obese women with NAFLD. The study included 56 severely obese women who underwent intraoperative wedge liver biopsy during the bariatric surgery. Hepatic FGF21 and omentin-1 mRNA was assessed by quantitative real-time PCR, while their serum concentration with commercially available enzyme-linked immunosorbent assays.

Results: FGF21 serum level was significantly higher in patients with more extent steatosis (grade 2 and 3) compared to those without or with mild steatosis (grade 0 and 1) (p = 0.049). However, ROC analysis showed poor discriminating power for FGF21 serum level in differentiation between more and less severe steatosis with AUC = 0.666. There was evident tendency to higher levels of hepatic FGF21 mRNA in patients with lobular inflammation and fibrosis, and to lower levels in the case of ballooning degeneration and steatosis. There was positive mutual correlation between hepatic FGF21 and omentin-1 mRNA levels (r = 0.73, p < 0.001). Fibrosis stage was associated with serum glucose and HOMA-IR (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 FGF21 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 metabolic and histopathological abnormalities. In severely obese patients with NAFLD we observed evidence for the role of FGF21 and omentin-1 RNA expression as a potential biomarker of advanced liver disease.

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

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Dushay J, Chui PC, Gopalkrishnan GS, et al. Increased fibroblast growth factor 21 in obesity and nonalcoholic fatty liver disease. Gastroenterology 2010; 139 (2): 456-463 [PMID: 20451522 PMCID: PMC4682667 DOI: 10.1053/j.gastro.2010.04.054]
(HSCs), which were separated from Sprague-Dawley rat, were treated with differ-
entially lutein B and TGF-β1 such of steatohepatitis. HSCs proliferation, western blot were 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 treated 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 signifi-
cantly with a time and dose dependent relationship by the treatment of lutein B and TGF-β1, with inhibitory concentrations of α-SMA (IC50 = 0.180g/l). Western blot analysis showed that the expressions of Wnt receptor Frizzled-4 protein and α-SMA were obviously lower in the group of lutein B treatment than that in the control group. Moreover, the Lutein B and TGF-β1 treatment increased the expressions of Frizzled-4 and α-SMA genes in the level of mRNA.

Conclusion: The Lutein B mediated anti-hepatic fibrosis by inhibiting the proliferation of HSCs through restraining the Wnt signaling pathway.

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

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-alco-
holic steatohepatitis (NASH) and are a major component of inflammatory cells in-
filtrated 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 efficacy of macrophage depletion on NASH. C57BL/6 wildtype (WT) mice and transgenic macrophage depletion model mice by injecting liposomal clodronate-treated WT mice and DTox-treated MCD diet, concomitant with significantly enhanced hepatic macrophage infiltration as indicated by F4/80 staining. Macrophage depletion by liposomal clodronate-treated WT mice and DTox-treated mice were further evaluated in human cells using a FXR reporter assay. Assessment of FXR-depen-
dent 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 assess-
ment of cellular cytotoxicity and intracellular lipid accumulation.

Results: From the compound library, five BA derivatives showed stronger activa-
tion of FXR, comparing with their natural precursors. Incubation of HepG2 cells with BA derivatives led to a ~25% reduction in cell viability and ~75% increase in cell death, with a dose-dependent accumulation of lipid droplets. Pre-incubation of cells with selected derivatives efficiently prevented Fxr-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, FGF19 and VLDLR mRNA levels, and repressed PARP1, LXR, SREBP1-c and CYP7a1 mRNA expression. Molecular docking studies and FXR reporter assays confirmed ligand affinity to Fxr. Furthermore, chenodeoxycholic acid and its oxo analogs as well as oxo analogs of non-cholic acid BA derivatives were identified as activators of FXR at lower concentra-
tions comparing with the parent molecule.

Conclusion: In conclusion, we identified novel BA derivatives that directly modu-
late liver nuclear receptors, such as Fxr and Lxr, thus protecting liver cells from lipid accumulation and reducing cell death. BA derivatives may be used as scaffolds for the development of targeted therapies for NAFLD.

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

(Supported by PTDC/BIM-MEC/0905/2014, SFRH/BD/110672/2015, and SFRH/BD/80975/2011, FCT, Portugal.)

P0660 NEWLY SYNTHESIZED BILE ACID DERIVATIVES PREVENT LIVER STEATOHEPATITIS AS A PROVEN ANTI-FIBRINOGEN THROUGH TARGETING OF NR1 SUBFAMILY NUCLEAR RECEPTORS

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Introduction: Non-alcoholic fatty liver disease (NAFLD) is considered the hepa-
tic manifestation of metabolic syndrome, with simple liver steatosis being capable of gradually progressing to inflammation, fibrosis, cirrhosis and even hepatocel-
lar 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)-

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 meta-
obolic syndrome with rising socio-economic impact worldwide. NAFLD is defined by significant lipid deposition in hepatocytes that is unrelated to alcohol con-
sumption. This high prevalence of liver disease occurs after a protracted inflam-
matory state caused by innate immune responses (TGF-β1 and LXRR), which are triggered by consumption of fructose-rich goods 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 dis-
cases. 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 2 mM oleic acid (OA)
Disclosure of Interest:

miRNAs targeting mitochondrial proteins during NAFLD may help in the development of targeted therapies for NAFLD. For example, miR-34a has been shown to inhibit the expression of Mfn2, a protein involved in mitochondrial fission. A better understanding of the network of miRNAs targeting mitochondrial proteins during NAFLD may help in the development of novel targeted therapies for metabolic diseases associated with mitochondrial dysfunction. (Supported by TDT-BIC-MEC/089/2014, SF-1115/13, FCT, and Gilead Sciences International Research Scholars Program 2015)
mononuclear layer containing stem cells is a novel approach for regeneration of liver in patients with alcoholic liver cirrhosis. Therapeutic options are not constant and require repeated PBMC transplantation.

**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 chronically hepatitis C patients with liver cell failure were prospectively enrolled. They were classified into 3 groups; Group I: 20 patients underwent (ABMSC) injected intrasplenic. Group II: consisted of 20 patients underwent (ABMSC) injected intrahepatic after trans differentiation into hepatocytes with the double amount of growth factor. Group III: 10 control patients underwent (ABMSC) injected intrahepatic; after trans differentiation into hepatocytes with the double amount of growth factor. Group III (Control Group); consisted of 20 patients received traditional supportive treatment for chronic hepatitis C, and MELD score and performance status.

**Conclusion:** There was improvement in serum albumin, ascites, lower limb edema, and hepatic accumulation of fat by the 3rd month and this was maintained till the end of the study. Fatigue improved in all patients who had ABMSC. There was improvement in serum albumin, ascites, lower limb edema, bleeding tendency and physical activity. Also there was improvement in MELD score and performance status.

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

### P0665 PERIPHERAL BLOOD MONONUCLEAR CELL TRANSPLANTATION STIMULATES HEPATOCYTES PROLIFERATION IN PATIENTS WITH ALCOHOLIC LIVER CIRRHOSIS

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**Introduction:** It is well known that severe liver disease requires a liver transplantation to be treated. But liver transplantation is not available in many countries. Autologous bone marrow is a bank of therapeutic stem cells which can stimulate liver regeneration. Proliferating cell nuclear antigen (PCNA) shows nuclei of dividing cells and may be useful for calculating proliferation index.

**Aims & Methods:** The aim of this study was to evaluate changes of proliferation intensity of liver cells in patients with alcoholic liver cirrhosis after autologous peripheral blood mononuclear cell (PBMC) transplantation. This uncontrolled open-labeled clinical trial was approved by Ethical committee of Ministry of Health of the Republic of Tatarstan, Russia. Eleven patients took part in the study, they received granulocyte colony-stimulating factor injections for 5 days for PBMC mobilization. On the 6th day PBMCs were collected and injected into the celiac trunk. Liver biopsies were obtained three times from each person on not less than 6 months before transplantation of PBMCs into the celiac trunk (initial), three and twelve months after the procedure. Liver biopsy specimens were embedded in paraffin and stained immunohistochemically with antibodies against PCNA. The PCNA labeling index was calculated as the number of PCNA-labeled nuclei for 1000 hepatocyte nuclei in each specimen and the results were expressed as percentage ratios. Statistical analysis was done by Wilcoxon signed-rank test using Statistica v.12 software. p value < 0.05 was considered significant.

**Results:** Before the transplantation of PBMCs 28.3 ± 18.3% of all the hepatocytes expressed PCNA without any topographic prevalence. Three months after the transplantation the proportion of proliferating hepatocytes increased up to 36.7 ± 24.8%. Twelve months after transplantation of PBMCs we found hepatocytes proliferation to be 2 times higher than before the procedure. Proportion of proliferating hepatocytes reached 50.2 ± 17.0% (p = 0.04). Great increase in hepatocytes proliferation intensity coincided with biochemical improvements of serum bilirubin, ALT and alkaline phosphatase.

**Conclusion:** Our study showed that proposed treatment was safe and effective. We can conclude that after transplantation of autologous PBMC s proliferation of hepatocytes greatly contributes to the liver regeneration and improvement of blood biochemical data in patients with alcoholic liver cirrhosis. However, effect of this treatment is not constant and requires repeated PBMC transplantation.

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

### P0666 ASSOCIATION BETWEEN NONALCOHOLIC FATTY LIVER DISEASE AND METABOLIC SYNDROME IN APPARENTLY HEALTHY KOREAN ADULTS

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**Introduction:** The prevalence of non-alcoholic fatty liver disease (NAFLD) has increased and several studies have shown that there is an association between NAFLD and insulin resistance (IR). The aim of this study was to determine how much impact the risk factors of metabolic syndrome have on ultrasoundographic fatty liver, especially NAFLD.

**Aims & Methods:** A total of 41,258 adults who underwent routine comprehensive health check-ups, including abdominal ultrasonography, were selected. We calculated the adjusted prevalence ratios (PRs) for components of MetS (high blood pressure, impaired fasting glucose, low high-density lipoprotein cholesterol, hypertriglyceridemia) 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 was a strong correlation 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.

### P0667 LEAN-NAFLD IS THE STRONGEST PREDICTOR OF FUTURE OBESITY AMONG URBAN ADULT SRI LANKANS: RESULTS FROM A PROSPECTIVE, COMMUNITY CORHORT FOLLOW-UP STUDY

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**Introduction:** Obesity is a global problem. Data from the Asian region is limited.

**Aims & Methods:** In a cohort follow-up study we investigated obesity among 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) > 90 cm males and WC > 80 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], 472(15.8%) had obesity [43.9% women] and 1584(53.3%) were normal weight [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:** Adult obesity was a strong correlation with MetS and also with each risk factors of MetS. Therefore, assessment for concurrent MetS among NAFLD patients is considered to be necessary.

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

### Reference


P0668 THE USE OF THE FATTY LIVER INDEX TO DETERMINE THE PREVALENCE OF FATTY LIVER DISEASE (HEPATIC STEATOYSIS) 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 transpeptidase (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 (WC) and 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 UHG.

Results: Data was completed on 316 participants; 58 were excluded, the majority due to either a history of alcohol excess or known liver disease. A total of 258 participants were therefore evaluated; 50% were male. One hundred and sixteen (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 <0.001). Those with 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 <0.001). There was a statistically significant difference in all parameters measured between all 3 groups (p <0.001), 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 older participants 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: IN VITRO AND IN VIVO STUDY

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Introduction: Bisphenol A (BPA) is an endocrine disrupting chemical, a hetero- 
genic 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 enzyme abnormalities, and in general with the whole blood glucose homeostasis.

Aims & Methods: We have evaluated BPA plasma and urine levels in non-alco- holic fatty liver disease (NAFLD) patients compared to healthy subjects and we evaluated the possibility to eliminate this environmental factor after a BPA-free diet regimen. Furthermore, we evaluated, in human HepG2 cells, the effects of exposure to different BPA concentrations on both oxidative stress induction and cell proliferation. We enrolled sixty patients with histologic diagnosis of NAFLD with or without T2DM, before a BPA-free diet, and healthy subjects, by subject- ing them to evaluation of body composition using bioimpedance analysis. In vitro, the proliferation of BPA-exposed HepG2 cells at two different concentrations (0.025 and 0.055 μM) was evaluated, both at high (H-HepG2), in order to simulate human hyperglycemia, and at low (L-HepG2) glucose concentrations, for 24 hours, as assessed by TRH assay.

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 adipose tissue 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 compar-ison to NAFL ones. Only H-HepG2 was treated with 0.055 μM increased proliferation compared to controls at 48h (p < 0.0001). Moreover, BPA increased TBARS levels at 48h in H-HepG2 cells versus controls.

Conclusion: Our study reveals a possible role of BPA as an environmental factor in the progression of NAFLD, particularly in obese and/or T2DM patients.

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

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 liver disease (NAFLD) are still the topic of debate in human studies. It has been shown that fatty infiltration in pancreas correlates with metabolic risk factors and may represent significant manifestation of metabolic syndrome (MeS) in association with nonalcoholic fatty liver disease (NAFLD). The aim of our study was to determine the association of fatty pancreas (FP) in NAFLD patients with features of MeSand to determine a simple new noninvasive scoring system for FP prediction in NAFLD patients.

Aims & Methods: We conducted across-sectonal 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, PI-Mbles-4 score, and APRI score). In this study, the FP was considered if more than the 50% of the pancreas had a fatty content. In this study, we associated MeS with the presence of FP and NAFLD and evaluated the presence of MeS predictive factors in NAFLD.

Results: Of these 143 patients with NAFLD, 84 had criteria for metabolic syn- drome (MeS), while there was no significant difference in frequency among FP groups. Out of all clinical and laboratory characteristics, no statistical differences were demonstrated in demographic and lifestyle factors such as age, gender, body mass index (BMI), systolic and diastolic blood pressure, presence of hypertension and dyslipidemia, values of insulin, high density lipoprotein (HDL) and triglycerides. Waist cir- cumference (WC) showed higher BPA levels in plasma and urine. In our population study, NASH patients showed a significant reduction of BPA circulating levels (p < 0.001) 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 adipose tissue 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 compar-ison to NAFL ones. Only H-HepG2 was treated with 0.055 μM increased proliferation compared to controls at 48h (p < 0.0001). Moreover, BPA increased TBARS levels at 48h in H-HepG2 cells versus controls.

Conclusion: Our study reveals a possible role of BPA as an environmental factor in the progression of NAFLD, particularly in obese and/or T2DM patients.

Disclosure of Interest: All authors have declared no conflicts of interest.
with use of antidiabetic agents and the absence of highly fatty pancreas, indicating its potential protective role. Simple new noninvasive scoring system was designed from multivariate logistic regression analysis to estimate the occurrence of severely FP in NAFLD with best ability in the prediction in score values above 6.5.

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

P0671 SERUM THYROID STIMULATING HORMONE IS INDEPENDENTLY ASSOCIATED WITH HEPATIC STEATOSIS AND STEATOHEPATITIS IN EUTHYROID SUBJECTS

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Introduction: Non-alcoholic fatty liver disease (NAFLD) is a rapidly growing disease worldwide. The pathogenesis of NAFLD is not well recognized. Thyroid is totally involved in regulation of lipid and carbohydrate metabolism, body weight, and energy homeostasis. Therefore, the role of thyroid hormones in pathogenesis of hepatic steatosis is anticipated.

Aims & Methods: This study aimed to investigate thyroid hormone abnormalities in euthyroid subjects with hepatic steatosis. A cross sectional study was conducted between September 2012 and September 2015 at Namazi hospital, Shiraz, Iran. Study subjects were healthy individuals who had undergone liver biopsy for evaluation of liver histology as a routine pre-transplant checkup before living related 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. The relationship of serum TSH and liver histology was studied with use of antidiabetic agents and the absence of highly fatty pancreas, indicating its potential protective role. Simple new noninvasive scoring system was designed from multivariate logistic regression analysis to estimate the occurrence of severely FP in NAFLD with best ability in the prediction in score values above 6.5.

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

P0672 IDENTIFICATION AND IN SILICO CHARACTERIZATION OF SIX NOVEL GANAB MUTATIONS IN POLYCYSTIC LIVER DISEASE

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Reference

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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 PRKCSH, has been identified as one of the causative genes of ADPLD. Recent data suggest that the α-subunit of glucosidase II (GIIa), 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 novel bona fide GANAB mutations in 7 patients (c.3306delT and c.11_16delTAGCGG, 1 splicing (c.2691-28C > G), 2 nonsense (c.2509C > T and c.2565C > T) and 1 missense (c.1835G > C) mutation. In silico analysis showed c.687delT and c.11_16delTAGCGG 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.2509C > T and c.2565C > T) are located in Internal Caspases 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 lineaging 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.

Reference
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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 the only validated alternative. The main surgical procedures are: restrictive gastric surgery (SG) and gastric by-pass (GBP), and they are chosen in function of BMI, age and comorbidity. Both techniques have proven effective in weight loss. It is known that liver fibrosis evaluation with Point Shear Wave Elastography (pSWE) is not effective 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 8%, p = 0.05), ALP (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 by 27% in SG, p = 0.02). No difference was observed for pSWE.

Conclusion: This study showed some significant differences in clinical and labora- tory 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 FOR A LIVER VOLUME COMPARED WITH PATIENTS WITH COMBINED POLYCYSTIC LIVER DISEASE AND AUTOSOMAL POLYCYSTIC KIDNEY DISEASE: RESULTS OF THE PLD REGISTRY

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Purpose: To compare liver volume in ADPKD and ADPLD patients and to identify new risk factors.

Methods: Out of a total 1674 patients in the PLD registry, 1222 patients (1110 ADPKD, 112 ADPLD) could be selected. In the ADPKD group, 355 ADPKD patients were included and adjusted liver volume was measured prior to liver reducing therapy. The ADPLD group included 112 patients. In all patients, height adjusted total liver volume was measured.

Results: Out of a total 1674 patients in the PLD registry, 1222 patients (1110 ADPKD, 112 ADPLD) could be selected. In the ADPKD group, 355 ADPKD patients were included and adjusted liver volume was measured prior to liver reducing therapy. The ADPLD group included 112 patients. In all patients, height adjusted total liver volume was measured.

Conclusion: In this cohort more ADPLD patients had moderate to severe PLD compared with the ADPKD group.

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

P0675 CARDIOVASCULAR RISK MODEL DEVELOPMENT FOR THE (ATYPICAL) PATIENT WITH NON-ALCOHOLIC FATTY LIVER DISEASE

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Purpose: To develop a risk model for cardiovascular diseases in patients with non-alcoholic fatty liver disease (NAFLD) affecting 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.

Methods: All patients with NAFLD and metabolic syndrome (MS) were 2:1 weighted. The non-alcoholic fatty liver disease (NAFLD) patients were identified using a combination of medical history, physical examination, blood tests, and ultrasound imaging.

Results: We included 95 patients with NAFLD, from which 53 were with MS and 42 were without MS. In all patients with NAFLD, with and without MS, there was a correlation between the value of intima-media thickness and the presence of NASH (p = 0.025), the degree of steatosis (p = 0.027) and the severity of fibrosis (p < 0.001). Patients with NAFLD and MS had higher values of lpa and npti compared with those with NAFLD, but without MS (p = 0.002).

Conclusion: In all patients with NAFLD, there was a correlation between the presence of lpa and npti and the level of total cholesterol (p = 0.438), LDL cholesterol (p = 0.505), HDL-cholesterol (p = 0.438), and triglycerides (p = 0.911) were not correlated with the presence of lpa, nor on the entire group of patients or on each arm. In a logistic model for the risk of developing lpa, we included presence of NASH, the grade of steatosis, the stage of fibrosis, body mass index, abdominal circumference and creatinine clearance level. In this model, the stage of fibrosis has been shown to be a predictor with a positive effect on the presence of lpa (p = 0.004, adjusted OR = 7.19, CI[1.86;27.72]). This model correctly classified 90.9% of patients with lpa and 91.7% of patients without lpa.

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.5 patients (23.02%) were overweight, 9 patients had normal weight and 24 (15.79%) had severe obesity. In all patients we calculated fibrosis scores: BARD, FIB-4 and NAFLD fibrosis score (NAFLD-FS). Blood samples were collected to determine aminotransferases, glucose, albumin level, platelet count. The abdominal ultrasonography was performed by the same physician and was graded using a semi-quantitative scale of 0 (no fibrosis), 1 (mild), 2, 3, 4, 5. 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% CI: 0.771–0.874). Sensibility and specificity for cutoff 7.1 kPa was 0.74 respectively 0.79 to exclude significant fibrosis. NAFLD-FS correlated stastic 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 P0679 EFFECT OF GRANULOCYTE COLONY-STIMULATING FACTOR (G-CSF) ON MORTALITY AND COMPLICATIONS VIZ. SEPSIS, ENCEPHALOPATHY, HEPATORENAL SYNDROME, AND GASTROINTESTINAL BLEED IN SEVERE ALCOHOLIC HEPATITIS: A RANDOMIZED CONTROLLED STUDY A. Sharma Gastroenterology and Hepatology, Fortis Escorts Hospital Jaipur, Jaipur/India Contact E-mail Address: aabhinav__11065@yahoo.com Introduction: Severe alcoholic hepatitis has very high short-term mortality. Compared to standard medical therapy (SMT), GCSF improves clinical and biochemical profiles, morbidity and mortality in these patients. We evaluated efficacy of G-CSF in modifying the disease course of severe alcoholic hepatitis over a period of 3 months in terms of mortality, morbidity by Discriminant function (mDF), Child-Turcotte-Pugh (CTP) and Model for End-Stage Liver Disease (MELD) score 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 5μg/kg GCSF subcutaneous (10 doses for 5 days). We assessed survival, changes in CTP, MELD and mDF scores and the development of complications till 90 days.

Results: The baseline parameters in both groups were comparable. On day 6 group A had higher mean leukocyte and CD34 counts than group B (P < 0.05). On 90 days follow up 17 patients in group A (68%) and 9 group B (36%) survived (P = 0.04). Mean changes for different scores were greater in group A then group B i.e. CTP (-41.97% vs -8.84%), MELD (-50.89% vs 10.09%) and mDF (-74% vs 18%) (P < 0.01). The percentages of patients who developed HRS, HE, or sepsis were lower in group A than in group B (28% vs 64%, 32% vs 64%, and 28% vs 68%, respectively) (P < 0.01). 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.

References

P0680 ALCOPHOLIC LIVER DISEASE/NON ALCOPHOLIC FATTY LIVER DISEASE INDEX (ANL): HOW TO DISTINGUISH THE TWO DISEASE FROM NON ALCOPHOLIC LIVER DISEASE WITHOUT HISTOLOGY R. Gaspar1, J. Santos-Antunes2, S. Rodrigues3, F. Carneiro4, G. Macedo5,6
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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 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 a single marker. However, to overcome these difficulties, a ANI (alcoholic liver disease/nonalcoholic fatty liver disease index) was created for a non-invasive determination of fatty liver diagnosis.

Aims & Methods: The aim of this study was to evaluate the reliability of ANI as a non-invasive diagnostic tool for NAFLD from ALD. A retrospective study between 2010 and 2015 in patients with definite diagnosis of NAFLD and ALD based on clinical, biochemical and histological criteria was performed. ANI scoring system in the differentiation of ALD and NAFLD was evaluated through the area under receiver operating curve (AUROC). ANI score was calculated through Mayo Clinic formula.

Results: This study was carried out in 22 patients with ALD and 120 with NAFLD, 87 men (61.3%) with a median age of 51 ± 13 years. NAFLD patients presented with a body mass index (BMI) of 29.0 ± 5.9 vs 23.9 ± 6 in ALD. ANI showed a sensitivity of 81% and specificity of 79% for the diagnosis of ALD with a cut-off value of −1.96 [AUROC 0.806 (0.715-0.898), p < 0.001]. ANI greater than −1.96 indicates a diagnosis of ALD whereas ANI less than −1.96 indicates the likelihood of NAFLD.

Conclusion: ANI scoring system is a non invasive diagnostic and reliable tool that may be used to distinguish NAFLD from ALD, decreasing the need for live biopsy. ANI greater than −1.96 suggests the diagnosis of ALD and ANI lesser than −1.96 suggest NAFLD.

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

P0681 TO DRINK OR NOT TO DRINK? A PROSPECTIVE COHORT STUDY ON THE EFFECTS OF ONE MONTH ALCOHOL ABSTINENCE IN MODERATE DRINKERS
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Introduction: Alcohol consumption is an accepted phenomenon in Western society, although harmful effects of excessive alcohol intake on health have been widely shown. Alcohol has a direct toxic effect on the liver, potentially leading to steatohepatitis and eventually liver fibrosis and cirrhosis. Excessive use is furthermore associated with obesity, hypertension, hypercholesterolemia and diabetes. Cessation of alcohol may reverse these effects to some degree. The biological effects of short-term abstinence from moderate alcohol consumption are not known.

Aims & Methods: A prospective interventional study in 16 healthy moderate drinkers (≤3 units alcohol/day or 21 units/week) who discontinued alcohol use for one month. Nine complete abstainers served as a control group. In both groups an extensive health evaluation was performed at three time points: at baseline (T0), at cessation (T1) and after one month of resuming alcohol intake (T8). Outcomes consisted of morphometrics (blood pressure, body mass index and body impedance analysis), transient and shear wave elastography to assess the liver’s stiffness, computer assisted liver volumetry and liver fat. A blood panel consisted of liver enzymes, cholesterol, glucose and iron metabolism and inflammatory parameters. Several quality of life components were assessed with VAS scales.

Results: The intervention and control group were comparable on baseline in terms of age, gender and morphotomics. Prior to intervention the participants consumed on average 10.4 ± 4.5 units alcohol/week and when they resumed alcohol use, an average of 12.4 ± 5.1 units/week. During the intervention period, complete cessation was ascertained by blood parameters. Liver stiffness and liver fat percentage did not differ between both groups nor change within period, complete cessation was ascertained by blood parameters. Liver stiffness consumed on average 10.4

Conclusion: The intervention and control group were comparable on baseline in terms of age, gender and morphotomics. Several quality of life components were assessed for one month. Nine complete abstainers served as a control group. In both groups an extensive health evaluation was performed at three time points: at baseline (T0), at cessation (T1) and after one month of resuming alcohol intake (T8). Outcomes consisted of morphometrics (blood pressure, body mass index and body impedance analysis), transient and shear wave elastography to assess the liver’s stiffness, computer assisted liver volumetry and liver fat. A blood panel consisted of liver enzymes, cholesterol, glucose and iron metabolism and inflammatory parameters. Several quality of life components were assessed with VAS scales.

Results: The intervention and control group were comparable on baseline in terms of age, gender and morphotomics. Prior to intervention the participants consumed on average 10.4 ± 4.5 units alcohol/week and when they resumed alcohol use, an average of 12.4 ± 5.1 units/week. During the intervention period, complete cessation was ascertained by blood parameters. Liver stiffness and liver fat percentage did not differ between both groups nor change within period, complete cessation was ascertained by blood parameters. Liver stiffness consumed on average 10.4

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 metabolic products of intestine enter the blood through the damaged intestinal barrier and cause hepatic injury. 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 metabolic products 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. Results: HE and oil red O staining of liver tissues in alcohol group showed significant steatosis and inflammation response, while 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 ± 3.05 vs 12.23 ± 1.19 pg/ml, p < 0.05) and TNF-α (779.4 ± 1.01 vs 272.4 ± 6.78 pg/ml, p < 0.05) was significantly increased. Probiotics can effectively case endotoxemia (35.63 ± 1.84 vs 6.236 ± 3.05 pg/ml, p < 0.05) and inflammatory factors TNF-α (526.6 ± 25.04 vs 779.4 ± 10.01 pg/ml, p < 0.05) induced by alcohol. RT-PCR results showed that probiotics increased the expression of Reg3b and Lingo-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 that the expression of Occludin and Claudin-1 increased in probiotic treatment group (p < 0.05).

In addition, Bacteroides (p < 0.05) and Bacteroides (p < 0.05) were significantly increased in the intestine of the alcohol group. While the Clostridium (p < 0.05), Lactobacillus (p < 0.05) and Clostridium (p < 0.05) were decreased. With the treatment of probiotics, the levels of Enterococcus (p < 0.05) and Enterobacteriaceae (p < 0.05) decreased, and the levels of Lactobacillus (p < 0.05) and Bifidobacterium (p = 0.05) increased.

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 intestine micro ecological imbalance. Disclosure of Interest: All authors have declared no conflicts of interest.

References

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Introduction: Chemotherapeutic drugs have a direct hepatic toxic 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 overall 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 I-II, aged 24–67 years, 41(48.8%) males, 30(35.7%) and 13(15.5%) of patients had undergone induction regimen in full doses.

Results: We assessed the correlation between the level of AL chemotherapy and the level of hepatotoxic reactions in AL chemotherapy. The highest level of hepatotoxic reactions in AL chemotherapy was observed in patients with NPI > 10 and NPI > 20.

Conclusion: Metabolic and biochemical changes within the liver, amelioration of lipid profile and improvement of physical fitness can be observed after one month of alcohol cessation in moderate drinkers. This pilot results should be further confirmed in large cohorts but also in clinical trials with the public message to subdue and possibly even altogether cease alcohol use.

Disclosure of Interest: All authors have declared no conflicts of interest.
the CTCAE scale was used. Overweight was detected in 40 patients: BMI = 25–29 kg/m², n = 30 – in 11 (27.5%) patients. Depending on overweight presence the patients were divided into 2 groups: I (n = 44) – patients with AL with normal body weight, II (n = 40) – patients with AL and overweight.

**Results:** In AL patients of group I before the start of chemotherapy functional liver was significantly different from healthy people. In group II there was an increase of ALT activity in 1.5 times, AST – in 1.2 times, ALP and GGT in 1.4 times compared to the norm (p < 0.05) and reached grade I level, and no change in bilirubin and total protein levels. On the 28th day of treatment in 3 (6.8%) patients of group I the violation of the functional liver state was revealed, which was characterized by the increased activity of ALT in 2.3 and in 2.2 times respectively, GGT and ALP in 1.9 and 2.4 times respectively, the level of total bilirubin increased in 2.1 times (p < 0.05), of which in 17 (42.5%) patients hepatotoxic reactions were of grade I level and in 2 (5%) – of grade II level, with no statistically significant changes in protein synthesis liver function. On the 56th day of treatment in 7 (15.9%) patients of group I the violation of the functional liver state was revealed, which was characterized by the increased activity of ALT in 1.8 times, AST – in 1.3 times, ALP – in 1.6 times, GGT – in 1.9 times compared to normal levels, the bilirubin and total protein levels remained in the normal range, that consistent with grade I. In group II hepatotoxicity was detected in 26 (65%), which was characterized by the increased activity of ALT and AST in 2.6 and in 2.3 times respectively, GGT and ALP in 2.6 and 3.7 times respectively, the level of total bilirubin increased in 3.6 times (p < 0.05), of which in 10 (25%) patients hepatotoxic reactions were of grade I and in 16 (40%) – of grade II level.

**Conclusion:** The presence of the overweight results in a significant increase in the frequency and degree of hepatotoxic reactions in patients with AL during chemotherapy.

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

**References**


Severe alcoholic hepatitis (SAH) remains a condition which bears utmost importance. Although serum biomarkers are available, the adequate selection of patients who would benefit the most from corticotherapy is of utmost importance. SAH appears to have a different metabolic profile, mainly due to changes in lysophosphatidylcholine metabolism. Targeted metabolic studies are required in order to confirm the results and to evaluate the possible applications in current clinical practice.

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

Table: Patient outcomes following liver transplantation

<table>
<thead>
<tr>
<th>Patient</th>
<th>Gender</th>
<th>Age</th>
<th>Hours from ingestion to ICU admission</th>
<th>Clichy’s criteria (Yes/No)</th>
<th>King’s criteria (Yes/No)</th>
<th>Ganzert criteria (Yes/No)</th>
<th>Escudier criteria (Yes/No)</th>
<th>Listed to ELT (Yes/No)</th>
<th>ELT (Yes/No)</th>
<th>Outcome</th>
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<td>Patient 1</td>
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<td>72</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Died from acute myocardial infarction after ELT</td>
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<tr>
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<td>72</td>
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<td>Yes</td>
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<td>Yes</td>
<td>Yes</td>
<td>Alive</td>
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<td>48</td>
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<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Died, absence of donor</td>
</tr>
<tr>
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<td>67</td>
<td>24</td>
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<td>Yes</td>
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<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Alive</td>
</tr>
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<td>Yes</td>
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<td>No</td>
<td>Yes</td>
<td>No</td>
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<td>Yes</td>
<td>Died from cardiopulmonary arrest after ELT</td>
</tr>
<tr>
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<td>Yes</td>
<td>Alive</td>
</tr>
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<td>Yes</td>
<td>Yes</td>
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<td>Yes</td>
<td>Died from cardiopulmonary arrest after ELT</td>
</tr>
<tr>
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<td>No</td>
<td>Died, absence of donor</td>
</tr>
<tr>
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<td>72</td>
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</tr>
<tr>
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<td>48</td>
<td>16</td>
<td>Yes</td>
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<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Alive</td>
</tr>
<tr>
<td>Patient 12</td>
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<td>64</td>
<td>24</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
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</tr>
<tr>
<td>Patient 13</td>
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<td>63</td>
<td>56</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Died, peritonitis after ELT</td>
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<tr>
<td>Patient 14</td>
<td>Male</td>
<td>52</td>
<td>37</td>
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<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
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</tr>
<tr>
<td>Patient 15</td>
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<td>56</td>
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<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Died from acute myocardial infarction after ELT</td>
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<tr>
<td>Patient 16</td>
<td>Male</td>
<td>70</td>
<td>57</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Died, irreversible intestinal ischemia</td>
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</tbody>
</table>

ELT - emergency liver transplantation
P0688 APPLICATION OF THE ICA-AKI CRITERIA IN THE DIAGNOSIS OF ACUTE KIDNEY INJURY IN PATIENTS WITH ACUTE DECOMPENSATION OF CIRRHOSIS
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Introduction: Acute kidney injury (AKI) is a common complication in patients with decompensated liver cirrhosis. Recently, the International Club of Ascites (ICA) defined new diagnostic criteria: the ICA-AKI criteria.
Aims & Methods: This study aims to identify patients hospitalized for acute decompensation of cirrhosis with AKI, according to the ICA-AKI criteria, and to determine if its application leads to greater prognostic accuracy.
Methods: Retrospective analysis of hospitalized patients in a gastroenterology department for acute decompensation of cirrhosis, without acute-on-chronic liver failure, between January 2014 and December 2015. Identification of AKI patients according to ICA-AKI criteria. The mortality rate of severity of liver disease and in-hospital and short-term mortality among patients with and without AKI. Compared the accuracy of the conventional criteria vs. ICA-AKI criteria in the prediction of mortality.
Results: 161 patients included, 85.7% male, mean age of 65.5 ± 10.8 years. Average length of stay of 11.6 ± 9.5 days. 39.8% of patients had AKI on admission or during hospitalization according to the ICA-AKI criteria (60.9% in stage 1, 20.3% in stage 2 and 18.8% in stage 3). Patients with AKI according to ICA-AKI had longer hospitalizations (14.55 ± 9.75 days, p < 0.05), higher severity of hepatic disease quantified by the MELD and MELD-Na scores (17.62 ± 12.83 vs. 12.83 ± 9.75, p < 0.05) and higher in-hospital, 28 and 90-day mortality compared to patients without AKI (23.4 ± 6.2% vs. 18.7 ± 3.9% vs. 9.3%, p < 0.05, 42.9 ± 23.7% vs. 27.7%, p < 0.05). There was a statistically significant association between the presence of infection and the development of AKI (p < 0.05). The ICA-AKI area under the curve (AUC) to predict in-hospital, 28 and 90-day mortality was significantly higher than the AUC of conventional criteria (0.682 vs. 0.533; 0.678 vs. 0.588; 0.618 vs. 0.509, p < 0.05). 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 acute kidney injury (36 vs 11%), liver injury (36 vs 15%), 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.

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

Reference

Aims & Methods: The aim of this study was to evaluate the efficacy of carvedilol versus propranolol in the prevention of variceal bleeding in cirrhotic patients with occlusive portal vein thrombosis. Between January 2014 and December 2015, cirrhotic patients with occlusive non-malignant PVT were enrolled in a tertiary center. PVT was suspected by Doppler ultrasound and confirmed by computed tomography. Cirrhotic patients with esophageal varices and no previous variceal bleeding were randomized to carvedilol 6.125 mg daily or Propranolol 40 mg daily. End points were esophageal varical bleeding or death.

Results: In the study period forty eight patients were evaluated. Twenty one and twenty seven patients were randomized in carvedilol and propranolol arms respectively. Mean age was 49 ± 12.2 years: 33 (68.7%) were males: 60.4% had viral cirrhosis: mean Child-Pugh score was 7.2 ± 2.6 and mean follow up was 12.3 ± 9.1 months (range 1–29 months). All the patients had occlusive non-malignant PVT, most of them involving only the trunk, and grade 2 or 3 esophageal varices. Both carvedilol and propranolol groups had comparable variceal bleeding rates (14.2% vs. 14.8%, P = 0.002), bleed related mortality (9.5% vs. 11.1%, P = 0.027) and overall mortality (23.8% vs. 22.2%, P = 0.044) respectively. Adverse events in carvedilol group were hypotension (n = 2), requiring cessation of therapy, while and dyspnea (n = 3) resolved spontaneously. In the propranolol group there was 1 adverse event that required discontinuation of treatment (grade 2 atro-ventricular block).

Conclusion: Our study suggests that carvedilol is probably not superior to propranolol in preventing first variceal bleeding in cirrhotic patients with occlusive PVT, and they both can be used as primary prophylaxis.

Discreet of Interest: All authors have declared no conflicts of interest.
**P0095** PROTON PUMP INHIBITORS IN CIRRHOTIC PATIENTS: IT’S URGENT TO RETHINK THEIR USE!

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**Introduction:** Despite the progress in the treatment of cirrhosis, infections remain a common problem, being responsible for the great majority of morbidity and mortality in these patients.

**Aims & Methods:** The aim of this study was to identify predictive factors for infection in the first hospitalization for decompensated cirrhosis (DC). Retrospective analysis of patients with the first hospitalization for DC between January of 2009 and March of 2016. Demographic, clinical and biochemical data was compared between patients with and without infection in the first hospitalization for DC.

**Result:** From the 179 patients with a first hospitalization for DC, 6% had ascites on admission, 45.8% had upper gastrointestinal bleeding, 38.5% had jaundice, and 28.5% had hepatic encephalopathy. Regarding medication, 29.6% of the patients were taking proton pump inhibitors (PPI), 22.3% had beta-blockers prescribed, and 1.7% were on prophylactic antibiotic. In those 53 patients with proven infection, spontaneous bacterial peritonitis was the most common infection (34%), followed by urinary tract infection (30.2%) and pneumonia (15.2%). Infected patients presented with jaundice (p = 0.03), severe asites (p = 0.03), use of PPI (p = 0.003) and acute-on-chronic liver failure (p = 0.006) more frequently than those without infection. Additionally, infected patients presented with significantly increased values of C-reactive protein (p < 0.001), INR (p = 0.04), creatinine (p < 0.001), MELD scores (p = 0.001). Mortality rates were higher in infected patients at 30-day (4.0% vs. 9.4%), 3 months (7.9% vs. 18.9%), 6 months (12.7% vs. 24.5%) and 1 year (22.2% vs. 26.5%). In the multivariate analysis, the use of PPI was independently associated with an increased risk of infections (OR = 2.3, 95% CI 1.052–5.173).

**Conclusion:** Almost a third of patients will develop infections right at the first hospital admission for decompensated cirrhosis, which are associated with higher short and long-term mortality rates. As PPI more than double the risk of infections, the indication for the use of these drugs should be strictly reviewed and their interruption considered in cirrhotic patients.

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

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**P0097** CRITICAL FLICKER FREQUENCY TEST PREDICTS THE FIRST EPISODE OF OVERT HEPATIC ENCEPHALOPATHY IN PATIENTS WITH COMPENSATED LIVER CIRRHOSIS

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**Introduction:** Flicker frequency (FF) values ≤39 Hz identify cirrhotic patients with minimal hepatic encephalopathy (mHE) and predict their risk of developing overt hepatic encephalopathy (oHE). However, these results have been obtained in cirrhotics with advanced liver disease suffering a previous episode of liver decompensation (74% of patients) or oHE (14% of patients). Herein, we evaluated the effectiveness of CFF in predicting the first episode of overt HE both by log-rank test (p = 0.001) and Cox regression analysis (HR = 5.623; 95% CI = 2.433–12.991; p < 0.001).

**Conclusion:** We demonstrated, for the first time, that CFF predicts the first episode of oHE in a population of compensated cirrhotics that never experienced of HE. Cirrhotic patients should be routinely screened by CFF to identify patients at risk of oHE.

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

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**P0098** OMNIPRESENCE OF LIVER FIBROSIS, BUT PORTAL HYPERTENSION ONLY IN SELECTED ADULT FONTAN PATIENTS

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**Introduction:** The Fontan circulation causes some degree of hepatic congestion by its nature of anatomical reconstruction. This may lead to liver fibrosis or even cirrhosis, but to what extend is unknown. A profound hepatic evaluation, incorporating several non-invasive modalities, in an asymptomatic Fontan patient cohort may further elucidate this.

**Aims & Methods:** Consecutive patients with a Fontan circulation are prospectively included for scoring of liver fibrosis. This screening consists of a blood panel, including biomarkers, liver stiffness measurement, transient elastography (Fibroscan), contrast-enhanced liver MRI or CT-scan and liver biopsy. Liver biopsies were systematically scored with the Fontan specific fibrosis score. Mild fibrosis was defined as a maximum score of 2 of sinusoidal and portal fibrosis component, severe fibrosis as score 3 or 4 on at least one component. Non-invasive markers for portal hypertension (PHT) such as presence of collaterals and splenomegaly on imaging, platelet count (N/μL/mm3) spleen diameter (mm) (ratio) (PSR) and von Willebrand factor (VWF) were measured.

**Results:** From November 2015 until March 2017, 52 Fontan patients were included (mean age 27.5 ± 7.5 years, 60% male). The majority of patients had one or more elevated liver enzymes (elevated GGT in 68%, median 67 μmol/l IQR 51–107). Median platelets were 174 × 10^9/(μL) (IQR 147–213) and mean VWF 104 ± 23%. Mean liver stiffness was 21.8 ± 9.3 kPa. The majority (77%) of ultra-soundographies showed no sign of cirrhosis or splenomegaly (mean spleen size 11.9 ± 1.8 cm). However, 54% of advanced imaging (MRI or CT-scan) showed cirrhosis, 23% congestion and in 21% signs of PHT were observed. Of 33 patients with histology, none were without fibrosis or sinusoidal dilatation and cirrhosis was present in 21%. Of these only 57% also showed signs of cirrhosis on imaging. Of all patients with signs of PHT on imaging only one (13%) patient had histologically confirmed cirrhosis whereas five (15%) had mild fibrosis. Liver stiffness was equal in patients with mild (22.3 ± 3.9 kPa) and pathological when severe fibrosis was noted (25.3 ± 1.2 kPa) (p = 0.458). Median PSR in patients with mild fibrosis was 1557 (IQR 1139–1910) and 1223 (IQR 1045–1451) in severe fibrosis (p = 0.114). VWF was comparable between groups (99 ± 12 vs. 105 ± 20%, p = 0.241). Patients with severe fibrosis were not older (28 ± 7 vs. 26 ± 6 years, p = 0.555) nor had a longer duration of the Fontan circulation (22 ± 5 vs. 21 ± 4 years, p = 0.644).

**Conclusion:** All Fontan patients are at risk of developing severe liver fibrosis, irrespective of age, duration of Fontan circulation and even when asymptomatic. Portal hypertension may occur in the absence of severe fibrosis. Assessment by solely non-invasive modalities may both under- and overestimate the incidence of fibrosis. For generalizability of the current findings, Fontan patients should be prospectively assessed with multimodality assessment in larger cohorts.

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

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**P0099** A RANDOMIZED DOUBLE BLIND CONTROLLED TRIAL TO EXPLAIN THE EFFECT OF LACTOBACILLUS Rhamnosus GG IN PATIENTS WITH MINIMAL HEPATIC ENCEPHALOPATHY

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**Introduction:** Prebiotics has been recently used to treat cirrhotic patients with any grade of acute or chronic hepatic encephalopathy (HE). Herein, we evaluated the efficacy of Lactobacillus Rhamnosus GG (LRGG) on the treatment of minimal HE (mHE) in compensated cirrhotics.

**Aims & Methods:** 134 patients were screened by critical flicker frequency (CFF) to diagnose mHE. Among them, 41 patients were CFF+ (≤39 Hz) and were...
randomized to placebo or LRGG treatment, for 2 months. In all intention to
primary analysis of 202 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
12 weeks compared to baseline. However, in the former group CFF value
significantly increased as compared to placebo (46.5 ± 5.7 vs. 41.1 ± 4.6 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.

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hepatic encephalopathy in patients with cirrhosis: a randomized controlled
3. Dhiman RK, Rana B, Agrawal S, et al. Probiotic VSL#3 reduces liver
disease severity and hospitalization in patients with cirrhosis: a randomized,
36(7): 986-93.

P0700  ASSOCIATIONS OF GENETIC POLYMORPHISM OF TOLL-
LIKE RECEPTOR 7 (TLR-7) AND SEX-LINKED TLR-7 ALLELES WITH THE HEPATITIS C VIRUS INFECTION OUTCOME IN EGYPTIAN POPULATION: A MULTICENTRE FAMILY-BASED STUDY

M. El-Bendary1, M. Neamatallah2, H. Elalfy2, T. Besheer1, A. Ellkoby3, M. El-
Daly1, M. Elsareef2, M. Zahran3, B. El-Arauga2, M. El-Setouhy4, A. Eladl2, G.
Esma1, T.R.W.F.B.S.&.T.D.F.(Science & Technology Development Foundation
(STDF), Cairo/Egypt

Aims & Methods: To identify the association between TLR-7 polymorphism
and chronic hepatitis C (CHC) in the Egyptian population.

Introduction: The HCV carries a variable clinical course in many patients. The human Toll like
receptors (TLRs) are a family of transmembrane pattern recognition receptors that recognize
saccharide microbial molecules and enable the innate immune system to discriminate among groups of
pathogens and to induce an appropriate cascade of effector responses. Toll-like receptors 7
(CCR6) and 8 (XLR-8) are two important TLRs that are involved in the recognition of HCV in the
plasma and enable the innate immunity to discriminate among groups of pathogens.

Material and Methods: A case-control study was conducted to evaluate the association
between the TLR-7 polymorphism and CHC in the Egyptian population. The study included
216 CHC patients (216) and 108 spontaneous clearing (SVC) patients. Serum samples were
analyzed for the common genetic variants of TLR-7 rs3853839 polymorphism by
TaqMan allelic discrimination kit (Applied Biosystems) according to the manufacturer's
instructions.

Results: C allele of TLR 7 rs3853839 was more frequent in CHC patients than in SVC patients
(69.1% vs. 46.3% for the SVC, control and CHC groups respectively. When the association of
these alleles with HCV spontaneous clearance (SVC) and control groups when compared to
chronic HCV group [OR 15.285 (95% CI 2.04 to 114.08, corrected P (Pc)
= 0.9306 0.0234 0.0003] respectively.

Conclusion: The risk of development of chronic HCV infection was associated with
sex-linked TLR-7 allele carriage in both male and female subpopulations in Egyptian families.

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

References
986-93.
2. M. El-Bendary1, M. Neamatallah2, H. Elalfy2, T. Besheer1, A. Ellkoby3, M. El-
Daly1, M. Elsareef2, M. Zahran3, B. El-Arauga2, M. El-Setouhy4, A. Eladl2, G.
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Introduction: Hepatitis C virus infection is a pressing national problem in Egypt. HCV carries a variable clinical course in different patients. The human Toll-like receptors (TLRs) family consists of ten receptors that are critically important for immune response recognition and recognition of diverse microbial molecules and enable the innate immune system to discriminate among groups of pathogens and to induce an appropriate cascade of effector responses. Toll-like receptors 3 and 7 are recognition receptors that allow the innate immune system binding to RNA pattern. The genetic polymorphism of these receptors has a direct role on the outcome of many diseases.

Aims & Methods: The aim of this study was to assess the association between genetic polymorphism of TLR 3 and Sex-linked TLR 7 alleles with HCV infection outcome in Egyptian families using high resolution techniques. 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 virus clearance (SVC) (108 subject), chronic HCV (CHC) patients (216), and non-specific 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™ allelic discrimination kit (Applied Biosystems) according to the manufacturer's instructions. The distribution of the TLR 7 gene rs3853839 (C/G) polymorphism was assessed separately in male and female 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 frequency
of the T allele was found to be 11.5%, 16.5%, 38.9% in SVC, control, and
CHC groups respectively. When these alleles were compared between the
three studied groups, the T allele of TLR 3 rs3775291 was found to be significantly
higher in CHC group when compared to both spontaneous clearance
(SVC) and control groups [OR 15.285 (95% CI 2.04 to 114.08, corrected P (Pc)
< 0.02) and OR 5.17 (95% CI 2.30 to 11.64, Pc < 0.0003)] respectively. As regard the
sex-linked TLR-7 it was found that the frequency of the C allele was 69.5%, 69.1% and 46.3% for the SVC, control and CHC groups respectively. While the
frequency of the G allele was found to be 30.5%, 30.9%, 37.7% in SVC, control
and CHC groups respectively. When the association of these alleles with HCV
infection outcome was studied in the female and male subpopulations it showed
that: The C allele of TLR 7 rs3853839 in the female subpopulation was signifi-
cantly higher in both HCV 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 0.0109 to 0.28,
Pc < 0.0001)] respectively.

Table(1): Association of the allele T of TLR3 rs3775291 polymorphism among the studied groups.

<table>
<thead>
<tr>
<th>Allele</th>
<th>SVC vs spontaneous</th>
<th>CHC vs Spontaneous</th>
<th>CHC vs control</th>
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</thead>
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<tr>
<td>Odds ratio (OR)</td>
<td>2.9517</td>
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<td>5.176</td>
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<td>95% CI</td>
<td>0.3648 to 23.8807</td>
<td>2.0481 to 114.0824</td>
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<tr>
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<td>1.015</td>
<td>2.659</td>
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<tr>
<td>P</td>
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<td>0.0078</td>
<td>0.0001</td>
</tr>
<tr>
<td>Pc</td>
<td>0.9306</td>
<td>0.0234</td>
<td>0.0003</td>
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</tbody>
</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 have shown that the use of DAAs is safe and effective in patients in the active post-transplant period. The aim of this study was to quantify LS regression both quantitatively (measured in Kilopascals) and qualitatively (stages of F0-F4 fibrosis).

Aims & Methods: The aim of this study was to quantify LS regression both quantitatively (measured in Kilopascals) and qualitatively (stages of F0-F4 fibrosis). Twenty-four Italian centers were involved in this real-life study where HCV genotype 3 would constitute the best option. Patients with high-risk VE [n = 32] (15.6%) had a mean LS value of 8 (12.7%). The improvement in LF measurements has a clinical correlation with changes in platelet numbers and the presence of varices according to Baveno VI criteria. We did not find any significant differences in platelet levels or in the regression of varices.

Conclusion: Use of Daclatasvir/Sofosbuvir or Sofo/ribavirin in early treatment of HCV genotype 4 post liver donor: SVR was achieved higher at 54 weeks than the use of RBV in non cirrhotic patients.

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

References:
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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- Sofo-premipir 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.

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

P0704 IMPROVEMENT OF LIVER STIFFNESS VALUES ACHIEVED 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: Use of Sofo in liver stiffness (LS) measured by transient elastography (TE) has been observed in patients with chronic hepatitis C treated with direct action antivirals (DAA) 1, 2. The Baveno VI guidelines 3 propose that patients with compensated advanced chronic liver disease (cACLD), LS measurement < 20kPa and a platelet count > 150000/uL can avoid screening endoscopy as their combination is highly specific for excluding clinically significant oesophageal varices (EV). These findings have been validated recently 1, 4, 5.

Aims & Methods: The aim of this study was to quantify LS regression both quantitatively (measured in Kilopascals) and qualitatively (Stages of F0-F4 fibrosis) in a stationary phase after the sustained virological response (SVR) in patients with cACLD (14). The secondary objective was to assess whether this improvement in LF measurements has a clinical correlation with changes in platelet numbers and the presence of varices according to Baveno VI criteria.

Results: 84 patients (49 men and 35 women) with cACLD were included in the study. Median TE on baseline (BL) prior to DAA treatment was [mean (range), 23.86 (12.5-75) kPa] and decreased to [mean, 15.6 (4.8-75) kPa] at SVR 24 and [mean Range], 16.19 (3.6-72) kPa] at SVR > 54. Both were statistically significant [p = 0.02] demonstrating 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 (improve from F4 to F3 or less) the AUC was 0.8 for 17.9 kPa as the cut-off point which has a Sensitivity of 0.76 and Specificity of 0.81. NPV = 78.12. PPV = 78.57. 32 patients with highly suggestive cACLD (LS > 15 kPa) underwent upper endoscopy (UE): 10 (32%) had varices (5 small EV and 5 big EV). 17 (53%) fulfilled the Baveno VI criteria (3 with small EV and 4 with medium 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 DAA both at SVR24 and SVR > 54. This improvement seems to be more likely in patients with lower TE values (in our study 17.9kPa). 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 regimen 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 > 12.5 kPa. Patients with undetectable RNA after 12 weeks of treatment were considered cured - sustained virologic response (SVR). Results: No significant demographic and clinical differences were found between the two groups with the exception of the fibrosis stage (table). Two hundred and forty-four patients concluded the treatment; the SVR was 99% in group 1 and 100% in group 2, without differences between the two groups (p = 0.275). Thirty three patients are still in follow up: group 1 -15 pts and group 2 -18pts. The reported adverse effects were mild in both groups (fatigue, insomnia, headache and pruritus) but more frequent in group 2 (p = 0.046).

Conclusion: In patients with chronic HCV genotype 1 infection and RNA <6000000 UI/mL, the 8 weeks regimen of ledipasvir plus sofosbuvir without ribavirin has similar high cure rates with less adverse effects.

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

P0706 CLINICAL FEATURES OF PATIENTS DEVELOPING HCC AFTER ACHIEVING SVR WITH DAAC 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), including the preventive effect of hepatocarcinogenesis after achieving sustained virological response (SVR), patients intolerant of IFN, such as those with advanced age or liver cirrhosis (LC), could not save its privilege. The appearance of direct-acting antivirals (DAAs) provided almost every patient with the chance to receive the treatment without any serious adverse effects (AEs). In addition, SVR could be highly expected in more than 95% of patients treated with DAAs. However, the preventive effect of the future hepatocarcinogenesis following eradication of HCV remains unknown. In our facility, the administration of DAAs to treated patients with hepatitis C virus (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 Daclatasvir/Asunaprevir, Ombitasvir/Paritaprevir/Ritonavir, Sofosbuvir/Ledipasvir, or Sofosbuvir/Ribavirin) were enrolled in this study (Age 69 ± 6.8, male/female 71/29, genotype 1 122/3, chronic hepatitis LC 124/29, PLT 15.3 ± 0.5 × 10^12/L, ALT 44.9 ± 3.5 × 10^3/U/L, FIB-4 index 3.9 ± 0.2, APRI 1.3 ± 0.1, Wisteria floribunda agglutinin positive Mac-2-binding protein (WFA(þ)-M2BP) 3.3 ± 0.5 COI, AFP 12.1 ± 2.4 ng/mL, PIVKA-II 28.8 ± 4.3 mAU/mL). All patients were divided into 2 groups (A: 9 patients with HCC developing after SVR achievement, B: 144 without HCC after SVR achievement). Parameters (PLT, WFA(þ)-M2BP, FIB-4 index, APRI, ALT, Alb, AFP, PIVKAII) 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(A44.9±3.5/19.5±1.1/U/L), FIB-4(11.9±3.1/4.1±0.3 ng/mL), WFA(þ)-M2BP(3.2±0.5/1.9±0.3 COI), FIB-4 index(3.7±0.2/3.0±0.2) and APRI(1.2±0.7/0.6±0.5), and significant increase in Alb(44.9±3.5/16.1±4.0 g/L) and PLT(15.3±0.5/10.9±1.8 × 10^12/L). In group A, significant declining was observed only in ALT (45.1±10.9/16.7±2.2 × 10^12/L). This result indicates that DAA treatment significantly ameliorates parameters related with hepatic fibrosis as well as hepatic inflammation in patients, however, it led to the significant amelioration only in the patients with hepatic inflammation in group A. Next, focusing on parameters after achieving SVR, WFA(þ)-M2BP(A3.4±0.6/B1.7±0.2 COI) and FIB-4 index(5.7±1.6/3.0±0.2) were significantly higher and Alb(3.8±0.4/3.0±0.4 g/L) was significantly lower in group A comparing with group B. When dividing group A into 2 groups (C: new occurrence/D: recurrence), FIB-4 index(3.0±1.3/6.2±1.8 ng/mL), WFA(þ)-M2BP(2.0±0.8/3.8±0.7 COI), FIB-4 index(3.6±2.4/3.6±2.0) and APRI(0.6±0.4/1.1±0.3) were higher and Alb(4.3±0.1/3.6±0.3 g/L) and PLT(20.9±13.2/13.4±3.4 × 10^12/L) 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 the 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 confirming SVR with DAA to HCV.

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

P0707 EARLY OCCURRENCE OF HEPATOCELLULAR CARCINOMA IN PATIENTS WITH HEPATITIS C VIRUS TREATED WITH DIRECT-ACTING ANTIVIRALS

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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
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 2017 was reviewed to clarify the impact of DAAs on HCC occurrence and recurrence. SVR was defined as no detection of HCV RNA in the serum at 24 weeks after the cessation of antiviral therapy.

Results: SVR was achieved in 21 patients treated with interferon (IFN)-based regimen and in 1 patient with DAAs at hepatectomy. Between the two groups, there were no significant differences in the clinical characteristics, including the age, prevalence of diabetes mellitus, drinking history, preoperative liver function, operative procedures, tumor size and presence of liver cirrhosis, but the median duration from the date of SVR to the date of HCC incidence was significantly shorter in patients treated with DAAs (14 days, range: -123 to 235 days) than in those treated with IFN-based regimens (324 days, range: 35 to 4190 days). In particular, HCC was detected within 24 weeks after the cessation of antiviral therapy in 3 patients treated with DAAs. After hepatectomy, SVR was achieved in 21 (DAAs: 16 patients, IFN-based regimens: 5 patients) of the 67 patients without SVR when hepatectomy was performed, and the 1- and 3-year disease-free survival (DFS) rates were 93.7% 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 hepatectomy, respectively. The DFS rate was significantly higher in patients with SVR than in those without SVR (p < 0.05), but was not markedly different according to the antiviral treatments (p = 0.594).

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±8.5 vs 49.5±7.5, p < 0.05). Severe fatigue was present in 30% (33 patients) of the HCV group compared to 11.6% (7 patients) in controls. Subgroup analyses of respondents age 60 years and older revealed lower MCS score in HCV patients compared to controls (41.95 vs. 49.72, p < 0.05). Control group registered higher PCS score (53.30 vs 45.2, p < 0.05) compared to the study group.

Conclusion: Although the results were obtained on a small group we observed that in untreated patients with chronic HCV infection, HRQoL is significantly impaired due to fatigue severity and age. Our result underline the need for effective antiviral treatment to decrease the burden of fatigue in this segment of population.

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

P0708 EFFICACY AND SAFETY OF SOFOSBUVIR AND RIBAVIRIN IN HCV POSITIVE PATIENTS WITH REINAL IMPAIRMENT
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Introduction: Hepatitis C virus infection is a leading cause of chronic liver disease affecting more than 170 million people worldwide. HCV infection in the setting of renal impairment is not uncommon. Despite the major developments in the treatment of HCV, treatment of this sub group of patient with impaired renal function is still a challenge.

Aims & Methods: The aim of this study is to determine the efficacy and safety of sofosbuvir and ribavirin in HCV positive patients with renal impairment. All consecutive patients of HCV related liver disease with creatinine clearance less than 30 ml/min were included in the study. Data was collected for tolerability, efficacy and on treatment adverse events. All the patients received Sofosbuvir and dose adjusted Ribavirin according of CrCl. Virological response was checked at 1 month (RVR), 3 months (RVR) and at the end of treatment.

Results: A total of 31 patients were included in the study were 31 out of which 17 (54.8%) were male. Mean age was 52.2 ± 17.6 years while the mean BMI was 25.0 ± 4.0 kg/m2. 10 (22.5%) patient were on regular hemodialysis. 26 (83.9%) patients had CTP-A while 5 (16.1%) had CTP-B disease. Majority of the patients 22 (71%) were genotype 3 while 7 (22.6%) were genotype 1. 24 (77.4%) patients were treatment naive, while those who were treatment experienced, 3 patients received each Interferon and Peg interferon therapy. Treatment was stopped in 2 (6.5%) patients because of disease decomposition while 3 (9.7%) were lost to follow up. ETR was achieved in 25 (96.1%) out of 26 patients who completed treatment. Similarly 12 (80 %) out of 15 patients have achieved SVR-12 so far. During the therapy 10 (32.3%) patients had adverse events, 6 (19.4%) suffered from depression while 4 (12.9 %) developed grade II anemia.

Conclusion: In resource constraint population where newer DAAs are not available an combination of sofosbuvir and low-dose ribavirin in patients with renal impairment seems to be better tolerated and efficacious in terms of achieving the virological response.

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

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 treatment of (HCV). Most trials have been conducted in HCV genotype 1 and data for Interferon free regimen in genotype 3 (GT-3) is limited especially in cirrhosis.

Aims & Methods: We aimed to evaluate the safety and efficacy of SOF plus Ribavirin (RIB) in patients with compensated and decompensated cirrhosis. This is a prospective real-world cohort study of HCV with compensated or decompensated cirrhosis. Efficacy was assessed by Sustained Viral Response (SVR) and controls (n = 110) and

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±8.5 vs 49.5±7.5, p < 0.05). Severe fatigue was present in 30% (33 patients) of the HCV group compared to 11.6% (7 patients) in controls. Subgroup analyses of respondents age 60 years and older revealed lower MCS score in HCV patients compared to controls (41.95 vs. 49.72, p < 0.05). Control group registered higher PCS score (53.30 vs 45.2, p < 0.05) compared to the study group.

Conclusion: Although the results were obtained on a small group we observed that in untreated patients with chronic HCV infection, HRQoL is significantly impaired due to fatigue severity and age. Our result underline the need for effective antiviral treatment to decrease the burden of fatigue in this segment of population.

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

Results: The cohort consisted of 9 1consecutive patients out of which 41 were compensated cirrhotics and 50 had compensated cirrhosis. The mean age was 53.4 ± 11years. Males were 47 (51.6%) and females were 44 (48.4%). Mean CTP and MELD score were 7.71 and 9.21 respectively. In compensated cirrhosis, SVR was achieved in 25 (84.5%) treatment naive patients compared to treatment experienced patients where 5 (80%) achieved SVR. In decompensated cirrhosis SVR was achieved in 22 (77.3%) treatment naive 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.
Early recurrence rate of HCC in treated patients with compensated intrahepatic growth (1 patient), new intrahepatic lesion (1 nodule in 2 patients, 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 comorbidity 24% with Child Pugh A6. The median MELD score was 9 (6 + 18) 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 those with hepatic resection (33%), and the lowest risk of recurrence was observed in RFA (12.5%). 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 hepatocellular carcinoma in 2 patients. We found no correlation between the HCC-free interval of time and recurrence rate (p = 0.62).

Conclusion: Early recurrence rate of HCC in treated patients with compensated liver cirrhosis that received DAA with OBI/PVT/DSV + RBV was 29%, significantly compared to the historical cohort. The rate is higher in males (40%) and in patients treated with TACE (40%).

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

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5. Results: Two female patients decompensated and died because of acute liver failure 3 and 6 months after 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 comorbidity 24% with Child Pugh A6. The median MELD score was 9 (6 + 18) 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 those with hepatic resection (33%), and the lowest risk of recurrence was observed in RFA (12.5%). 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 hepatocellular carcinoma in 2 patients. We found no correlation between the HCC-free interval of time and recurrence rate (p = 0.62).

Conclusion: Early recurrence rate of HCC in treated patients with compensated liver cirrhosis that received DAA with OBI/PVT/DSV + RBV was 29%, significantly compared to the historical cohort. The rate is higher in males (40%) and in patients treated with TACE (40%).

Disclosure of Interest: All authors have declared no conflicts of interest.
P0716 HOW DIFFERENT IS THE PERFORMANCE OF CEUS IN CIRRHOTIC VS. NON-CIRRHOtic PATIENTS?

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Introduction: The aim of this paper is to evaluate the performance of CEUS as a first step in the evaluation of focal liver lesions (FLLs) in cirrhotic and non-cirrhotic patients.

Aims & Methods: A retrospective study was performed on a cohort of 2904 FLLs evaluated by CEUS between September 2009-December 2016, according to EFSUMB guide lines (2) in a tertiary center. 979 (33.7%) FLLs did not completely fulfill the EFSUMB-CEUS criteria thus needing to be confirmed by other imaging technique (contrast-enhanced CT, contrast-enhanced MRI) or histology. Lesions that were previously diagnosed have been excluded. Using CT, MRI and histology for the final diagnosis we calculated the specificity, sensitivity and accuracy of CEUS for benign and malignant FLLs that challenged the examiner, in cirrhotic and non-cirrhotic patients.

Results: CEUS managed an overall diagnostic accuracy of 76.8% (752/979) of the lesions. From the 979 FLLs, 335 (34.3%), 67.7% HCC, 4.7% Hemangioma, 3.8% Metastasis, 18.2% Other benign lesions and 5.3% Other malignant lesions, were detected in liver cirrhosis (LC) and 644 (65.7%), 36.1% Metastasis, 19.5% Hemangioma, 6.8% HCC, 31.3% Other benign lesions and 6% Other malignant lesions were in non-cirrhotic liver (NC). In LC CEUS performance for benign lesions was: 77.6%, 92.1%, 91.3% and for malignant lesions was: 76.1% Se, 92.4% Sp and 83.8% Ac. In the NC group, CEUS performance for benign lesions was: 82.8% Se, 95.8% Sp and 88.4% Ac. and for malignant lesions was: 90.16% Se, 90.13% Sp and 89.4% Ac. CEUS performance was on the most frequent lesions: Hepatocellular Carcinoma (HCC) in LC: 65.2% Se, 86% Sp, 68.5% AC. HCC in NC: 65.9% Se, 94.7% Sp, 92.1% Ac. Metastasis in LC: 30.7 Se, 97.3Sp, 92.9% Ac. Metastasis in NC: 78.5% Se, 91.2% Sp, 85.5% Ac. Hemangioma in LC: 68.7% Se, 95.6 Sp, 93.4% Ac. and for Hemangioma in NC: 77.2% Se, 96.1% Sp and 91.3 Ac.

Conclusion: CEUS is an accurate and reliable method as a first step in the evaluation of FLLs. Liver cirrhosis does not influence significantly CEUS performance.

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

References


P0717 CUX1 IN LIVER CANCER: EXPERIMENTAL STUDY IN HYPOXIA MODEL

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Introduction: CUX1 (CUTL1) is a transcription factor able to promote the expression of proangiogenic genes in tumor cells. To understand the role of CUX1 in tumorigenesis, it is important to precisely define the expression profile of CUX1 in different tumor types and surroundings.

CUX1 expression is upregulated in hypoxic and/or normal tissue culture conditions. The hypoxia condition was established by 24h treatment with 150 µM CoCl2 or with 0.5% O2 atmosphere. Hypoxia markers and CUX1 were analysed by RT-qPCR. Transfection with plasmid expressing a reporter sequence for HIF-1alpha was performed in combination with CUX1 knock-down.

Results: Hypoxia determined the up-regulation of HIF-1alpha (Hypoxia inducible factor1-alpha) and a stable or up-regulated expression of its inhibitor FHI-1 (SLC2A1) up to 24 h prolonged hypoxia. VEGFA was significantly
Aims & Methods: 
hepatocellular carcinoma (HCC). But the specific mechanism has not been ing medicine. Recent studies have shown that SAMe has the inhibitory effects on human hepatocellular carcinoma cell HepG2 and mouse hepatocyte AML12.

Disclosure of Interest: 

References 
Conclusion: Our results support the hypothesis that overexpression of BRG1 increases cell growth and cell invasion in HCC. Furthermore, the data highlight genes promoting proliferation and invasion that are being regulated by BRG1 during hepatocarcinogenesis. In particular, CyclinB, D, E and MMP7 appear to play a major role in this context and might be an important link between BRG1 expression and HCC development.

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

P0720 PROGNOSTIC ROLE OF NEUTROPHIL-TO-LYMPHOCYTE RATIO IN HEPATOCELLULAR CARCINOMA (HCC)

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Introduction: Inflammation may play an important role in progression, and a high neutrophil-to-lymphocyte ratio (NLR) has been reported as a poor prognostic indicator in several malignancies.

Aims & Methods: This study was aimed to investigate the prognostic value of NLR in patients with HCC. We performed a retrospective study including patients with hepatocellular carcinoma admitted in the hepato-gastroenterology department of Sousse between January 2010 and December 2015.

Results: A total of 76 patients were included in this study. Mean age was 59.8 (33-87) years. The sex ratio was 3.22 (M:F = 58:18). Hepatocellular carcinoma occurred on a liver of cirrhosis in the majority of cases (90.7%). The main causes of cirrhosis were hepatitis B virus infection (11 patients-16%), non alcoholic steatohepatitis (6 patients-8.6%) and alcohol consumption (5 patients-7.2%). Our results showed that high NLR was associated with poor overall survival (OS) in HCC regardless of therapeutic choice (P < 0.05). Otherwise, high NLR was significantly correlated with the presence of vascular invasion ($P = 0.002$), lymph node metastasis ($P = 0.04$), tumor multiplicity ($P = 0.01$) and higher incidence of AFP $\geq$ 200 ng/mL ($P = 0.04$).

Conclusion: Elevated NLR indicates a poor prognosis for patients with HCC. The NLR is a readily available and inexpensive biomarker, and its addition to established prognostic scores for clinical decision making warrants further investigation.

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

P0721 REIC/DKK-3 PROTEIN CONCENTRATION INDUCE THE POSITIVE EFFECT TO THE MORTALITY OF HEPATOCELLULAR CARCINOMA

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Introduction: The Wnt/β-catenin plays essential roles in the growth of hepatocellular carcinoma (HCC). The Dickkopf (Dkk) protein family (Dkk1–4) is known as Wnt signal antagonists, and reduced expression in immortalized cells (REIC)/Dkk-3 over-methylation is associated with poor prognosis of HCC patients. But the roles of REIC/Dkk-3 in inhibiting Wnt signaling remains still unclear.

Aims & Methods: In our previous study, REIC/Dkk-3 protein induced significant production of interferon gamma from lymphocytes incubated with pancreatic cancer cells, indicating that REIC/Dkk-3 protein might activate cancer immunity in the tumor-bearing patients.1 We hypothesized that REIC/Dkk-3 expression was correlated with cancer immunity in HCC patients. Thus, we investigated the correlation between serum REIC/Dkk-3 protein level and the prognosis in HCC patient. We retrospectively studied 58 HCC patients who underwent primary liver resection for HCC admitted to out unit from 2008 to 2017. Patient serum was gathered before resection. Serum REIC/Dkk-3 protein level was measured by an enzyme-linked immunosorbent assay.

Results: 58 HCC patients were divided into two groups, 41 REIC/Dkk-3 high concentration group (protein level > 800) and 17 Dkk-3 low concentration group (protein level < 800), according to the presence of REIC/Dkk-3 proteins in the blood, as detected by ELISA spectrometry. There was no significant difference in age, sex, Child-Pugh score and HCC stage in the patient groups. REIC/Dkk-3 Protein tended to be declining in liver cancer patients with poor prognosis. ($P = 0.186$)

Conclusion: Our results demonstrated that the serum Dkk-3 protein levels might be a prognosis marker in HCC patients. Further study is necessary with more number of HCC patients.

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

Reference
P0724 MICROWAVE VERSUS RADIOFREQUENCY THERMAL ABLATION OF HEPATOCELLULAR ADENOMA: SAFETY AND EFFICACY


Introduction: Hepatocellular adenoma (HCA) is a rare benign tumor of the liver that typically presents in women within their reproductive years. The recent increase in the HCA prevalence is noticeably associated with the rising prevalence of obesity and the metabolic syndrome. Because of high risk of complications such as hemorrage, rupture and malignant transformation, appropriate treatment strategy should be considered. Given the success of image-guided ablation in treating malignant hepatic tumors, there is increased interest in treating benign masses with percutaneous ablation.

Aims & Methods: To investigate the efficacy and safety of Microwave versus Radiofrequency Ablation in management of HCA. Out of 320 Patients presented with hepatic focal lesions over 1 year, data of 15 patients diagnosed to have HCA were collected retrospectively. The diagnosis of HCA in those patients was based on radiological findings using triphasic pelvi-abdominal CT, dynamic MRI or cytopathological examination of FNAC for those whose radiological findings were not conclusive. The size of the all tumors was ranged between 2.5 to 6.9 cm.

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 current natural history of HCC patients is not established.

Aims & Methods: This study aimed at evaluating the impact of metabolic disorders on clinical features, treatment and survival of HCC patients regardless of its etiology. We analyzed the Italian Liver Cancer (ITA.LI.CA) database regarding 839 HCC patients prospectively collected from 2009 to 2014. The following metabolic features were analyzed: BMI, diabetes, arterial hypertension, hypercholesterolemia and hypertriglyceridemia. According to these features, patients were divided into 3 groups: 0–1 metabolic features, 2 metabolic features, 3–5 metabolic features.

Results: As compared with patients with 0–1 metabolic features, patients with 3–5 features showed lower percentage of HCC diagnosis on surveillance (p 0.021), larger tumors (p 0.038), better liver function (higher percentage of patients with Child-Pugh A [p = 0.007] and MELD < 10 [p = 0.003]), higher percentage of metastases (p 0.024), and lower percentage of portal vein thrombosis (p 0.010). The BCLC stage and treatment options were similar among the 3 groups, with the exception of a less frequent access to locoregional therapies for BCLC stage B patients with 3–5 features (p 0.012). Overall survival and survival according to BCLC stage and/or treatment did not significantly differ among the 3 groups.

Diabetic patients showed a lower survival (p = 0.046). MELD score, HCC
morphology, nodule size, BCLC stage, portal vein thrombosis and metastases were assessed for lead-time. Patients with HFS have may have prolonged the administration period, improving the prognosis.

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 liver volume was 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 was 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 increased liver volume index (LVI). Presence of liver cirrhosis was also associated with higher risk for HCC. (P < 0.001), whereas age, sex, alpha-fetoprotein and HCV RNA level were not significant predictors of HCC. Multivariate analysis show that LVI > 1 and presence of LC were independent predictors of HCC (HR: 63.53, CI: 1.24–1442.28, 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 a vascularization inhibitor, sorafenib, prolonged survival in patients with HFS, as demonstrated by controlled trials in patients with HCC. We examined the influence of HFS on the effects of treatment after the introduction of sorafenib in 42 patients with a history of multidisciplinary treatment, such as transcatheter arterial chemoembolization (TACE), between May 2009 and March 2017.

Results: Grade 1 or higher HFS was observed in 22 patients (53%), and it was absent in 20 (47%). Overall, the median sorafenib administration period was 2.1 months. In the HFS-free and HFS groups, it was 0.9 and 2.7 months, respectively (p < 0.001). Survival analysis was performed using the Kaplan–Meier method. Overall, the median survival was 5.2 months. In the HFS-free and HFS groups, it was 3.0 and 7.8 months, respectively (p = 0.001). Multivariate analysis showed that sorafenib administration period (hazard ratio, 0.41; 95% CI, 0.19 to 0.88; p = 0.023) and administration period (hazard ratio, 0.45; 95% CI, 0.20 to 0.98; p = 0.045) were significant predictive factors. The following were not significant predictive factors: age, BCLC staging, dosage, and tumor markers.

Conclusion: The prognostic of hepatocellular carcinoma patients receiving sorafenib treatment was closely related to the presence of HFS and administration period. HFS was a predictor of outcome in patients with hepatocellular carcinoma treated with sorafenib. This study indicated that a multi-thyrosine kinase inhibitor, sorafenib, prolonged survival in patients with HFS, as demonstrated for cetuximab. HFS reduces the quality of life (QOL), and it is a sorafenib administration-inhibiting factor. In our hospital, a system for patients to initially consult the Pharmacists’ Outpatient Clinic, followed by the feed-back of grade-based HFS control strategies to physicians at the outpatient clinic, was established. Skin reactions for sorafenib-treated patients with HFS may have prolonged the administration period, improving the prognosis.

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

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 worldwide. Extrahaepatic metastasis of HCC occurs in about 30–50% of patients, and it depends on HCC stages.1 The most frequent site is lung, followed by lymph node, bone, and adrenal gland.2 Extrahaepatic metastases to unusually sites from HCC have been reported in a few case reports. We report cases of patients with unusual extrahaepatic metastatic sites from HCC.

Aims & Methods: We carried out a retrospective study of 16 patients with unusual extrahaepatic metastases 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 an noncirrhotic 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 adenral metastases, 3 costovertebral metastases, 2 gastric metastases, 2 brain metastases, 1 cerebral metastasis, 1 cavalicular metastasis, 1 ovarian metastasis, 1 nasopharyngeal metastasis, and a case of metastasis in the path of percutaneous biopsy of HCC. In 4 cases the diagnosis of HCC and metastasis was synchronous while in 12 cases median time from diagnosis of hepatocellular carcinoma to the detection of extrahaepatic HCC was 15.5 months. Therapeutic abstention was decided in 14 patients for the advanced stage of the disease. Metastatic metastasis was resected surgically and HCC occurring in healthy liver was treated by lpectomy 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 extrahaepatic metastasis of HCC diagnosed during clinical course was not frequent. The diagnostic procedures for extrahaepatic 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: Hepatocolangiocarcinoma is a rare primary hepatic tumor con-ffering features of both, cholangiocarcinoma and hepatocellular carcinoma (CHCC-ICC). Few data concerning the epidemiology of CHCC-ICC have been published, mainly from surgically operated and Asian and American populations.

Aims & Methods: The main objective of this retrospective multicenter study was to evaluate epidemiological features and overall survival of historically proven advanced CHCC patients in a French population. Data from patients treated for historically proven CHCC-ICC in six French university hospitals between 2008 and February 2017, were retrospectively collected. The main clinical, biological, therapeutic features and OS were reported. Statistical analysis was performed using Graph Pad Prism 6.

Results: Thirty patients were included. 28 patients were HCC treated (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,
Disclosure of Interest: relevant modified BCLC system for HCC patients.


Results: Each bile acid formed various inhibitory or promoting regions in target strains. Saccharomyces bouardi and Lactobaciulis casei, which are commercially available as probiotics, were mainly inhibited by hydrophilic bile acids. Enteroceccus faecalis and Klebsiella pneumoniae, which are frequently observed in bile during biliary infections, did not form a large inhibitory zone of bile acids. Ercherella cloi, which is occasionally found in the lower intestinal tract, proliferated more around bile acid. Other microorganisms, which cause hepatic bile acid infections in various organs in the body, showed various patterns. As a result of relative quantitative analysis (RT-PCR) based on the control group, the ratio of Fermenticus to Bacteroides was decreased in the group treated with UDCA for 3 weeks. In the cholestatic model, NGS showed changes in the proportion of intestinal microbiota and an increase in diversity after 3 weeks of UDCA supply.

Conclusion: The effects of various kinds of bile acids on microbiota are very diverse, and the oral administration of certain bile acids may change changes in intestinal microbiome in the human body. Finally, oral feeding of certain bile acids can be used as a therapeutic treatment for dysbiosis by controlling the microbial environment in the intestinal tract.

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

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NECROPTOSIS IN EXPERIMENTAL CHOLESTASIS AND CHOLANGITIS AND MEDIATES LIVER INJURY AND P0734 MIRNA-21 IS OVEREXPRESSED IN PRIMARY BILIARY
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with biochemical, molecular and histological analysis of hepatic damage, fibrosis,
miR-21 expression increased in the liver of WT mice, accompanied by reduced hepatocellular degeneration, oxi-
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Introduction:

miR-21 ablation ameliorates liver damage and necroptosis in BDL mice, via relieved repression of

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 gallblad-
ded patients was significantly lower in the group without IDUS (P = 0.026). Using IDUS under fluoroscopy

Conclusions: The success rate of ETGBD was significantly higher in the group with IDUS compared to

P0735 IS COMPLETE STONE REMOVAL ALWAYS NECESSARY IN EXTREMELY ELDERLY PATIENTS?
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Introduction: Endoscopic sphincterotomy, endoscopic papillary balloon dilation, and extracorporeal shockwave lithotripsy are widely recognized as safe and effective treatments of choledocholithiasis. However, complete 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 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, hypoamylase, or decreased blood pressure during the endoscopic procedure), and total number of endoscopic procedures differed significantly between the two groups. The median number of stones was one (range 0–5) and two (range 1–5) (P = 0.013), while the median diameter of the largest stones was 9 mm (range 0–27) and 14 mm (range 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.

P0737 THE RENDEZVOUS PROCEDURE FOR THE MANAGEMENT OF BILIARY STONES 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 endo-
coscopic and percutaneous approach in order to re-establish bile duct continuity in complex BDI.

Aims & Methods: The aim of this study is to assess short-term and long-term outcomes of the RV. All consecutive patients with BDI referred to our tertiary center were analyzed retrospectively. RV procedure was performed when endoscopic stenting or PTC failed and when deemed feasible by a dedicated multidisciplinary team including a hepatopancreato-bili-
ary surgeon, gastroenterologist and interventional radiologist. Classification of BDI, technical success of RV, procedure-related complications and outcomes were assessed.

Results: Among a total of 812 patients, RV was performed in 47 (5.8%) patients, of which 31 (66%) were diagnosed with complete transaction of the bile duct (type D/Norrisberg 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

Aims & Methods:
Drainage in function of the number of segments drained.

Introduction:
Our policy is to try to drain the most possible segments of the liver in unilateral or bilateral palliative drainage has to be performed for this kind of stenosis. A Ct-scan or MRI was performed before and after the choice of the technique was left to the appreciation of the operators. All techniques 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.

Table 1: Treatment outcomes

<table>
<thead>
<tr>
<th>Study period, mean, mo (range)</th>
<th>1.5 (0.5–10.0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Progression free survival, mo (IQR)</td>
<td>1.7 (0.8–2.3)</td>
</tr>
<tr>
<td>Survival from study-enroll, mo (IQR)</td>
<td>2.5 (1.4–4.9)</td>
</tr>
<tr>
<td>Best response, n (%) SD</td>
<td>3 (6.8%)</td>
</tr>
<tr>
<td>Not evaluated</td>
<td>18 (40.9%)</td>
</tr>
<tr>
<td>ECOG, n (%)</td>
<td>19 (43.2%)</td>
</tr>
<tr>
<td>Maintained</td>
<td>31 (72.1%)</td>
</tr>
<tr>
<td>Decreased</td>
<td>4 (9.3%)</td>
</tr>
<tr>
<td>Adverse event, n (%)</td>
<td>16 (36.4%)</td>
</tr>
<tr>
<td>Grade 1</td>
<td>29 (65.9%)</td>
</tr>
<tr>
<td>Grade 3</td>
<td>12 (27.3%)</td>
</tr>
<tr>
<td>Grade 4</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Drop out cause, n (%)</td>
<td>1 (2.3%)</td>
</tr>
<tr>
<td>Adverse event</td>
<td>4 (9.1%)</td>
</tr>
<tr>
<td>Patient’s death</td>
<td>7 (15.9%)</td>
</tr>
<tr>
<td>Disease progression</td>
<td>22 (50.0%)</td>
</tr>
<tr>
<td>Withdrawal consent</td>
<td>5 (11.4%)</td>
</tr>
<tr>
<td>Loss of follow-up</td>
<td>2 (4.5%)</td>
</tr>
<tr>
<td>Poor general condition</td>
<td>3 (6.8%)</td>
</tr>
</tbody>
</table>

Conclusion: KML001 was safe and well tolerated in respects of adverse events. KML001 was also shown promising result in disease control and pain control. KML001 can be another palliative treatment option for patients with advanced biliary tract cancers who non-respond to gemcitabine-based chemotherapy.

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

P0741 ENDOSCOPIC DRAINAGE OF MALIGNANT STENOSIS OF THE BILIARY CONFLUENCE: HOW MANY SEGMENTS SHOULD BE DRAINED TO IMPROVE THE PATIENT SURVIVAL?

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Introduction: ESGE stated in 2012 that more than 50% of the liver had to be drained in case of unresectable hilar liver stenosis, however it remains unclear if unilateral or bilateral palliative drainage has to be performed for this kind of stenosis. Our policy is to try to drain the most possible segments of the liver in case of hilar stenosis. The aim of our study was to evaluate the efficiency of hilar drainage in function of the number of segments drained.

Aims & Methods: The study is a retrospective analysis of a prospective registry of drainage of malignant stenosis of the hilum. Drainage were performed by operators performing ERCP, EUS-drainage, and per-cutaneous drainage. The choice of the technique was left to the appreciation of the operators. All techniques could be associated. A Ct-scan or MRI was performed before and after drainage to decide the plan of the drainage and to evaluate efficiency and quality of the drainage. All drainages were performed under general anesthesia in a intubated patient. The quality of the drainage was evaluated by calculation of the percentage of drained segments. This percentage was calculated by dividing the number of liver segment drained with the number of liver segment. The drainage was performed by removing 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 adenoma in 33 (43%), metastasis to colorectal cancer in 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. The other factor with impact on the survival was an invasion of the liver > 50% by tumor. There was no impact on the survival according to the different techniques used to drain the bile ducts. To confirm the efficiency of the quality of the drainage, a ROC curve was performed establishing a correlation between patients receiving chemotherapy and percentage of liver drained (area curve = 0.77 (0.65–0.88).

Disclosure: The conclusion of patient with a malignant stenosis of the biliary confluence is highly correlate with the rate of the liver segment drained.

Aims & Methods: The aim was to determine and compare the accuracy of TAUS and EUS for diagnosis of 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 also influenced by whether the polyp is a true or pseudo polyp. Pseudo polyps are non-neoplastic and do not need surgery. 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, using TAUS, EUS, EMBASE, Science Citation Index Expanded and the Cochrane library were searched. The search was not restricted based on language, publication status, or prospective or retrospective nature of the studies. Only studies with data on true positives, false positives, false negatives and true negatives for TAUS or EUS were included. When there is a single study, the cutoff was 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 specificity 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 0.09 to 1.00 and 0.46 to 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. HRSC analysis showed no significant difference between the diagnostic accuracy of TAUS and EUS for differentiating between true and pseudo polyps and for...
differentiating between (pre)malignant and benign polyps (p = 0.174 and p = 0.589 respectively).

Conclusion: Diagnostic accuracy of TAUS for diagnosis gallbladder polyps is moderate and decreases further when differentiating between polyp types. TAUS would regularly provide false positive results, leading to unnecessary surgery. There was no evidence that diagnostic test accuracy of EUS was better than TAUS. Further studies of high methodological quality are needed to determine diagnostic accuracy of EUS and TAUS for differentiating between polyp types.

This abstract is based on a pre-peer review draft of a Cochrane Review.

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

Reference

**P0743**

**DIAGNOSTIC VALUE OF CONTRAST-ENHANCED ULTRASONOGRAPHY IN HIGH MECHANICAL INDEX CONTRAST MODE FOR POLYPOID LESIONS OF THE GALLBLADDER**

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**Introduction:** In its early stages, gallbladder cancer is an asymptomatic disease, and is associated with a poor prognosis if found in an inoperable condition. Several investigators have reported the utility of contrast-enhanced ultrasonography (CEUS) in low mechanical index (MI) contrast mode using a microbubble contrast agent for gallbladder lesions. However, CEUS images with low MI setting are influenced by the echogenicity of background B-mode and cannot depict precise vessel images, in contrast with high MI contrast mode.

**Aims & Methods:** The aim of this study was to assess the diagnostic value of CEUS in high MI contrast mode for characterizing polypoid lesions of the gallbladder (PLG). Thirty-six patients with PLG, including 17 with gallbladder cancer and 19 with benign polyps, who underwent CEUS were enrolled. The institutional review board approved this study and informed consent was obtained. Perfluorobutane-based contrast agent and high MI contrast mode was used for CEUS. Two blinded readers retrospectively evaluated images obtained in B-mode and CEUS. Kappa values, which reflect inter-observer agreement, were used for CEUS. Two blinded readers retrospectively evaluated images obtained in B-mode and CEUS. Kappa values, which reflect inter-observer agreement, were used for CEUS. Two blinded readers retrospectively evaluated images obtained in B-mode and CEUS. Kappa values, which reflect inter-observer agreement, were used for CEUS. Two blinded readers retrospectively evaluated images obtained in B-mode and CEUS. Kappa values, which reflect inter-observer agreement, were used for CEUS.

**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% (33/36) on CEUS, and 88% (7/8), 91% (10/11), and 89% (17/19) on CEUS after stratification according to size, respectively.

**Conclusion:** CEUS in high mechanical index contrast mode was a useful modality for differentiating gallbladder cancer and benign PLGs.

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

**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 (1620 patients)</td>
<td>0.80 (0.55–0.98)</td>
<td>0.97 (0.95–0.98)</td>
<td>Minimum: 0.4% (0.1) Median: 6.4% Maxium: 53.3%</td>
<td>0.00 (0.00–0.00)</td>
<td>0.01 (0.00–0.04)</td>
</tr>
<tr>
<td>TAUS</td>
<td>True gallbladder polyp</td>
<td>7 studies (1272 patients)</td>
<td>0.77 (0.48–0.92)</td>
<td>0.78 (0.59–0.90)</td>
<td>Minimum: 9.1% (0.1) Median: 20.2% Maxium: 60.0%</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% (0.1) Median: 20.2% Maxium: 60.0%</td>
<td>0.35 (0.20–0.53)</td>
<td>0.02 (0.01–0.07)</td>
</tr>
<tr>
<td>TAUS</td>
<td>Dysplastic poly/ 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% (0.1) Median: 20.1% Maxium: 95.6%</td>
<td>0.19 (0.07–0.46)</td>
<td>0.02 (0.01–0.05)</td>
</tr>
<tr>
<td>EUS</td>
<td>Dysplastic poly/ 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% (0.1) Median: 20.1% Maxium: 95.6%</td>
<td>0.28 (0.12–0.54)</td>
<td>0.01 (0.00–0.02)</td>
</tr>
</tbody>
</table>

**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**


**Disclosure of Interest:** All authors have declared no conflicts of interest.
A422
United European Gastroenterology Journal 5(5S)

P0745 PRETREATMENT BODY MASS INDEX AND WEIGHT CHANGE DURING PERIOD OF CHEMOTHERAPY AFFECT SURVIVAL OUTCOME IN ADVANCED BILIARY TRACT CANCER PATIENTS

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Introduction: Recent studies have been conducted to investigate the association between obesity and survival in cancer patients. Cancer has a significant influence on the nutrient status of patients and obesity can affect on the pharmacokinetics of 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 high 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, 23.0-24.9 kg/m²; obese, ≥25 kg/m².

Results: Median OS was 12.1 months for underweight patients, 10.5 months for normal patients, 16.1 months for overweight group, 13.6 months for obese patients, respectively. (p = 0.047) Univariate analysis showed that BMI, local status, disease, operation, radiotherapy and ECOG performance were significantly associated with better survival. Compared with normal patients, overweight patients (BMI 23-24.9 kg/m²) had a reduced risk of mortality in multivariate analysis (HR 0.491, 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.

P0746 THROUGH THE CATHETER BIOPSY METHOD FOR BILIARY CARCINOMA

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Introduction: To perform curative operation of biliary carcinoma, the pre-operative identification of exact proximal and distal margins is important. A biopsy fence is conventionally inserted to common bile duct via duodenum ampulla guided with an antecedent guide wire. Cannulation of the bile duct with the biopsy forceps may sometimes be difficult in cases where no sphincterotomy is performed, placing the patient at risk of post-ERCP pancreatitis after multiple attempts to advance the forceps into the duct. Pancreateobiliary endoscopists have reported the biopsy methods.

Aims & Methods: The aim of this study was to assess the feasibility and safety of the catheter biopsy method. This was a prospective review of bile duct biopsies with this new method conducted in Sendai Kouei hospital from February 2015 to October 2016. All patients who had biliary stenosis were included. Patients’ demographic data, technical success, adverse events and the diagnostic accuracy were evaluated.

Results: A total of 95 biopsy procedures were performed in 40 patients. The technical success rate was 95% (90/95). Post-ERCP pancreatitis occurred in 1 of 40 patients (2.5%, 1 patient 1 grade). There were no other adverse events like perforation or bleeding. The diagnostic yield of mapping biopsy procedures was 100% (7 of 7 patients). Conclusion: The new biopsy methods to biliary stricture were feasible and safe. It opens up exciting possibilities for endoscopic preoperative diagnosis of the biliary carcinoma.

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

Reference


P0747 THE DEVELOPMENT OF A RISK SCORE TO PREDICT ADVERSE OUTCOMES OF EXPLORATORY SURGERY IN PERHILAR CHOLANGIOCARCINOMA

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Introduction: Patients with perihilar cholangiocarcinoma (PHC) have few treatment options and a poor prognosis. Most staging models for patients with PHC have been developed for the minority of patients with potentially resectable disease and are not applicable to the vast majority of patients.

Aims & Methods: The aim of this study was to develop a prognostic score for all PHC patients using variables available at presentation. All consecutive patients with PHC (regardless of tumor stage and treatment) in two tertiary referral centers between 2002 and 2014 were identified and included. Baseline patient and tumor characteristics were collected from medical records. Cox proportional hazards regression was used for multivariable analysis. Age, BMI, bilirubin, 19-9, and tumor size were modeled as continuous covariates.

Results: A total of 674 patients were included of whom 342 (50.8%) had unresectable disease at presentation during exploratory laparotomy. Multivariable analysis identified age (HR 1.41 (95% CI 1.23-1.63)), BMI (HR 1.11 (95% CI 1.05-1.17)), serum bilirubin level (HR 1.45 (95% CI 1.21-1.71)), CA 19-9 serum level (HR 1.22 (95% CI 1.07-1.38)), tumor size (HR 1.33 (95% CI 1.14-1.56)), WHQI performance status 3 (HR 1.48 (95% CI 1.10-1.95), suspected distant metastases on imaging (HR 1.69 (95% CI 1.29-2.20), unilateral HA involvement: HR 1.28 (95% CI 1.10-1.47), and main: hilarial HA involve- ment: (HR 1.61 (95% CI 1.21-2.14) as independent prognostic parameters.

Based on these factors, a prognostic score was created to predict survival for patients with PHC from the time of presentation. Discrimination using Kaplan-
Meier curves, and calibration curves revealed good predictive abilities. The risk scored identified patients with a 1-year survival probability ranging from 15% to 73%.

Conclusion: We developed a prognostic score to predict overall survival for PHC patients using eight independent poor prognostic factors available at presentation. This score may help to inform patients and guide individualized treatment 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 secondary to a resectable primary cancer. Recent data on PTC for the relief of malignant obstruction in a palliative setting demonstrated a high early mortality. We have therefore examined outcomes of ERCP in inoperable malignant obstruction.

Aims & Methods: The Hospital Episode Statistics (HES) database contains diagnostic and procedural data for all hospital attendances in England. HES is linked to the Office for National Statistics (ONS) to provide mortality data. All subjects from April 2001 to April 2015 in England with an ICD10 code for cancer 2 years prior to ERCP or in the following 6 months were examined. Subjects undergoing a curative surgical procedure were excluded. Associations between demographics, co-morbidities, unit ERCP volume and mortality were examined by logistic regression.

Results: 49055 subjects were included in the study of whom 48.7% were male, median age 74.5 years (range 19–104). Pancreatic cancer was the most common aetiology (63.5%), followed by liver and intrahepatic bile duct malignancy (19.4%). Mortality was 4.16%, 10.9% and 19.6% for 7 days, in hospital and 30 days 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), 78–83 (1.83, (1.68–2.00) p < 0.001), > 83 (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 (1.12, (1.12–1.35), p < 0.001) 11 to 15 (1.19, (1.33–1.66), p < 0.001), 16 to 20 (1.31, (1.17–1.47) p < 0.001), advanced year of ERCP 2013/14 (0.78, (0.68–0.90), p = 0.001), 2014/15 (0.85, (0.74–0.98) p = 0.028); and previous renal failure (1.92, (1.77–2.09), p < 0.001) were associated with increasing 30 day mortality. Asian ethnicity (0.82, (0.67–0.99), p = 0.036), cancer of extrahepatic and unspecified parts of biliary tree (0.60, (0.55–0.65), p < 0.001) and upper tertile of unit ERCP activity (>230) per annum (0.86, (0.80–0.93), p < 0.001) were negatively associated with 30 day mortality.

Conclusion: Short-term mortality in subjects with malignant biliary obstruction following ERCP was high. A better prognosis was observed in; high-volume ERCP units, Asian ethnicity and extrahepatic primary cancers. Male gender, advancing age, increasing co-morbidity score, 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: WHAT IS THE NUMBER OF LIVER STIFFNESS MEASUREMENTS NEEDED FOR A HIGH QUALITY EVALUATION?

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Introduction: Non-alcoholic fatty liver disease (NAFLD) is a common chronic liver disease and in particular a health threat in obese children. Single nucleotide polymorphisms in genes encoding PNPLA3 (rs738409) and TM6SF2 (rs58542926) contribute to the development of NAFLD. It is however unknown whether liver parameters and cardiometabolic disturbances coincide 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 rs11484 and TM6SF2 E167K. Anthropometric, cardiometabolic risk and liver-related parameters were determined.

Results: Anthropometric parameters did not differ significantly between carriers and non-carriers of the risk alleles. ALT and AST were significantly higher in PNPLA3 G allele carriers as compared to the C allele carriers (ALT; CC 21, (14–28), GG 26, (18–34), pG 50, (21–70), p = 0.004); for the PNPLA3 G3 genotype, compared to the C/C 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 non-carriers. The metabolic syndrome was more prevalent in risk allele carriers. These results suggest that hepatic aberrations and metabolic disturbances apparently do not develop concordantly in this specific population. Furthermore, these children with a high liver health risk may not be identified by measuring cardiometabolic parameters.

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

TUESDAY, OCTOBER 31, 2017 09:00-17:00

P0751 TWO-DIMENSIONAL SHEAR WAVE ELASTOGRAPHY IN CHILDREN: WHAT IS THE NUMBER OF LIVER STIFFNESS MEASUREMENTS NEEDED FOR A HIGH QUALITY EVALUATION?

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Introduction: Pediatric chronic liver diseases are becoming a public health issue. Ultrasound based elastographic techniques have emerged as non-invasive methods of pediatric liver fibrosis assessment. The most recent are two dimensional (2D) elastographic (2D E) techniques. While these are proved to be highly reproducible in children, there is still no consensus regarding the number of measurements to be performed for a high-quality evaluation.

Aims & Methods: We aimed to investigate the number of liver stiffness measurements (LSM) needed for a high-quality evaluation using a 2D SWE technique. We conducted a prospective study which included 73 children (age range: 3–17 years, mean age 11.73 ± 3.55 years, 37% girls, mean body mass index (BMI) 25.12 ± 7.83 kg/m2). We used the 2D-SWE. (Logi E9, GE Healthcare, Chalfont St Giles- UK), with a C2-60 probe. One example was performed per LSM for each child. We randomly extracted 1 LSM, 2 LSM, 3 LSM and 5 LSM from all and calculated their respective medians. We employed the Friedman test to compare the medians of 1, 2, 3, 5 and 10 LSMs. We used the interclass correlation coefficient (ICC) to assess the agreement between the medians of 1, 2, 3, 5 and 10 LSMs.

Results: Medians calculated from 1, 2, 3, 5 and 10 LSMs were similar (ICC = 0.96). Furthermore, the agreement between medians calculated from 1, 2, 3, 5 and 10 LSMs was excellent (ICC = 0.96, 95% confidence interval: 0.944–0.974).

Conclusion: We suggest obtaining 5 LSM for a high-quality evaluation using this 2D SWE technique.

Disclosure of Interest: S.A. Popescu: I hereby confirm that I have received financial support (congress travel grants, speaker fee) from: Philips, General Electric, Abbvie, AstaZeneza, Zentiva.

All other authors have declared no conflicts 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

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 pancreaticitis. Angioembolization with conventional trans-catheter approach is the standard treatment. Direct percutaneous embolization has been commonly used for treatment of peripheral artery pseudoaneurysm when trans-catheter approach is not feasible. However, very limited data is available regarding its safety and efficacy in visceral artery pseudoaneurysm.
Aims & Methods: We aimed to assess the technical feasibility, safety and effec-
tiveness 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, safety and efficacy of percutaneous embolization were analyzed. At 30 days follow up US with color Doppler/dual phase computed tomography was done to see for recurrence of pseudoaneurysm. Results: 23 patients (18 male) with mean age of 34.47 ± 7.28 (7–72) years, under-
went direct percutaneous embozation for visceral pseudoaneurysm. Most common aetiology for pseudoaneurysm was pancreatitis (16) followed by trauma (3), paracentesis (3) and surgery (1). The site of pseudoaneurysm was-
splenic artery (13), left gastric artery (3), hepatic artery (3), inferior epigastric-
artery (3) and gastroduodenal artery (1). Mean size of pseudoaneurysm was 1.8 ± 0.6 (1–3.5) cm. Reasons for choosing percutaneous approach over trans-
catheter embolization included technical difficulties in 11 patients, excess collat-
ellar feeding at 3 patients, and recurrence after pre-
vious embolization in 6 patients. Agents used for embolization-glue with lipiodol (21), coil (1) and coil with glue (1). Mean procedural time was 11.3 ± 2.11 (8–16)
minutes and fluorooscopy exposure time was 2.4 ± 1.34 (1–6) minutes. Percutaneous embolization was successfully performed in all patients (technical success-100%). Mild adverse events included - local site pain in 19 (80%) patients. Moderate adverse event included - splenic infarct in 5 patients, all of which responded to conservative management. There were no major adverse events and no occurrence of distant embolization. At median follow up of 910
days (30-3186) there was no recurrence of pseudoaneurysm (clinical success-
100%). Conclusion: Percutaneous embolization is safe and effective for treatment of visceral artery pseudoaneurysm. Percutaneous technique may be considered as an alternative to trans-catheter embolization in cases of challenging anatomy, multiple collaterals and recurrence after previous embolization precluding transcath-
ter embolization. Disclosure of Interest: All authors have declared no conflicts of interest.


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Introduction: Chronic (CP) and autoimmune pancreatitis (AIP) are characterized by infiltration of immune and inflammatory cells. Whether CP is proinflammatory for autoim-
unity 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 as they control proliferation, activation and differentiation of pro-
flammatory cells, and apoptosis. 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 lymphotxin overexpressing mice (Tg(Ela1-LTα, β) ) – a model to study CP and AIP – with p21 deficient (p21-/-) mice. Infiltrating cells were visualized by immunohistochemistry, supported by gene expression analysis in an early and a progressive phase. Circulating autoantibodies and the presence of tertiary lymphoid organs (TLOs) were analysed to assess autoimmunity.

Results: p21 was upregulated in human CP patients but remained unchanged in AIP patients. p21 deficiency in LT mice (LTp21-/-) prevented early pancreatic injury. LTp21-/- mice had normal serum amylase, reduced inflammatory gene expression and cell infiltration. In acinar cells diminished proliferation and abrogated activation of non-canonical NF-kB 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 com-
parable tertiary lymphoid organs (TLOs), autoantibodies and elevated IgG levels. However, acinar cell proliferation, acinar-to-ductal metaplasia and acinar non-canonical NF-kB 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 medi-
ators 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. Furthermore, p21 inhibition in mice and renders 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: Various forms of pancreatitis (e.g. severe acute pancreatitis, auto-
immune pancreatitis type 2) are characterized by an infiltration of neutrophil granulocytes. Yet, despite sharing the feature of granulocytic infiltration, these diseases take opposing natural courses of disease. A novel function of granulo-
cytes, the formation of aggregated neutrophil extracellular traps (aggNETs), has been described and called for a reevaluation of the specific role of neutrophils in pancreatitis. We were interested in the specific function of granulocytes in various models of pancreatic inflammation.

Aims & Methods: Experimental models of pancreatic inflammation were employed including caerulein-induced pancreatitis and a novel model of IL-
17A-induced pancreatitis. The course of disease was characterized by immu-
nohistochemistry, RNA expression and flow cytometric analyses.

Results: Transgenic systemic delivery of IL-17A alone can induce granulocytosis and neutrophil infiltration to the pancreas. Interestingly, neutrophils do not reach the pancreatic ducts and form aggregates in the ductal lumen. Our experimental models further indicate that peptidyl arginine deimine 4 (PAD4) is critical for intraductal aggregate formation and that PAD4-deficiency abrogates disease progression. Mechanistically, we identify the pancreatic juice as a strong instigator of neutrophil extracellular trap formation. Characteristic single components of pancreatic juice, such as bicarbonate ions and calcium carbonate crystals, induce aggregated NET formation.

Conclusion: Granulocytes aim to contain an inflammatory focus and enter pan-
creatic ducts with potentially detrimental consequences to dependent areas of the organ.

Disclosure of Interest: M. Leppkes: M. L. has received a research scholarship from MSD Sharpe & Dohme GmbH, Germany. No financial or non-financial conflict of interest exists related to this study.

All other authors have declared no conflicts of interest.


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Introduction: Mitochondrial dysfunction is a hallmark of several disease patho-
genes including acute pancreatitis (AP). Our results suggest that mitochondrial
damage is crucial in bile acid induced inhibition of pancreatic ductal HCO3-
isecretion, however the details of mitochondrial function and dysfunction in pan-
creatic ductal epithelial cells (PDEC) is not known yet.

Aims & Methods: The aim of our study was to characterize the mitochondrial
function and function in PDEC under physiological and pathophysiological conditions. Guinea pig and Cyclophilin D WT and knock out (KO) mouse pancreatic ducts were used. Mitochondrial distribution was studied by electron microscopy (EM). Mitochondrial membrane potential (ΔΨm) was measured by
confocal microscopy and pancreatic ductal HCO3- secretion by microfluorometry.

Results: EM measurements revealed that the mitochondrial density is signifi-
cantly higher on the apical side of the guinea pig PDEC compared to the middle or the basal segment in HCO3- buffered solution, or during the adminis-
tration of 5 μM forskolin. This was also confirmed by the ΔΨm measurements as
we detected increased TMRM fluorescence on the apical side of the PDEC during stimulation. The genetic KO of cyclophilin D significantly reduced the
loss of ΔΨm and protected pancreatic ductal HCO3- secretion during the adminis-
tration of 500 μM chenodocholic acid.

Conclusion: Our results revealed that mitochondrial function has a central role in the function of PDEC presumably by providing ATP for fluid and ion secretion. On the other hand the opening of MPTP seems to be crucial in the bile acid induced toxicity offering a potential therapeutic target in AP.

Disclosure of Interest: All authors have declared no conflicts of interest.
Introduction: Infectious complications are main causes of mortality in severe acute pancreatitis. Most infections (30%) are intestinal origin (2). The Nucleotide oligomerization domain 2 (NO2) 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 NO2 variants and AP severity in this study.

Aims & Methods: Group 1 (n = 27) was healthy. Group 2 (n = 36) and Group 3 (n = 32) were composed of mild and severe pancreatitis patients according to the Atlanta 2012 classification (5). Four NO2 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. 1007fs variant was found in 3, 3 and 1 patient in mild (3/36, 8.3%) and severe pancreatitis (3/32, 9.4%) groups, and in healthy group (1/27, 3.7%), respectively. There was no significant difference in the frequencies of NO2 variants between groups. Serum IL-6, TNF-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 NO2 variants.

Conclusion: Our results suggest that there may be a relationship between the presence of p.R702W variant and severe pancreatitis.

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

References

P0758 A LUMEN AMPOUS METAL STENT WITH ANTI-REFUX VALVE FOR ENDOSCOPIC ULTRASOUND-GUIDED DRAINAGE OF PSEUDOCYST AND WALLED-OFF NECROSIS


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Introduction: Pancreatic pseudocyst (PC) and walled-off necrosis (WON) are frequent complications of acute pancreatitis. Drainage procedure is required when complications and complications, such as pain, biliary obstruction and infection occur. With technological advances, endoscopic ultrasonic (EUS)-guided drainage replaced surgical treatment and has become the standard treatment. We developed a novel fully-covered lumen apposing metal stent (LAMS) with anti-reflux valve for the purpose of preventing complications such as stent migration or reflux of bowel contents while improving the stent patency. The aim of this study is to investigate the efficacy and the rate of complications of EUS guided drainage using novel LAMS with anti-reflux valve for PC and WON.

Aims & Methods: We compared the treatment outcomes and the rate of complications of EUS-guided drainage using LAMS with EUS-guided drainage using plastic stents. Ten patients underwent EUS-guided drainage using the novel LAMS (LAMS group) and eighteen patients using conventional plastic stents (plastic stent group) from December 2013 to October 2016. A novel LAMS used in this study was designed to have bilateral flare ends, 4 anti-migration flaps (at each side) and a pair of 2 anti-reflux valves (inside the lumen). Technical success was defined as a successful placement of the 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 = 0.951), clinical success rate (70% versus 77.8%; p = 0.491), resolution rate (76.8% versus 80.7%; p = 0.705), complication rate (40% versus 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, 4 patients had mild fever was developed in 4 patients, all amount of pneumoperitoneum was in 1 patients, self-migration of stent (after resolution of fluid collection) was in 2 patients. 3 patients showed serious adverse events in 1 patient in each group experienced peritonitis due to immediate stent migration and 1 patient had upper bleeding. Proximal stent was removed in 1 patient in each side in 41.2 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 outcome and the rate of complications even in resistant complications of severe acute pancreatitis. 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.

Disclosure of Interest: All authors have declared no conflicts of interest.
THE PREDICTORS OF STEP UP APPROACH USING ENDOSCOPIC ULTRASOUND-GUIDED TRANSMURAL DRAINAGE FOR WALLLED-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 approaches such as direct endoscopic necrocectomy (DEN) and surgical necrocectomy 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 of WON with the outcome of endoscopic transmural drainage. 49 patients (38 males; mean age 60.7±13.44) with symptomatic WON treated by an attempted EUS-TD initially were enrolled in this study. The relationship between the outcome of treatment and the clinical characteristics including morphology and extent of WON was evaluated.

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 form step up approach was needed in 19 patients. DEN, percutaneous drainage and surgery were done in 4, 2, and 3 patients, respectively. All patients with step up approach had successful outcomes. Three patients died before step up approach was performed, but death was not related with the procedure itself. There were no 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 was correlated with the necessity of 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 arteriolar 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


admission to hospital. A receiver operating characteristic (ROC) analysis was built at each day after ERCP to examine the discrimination of severe AP. 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, IFN-γ 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). We calculated the IL13/IFN-γ index. This ratio was significantly higher in patients with mild AP when compared between groups (p = 0.007 vs. 10–8). This difference was also observed between severe AP and the rest of the patients (p = 0.007). The ROC curve was also modified, increasing the area under the curve (AUC), the sensitivity and the specificity, in relation to AP severity.

Conclusion: An IL13/IFN-γ ratio that could be of great interest in the assessment of prognosis in AP. A high value of the IL13/IFN-γ ratio at hospital admission is associated with a good prognosis of AP.

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

P0763 CORRELATION BETWEEN POST-ERCP SERUM AMYLASE LEVELS AND CT FINDINGS IN ERCP-INDUCED PANCREATITIS: A PROSPECTIVE MULTICENTER OBSERVATIONAL STUDY

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Introduction: According to the diagnostic criteria by Cotton et al. post-ERCP pancreatitis is defined as the persistence of serum amylase levels three times or higher than the upper limit of the standard for 18 ± 6 h after ERCP with persistent upper abdominal pain for 4 h or longer. However, the criterion of three times or higher than the upper limit was mostly based on retrospective studies, and has not been necessarily supported by imaging diagnosis. In this study, using CT findings as the gold standard of ERCP-induced pancreatitis, we investigated the serum amylase level that suggested ERCP-induced pancreatitis in a prospective multicenter study.

Methods: We performed a high-volume center study. 2078 patients examined by ERCP between April 2015 and May 2016 were retrospectively followed. CT was performed in patients whose serum amylase level exceeded the institutional upper limit on the day after ERCP (after 12–20 h) to investigate the presence or absence of acute pancreatitis. Two expert radiologists performed the diagnostic evaluations of the images blinded and judged the presence or absence of pancreatitis based on the Balthazar grade. Patients with a preexisting high amylase level, clinically diagnosed pancreatitis, and had a difficult imaging evaluation due to the presence of the Balthazar grade. Patients with a preexisting high amylase level, clinically diagnosed pancreatitis, and had a difficult imaging evaluation due to the presence of the Balthazar grade. Patients with a preexisting high amylase level, clinically diagnosed pancreatitis, and had a difficult imaging evaluation due to the presence of the Balthazar grade.

Results: Amylase levels increased on the following day in 402 (21.5%) of the 1868 patients included, and 340 patients examined by CT were included in the analysis. ERCP-induced pancreatitis was diagnosed based on imaging in 204 patients (10.8%). The cutoff amylase level for judging the presence or absence of pancreatitis on the following day was 2.75 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 AUROC 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 AUROC 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 2.75 times higher than the institutional upper limit. The diagnostic value of serum amylase levels 2 h after ERCP was also higher than a cutoff level persisting for less than 4 h, but the sensitivity 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.

Reference

P0764 CLINICAL EFFICACY AND SAFETY OF EU-SUPPORTED 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 pancreatitis 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 pancreatitis and WON were defined as according to the revised 2012 Atlanta classification. Those encapsulated fluid collection outside of the pancreas were excluded from this study. The following data were collected: patient demographics, EUS and microbiological 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 introduction of the AXIOS device, which was then advanced to create the fistula tract by using the electrocautery tip. Once the delivery catheter was inside the WON, the distal and proximal flange of the stent were deployed subsequently under EUS and endoscopic guidance respectively. Outcome measures Primary outcome measures were: 1. technical success defined as stent deployment without any difficulty nor reposition; 2. clinical success defined as symptom resolution with the abscess size ≤2 cm on computed tomography (CT); Secondary measures are: 1. Stent revision due to its migration/dislodgment in case of unresolved abscess; 2. adverse events; 3. WON recurrence Data analysis Continuous variables were expressed as median and IQR. Categorical data were expressed as absolute numbers and percentages.

Results: The clinical characteristics of the patients and their WONs are shown in Table 1. In the cohort, the deployment of LAMS (AXIOS: 15 ± 10 mm, n = 38; 10 ± 10 mm, n = 8) was technically successful in 45 (97.8%, 3 cases required 2nd attempt for proper deployment) cases while one case required to switch over to a fully-covered metal stent due to the lengthy insertion tract. 28(60.9%) cases were managed with necrosectomy (median 3, IQR 2) in which 15(32.6%) of them had concurrent necrosic drainage prior to each procedure. 43(93.5%) patients were treated successfully while two refractory cases required superimposed insertion of a fully-covered metal stent coaxially to control the bleeding while the other five had bleeding stopped spontaneously. Delayed bleeding was reported in 4 cases:three were managed by local hemostatic management and one case was managed by switching to percutaneous drainage. 20(43.5%) cases reported to have adverse events. Six patients experienced immediate bleeding during insertion of LAMS in which two related to process of necrosectomy; among them, one case required the superimposed insertion of a tubular 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 control while one required to switch over to percutaneously drainage. 20(43.5%) cases reported to have adverse events. Six patients experienced immediate bleeding during insertion of LAMS in which two related to process of necrosectomy; among them, one case required the superimposed insertion of a tubular 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 control while one required to switch over to percutaneously drainage. 20(43.5%) cases reported to have adverse events. Six patients experienced immediate bleeding during insertion of LAMS in which two related to process of necrosectomy; among them, one case required the superimposed insertion of a tubular 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 control while one required to switch over to percutaneously drainage. 20(43.5%) cases reported to have adverse events. Six patients experienced immediate bleeding during insertion of LAMS in which two related to process of necrosectomy; among them, one case required the superimposed insertion of a tubular fully covered metal stent coaxially to control the bleeding while the other five had bleeding stopped spontaneously.

Conclusion: LAMS is an effective and less invasive method for WON drainage. However, the clinical experience with LAMS is increasing, and there is still much to learn about their safety profile. The procedure is technically successful in most patients and was associated with a low incidence of adverse events.

Disclosure of Interest: All authors have declared no conflicts of interest.
Table 1 Continued

<table>
<thead>
<tr>
<th>Feature</th>
<th>LAMS (n = 46)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diameter (cm)</td>
<td>9(4.5)</td>
</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)</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>Stenting</td>
<td>3(67.3)</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>Nasoacryotic drainage (n, %)</td>
<td>15(32.6)</td>
</tr>
<tr>
<td>Technical success</td>
<td>45(97.8)</td>
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<tr>
<td>Stent revision</td>
<td>12(26.1)</td>
</tr>
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<td>Spontaneously migration</td>
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<td>Dislodged during necrosectomy</td>
<td>2</td>
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<tr>
<td>Ineffective drainage</td>
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<tr>
<td>Adverse events</td>
<td></td>
</tr>
<tr>
<td>Bleeding</td>
<td>10</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(93.5)</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: alcohoholism, hyperplasia, post ERCP (n = 1); idiopathic (n = 3); 5: Enterococcus spp (n = 5), Methicillin-sensitive Staphylococcus aureus (n = 2); 6: AXIOS 10 × 10 mm: n = 6(transgastric); n = 2(transduodenal); 7: mal-deployed stent: n = 4, all successfully placed in 2nd attempt (among them, one changed into Wallflex stent 60 × 10 mm) 8: divided to a tubular metal stent (n = 1); 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 beating: within 48 hr: n = 3, embolisation required: delayed bleeding: all spontaneously subsided; 9: refractory cases: managed by percutaneous drainage (n = 1), superimposed fully-covered tubular metal stent co-axially (n = 2) NE LAMS, lumen-apposing metal stent.

Conclusion: Pancreatic WON can be effectively treated by EUS-guided LAMS placement co-axially within lumen of LAMS; early bleeding: within 48 hr, n = 4, all successfully placed in 2nd attempt, embolisation required; delayed bleeding: all spontaneously subsided. 10: refractory cases: managed by percutaneous drainage (n = 1), superimposed fully-covered tubular metal stent co-axially (n = 2) NE LAMS, lumen-apposing metal stent.

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

References


P0765 RECTAL INDOMETHACIN IS PROTECTIVE AGAINST POST-ERCP PANCREATITIS IN HIGH-RISK AND AVERAGE-RISK POPULATION: A SYSTEMATIC REVIEW AND META-ANALYSIS

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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 shown the potential efficacy in prophylaxis PEP across high-risk patients, especially for diclofenac or indomethacin [3–5]. Recently, a prospective, double-blind, controlled trial conducted by Levenick [6] and colleagues in the USA showed that the reduction in PEP using indomethacin was not as significant as previously reported. In fact, even 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 patients[7]. These findings raised the question that whether administration of rectal indomethacin should be recommended in average-risk patients.

Aims & Methods: We aimed to determine the beneficial effect of rectal indomethacin in the prevention of post-ERCP pancreatitis in average-risk of patients.

We systematically searched Cochrane 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 group (RR, 0.49; 95%CI, 0.35–0.71) and average-risk group (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 dis- charged patients 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 popula- tion 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 bilio-pancreatic surgery) were reported according to hospital Units. Statistics: Chi squared for trend and Odds Ratio (OR) were applied. Results: During the analysed period, 23,389 overall hospitalizations for AP, annual hospitalizations of 32 patients/100,000 inhabitants and in-hospital mor- tality of 3.2% were observed. Characteristics of the patients were: mean age: 62.2 +/−/9.3ys, 54% Males (M); Female (F) mean age: 65ys +/−/19.3ys, male 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 the youngest to oldest patients (from 4.4 to 15.12 ± 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 com- parison to General Medicine Units, GI units were associated with a low in- hospital mortality (OR: 0.37, CI 95%: 0.28–0.49, p < 0.05) and an high NFS (OR: 2.88, CI 95%: 2.18–3.81, p < 0.05).

Conclusion: During the last 15 years in the Veneto Region, hospitalization rate, in-hospital mortality rate and need for surgery of acute pancreatitis significantly decreased. Conversely, admissions in both General Medicine and GI units increased. Management of AP in GI units seems to be related with a best out- come: lower in-hospital mortality and probably, more eligible patients for surgi- cal treatment. 

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

References

P0767 COMPARISON OF CLINICAL COURSE AND OUTCOME OF ACUTE PANCREATITIS, RECURRENT ACUTE PANCREATITIS, ACUTE ON CHRONIC PANCREATITIS
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Introduction: Recurrent acute pancreatitis (RAP) and acute on chronic pancreatitis (ACP) are likely to have severe disease and complications in comparison to RAP. The aim of this study was 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 dialysis 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 the entire population) had POF of AP, 6 (13% of whom had POF) of ACP and none of RAP patients developed POF (p < 0.001). PCD and surgery requirement were seen in 89 (56%) of 9 (6%) of AP, 5 (11%) & 4% of ACP and none of RAP patients respectively (p < 0.001). AP as compared to RAP (18.80 ± 14.58 ± 8.82 ± 11.2, 33.5 ± 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%; p < 0.001). 41 (26%) of AP, 2 (4.4%) of ACP, but none of patient with RAP needed ventilatory support (p < 0.001), while 13 (8%) of AP patients, 1 (2.2%) of ACP and none with RAP required dialysis (p < 0.05). Mortality in AP, ACP and RAP was 29 (18%), 2 (4.4%), 0 (0%) respectively (p < 0.05).

Conclusion: Patients with RAP 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 and often pancreatitis occurred outside hospital. Curtis occurred after surgery was included. Furthermore, most of the studies includes in the dictum 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 and identify the frequency of evaluate the possible differences between type and localization of IPMNs in occurrence of acute pancreatitis and his disease severity. A retrospective analysis was performed on all observed patients with IPMN-MD, IPMN-BD and mixed type at Gastroenterology Unit in the period between January 2009 and March 2016.

Results: In the study patients an instrumental or histological diagnosis of IPMNs were included.

Conclusion: In all studied 346 patients (164 males and 182 females, mean age at the first report 61.6 ± 12.2 years). At the time of radiological diagnosis, 45% were asymptomatic, 51% had had symptoms, while 4% of the data were missing: the frequency of AP (excluding biliary etiology) of all 346 patients with IPMN was 26%. AP was edematous in 85% of patients and necrotic in 15%. We found that increased frequency in patients with PA with IPMN of the main pancreatic duct (MD and mixed), and unifocal type. The localization to the body seems to be more correlated with the presence of AP. The number of cysts (for IPMN-BD and mixed type) was significantly lower in patients who had AP.

Conclusion: Our medical extraction series confirms that the PA is an event that occurs in 26% of patients with IPMNs, with a prevalence of the male sex, it is associated with a IPMN central and mixed type, predominantly localized to the body. The pancreatitis is not associated with malignancy in resected patients. Disclosure of Interest: All authors have declared no conflicts of interest.

P0769 APOLIPOPROTEIN B AND A-I RATIO PREDICTS SEVERE ACUTE PANCREATITIS
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Introduction: Severe acute pancreatitis (SAP) has a considerable mortality and morbidity rate. Although many indices have been developed to classify the severity of acute pancreatitis (AP), there is no ideal method for predicting SAP. The ratio of apolipoprotein B to A-I (apoB/A-I) is associated with metabolic syn- drome and inflammatory status.

Aims & Methods: This study aims to investigate the association between severity of AP and serum apoB/A-I ratio. Patients with AP were prospectively enrolled at Yonsei University Wonju College of Medicine from March 2015 to August 2016. The severity of acute pancreatitis was assessed according to the revised Atlanta classification criteria (Atlanta 2012).

Results: Of 191 patients with AP, 134 (70.2%) were classified as mild AP, 42 (22%) as moderately severe AP, and 15 (7.9%) as SAP. The apoB/A-I ratio was highest in patients with SAP compared with those with mild and moderately severe AP (p < 0.001). The apoB/A-I ratio positively correlated with Atlanta classification, computed tomography severity index, and Bedside index for sever- ity of AP. The apoB/A-I ratio showed the highest ability to predict SAP in patients with AP compared with apolipoprotein B or apolipoprotein A-I alone. Conclusion: Serum apoB/A-I ratio appears to have value in predicting SAP in patients with AP.

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


References


P0770 IMAGING IN CHRONIC PANCREATITIS – DATA FROM THE SCANDINAVIAN-BALTIC PANCREAS 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 = 1–2 and C: Moderate/marked = 3–4) was performed for correlation to the clinical data.

Results: The database contains 932 patients (623 men). The M-ANNHEIM-score was present from 446 subjects and both imaging scores from 93 subjects. According to M-ANNHEIM subjects were graded as: 0: Normal (8.1%), 1: Minimal change (15.5%), 2: Moderate (17.9%) and 3: Marked (39.9%). Correlation of the imaging scores: The imaging-scores demonstrated acceptable correlation (p = 0.75, p < 0.001) and good agreement (ICC = 0.71 (0.59, 0.8), p < 0.001). Agreement was best for groups with marked changes.

The clinical parameters divided by M-ANNHEIM groups are presented in the table.

<table>
<thead>
<tr>
<th>Clinical parameter</th>
<th>A: Normal</th>
<th>B: Minimal change</th>
<th>C: Marked</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disease duration (Years)</td>
<td>3.6(5.2)</td>
<td>4.6(5.8)</td>
<td>5.0(6.4)</td>
</tr>
<tr>
<td>Pain (VAS 0–100)</td>
<td>38.3(39.2)</td>
<td>39.4(36.5)</td>
<td>35.5(35.3)</td>
</tr>
<tr>
<td>Nutrition (BMI kg/m²)</td>
<td>24.2(5.0)</td>
<td>24.7(5.5)</td>
<td>23.7(4.7)</td>
</tr>
<tr>
<td>Malnutrition (%)</td>
<td>4</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>Diabetes (%)</td>
<td>39</td>
<td>43</td>
<td>39</td>
</tr>
<tr>
<td>Smoke (Pack years)</td>
<td>[0–20]</td>
<td>[0–25]</td>
<td>[170–377]*</td>
</tr>
<tr>
<td>Alcohol Lifetime years &gt; 5units/day</td>
<td>[0–18]</td>
<td>[0–18]</td>
<td></td>
</tr>
</tbody>
</table>

*p < 0.05 (Kruskal-Wallis). No other differences reached significance. Values: mean (SD) or median [IQR-range]. Malnutrition: BMI < 18.5.

Conclusion: Subjects with marked structural changes had the highest lifetime smoke-doses. There was poor correlation of structural changes to the clinical features. The two imaging scores demonstrated acceptable correlation and agreement. Poor agreement in normal/minimal-change groups may reduce the value of the scores where they are most needed. The results are presented on behalf of the SBPC study group.

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

P0771 OSTEOPATHY IS COMMON IN PATIENTS WITH CHRONIC PANCREATITIS, BUT IS NOT RELATED WITH VITAMIN D AND FECAL ELASTASE LEVELS (P-BONE STUDY)

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Introduction: In patients with chronic pancreatitis (CP) malabsorption of vitamins D and K, alcoholism, smoking and inflammatory status contribute to low bone mineral density (BMD). A recent meta-analysis estimated the prevalence of osteoporosis (25%) and osteopenia (40%) in CP and highlighted limitations of the reviewed studies.

Aims & Methods: To evaluate the prevalence of osteoporosis and osteopenia in patients with CP and to investigate the correlation between BMD and CP features, and vitamin D and PEI. This is a multicentre cross-sectional study (P-BONE, a Pancreas 2000 project) on prevalent CP patients. The Diagnosis and severity of the disease was defined according to the M-ANNHEIM classification. Clinical information and biochemical variables were recorded; PEI was assessed by computed tomography. Standardised density was performed by dual-energy x-ray absorptiometry (DEXA). Categorical variables were analysed by means of Fisher's exact test, and continuous variables by t-test. A logistic regression analysis was performed to identify risk factors for osteoporosis or osteopenia. The relationship between continuous variables was assessed with Pearson correlation coefficient.

Results: 211 consecutive CP patients were enrolled at 6 Centres (67% M; mean age 60 ± 13 years). Osteoporosis was diagnosed in 42% and osteopenia in 22% of cases. Alcohol was a risk factor (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 bone mineral density at the elbow (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 4.95%CI 1.2–9.8; p = 0.001) OR 1.09% 95% CI 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%) NS4S, others (27%). Median age at first symptoms appeared to be 13 years. Diagnosis was made in 2 [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 dactyl amputations 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 calculated (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 pancreatic tissue 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))< 0.001
368 (161)
128 (144)
51 (69)
Nutrition: BMI (kg/m²) (mean (SD))< 0.001
24.6(4.9)
23.7(4.3)
22.6(4.3)
Frequency BMI > 18.5 (%)< 0.001
5
16
Frequency BMI > 18.5 (%)< 0.001
5
16
Vitamin D: Frequency <25nmol/L (%) (I vs II)< 0.001
7.4
23.7
17.6
Enzyme Treatment (lipase-units/day) (median [IQ range])< 0.001
0[0–75000]
120000
[75000–150000]
Hemoglobin: (median [IQ range]) p < 0.05
11.8(2.7–3.0)
10.7(2.8)
Faecal Elastase and disease duration (years)** p < 0.001
<10: 143(175)
>10: 91(118)

Conclusion: In our material frequency of EPI is higher than reported in the Scandinavian-Baltic-Pancreatic-club database. In our material frequency of EPI is higher than reported in the Scandinavian-Baltic-Pancreatic-club database.

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

P0774 FLUID AND HCO3– SECRETION AND CFTR ACTIVITY IS INHIBITED BY CIGARETTE SMOKE EXTRACT IN GUINEA PIG PANCREATIC DUCTAL CELLS

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Introduction: Smoking represents an independent risk factor for the development of chronic pancreatitis (CP). It is well documented that secretion of pancreatic ductal alkaline fluid (which is regulated mostly by the anion exchanger and C02/HCO3– 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– secretion. Guinea pigs were exposed to cigarette smoke four times a day for 30 min for 6 weeks. The CFTR expression was analysed by immunohistochemistry. Pancreatic ducts were isolated from guinea pig pancreas. Cigarette smoke extract (CSE) was prepared by smoking 15 cigarettes into 10ml distilled water by a smoking machine. Intracellular Ca2+ concentration and pH were evaluated by microfluorometry. Fluid secretion was measured by video microscopy. CFTR currents were detected by whole cell configuration of patch clamp technique.

Results: Cigarette smoking significantly diminished the expression of CFTR and the fluid and HCO3– secretion in guinea pig pancreas. CSE dose dependently decreased fluid and HCO3– secretion in guinea pig pancreatic ducts via inhibition of anion exchanger, Na+/H+ exchanger and Na+/HCO3– cotransporter and also forskolin-stimulated Ct– current of CFTR Ct– channel. CFTR inhibition altered the pattern of carbachol-induced Ca2+ signal in pancreatic ducts suggesting that some of the inhibitory effects may be regulated by calcium signalling.

Conclusion: Cigarette smoking and CSE inhibits pancreatic ductal fluid and HCO3– secretion and the activity of the CFTR which may play role in the smoke-induced pancreatic damage. This study was supported by OTKA, MTA, SZTA and UNKP.

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

References
1. Agarwal B, Krishna NB, Labundy JL, Safdar R, Akduman EI. EUS and/or EUS-GUIDED fine needle aspiration (EUS-FNA): In our center, we propose an additional role of ROSE in histological diagnosis aimed at improving diagnostic accuracy.
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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 solid lesions with EUS-FNA for pancreatic solid lesions and surgery. We retrospectively compared the diagnostic performance of ROSE during EUS-FNA with the final diagnosis confirmed by surgically resected specimens. Diagnosis by ROSE using Diff-Quik® was carried out by both a cytopathologist and an endoscopist.

Results: The median of needle passes required for ROSE was 1 range, 1–5. Final diagnoses for the 215 lesions were pancreatic ductal adenocarcinoma (PDAC; n = 162), pancreatic ductal adenosquamous carcinoma (PDASC; n = 9), pancreatic neuroendocrine tumor (pNET; n = 30), solid pseudopapillary neoplasm (SPN; n = 9), metastatic tumors (n = 4), and acinar cell carcinoma (ACC; n = 1). Primary lesions for metastatic tumors in the pancreas were renal cell cancer (RCC; n = 2), small cell lung cancer (SCLC; n = 1), and colon cancer (n = 1). Some of the cases could not diagnose14 cases. When adenocarcinoma (excluding subtype) was suspected by ROSE, ROSE diagnosed 94.6% (159/168) of adenocarcinomas. When special type tumor (pNET, SPN, RCC, SCLC) was suspected by ROSE, ROSE diagnosed 96.4% (27/28) of special type tumor.

Conclusion: All adenocarcinomas suspected by ROSE were malignant tumors. When special type tumor (pNET, SPN, RCC, SCLC) was suspected by ROSE, diagnostic accuracy of ROSE was 96.4%. Diagnostic accuracy using ROSE is high agreement in final histological diagnosis. It is suggested that ROSE may also be useful for diagnosis of special type tumor.

Disclosure of Interest: All authors have declared no conflicts of interest.
P0777 THE NOVEL ROLE OF GASTROKINE, A GASTRIC TUMOR SUPPRESSOR PROTEIN, IN PANCREATIC CARCINOGENESIS
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Introduction: Pancreatic ductal adenocarcinoma (PDAC) has one of the most dismal prognoses of all cancer types. Diagnostic techniques for early malignant lesions are limited, which shows an evident need to understand the pathomechanism leading to PDAC and find a suitable marker for early detection. Initial processes in PDAC development involve acinar to ductal metaplasia (ADM) with further neoplastic progression into four pancreatic intraepithelial neoplastic (PanINs) stages. After accumulation of mutations, these lesions will further evolve into PDAC. Gastrokine 1 & 2 (GKN1 & GKN2) are secreted proteins found early 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 Kra512D PltAfcre (KC) mice, a mouse model with predisposition to pancreatic cancer, revealed strikingly high gastrokine expression. We will further analyze the involvement of GKNs in the development and progression of PDAC and explore the possibility to use them as biomarkers.

Aims & Methods: GKN1 & GKN2 expression was confirmed by qPCR in human and mouse pancreas samples. The presence of GKN1 was verified by western blot and immunohistochemistry (IHC) in mouse pancreas. Mouse pancreatic juice during carcinogenesis could make gastrokine a potential biomarker for the detection of early pancreatic premalignant lesions. With our mouse models we will provide in vivo evidence on the role of GKNs as potential tumor suppressors in pancreatic cancer and autophagy inhibition might be a potential target in treating pancreatic cancer.

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

P0778 AUTOPHAGY IS ESSENTIAL FOR PANCREATIC CANCER DEVELOPMENT IN A NEW HUMANIZED GENETICALLY-MODIFIED ADULT MOUSE MODEL
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Introduction: Pancreatic cancer is one of the deadliest malignancies and there are no effective therapies for it. According to a search of The Cancer Genome Atlas (TCGA) in oncopaint in Kirsten rat sarcoma virus (K-RAS), Tumor protein (TP53), Cyclin-dependent kinase inhibitor (CDKN2A) and Cyclin-dependent kinase inhibitor (CDKN2B) are the most frequent aberrations in human pancreatic cancer (91%, 63%, 35% and 34% of cases, respectively). Macrophagocytosis (breakdown of the autophagic action) has been implicated in some of human diseases, and it plays a complex role in pancreatic cancer.

Aims & Methods: We aimed to investigate autophagy response in a new humanized genetically-modified adult mouse model of pancreatic cancer. To induce pancreatic adenocarcinoma we used viruses expressing oncogenic K-RAS and shRNAs targeting tumour suppressors Trp53, Cdk4a2a and Cdkn2b (i.e., lentiviruses-KTCC) were injected into pancreas of 9-week old adult mouse. Autophagy was detected by immunofluorescence staining for autophagic protein light chain-3 (LC3) and Lysosomal-associated membrane protein 1 (LAMP-1). Additionally, the expression of autophagic protein LC3, autophagy related protein 7 (ATG7), LAMP-1 and P62 were determined by western blot.

Conclusion: In vitro, pancreatic duct epithelial cells of normal mice were primary isolated, LC3 was determined by immunofluorescence staining in the lentiviruses-KTCC infected primary cells. Results: Mice developed pancreatic cancer ten weeks after lentiviruses-KTCC injection, both in macrography and histopathology analysis. The mRNA levels of autophagic genes Atg7 and Atg12 were up regulated. In addition, the LC3I and LAMP-1 positive areas were significantly increased and co-localization of LC3 and LAMP-1 was found in pancreatic tumour sections. Moreover, the increased protein levels of ATG7, LC3, LAMP-1 and decreased P62 protein was observed in the pancreatic tumour tissues. In vitro, the protein level of LC3 in the lentiviruses-KTCC infected primary cells was increased by 6 times when compared with that in the control primary cells (P = 0.0104).

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

P0779 HIPEC IN GI CANCERS. IS HYPERTHERMIA FRIEND OR FOE?
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Introduction: Hyperthermia as a positive additive to chemotherapy is described in multiple studies. Despite controversial results hyperthermic intraoperative chemotherapy (HIPEC) is a standard treatment option for some types of gastrointestinal cancer that invades peritoneum. However, the results of clinical data and basic research are uneven. Moreover, there is a lack of fundamental knowledge on additive cytotoxic effect of hyperthermia on cancer cells of different origin.

Aims & Methods: Our aim was to analyse gastrointestinal cancer cell response to various hyperthermia levels, accompanied by chemotherapy, in a manner of cell cytotoxicity, apoptosis and intracellular cisplatin concentration. Cancer cell lines of gastric (AGS), pancreatic (T4M4) and colorectal (Caco-2) origin were exposed to cisplatin and different temperature regimes (37°C to 45°C) either in isolated manner, or in combination. Cells were treated for one hour, mimicking HIPEC timing in clinical setting. The intracellular concentration of cisplatin was measured immediately after experiment by mass spectrometry. 48 hours later changes of cell viability and apoptosis rates depending on temperature in addition to cisplatin treatment were evaluated by MTT and Annexin/V AAD flow cytometry respectively.

Results: Response of AGS to hyperthermia was as implied. Viability of the cells was gradually decreasing by raising the temperature. Caco-2 cells had no significant response to temperature rise up to 42°C, but at 43°C viability dropped by 14% constantly remaining at higher temperatures. T4M4 cells acted in unprepared manner, whereas decreasing viability by 30% in the interval between 37°C to 42°C and 20% increase at 43°C was observed. Following simultaneous exposure to hyperthermia and cisplatin we observed no additive temperature alterations in interval between 37°C to 45°C. However, at particular temperature regimes, we observed temporary proliferation increase: AGS – at 42°C (33%); T4M4 – at 43°C (32%). Higher temperatures dramatically inhibited AGS – by 70%, T4M4 - by 76%. There was the linear pattern of slight decrease (up to 26% at 45°C) of viability in Caco-2 cells. Isobologram analysis of combined hyperthermia and cisplatin treatment revealed strong antagonism of hyperthermia and chemotherapy in all analyzed cell lines. Nevertheless, hyperthermia of 43°C in addition to cisplatin promoted apoptosis of AGS cells by 33%; Caco-2 by 26%, T4M4 by 19%. Moreover, application of hyperthermia (43°C) could contribute to increase of intracellular cisplatin concentration by 30%, 20% and 18% AGS, Caco-2 and T4M4 cells respectively.

Conclusion: Our results indicate that there is no linear contribution of hyperthermia to chemotherapy in all analyzed cell lines. Therefore, in clinical setting it should be applied individually, regarding cancer type. Moreover, particular temperatures can worsen the treatment and increase cancer cell growth.

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

P0780 CACHEXIA INVOLVEMENT IN THE LOCAL SPREAD OF PANCREATIC DUCTAL ADENOCARCINOMA
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Introduction and Background: Cachexia (C) is a complex catabolic syndrome involving anabolic and catabolic processes, with its hallmark being muscle and fat wasting. This process occurs in advanced cancer (40% of all cancer deaths). Cachexia is associated with increased mortality and poor quality of life. The local spread of PDAC is a major cause of patient death, and the role of C in this process is unknown. The aims of the study were to investigate the involvement of C in PDAC local spread and to determine the presence of C biomarkers in PDAC patients.

Materials and Methods: We characterized the cachectic condition of PDAC patients by measuring specific serum biomarkers of C (enolase-1, neuropeptide Y, fibroblast growth factor) and their correlation with tumor stage.

Results: C was present in 40% of cases and was associated with higher tumor stage and presence of lymph nodes. Serum enolase-1 and neuropeptide Y were significantly higher in C patients compared to non-C patients. Further, we found a positive correlation between C and tumor size, and a negative correlation with Karnofsky performance score.

Conclusion: Cachexia is a common and severe complication of PDAC, associated with advanced tumor stage and poor prognosis. The identification of C biomarkers in PDAC patients may help in the early diagnosis and monitoring of this condition.

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

the local spread of PDAC, but not in metastasis or survival.

Kaplan-Meier curve and log-rank tests were used to determine the differences in survival curves of studied patients.

Conclusion:

of ezrin expression was similar.

location of tumor was found. The survival of patients with high or low levels of actinin was closely related to advanced clinical stage (stage III-IV), tumor size, location and with the presence of metastasis (p < 0.05). Actinin expression was higher in patients with type 2 diabetes (p = 0.04). No relationship between actinin level and the patients age, sex or tumor size, was noted. Patients with actinin expression had had a shorter survival time than PDAC patients with actinin low expression (Log-rank = 4.35, p = 0.03).

Conclusion: Actinin is associated to cachexia and the local spread of PDAC, metastasis, the presence of diabetes and survival.

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

References


5. Chen J.L, Huang J, Shi J, Xiong J. et al. Actinin expression in PDAC related to the clinical stage and survival. There were included patients with histological proven of adenocarcinoma (n = 115) and a matched control group (n = 124). The plasma levels of actinin was analyzed using western blot. The t test was used to determine the difference between the two groups, Kaplan-Meier curve and log-rank tests were used to determine the differences in survival curves of studied patients.

4.2 Results:

expression in PDAC compared to controls (p = 0.009 and p = 0.05). Ezrin expression has been closely related to advanced clinical stage (p = 0.03), but not with the presence of metastasis. No relationship between ezrin levels and the patients age, sex or tumor size and location of tumor was found. The survival of patients with high or low levels of ezrin expression was similar.

Conclusion: Ezrin pathway as a intracellular ezrin biomarker is related to the local spread of PDAC, but not in metastasis or survival.

Disclosure of Interest: All authors have declared no conflicts of interest.
treated by EUS-CPT. Clinical information was obtained retrospectively from the medical notes and reporting sheets. All patients were followed-up until the patient died or was lost to follow-up. Between November 2014 and March 2017, 70 patients with PC pain were enrolled. We performed EUS-CPT by injection of 5 ml of bipucaine mixed with 15 ml of pure ethanol on the celiac plexus and with different doses of endoscopic ultrasonography-guided fine needle aspiration needle. Treatment response was assessed by self-reported pain relief and change in the daily dose requirement of morphine. Treatment response was defined as to decrease or stay of the same amount of morphine consumption after EUS-CPT, or achieve morphine dosage level within 4 weeks after EUS-CPT if morphine consumption temporarily elevated because of the delayed response of EUS-CPT. Pain evaluation was conducted at 1 week, 4 weeks, and 12 weeks after EUS-CPT and tumor disease progression.

A retrospective analysis was employed to investigate factors associated with metastatic stage and survival. This was a retrospective analysis of a single-centre cohort of prospectively selected patients. Information on the association between presentation symptoms, diagnostic delay, risk factors for PDAC, stage at diagnosis and survival are however limited, with heterogeneous results. Furthermore, the association between presentation symptoms, diagnostic delay, disease stage and survival are also significantly longer in the response group as compared to the no-response group (median: 5.8 vs 1.8 months, p = 0.003). The survival after EUS-CPT was also significantly increased in patients who had a shorter diagnostic delay (2.1 vs 6.5 months, p = 0.017), CA19-9 (median: 617.2 vs. 3519 U/ml, p = 0.009), CRP (median: 0.61 vs. 1.91 mg/dl, p = 0.029) and albumin (median: 3.4 vs. 3.8 g/dl, p = 0.029). Univariate analysis revealed a significantly smaller percentage of patients with CRP level elevation over 3.0 mg/dl from baseline within 4 weeks after EUS-CPT (11 vs 38%, p = 0.01). The overall survival after EUS-CPT was also significantly longer in the responder group (median: 5.8 vs 1.8 months, p = 0.003).

Conclusion: Our study demonstrated that EUS-CPT had therapeutic effect on intractable pain in unselectable PC in the long follow-up. Repeat EUS-CPT was also effective in patients who showed a treatment response to the first EUS-CPT. Possible benefit from EUS-CPT inflammation and aggressiveness, indicative of higher CRP, CA19-9 and lower albumin levels, and the higher frequencies of liver metastases at diagnosis in only 18% of cases compared to 45% of other presentations 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 NRAS median key signaling during early development of the tumors (ref 2).

Better prediction of histological 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 define if quantification of major driver mutations such as KRAS and NRAS in the plasma cfDNA could serve as biomarkers for diagnosis of localized PDAs and risk stratification of IPMNs. We first established protocols for absolute quantification of very low concentrations of the target mutant alleles using a Bio-Rad QX200 droplet digital PCR platform (ddPCR). Using this novel protocol, feasibility of the assay was tested. At present, 92 PDA and 145 IPMN patients with either benign or malignant neoplasms have been recruited (UMIN000012810).

Results: Although ddPCR-based assays have rather high precision and sensitivity (0.01%), limited plasma cfDNA yields in patients with resectable PDAs (Stage 0-1). However, patients in significant intrinsic errors due to “subtle presence” and missing targets at very low abundance during compartmentalization could be effectively overcome by pre-amplification, and the sensitivity of mutant KRAS detection was greatly improved (80.3%) relative to a standard protocol (37.5%). Initial efforts have been made to quantify the cfDNA using conventional PCR, but the low sensitivity of this approach has limited its feasibility as a routine clinical test. New technologies for quantifying cfDNA are now sensitive enough for reliable application in the clinic (ref 1). Pancreatic 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 NRAS are found in about 50% of IPMNs. These results suggest that diagnosis at the preclinical stage is necessary to change disease prognosis.

Disclosure of Interest: All authors have declared no conflicts of interest.
The median follow-up period was 7.4 months (range 1.5–14.9 months); disease control rate, severity grade and dose-intensity) were analyzed. Treatment efficacy (overall survival (OS), progression-free survival (PFS), objective response rate, severity grade and dose-intensity) were analyzed. The median OS, PFS and objective response rate were 12.0 months (95% confidence interval [CI] 9.515–14.485), 7.8 months (95% CI 5.021–10.579) and 48.5%, respectively. The incidence of neurotoxicity was 54.5% and 12 (18.2%) patients experienced grade ≥ 3 neurotoxicity. 30 (45.5%) patients showed grade ≥ 3 neutropenia and 10 (15.2%) patients had febrile neutropenia. Grade ≥ 3 gastrointestinal AE was observed in 11 (16.7%) patients and 26 (42.4%) patients experienced dermatologic AE such as alopecia and skin eruption. About 59% of patients experienced treatment delays due to adverse events. Dose reduction was performed in 39 (59.1%) patients and 14 patients experienced treatment cessation due to severe AE.

Table 1: Treatment efficacy and treatment-related adverse events of gemcitabine with nab-paclitaxel

<table>
<thead>
<tr>
<th>Variable</th>
<th>Number (Percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration of chemotherapy</td>
<td></td>
</tr>
<tr>
<td>Cycles (28-day schedule)</td>
<td>5 (2-12)</td>
</tr>
<tr>
<td>Duration, days</td>
<td>141 (32-435)</td>
</tr>
<tr>
<td>Efficacy of Chemotherapy</td>
<td></td>
</tr>
<tr>
<td>Overall survival - months (95%CI)</td>
<td>12.0 (9.515–14.485)</td>
</tr>
<tr>
<td>Progression-free survival - months (95%CI)</td>
<td>7.8 (5.021–10.579)</td>
</tr>
<tr>
<td>Adverse events</td>
<td></td>
</tr>
<tr>
<td>Peripheral neuropathy</td>
<td>36 (54.5%)</td>
</tr>
<tr>
<td>Grade ≥ 3 neuropathy</td>
<td>12 (18.2%)</td>
</tr>
<tr>
<td>Grade ≥ 3 Neutropenia</td>
<td>30 (45.5%)</td>
</tr>
<tr>
<td>Febrile neutropenia</td>
<td>10 (15.2%)</td>
</tr>
<tr>
<td>Administration of G-CSF</td>
<td>14 (21.2%)</td>
</tr>
<tr>
<td>Grade ≥ 3 adverse event</td>
<td>11 (16.7%)</td>
</tr>
<tr>
<td>General weakness</td>
<td>32 (48.5%)</td>
</tr>
<tr>
<td>Dermatologic adverse event</td>
<td>28 (42.4%)</td>
</tr>
<tr>
<td>Dose reduction due to AE</td>
<td></td>
</tr>
<tr>
<td>Gemcitabine</td>
<td>21 (31.8%)</td>
</tr>
<tr>
<td>nab-paclitaxel</td>
<td>39 (59.1%)</td>
</tr>
<tr>
<td>Delay of administration due to AE</td>
<td></td>
</tr>
<tr>
<td>n (%)</td>
<td>39 (59.1%)</td>
</tr>
<tr>
<td>Cessation of administration due to AE</td>
<td>14 (21.2%)</td>
</tr>
</tbody>
</table>

Conclusion: These results suggest that gemcitabine and nab-paclitaxel combination therapy is effective for metastatic pancreatic cancer treatment in East-Asian population group. Similar to previous studies, this combination therapy showed remarkable neurotoxicity and myelosuppression. Careful monitoring and proper management during chemotherapy is required.

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

References

Disclosure of Interest:

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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.
P0789 EVALUATION OF THE EFFICACY OF ENDOSCOPIC SPHINCTEROTOMY IN THE TREATMENT OF SYMPTOMATIC PANCREATIC DUCTAL ADENOCARCINOMA UNDERGOING GENETICALLY-BASED CHEMORADIOThERAPY.

Introduction: Pancreatic ductal adenocarcinoma (PDAC) is a leading cause of cancer death worldwide and the most challenging cancer to be treated. The most common presentation of PDAC is abdominal pain (AP), due to pancreatic blockage, which can be managed by endoscopic sphincterotomy (ES) to manage them.

Methods: This was a retrospective multi-centered observational study in 4 tertiary referral university centers. All patients with symptomatic pancreatic ductal adenocarcinoma undergoing genetic-chemotherapy were analyzed. Endoscopic sphincterotomy (ES) was performed to improve the symptoms and reduce the need for surgery.

Results: A total of 21 patients met the inclusion criteria. The mean age was 69 years (range 38–88). The mean number of cysts was 3.5 (1–10). None of the patients had adenocarcinoma. The mean number of cysts was 3.5 (1–10). The median number of cysts was 3.5 (1–10), the larger measuring 12.7 mm [5–25] mm. They were located for 59% in the head, 17% in the body or tail, and they were diffuse in 24%. None patient had worrisome features (WF). Among the patients whom failed (4/21), one had a second ES with final success, whereas 4 have been operated (2 for initial pain, 2 for WF). Among the patients whom failed (4/21), one had a second ES with final success, whereas 4 have been operated (2 for initial pain, 2 for WF).

Conclusion: ES for symptomatic IPMN without WF is effective in 81% of the patients. 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.
Aims & Methods: In this study, we aimed to overcome the subsampling issue and to establish a framework for quantification of rare tumor cell-derived mutant alleles for non-invasive diagnosis of gastrointestinal cancer. To establish more reliable ddPCR protocol for quantification of low-frequency alleles within a limited cfDNA pool, two-step multiplex ddPCR targeting eight pre-amplified KRAS variants was examined using a Bio-Rad QX200 droplet digital PCR platform. Plasma samples from patients with colorectal (n = 10) and pancreatic cancer (n = 9) were evaluated, and cfDNA from healthy volunteers (n = 30) was utilized to calculate reference intervals.

Results: Limited cfDNA yields in patients with resectable colorectal and pancreatic cancers did not meet the requirement for efficient capture and quantification of mutant alleles within a limited cfDNA pool, two-step multiplex ddPCR targeting eight pre-amplified KRAS exon 2 as the first-step PCR. Eight pre-amplification cycles followed by a second-run ddPCR were sufficient to approach approximately 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 was presented by the wild-type allele was significantly enhanced. The cut-off limit of reference intervals for mutant KRAS was determined to be ~0.09% based on samples from healthy individuals.

Conclusion: The modification introduced in the ddPCR protocol facilitated the quantification of low-copy alleles carrying driver mutations, such as oncogenic KRAS, in localized and early-stage cancers using small blood volumes, thus offering a minimally invasive modality for timely diagnosis.

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

Reference

P0792 - 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 were performed in 197 patients with median age of 68 years (46% male) 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 23.8%. ROSE was performed in 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% ± 8.3% whereas 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 10 ng/mL, p = 0.001), size of the lesion (36.1 vs 29.8 mm, p < 0.001), invasion of adjacent structures (64.6% vs 47%), metastasis to lymph nodes and malignancy (73.2% vs 25.4%, p < 0.001) were more 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 was an essential tool in EUS-FNA (dual adenoscarcino- noma 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.

Reference
and antiﬁbrrotic 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 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 donor with open conditioned media. A BALB/c nude mouse was analyzed to compare morphological features, while the major/minor axis of the images were compared by the experienced pathologist. Cellular-to-nuclei ratio for normal, low-grade dysplasia (LGD), high-grade dysplasia (HGD), and cancer) were examined under MPM. MPM and H&E imaging could demonstrate cell autofluorescence and second-harmonic generation in situ to enable EV retention in the fistula tract. Besides, the gel further provided a proangiogenic and an anti-inﬂammatory effect. The combined action of MSC EVs and the gel enhanced the healing associated with an anti-fibrotic effect in the esophageal fistula model. This investigation paves the way towards a future subcellular localized fistula therapy merging safety and efﬁcacy.

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

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Introduction: Real-time multiphoton morphological imaging for diagnosing gastric atypical hyperplasia and adenocarcinoma

P0795

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Introduction: Compared with histopathology, real-time histology or virtual biopsy is important for clinical diagnosis, especially for endoscopic examination. Based on two photon fluorescence (TPF), multiphoton microscopy (MPM) imaging could demonstrate cell autofluorescence and second-harmonic generation (SHG) signal from collagen, which implied real-time information on tissue architecture and cellular morphology. More importantly, no contrast agent is needed for this live diagnosis. The aim of this study is to evaluate the feasibility of MPM to histologically diagnose gastric diseases, compared with other chromoendoscopy and H&E histology.

Aims & Methods: A pilot study was performed between March 2016 and August 2016. 30 gastric tissue slides (normal, low-grade dysplasia (LGD), high-grade dysplasia (HGD), and cancer) were examined under MPM. MPM and H&E images were compared by the experienced pathologist. Cellular-to-nuclei ratio was analyzed to compare morphological features, while the major/minor axis ratio was calculated to reveal cellular asymmetry.

Results: Near-infrared light (800nm) was optimized and applied for multiphoton autofluorescence imaging in gastric tissue. Under MPM, gastric dysplasia tissue demonstrated enlarged, while cancer tissue were characterized by irregular size and shape, enlarged nuclei, and increased nuclear-to-cyttoplasmic ratio. All these were confirmed by H&E images. (Figure 1) The mean cellular/nuclei ratio for normal mucosa was 20.55 ± 5.94, LGD 34.60 ± 3.90, HGD 46.85 ± 3.72, and cancer 56.80 ± 3.37 (P < 0.05). The mean major/minor axis ratio for normal mucosa was 1.31 ± 0.09, LGD 2.02 ± 0.16, HGD 1.70 ± 0.12, and cancer 1.43 ± 0.18 (P < 0.05).

Conclusion: MPM-based optical biopsy was feasible and efﬁcient to clinically diagnose gastric cancer. With miniaturization and integration of endoscopy, MPM can be applied to provide real-time histological diagnosis without invasive biopsy for gastric cancer in the future.

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

Reference


P0797

UPPER GASTROINTESTINAL ENDOSCOPIC FINDINGS IN ASYMPTOMATIC HEALTHY INDIVIDUALS WITH NORMAL AND DECREASED SERUM PEPSSINOGENS 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 pepsinogens and pepsinogen I/II ratio < 3

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Introduction: Type 2 diabetes mellitus is a fattty liver disease that 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 endoscopic sleeve gastroplasty and local agonists, T2Ds), and bariatric surgery. Duodenal Mucosal Resurfacing (DMR) is a minimally invasive en-

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

Reference

P0798 REBAMIPIDE SOLUTION AS A NOVEL SUBMUCOSAL INJECTION PROMOTES HEALING SPEED AND QUALITY OF ESD-INDUCED ULCER BY SUPPRESSING FIBROSION


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Introduction: Peroral administration of rebamipide in additional to proton pump inhibitor (PPI) was reported to be effective to promote ulcer healing after endoscopic submucosal dissection (ESD). In this pilot study, we assessed the efficacy and safety of a novel rebamipide solution as a submucosal injection agent for ESD using in vivo porcine models.

Aims & Methods: The protocol was approved by the ethics review board of our animal experimental laboratory in advance (13055-0). ESDs of about 30 mm in diameter were performed at four sites in the stomachs of three pigs. An endoscopist blinded to the test agents performed the ESDs with a 2% rebamipide solution at two sites (rebamipide group) and with base solution alone at the other two sites (control group). The safety and the treatment results of rebamipide group were assessed. The gastric ulcer stages were evaluated by endoscopy once weekly up to week 4 after the ESD to determine a healing score based on ulcer staging using the classification of Sakita and Miwa. A1 stage was defined as score 1. A2, H1, H2, S1, S2 were defined as healing score 3, 2, 4, 5, 6, respectively. The average scores of each week were compared in the rebamipide group and the control group with the Wilcoxon signed-rank test. The pig was sacrificed at 1 week after the ESD and the other two were sacrificed at 4 weeks, for pathological evaluation of ESD-induced ulceration and ulcer scarring by HE. The number of neutrophils and width of the fibrosis were counted in the five fields. The width of the fibrosis was defined as the maximum diameter of the submucosa to the muscular layer at a site of ESD-induced ulceration or ulcer scar.

Results: There were no adverse events related with the use of the rebamipide solution. The average healing score was significantly higher in the rebamipide group than in the control group at 4 weeks after ESD. The histopathological assessment of the ulcers at 4 weeks, mucosal healing was remarkably better in the rebamipide group than in the control group, with a thicker and more homogeneous mucosal layer. Fibrosis was significantly less extensive in the rebamipide group than in the control group at 4 weeks (p = 0.02). In the evaluation of inflammation, the average number of neutrophils was lower in the rebamipide group than in the control group at both 1 week and 4 weeks, but not to a significant extent.

Conclusion: The rebamipide solution appeared to be safe and effective as an injection material for promoting the healing of ESD-induced ulcers. It also seemed to smoothen the folds of the ulcer circumference after ESD by suppressing fibrosis.

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

P0799 EFFECT OF ILAPRAZOLE ON THE HEALING OF ENDOSCOPIC SUBMUCOSAL DISSECTION-INDUCED GASTRIC ULCER: INTERIM ANALYSIS OF RANDOMIZED, MULTICENTER STUDY


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Introduction: The optimal treatment regimen or duration of endoscopic submucosal dissection (ESD)-induced gastric ulcer has not been established. The aim of this study was to assess the efficacy of novel PPI, ilaprazole for the treatment of ESD-induced gastric ulcer.

Aims & Methods: This was a prospective, open-label, randomized multicenter trial. Between June 2015 and April 2017, a total of 305 patients who underwent ESD for gastric neoplasm were randomly allocated with ilaprazole 20 mg or rabeprazole 20 mg daily for 8 weeks. The primary outcome was ulcer healing rate at 4 and 8 weeks.

Results: In the intention-to-treat analysis, the ulcer healing rate of each treatment group was not significantly different at 4 or 8 weeks (ilaprazole vs. pantoprazole; 96.7% vs. 96.4%, p = 0.80 at 4 weeks, 99.7% vs. 99.0%, p = 0.19 at 8 weeks). There was no independent predictive factors for a high ulcer healing rate in the multivariate analysis.

Conclusion: According to this interim analysis of trial, ilaprazole and rabeprazole showed no significant difference in the healing of artificial gastric ulcer. Most of the ulcers achieved complete healing within 4-8 weeks.

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

Reference

Agents. ESD postoperative bleeding rate in the patients with LDA was significantly higher than those in the patients with other anti-thrombotic agents and the patients with non anti-thrombotic agents. Furthermore, we compared the delayed bleeding rate in the patients continuing antithrombotic therapy with that in the patients with cessation of antithrombotic therapy or with heparin bridge therapy. The patients who were taking antithrombotic agents were treated with continuation of aspirin or clopidogrel. The cessation period of antithrombotic therapy before ESD followed the guidelines for therapeutic endoscopy in antithrombotic agents-users from Japan Gastrointestinal Endoscopy Society. We defined delayed bleeding as a postoperative bleeding after ESD lasting for more than 8 hours.

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 = 0.0087). 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 (continued and withdrawn from them were antiplatelet drugs) during ESD (continuation group), 38 discontinued antithrombotic therapy and resumed it after ESD (cessation group), and 30 switched to heparin therapy before ESD (heparin bridge group). One patient was excluded because of uncertain about the period of cessation. The delayed bleeding rate of continuation group, cessation group and heparin bridge group were 13.2% (5/38), 13.1% (11/84) and 20.0% (6/30), respectively, without significant difference (p = 0.63). The delayed bleeding rate of continuation group was 0.24% (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.

References:
esophageal squamous cell carcinoma at the endoscopic center of Xinjiang 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 patches were 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 “ulcer surface” using an endoscope. The number of mucosal patches ranged from 8 to 28. Complete re-epithelialization occurred within a median time of 8.6 days with a graft survival rate at 93.06%. Postprocedural stent accompanied by dysphagia occurred in seven patients on post-procedure day 247 (range, 18–34 days). The median sessions of EBD and intraluminal steroid injection was 3.3 (range 1–6). No other serious complications occurred in these patients, such as overall bleeding and perforation. Eight patients were still alive during the mean follow-up period of 11.6 months (range, 25 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**


<table>
<thead>
<tr>
<th>Pattern outcome</th>
<th>Pattern A</th>
<th>Pattern B</th>
<th>LBC</th>
<th>Pattern B + LBC + demarcation line</th>
<th>Pattern C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expected outcome</td>
<td>Sensitivity (CI 95%)</td>
<td>Specificity (CI 95%)</td>
<td>Accuracy (CI 95%)</td>
<td>Positive predictive value (CI 95%)</td>
<td>Negative predictive value (CI 95%)</td>
</tr>
<tr>
<td>Absence of intestinal metaplasia and neoplasia</td>
<td>0.94 (0.87–0.99)</td>
<td>0.75 (0.90–0.99)</td>
<td>0.54 (0.42–0.66)</td>
<td>0.97 (0.92–1.02)</td>
<td>0.97 (0.75–0.99)</td>
</tr>
</tbody>
</table>

**P0806**

**ENDOSCOPIC CLOSURE OF POST-SURGICAL FISTULAS OR PERFORATIONS WITH OVER-THE-SCOPE-CLIP**

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**Introduction:** Gastrointestinal perforations and post-surgical fistulas are feared complications with high morbidity and mortality. The over-the-scope-clip (OTSC) has been successfully used for its resolution.

**Aims & Methods:** We aimed to evaluate the therapeutic efficacy of OTSC in the management of upper digestive tract post-surgical fistulas or perforations. This was a retrospective review of consecutive patients at a single center from January 2011 to January 2017 who underwent upper endoscopy with attempt OTSC placement for the closure of post-surgical fistulas or perforations. Statistical analysis: IBM SPSS 23.0.

**Results:** A total of 18 patients (72% women), with a mean age of 48.9 ± 18.1 years were treated with an OTSC for the closure of post-surgical fistulas or perforations. Mean fistulas size was 5.8 ± 3.5 mm. Median follow-up time was 20.5 (5–84) months.

**Discussion:** OTSCs can be safely and effectively used in patients presenting with post-surgical fistulas or perforations and, when feasible, may be more advantageous and less costly than surgery. Further research is required to characterize the determinants of long-term success and risk factors for failure.

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

**References**


**P0808**

**A PROSPECTIVE STUDY USING A NEW DEVICE FOR ENDOSCOPIC RESSECTION OF EARLY NEOPLASIA IN BARRETT’S ESOPHAGUS**


**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 as resectable neoplasic 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 (1%) patients (CI 0.21 – 3.89%). Two perforations were closed with clips, all three patients received intra-venous antibiotics and were admitted to hospital for 2, 3 and 9 days. Bleeding requiring intraprocedural hemostasis occurred during 15% of procedures. Significant post-procedural bleeding requiring intervention occurred in 6 cases (2%). Dysphagia requiring endoscopic dilatation occurred in 7 patients (3%), after ER with a mean number of 4.0 ± 2.9 resected pieces. Mean total procedure time for ER using the new MBM device was 33 ± 17.1 minutes.

**Conclusion:** The new MBM device used in this study proved to be effective for resection of early neoplastic lesions in BE: successful ER was achieved in 96% of procedures. Perforations were seen in 1% and significant post-procedural bleeding in 2%, complications were effectively managed endoscopically.

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

P0807  
**COST–EFFECTIVE ANALYSIS COMPARING STANDARD BIOPSY VS. DIGITAL BIOPSY BY CONFOCAL ENDOMICROSCOPY**

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**Introduction:** Endoscopy has greatly influenced gastrointestinal endoscopy. However, most lesions can be suspected but not certainly diagnosed only on the basis of endoscopic findings and therefore, endoscopy is needed. On the other hand the reliability of detecting lesions histologically depends on the site, number, and size of biopsy (Bx) specimens with a 20–30% probability of sampling mistakes. Probe based Confocal Laser Endomicroscopy (p-CLE) allows endoscopic in-vivo mucosal cellular evaluation of the gastrointestinal (GI) tract with a high (90%) diagnostic accuracy. It allows to target Bx. Moreover, the NPV is > 98%. There is no information in the literature regarding the economic impact of performing digital biopsies (DBx) by p-CLE.

**Aims & Methods:** The aim of this study is to perform a cost–effectiveness analysis comparing the diagnosis of upper GI tract pathologies using only standard Bx following the literature recommendations (LR) vs. the diagnosis with DBx using p-CLE. This was a retrospective study with prospective collection data of patients included from Jan 2014 to Nov 2016. The pathologies included for p-CLE evaluation are summarized in Table 1. The diagnosis costs using standard Bx was calculated following the literature recommendations (Table 2). The standard Bx costs included the histological process and physician honoraria per Bx ($50,000), and one biopsy forceps for per patient ($50,000). The DBx cost by p-CLE included the probe, the processor and the physician honoraria ($USD 500,000). 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 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 patients. p-CLE indications distribution was: esophagus 29 (37.2%), stomach 46 (59%), and duodenum 3 (3.8%) subgroups. Biopsies were performed in 71/78 patients. p-CLE indications distribution was: esophagus 29 (37.2%), stomach 46 (59%), and duodenum 3 (3.8%) subgroups. Biopsies were performed in 71/78 patients.

**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>Updated Sydney System</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>8</td>
<td>438.00</td>
</tr>
<tr>
<td>Barrett’s Esophagus 1.0-3.0 cm</td>
<td>8</td>
<td>4</td>
<td>4</td>
<td>238.00</td>
</tr>
<tr>
<td>Barrett’s Esophagus &gt;4 cm</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>438.00</td>
</tr>
<tr>
<td>Gastric Tumor</td>
<td>8</td>
<td>5</td>
<td>13</td>
<td>688.00</td>
</tr>
<tr>
<td>Gastric Atrophy and/or Metaplasia</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>638.00</td>
</tr>
<tr>
<td>Gastric Ulcer</td>
<td>8</td>
<td>5</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 ($USD 50,000), and the Bx forceps per patient ($USD 38,000).

**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 A MEXICO**

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**Introduction:** Gastroparesis is a syndrome characterized by a delayed gastric emptying, 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 240min. Multiple treatments have been used with temporary results and morbidity, so new treatment options has been explored. G-POEM is a new endoscopic treatment which is based in the POEM treatment for achalasia 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 premedicated with a sedative and did not respond and have a positive gastroparesis cardinal symptom index (GCSI) score combined with a > 10% of retention at 240min in the GES study. Exclusion criteria were malignancy, peptic ulcer disease, normal GES and coagulation disorders. Procedure steps were shown in a POEM procedure, beginning 5cms below the pylorus with an longitudinal incision, then submucosal tunnel creation, myotomy of the pyloric arch up to the serosa and 2cms before this point and finally closure with clips. Follow-up included GCSI, endoscopy and GES at 3 months after procedure. Characteristics of procedure, and patients were documented. Student paired t-test was used for comparisons between groups and p < 0.05 was considered as statistically significant.

**Results:** There were 9 patients included in this initial study, the mean age was 42.4 ± 8.5yrs, 6 patients were female and 3 male. The most common etiology was postsurgical 4/9 (44.4%), followed by diabetic 3/9(33.3%) and idiopathic 2/9 (22.2%). The mean G-POEM time was 61.4 ± 7.8 min, and complications were self-limited and presented in only 4 patients, the GCSI score decreased 68% between the pre-procedure levels as well as the GER which decreased 67% compared with levels at 3 months after G-POEM (34.3 ± 5.8 vs 13.1 ± 3.2 p = 0.003/ 20.74 ± 5.3 vs 6.83 ± 1.78 p = 0.001 respectively). 7/9 (77.7%) normalized the GES<10% at (240min). Endoscopy at 3 months after procedure didn’t show any complication (Table 1).

**Conclusion:** G-POEM is a safe and effective procedure in Mexican patients with refractory gastroparesis with a normalization of the GES in up to 77% of these patients.

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

**References**

towards endoscopic management of FBs had been reported. No direct evidence has demonstrated the relationship between duration of FB impaction and outcomes of endoscopic management. Moreover, it remained unclear whether endoscopic management of FBs under general anaesthesia could improve endoscopic outcomes when compared with topical pharyngeal anaesthesia.

Aims & Methods: The aim of the present retrospective study is to analyze our endoscopic outcome and explores the best timing and anaesthesia methods of endoscopic intervention in population with FB ingestion. All consecutive patients suspected of FB ingestion were enrolled. The demographic, clinical and endoscopic data were collected and analyzed.

Results: Totally, 1294 cases were recruited in this retrospective research. The ages ranged from 7 months to 94 years, with a median age of 47.0 (31–63) years. The majority of patients (1191/1294 cases, 92.0%) presented with some symptoms after FB ingestion, in order of frequency odynophagia (415 cases, 32.1%), foreign body sensation (340 cases, 26.3%) and sore throat (267 cases, 20.1%). The duration of FB impaction ranged from 4 hours to more than 2 years with a median time of 1.06 (3.6–3) 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 (972 cases, 79.5%), followed by stomach (n = 95, 8.1%), duodenum (n = 36, 3.0%) and pharynx (n = 24, 2.0%). Nearly half of the patients (49.9%) developed FB-related complications, mainly including mucosal injuries (356 cases, 27.5%) and ulcers (210 cases, 16.2%). The most common underlying pathologies were oesophageal stricture (35 cases, 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; OR = 2.26, 95%CI: 1.48–3.46, p < 0.001), anaesthesia methods (OR = 1.35, 95%CI: 1.05–1.75, p = 0.02) and duration of FB impaction (OR = 1.74, 95%CI: 1.50–2.00, p < 0.001) were verified as risk factors for development of FB-related complication by logistic regression analysis. General anaesthesia could not improve positive FB detection (p = 0.18) or success rate of endoscopic management of FBs (p = 0.135), as well as decrease the complication rate when compared with topical pharyngeal anaesthesia (p = 0.523). VS 47.5%, p = 0.033).

Conclusion: FB-related complication rate increased with time, endoscopic management under general anaesthesia could not improve therapeutic effects when compared with topical pharyngeal anaesthesia. Overall, Patients suspected of FB ingestion should receive endoscopic management as soon as possible.

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

P0810 CLINICAL OUTCOMES AFTER ENDOSCOPIC RESECTION FOR ESOPHAGEAL SQUAMOUS CELL CARCINOMA COMPARING THE CASES WITH MM AND SM1 INVASION

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Introduction: Recent advances in endoscopic resection (ER) provide us increasing chances for resecting esophageal squamous cell carcinoma (ESCC) with muscularis mucosae (MM) and SM1 invasion as MM/SM1 invasive cancer is reported to have 8–20% of metastatic risks and is defined as relative indication for ER in guideline of Japan Esophageal Society. For them, we perform additional therapy such as chemo radiotherapy (CRT) or operation considering the risk of metastasis and patients’ condition.

Aims & Methods: To know the difference of metastatic risk and long time outcome 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 (39–96). 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 21 cases (21.6%). Additional therapy was performed in 15 cases (15.5%) (ope/CRT/RT/9/5/1). No case died of ESCC and 22 cases (22.7%) died of other diseases. Of 24 cases of SM1, 9 cases (37.5%) had LVI, 5 cases (20.8%) had DI. We recommended additional therapy in 12 cases (50.0%). Additional therapy was performed in 9 cases (37.5%) (ope/CRT/RT/chemistery: 3/4/1/1). Three cases died of ESCC and 5 cases (20.8%) died of other diseases. Comparing both groups, tumor size and local recurrence rate were not different each other. The frequency of LVI was significantly higher in SM1 than in MM (p = 0.05) and the frequency of DI was higher in SM1, although not significant (p = 0.161). The metastatic recurrence was observed significantly frequent in SM1 than MM (16.7% vs 2.1%; p < 0.01). The 5-year overall survival (OS)/disease specific survival (DSS)/relapse free survival (RFS) were 81.7%/100%/94.1% for MM and 62.9%/87.9%/91.7% for SM1. OS and RFS were not different each other, however, CSS was superior in MM than in SM1 (p < 0.01).

Conclusion: ESCC with MM invasion was superior in metastatic recurrence and CSS than ESCC with SM1 invasion, although we treat MM/SM1 in the same way. Additional therapy should be considered more positively in cases of 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 then 2 cm has many advantages against piece meal resection. One problem in ESD is to lift and prepare the specimen simultaneously. We used the ANUBIS-system for intragastric ESD.

Aims & Methods: The experimental study was conducted in a porcine model in general anesthesia. We started the study with 7 pigs in a survival model using the Anubisscope (Karl Storz, Germany). After insertion of the scope insufflations of CO2 were done using a grasper and a hook-knife. Also the grasper could use for coagulation. The stomach was done using CO2. After the opening of the valves at the tip of the Anubisscope (Karl Storz, Germany). After insertion of the scope insufflations of CO2. After the opening of the valves at the tip of the ANUBIS-system for intragastric ESD.

Conclusion: The use of an operating platform like the Anubisscope has the advantage of flexible preparation in opposite position of the instruments in ESD. The disadvantages are the only two degrees of freedom of the flexible instruments and the rotation-like movements. Also, it is not possible to reach all regions of the stomach.

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

P0812 USEFULNESS OF NARROW BAND IMAGING WITH MAGNIFYING ENDOSCOPY AS A SCREENING TEST FOR GASTRIC CANCER

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Introduction: Narrow band imaging with magnifying endoscopy (NBI-ME) is used for gastric cancer; however, whether NBI-ME is useful as a screening test for gastric cancers has not yet been determined. Additionally, it is important to consider the impact on the atrophy of the background gastric mucosa in gastric cancer screening because the incidence of gastric cancer depends largely on the degree of atrophy noted in the background gastric mucosa.

Aims & Methods: We aimed to determine the usefulness of NBI-ME as a screening tool for gastric cancer. We retrospectively studied 3515 patients who had undergone screening upper gastrointestinal endoscopy between April 2013 and March 2014. We excluded patients with advanced gastric cancer and those who had undergone gastrectomy. Thus, we studied 1080 patients who received NBI-ME and 2435 patients who had undergone conventional endoscopy. We classified the degree of atrophy of the background gastric mucosa using the Kimura-Takemoto classification. Severe atrophy was noted in 1620 patients (Group S), and mild atrophy in 1895 patients (Group M). We evaluated the biopsy rate, the detection rate of gastric neoplasms, and the accuracy of biopsy using NBI-ME compared to conventional endoscopy.

Results: The biopsy rate of NBI-ME and conventional endoscopy in Group M was 5.4 and 7.7%, respectively, while in Group S it was 14.9 and 14.8%, respectively. The biopsy rate did not differ significantly between those who received NBI-ME and those who had undergone conventional endoscopy. The detection rate of gastric neoplasms using NBI-ME and conventional endoscopy in Group M was 0 and 0.2%, respectively, while in Group S it was noted to be 4.2 and 1.8%, respectively. Thus, the detection rate of NBI-ME was significantly higher than that of conventional endoscopy in Group S (p < 0.01). The accuracy of biopsy with NBI-ME and conventional endoscopy in Group M was 0 and 3.2%, respectively, but in Group S was noted to be 36.4 and 14.1%, respectively. Thus, the diagnostic accuracy of biopsy using NBI-ME is significantly superior to conventional endoscopy in Group S (p < 0.01).

Conclusion: NBI-ME as a screening test for gastric cancer is useful for patients with severe atrophy of the background gastric mucosa because this technique has shown a higher detection rate of gastric neoplasms and better accuracy of biopsy.

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

References:

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

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Introduction: Levodopa is the gold standard in pharmacological 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). Improved 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/ Carbipedia 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 bias due to the small number of the sample in the question, the non-parametric Kruskal-Wallis H test was used for the comparison of three samples. A statistically significant value of p was less than 0.05. The analyzes were carried out using SPSS version 13 (SPSS Inc., Chicago, IL, USA).

Results: 1) Success rate for PEG-J placement was 100%; 2) Eight/24 patients (33%) dropped-out LCIG at T3; 3) Sixteen/16 patients (100%) showed statistically significant (p 0.05) higher performances in daily common activities and statistically significant (p 0.05) lower incidence and severity of motor fluctuation in T3 compared to T0 and T6; 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.

References:

P0815 PREDICTIVE RISK MODEL FOR POST-ENDOSCOPIC SUBMUCOSAL DISESECTION ULCER BLEEDING OF STOMACH

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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 anticoagulants, because of various underlying diseases such as cerebrovascular accidents or...
cardiovascular diseases [5]. 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 February 2014 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 (6.94%). In the derivation group, the model also showed good discrimination (C-index 0.662). In the validation group, the model showed good discrimination (C-index 0.655). Based on the model, the risk of post-ESD bleeding was divided into three grades, low risk (score ≤ 4), medium risk (score > 4 and ≤ 13), and high risk (score > 13). The incidence of post-ESD bleeding in the low, medium, and high risk group were 5.7%, 7.1%, and 10.3%, respectively. In the validation group, the incidence of post-ESD bleeding in the low, medium, and high risk group were 6.1%, 7.4%, and 11.0%, respectively.

Conclusion: Our study investigated a prediction scoring system of estimating the bleeding risk, including the patient, endoscopist factors. A risk score can be calculated before the procedure and the endoscopists can predict bleeding potency before the gastric ESD. Based on the scoring system, endoscopists may alter therapeutic plans such as prolongation of admission dates or mediation schedules.

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

References
4. Park YM, Cho E, Kang HY, Kim JM. The effectiveness and safety of LED-BLI-ME were demonstrated the high diagnostic performance of LED-BLI-ME for early gastric cancer. Secondary end point was to compared the diagnostic accuracy of LED-BLI-ME for EGC. First end point was to compare the diagnostic accuracy and between LED-BLI-ME and BLI-ME. Our study was 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. In addition, this study has been registered in the University Hospital Medical Information Network Clinical Trials Registry (UMIN-CTR: http://www.umin.ac.jp/ctr/) as trial UMIN 000025275.

Results: The clinicopathological features in the patients were as follows; mean age was 71.9 ± 8.74, gender (male/female) was 31/14, location (UM/L) was 9:15:21, macroscopic type (elevated: flat: depressed) was 18:1:26, median tumor size was 19.6 ± 19.6 mm, and final pathological diagnosis (well differentiated adenocarcinoma: moderately differentiated adenocarcinoma: poorly adenocarcinoma) was 37:1:7, respectively. Diagnostic accuracy of demarcation line of EGC using LED-BLI-ME and BLI-ME were 91.1% (41/45) and 91.1% (41/45), respectively. The rate of high confidence for diagnosis of a demarcation line of EGC using LED-BLI-ME and BLI-ME were 84.4% (38/45) and 91.1% (41/45), respectively. There was no significant difference of diagnostic accuracy between two modalities. The consistency rate in the demarcation line, microvascular pattern, and microsurfaces pattern of EGC between LED-BLI-ME and BLI-ME were 91.1% (41/45), 91.1% (41/45), and 97.8% (44/45), respectively. Conclusion: LED-BLI-ME were demonstrated the high diagnostic performance for diagnosis of EGC demarcation, similar to BLI-ME.

Disclosure of Interest: Y. Naito: Fujifilm Co. (collaboration research) Itoh Y. Fujifilm Medical Co. All other authors have declared no conflicts of interest.

Reference
P0818 RISK FACTORS OF COMPLICATION RELATED TO ENDOSCOPIC MANAGEMENT OF FOREIGN BODIES IN THE ESOPHAGUS: A PROSPECTIVE STUDY IN 595 CASES FROM MULTIPLE CENTERS IN CHINA

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Introduction: Foreign bodies (FBs) ingestion is a common medical emergency accounting for 4% of all emergency endoscopies, secondary only to the GI bleeding.1) 70%–75% of FBs are located in the esophagus2). The need of endoscopic management reached up to 63%–76%,3,4,5 with 3%–20% of incidence of complications.6-9 According to the latest guidelines from ESGE, emergent endoscopy is recommended for the impaction of sharp-pointed objects within 24 hours20. However, there were still different opinions on the endoscopic methods with different FBs.

Aim & Methods: The study was performed from October 2015 to August 2016 among 595 patients with clinical suspicion of foreign body ingestion from 18 general hospitals in China. The patient data including age, gender, clinical features, and data about endoscopic management including types and locations of foreign bodies, retrieval devices, outcomes and complications were collected and analyzed.

Results: 1) The most common types of foreign bodies were fish bones (34.0%), chicken bones (22.1%), fruit nuclei (17.7%), and food bolus (14.6%). The majority of them were sharp 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 (24.5%) 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 retrieval 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 24 hours as compared with less than 24 hours. Logistic regression analysis indicated that sharp objects had obviously more complications than non-sharp ones (OR 3.36, 95% CI: 1.97–5.74). In particular, the incidence of 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 ones, should 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.

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4. Palta R, Sahota A, Bemar A et al. Foreign body ingestion: characteristics and treatment of advanced precursor lesions and cancer. The annual incidence of dysplasia was 2.35% in the updated Sydney system and the recommended five gastric biopsies were performed. The histological assessment and biopsy sampling protocol has been standardized in the updated Sydney system and the recommended five gastric biopsies were widely applied in the staging system for gastric cancer risk stratification9. Some believes that the GA risk screening requires consideration of the cost - suffering of patients as well as rational utilization of medical resources, so adopt five biopsy pieces (lesser curvature of the antrum and corpus, angulus biopsy) with quite accurate consistency with five biopsy pieces protocol using OLGA and OLGIM staging (94.0% and 92.9%), together with a rather low omission diagnostic rate of OLGA and OLGIM III + IV (5.8% and 7.2%).

Conclusion: The incisura angularis with more moderate and severe GA and IM should be recommended as conventional biopsy site during endoscopy. The three types of atypia (antrum and corpus combined) was obviously associated with quite high consistency, more convenience and less cost comparing with five biopsy pieces protocol using OLGA and OLGIM staging system, and thus could be recommended in the further gastric risk screening applying OLGA and OLGIM staging.

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

References

P0819 BIOPSY STRATEGIES FOR ENDOSCOPIC SCREENING OF PRE-MALIGNANT GASTRIC LESIONS

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Introduction: GA and IM are detectable precancerous lesions of most gastric carcinomas. Early endoscopy examination may potentially result in early detection and treatment of advanced precursor lesions and cancer. The annual incidence of GA and IM in Europe, for GA was 0.1% and for IM was 0.25% in the Netherlands. The histological assessment and biopsy sampling protocol has been standardized in the updated Sydney system and the recommended five gastric biopsies were widely applied in the staging system for gastric cancer risk stratification9. Some believes that the GA risk screening requires consideration of the cost - suffering of patients as well as rational utilization of medical resources, so adopt five biopsy pieces (lesser curvature of the antrum and corpus, angulus biopsy) with quite accurate consistency with five biopsy pieces protocol using OLGA and OLGIM staging (94.0% and 92.9%), together with a rather low omission diagnostic rate of OLGA and OLGIM III + IV (5.8% and 7.2%).

Conclusion: The incisura angularis with more moderate and severe GA and IM should be recommended as conventional biopsy site during endoscopy. The three types of atypia (antrum and corpus combined) was obviously associated with quite high consistency, more convenience and less cost comparing with five biopsy pieces protocol using OLGA and OLGIM staging system, and thus could be recommended in the further gastric risk screening applying OLGA and OLGIM staging.

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

References
Conclusions: LCI mode was useful for recognition of early gastric cancer and gastric adenoma, especially for type 0-Ic and 0-IIb lesions that are frequently found in post- H. pylori eradication gastric mucosa.

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

P0821 GASTROINTESTINAL STROMAL TUMORS SHOULD BE RESETECTED EVEN IN A SMALL SIZE – A RETROSPECTIVE ANALYSIS IN 33 CASES
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Introduction: In gastrointestinal stromal tumors (GISTs) without a risk of metastasis to other organs, local resection is acceptable. In small GISTs, however, it is controversial whether surgical resection is necessary because of a risk of recurrence/metastasis in these tumors are considered to be quite low. Laparoscopic endoscopic cooperative surgery (LECS) is a promising surgical technique as one of minimally-invasive, function-preserving surgeries. By using this technique, we are aggressively resecting gastric SMTs including relatively small ones.

Aims & Methods: To investigate necessity of surgical resection for small GISTs, we retrospectively assessed a malignant potential of these tumors which were resected nonexposed endoscopic wall-inversion surgery (NEWS) (nonexposure LECS technique) as well as feasibility and safety of this technique. Between August 2013 and October 2016, NEWS was conducted in 33 consecutive SMTs which met all of following conditions: possible GIST which was preoperatively diagnosed by histology or imaging modalities, less than 3 cm in size and involving mainly the submucosal layer only. NEWS procedure, a lesion was 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 invected together with the stomach, endoscopic submucosal tunnel creation, and peroral retrieval. Short-term outcomes of NEWS and a potential risk of recurrence/metastasis in each tumor according the Fletcher's classification were assessed.

Results: Mean age and size of the lesion were 59.9±21.5 years-old and 2.3±1.4 cm, respectively. The procedure was successfully completed in all cases in a mean procedure duration of 206±43 min. The patients were discharged without severe adverse events 7.5±1.5 days after the procedure. The first endoscopy after the procedure was performed 5.8 months after discharge in 22 cases, which showed no residual food in the remnant stomach in all cases. Neither apparent impairment of food intake nor disease-related death occurred and a body weight loss was 0.9±2.3 kg during the mean observational period of 16 months. GIST was histologically diagnosed in 20 cases. A risk of recurrence/metastasis in these GISTs was classified into high (2), intermediate (1), low (12) and very-low (5), respectively. In a comparison of two groups (high/intermediate and low/very-low), a mean tumor size and existence ofdle formation were 31.7±21.6mm and 67% and 12% (p=0.036), and 67% and 12% (p=0.028), respectively.

Conclusion: Some small GISTs which could be retrieved transorally had a high malignant potential. NEWS was feasible, safe and therefore recommended for these tumors including ulcerated GISTs as a minimally-invasive surgical option to avoid an additional surgical scar for the retrieval of the specimen and a risk of intragastric tumor cell seeding into the peritoneum during the procedure.

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

performed off PPIs). At 24–36 months, esophagitis was present in 9 out of 41 examined patients (p < 0.04 vs. 3 months). In 6 out of 10 patients with esophagitis present at 3 months, who underwent control endoscopy at 24–36 months, esophagitis resolved completely even though only 2 patients had been treated by a PPI.

Conclusion: After POEM, the majority of patients with esophagitis had erosions on site of submucosal tunnel and early esophagitis often occurred in patients without an abnormal acid exposure. These findings suggest an ongoing healing process after POEM might interfere in findings of presumed post-POEM reflux esophagitis. Thus, the rate of real post-POEM reflux esophagitis may be lower than previously thought.

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

References


2. Xu M D, Cai M Y, Zhou P H, et al. Submucosal tunneling endoscopic dissection for lesser curvature superficial neoplasms can obviously improve the healing process after POEM might interfere in findings of presumed post-POEM reflux esophagitis. Thus, the rate of real post-POEM reflux esophagitis may be lower than previously thought.

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

P0824 ENDOSCOPIC SUBMUCOSAL TUNNEL DISSECTION FOR LESSER GASTRIC CURVATURESUPERFICIAL NEOPLASMS

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Introduction: Endoscopic submucosal dissection (ESD) has been widely used for resection of gastrointestinal neoplastic lesions, but there are still technical challenges in treating large ones especially located in lesser gastric curvature. In the tunnel technique, incisions at the lower and upper edge lesions are joined by a submucosal tunnel and then lateral incisions are made. The mucosa is thereby easily separated from the muscular layer. We report our experience of endoscopic submucosal tunnel dissection (ESTD) in lesser gastric curvature.

Aims & Methods: To estimate the safety and efficiency of endoscopic submucosal tunnel dissection (ESTD) for lesser curvature superficial neoplasms. 47 patients underwent ESTD and 21 received endoscopic submucosal dissection (ESD). Operation time, security, En bloc resection rate and complications were compared between the two groups. The major difference between the ESTD and ESD is that, instead of pre-cutting circumferential incision, a submucosal tunnel was created by submucosal dissection from the oral incision to the anal incision. Bilateral resection was then performed to remove the lesion completely.

Results: The differences between the two groups in the age of the patients and the diameter of the lesions had no statistically significant (P > 0.05). En bloc resection rate was 100% in the study group and 90.5% in the control group (19/21), and the difference was statistically significant (P < 0.05). The average operation time of the ESTD group was 59 minutes (50–70 minutes), whereas the control group was 67 minutes (48–110 minutes), the difference was statistically significant (P < 0.05). The intraoperative bleeding rate of the study group was 57.7% (15/26), the control group was 100%. The difference was statistically significant (P < 0.05). The incidence of perforation was 0% in the study group and 9.5% in the control group (2/21), and the difference was statistically significant (P < 0.05). There was 1 case of delayed bleeding after operation in the two groups, there were no postoperative perforation, and the difference was not statistically significant (P > 0.05). The incidence of bleeding and metastasis of the two groups after operation was not statistically significant.

Conclusion: ESTD for lesser curvature superficial neoplasms can obviously shorten the operation time and have a higher security, compared with the traditional ESD operation.

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

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

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

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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.
historical diagnosis to guide management decisions. Western data on ESD for SMT is absent. Aims was to analyse the data from our referral centre.

Aims & Methods: A prospectively collected ESD database was analysed to identify patients with SMT of the UGI. All lesions underwent EUS assessment with the aim to exclude MP involvement prior to resection, and in the case of neoplastic and non-neoplastic lesions, resection was performed endoscopically.

Results: 290 ESDs for SMT were performed. The median age was 59 years (range 18-93). 17 cases (6%) were referred from other hospitals. The majority of these cases (76%) were resected endoscopically. Common reasons for non-endoscopic resection were absent radiological features (50%) and obvious MP in the endoscopic images (28%). To FAE (0%) necessitating a higher number of endoscopies. Median age among the two groups were comparable at 75 and 69 years respectively. Male predominance in both the groups (70% and 67%). Adenocarcinoma was the most common malignancy (56%), followed by squamous cell carcinoma (35%) among the study subjects. We observed a higher frequency of oesophageal cancer (28%) to FAE (0%) necessitating a higher number of endoscopies. Patients with oesophageal cancer. These stents are inserted endoscopically, under direct vision (EC) or with fluoroscopic assistance to endoscopically and histologically. MP involvement cannot be reliably excluded prior to EUS. This technique should be considered for UGI SMT lesions without MP involvement in experienced centres.

Conclusion: ESD for selected UGI SMT is an effective treatment. Long-term endoscopic follow-up confirmed the absence of recurrence endoscopically and histologically. MP involvement cannot be reliably excluded prior to EUS. This technique should be considered for UGI SMT lesions without MP involvement in experienced centres.

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

P0827 COMPARING APPROACHES TO SELF-EXPANDING METALLIC STENTS INSERTION

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Introduction: The incidence of oesophageal cancer has increased significantly over the past two decades. The majority of these cancers are incurable at diagnosis. Therefore, the management is aimed at maintaining quality of life by ensuring adequate nutrition and palliation of symptoms, mainly dysphagia. Self-expandable 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 endoscopically and histologically. MP involvement cannot be reliably excluded prior to EUS. This technique should be considered for UGI SMT lesions without MP involvement in experienced centres.

Aims & Methods: The objective of this study was to compare the outcomes, using various performance indicators, in patients who underwent SEMS for palliation in oesophageal cancer via different approaches (EC or FAE) at the Royal Infirmary of Edinburgh (RIE). A retrospective observational study was conducted between May 2014 to April 2016; a total of 62 SEMS. The approach to stent insertion was subject to operator choice and availability of fluoroscopic assistance, and as such can be akin to randomized study. We compared early and late complications associated with two techniques. Early complications included pain, vomiting, bleeding, perforation and tachycardia. Late complications included tumour overgrowth, oesophagitis, oesophageal stricture and stent migration. We also compared morbidity, the need for repeat procedures and the number of additional stents required following each approach.

Results: Forty-seven stents were inserted by EC and fifteen by FAE. The median age among the two groups were comparable at 75 and 69 years respectively. There was male predominance in both the groups (70% and 67%). Adenocarcinoma was the most common malignancy (56%), followed by squamous cell carcinoma (35%) among the study subjects. We observed a higher frequency of oesophageal cancer (28%) to FAE (0%); however no malposition was observed in the EC group. Early complications were comparable in both groups, however chest pain (21%) was more frequently observed no malposition was observed in the EC group. Early complications: infections in 12 patients (16.4%), perforations in 2 (2.7%); late complications: stenosis in 7 (9.6%): dilation in 6, 1 patient (3%) had MP injury which precluded complete resection. Three of five lesions of the completely ESD procedures were in the proximal body of the stomach, however only two lesions of the completely resected lesions were in the proximal body (P=0.004). Otherwise, there were no significant differences between the patients and lesions characteristics. The histology of the SMT lesions were 9 NET, 6 leiomyoma, 5 Granular cell tumours, 4 inflammatory fibroid polypl, 2 Gliast, 2 dystrophic Lipomas, 1 myofibroblastic tumour and one Warthin’s like tumour. Nineteen patients had completed surveillance endoscopy (SE) without an endoscopic and histological recurrence (Median follow up 18 months). Six patients are pending SE. The four patients with deep MP involvement were referred for surgery.

Conclusion: Our results are comparable to findings of other authors (1, 2), in that neither approach is superior. Both FAE and EC techniques have similar early and late complications and comparable median survival. EC offers the advantage of stent placement with direct visualization, however a learning curve must be acknowledged. FAE insertion is a time-consuming procedure and exposes both patients and endoscopy staff to radiation. In conclusion, the approach used should be based on individual characteristics including operator experience, tumour characteristics and previous endoscopic interventions.

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

References

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 significant morbidity and mortality 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% odyphagia, 11.3% epigastric pain, 32.9% vomiting. Orpharyngeal lesions in 41.1%. In 79.5% endoscopy was performed in the first 12 hours. Oesophageal lesions were present in 46.6% of patients (Zargar classification: 1-2.7%, Ha-23.3%, Hb-5.5%, IIIa-6.8%, IIIb-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.

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

References

United European Gastroenterology Journal 5(5S)
PO829 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 of and image enhancement endoscopy (IEE) technology (e.g. NBI, BLI) is reported in a diagnosis for the early gastric neoplasm. That method is useful, but in order to master it is necessary to learn and familiarize complex classifications. Therefore, this diagnostic method is still more difficult for general endoscopists. Linked Color Imaging (LCI) was recently developed using a laser endoscopic system (Fujifilm CF-H260I with 563 nm). LCI acquires images by simultaneously using narrow-band short wavelength light and white light in an appropriate balance. This combination of light provides more information about the vasculature and architecture on the mucosal surface than that obtained with typical white-light imaging. When we use acetic acid indigocarmine mixture (AIM) with LCI, 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 endotherapy, as defined in BSG/ACPGBI guidelines 2). Non-complex polyp multidisciplinary team meeting was created within the North East of England. The aims of our study were to evaluate and compare the sensitivity, specificity, and clinical outcome of gastric ESD in patients aged 85 years or older. 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 outcome 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 carcinomas). All patients underwent ESD at our hospital between June 2007 and December 2012. Of 705 patients were divided into two groups: elderly (aged $<85$ years, consisting of 59 patients with a collective 71 lesions) and non-elderly (Group B: aged $\geq85$ 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 23.8% (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 ($<500 \mu$m), 7.0% (5/71; Group A) and 6.5% (52/805; Group B); and deep submucosal invasive carcinomas ($>500 \mu$m), 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 98.6% (70/71; Group A) and 97.1% (782/805; 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 lesions in Group A and 46.3% of the 32 lesions in Group B were resected en-bloc, respectively. There were no significant differences observed in the survival rates. 6 (10.0%) of 59 patients in Group A and 54 (9.3%) of 646 patients in Group B died, and disease-specific mortality rates in Groups A and B were 0% (0/59) and 0.8% (5/646), respectively.

Conclusion: Gastric ESD in patients aged 85 years or older can be effectively and safely performed. According to the long-term outcomes, gastric ESD performed as a local resection (total biopsy) in elderly patients may be acceptable, even in the non-curative cases.

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

PO831 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 sub-optimal outcomes, especially for the most complex lesions. A multicentre complex polyp multidisciplinary team meeting was created within the North East of England BCSP with the aim of ensuring more robust decision making and management of complex LNPCPs.

Aims & Methods: A virtual multicentre MDM was conducted via audioteleconferencing 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). The MDM considered 210 cases, of which 30 patients were referred for complex LNPCPs were not discussed. Patient data was distributed securely via NHSmail. Outcomes were assessed prospectively using key performance indicators (KPIs) from the BSG/ACPGBI guidelines.

Results: 61 complex LNPCP cases were managed via the MDM with 8 excluded from analysis (7: managed prior to MDM referral, 1: MDM advice not followed), 27 lesions were managed with primary endotherapy, 23 with primary surgery and 3 cases conservatively. Of the endoscopic cases, 2 required surgery due to failed endotherapy and were referred to a finding MDM meeting. The 12-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...
rate of complex LNPCPs with features suggestive of increased malignancy risk was 20% (51.31% ± 19.14% p = 0.029) vs. 18% (34.09% ± 15.46% p = 0.482).

**Conclusion:** Endoscopists with higher ADR tend to detect significantly 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.

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

**References**


**P0852 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 2534 screening colonoscopies performed by 266 endoscopists between 2007 and March 2017 within the austrian 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 0.39% and a maximum of 48.72%. In the low-ADR group mean ADR was 14.56% (SD 0.42) and 28.51% (SD 0.50) in the high-ADR group. Relating to size, there was a significant difference (p = 0.029) in detection of adenomas of 1–2 cm with a mean of 8.44% (SD 6.02) in low- vs. 10.22% (SD 6.64) of all adenomas in high-ADR group but no differences between adenomas <0.5 cm, 0.5–1 cm and those bigger than 2 cm. Regarding shape, proportion of pedunculated adenomas in low-group-ADR differ significantly higher (p = 0.002), with a mean of 19.36% (SD 14.60) vs. 17.40% (SD 9.55) but there were no differences between flat and sessile adenomas. With a mean proportion of 4.43% (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).

**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 (CI) were calculated to assess the strength of the influence of each individual variable.

**Results:** We included 265 lesions in 265 patients [mean age ± SD: 69 ± 10; 150 males (56.6%)]. They were recruited in 15 Spanish University Hospitals between January 2016 and March 2017. Location of the lesions were: esophagus (n = 7; 2.6%), cardia (n = 5; 1.8%); stomach (n = 48; 18.1%); duodenal bulb (n = 1; 0.3%); colon (n = 144; 54.3%) and rectum (n = 60; 22.6%). Mean lesion size was 38.6 ± 18.5 mm. Median duration of the procedure was 105 min. (8–375). In 73 cases (27.5%) criteria for difficult ESD were fulfilled. Endoscopic resection was aborted in 7 cases (2.6%). When endoscopic resection was achieved (n = 258; 97.3%) both situations, duration >3 h and a piecemeal resection, were noted in 21 (8.1%) patients. Duration >3 h in 25 cases (9.7%) and unsuccessful en bloc
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%)</td>
<td>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></td>
<td></td>
</tr>
<tr>
<td>Colorectal</td>
<td>2.6 (1.2–5.7)</td>
<td>0.01</td>
</tr>
<tr>
<td>Stomach</td>
<td>0.5 (0.2–1.0)</td>
<td>0.06</td>
</tr>
<tr>
<td>Lesion</td>
<td></td>
<td></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>
<tr>
<td>Complications</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intraprocedural bleeding</td>
<td>4.1 (1.9–8.7)</td>
<td>0.0003</td>
</tr>
</tbody>
</table>

Conclusion: The factors independently associated with technically difficult ESD (aborted procedures, time-consuming or finished with a piecemeal resection) were: lesion size >30 mm, poor manoeuvrability, recurrent lesions and intraprocedural bleeding. Except for the last one, the remaining factors can be identified during the first diagnostic endoscopy. Endoscopists who will start performing ESD should try to avoid these difficult procedures in the early part of their learning curve.

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

References


P0834 EPOCH-MAKING TECHNIQUE OF FULL-THICKNESS RESECTION FOR THE COLORECTAL TUMOR BY USING LAPAROSCOPY ENDOSCOPIQUE COOPERATIVE SURGERY (LECS) (Y. Tamegai1, Y. Fukunaga2, A. Chino3, S. Saito1, J. Fujijsaki1, M. Ueno3)

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Introduction: We established the Laparoscopy Endoscopy Cooperative Surgery (LECS) procedure to overcome the limitation of colorectal endoscopic submucosal dissection (ESD) procedure. The local full-thickness resection of the combined procedure of laparoscopy assisted colectomy (LAC) and ESD procedure. Also, it is the method that is epoch-making for minimal invasive treatment that keeps an intestinal function.

Aims & Methods: The aim of this study was to investigate the feasibility and safety of LECS procedure applied with endoscopic submucosal dissection (ESD) technique obtained adequate surgical margin. We performed ESD on 1376 colorectal tumors in 1341 patients (female: 777/564; mean age, 66.1years). 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, 63.5years) 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 is the lesion that safety cannot secure. In addition, the indication is the lesion which is curable by the local excision without lymph node dissection. Therefore, submucosal invasive (T1) cancer with the risk of lymph node metastases does not become the indication for this full-thickness resection technique. From the above-mentioned basic concept, indications of the LECS procedure for colorectal tumors were thought to be as follows: 1) Intra-mucosal carcinoma (Tis) and adenoma with high-grade atypia involved appendix or diverticulum. We examined the clinicopathological 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 results which 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 postoperative bleeding was an average of 8.9 g (3 to 20). We experienced no complications, and average post-operative hospital stay was 7.7(6 to 12) days. Histological examination of the resected specimens revealed negative lateral and deep margins. The postoperative follow-up was carried out first a half year later, and it was every one year subsequently. In the above-mentioned follow-up schedule, blood examination, colonoscopy, CT scan were performed for clinical evaluation. The residual/local recurrence case was absent for 31.6 months (range 10–60 months) for the mean follow-up period. Also, without complications such as postoperative anastomotic stricture or adhesive ileus, we followed favorable course.

Conclusion: We developed a LECS procedure to overcome the limit of ESD, and completed full-thickness one-piece resection of the tumors considered as high risk of perforation in the endoscopic treatment.

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

Reference

Patients described embarrassment related to changing and waiting areas; sensitivity of the test; exposure and physical reaction. Discomfort during the procedure was attributed to instrument and air insertion. Communication prepared patients and managed expectations, with one patient describing poor endoscopist communication affecting the whole experience. Communication was important in terms of appointment, endoscopist and choice of pre-medication, however it was highly individualised. Comunication prepared patients and managed expectations, with one patient describing poor endoscopist communication affecting the whole experience. Communication 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. Communication was important in terms of appointment, endoscopist and choice of pre-medication, however it was highly individualised.

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Reference

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 mucosal examination, lesion detection and treatment. Walking exercise is known to be effective for colon cleansing. However, it is difficult for patients with uncomfortable walking to improve the status of bowel cleansing.

Aims & Methods: 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. 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 bowel cleansing. This work will be used to develop PREMs for bowel cleansing.

Disclosure of Interest: L.J. Neilson: Research post previously funded by Aquilant endoscopy

C.J. Rees: Colin Rees has received research grants from ARC medical, Olympus Medical, Aquilant endoscopy, Norgine, travel grants from Boston scientific and Cook medical and speaking grants from Norgine and Olympus. All other authors have declared no conflicts of interest.

Reference
prparation. 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). Vibration group was superior than walking group in time of first defecation after taking PEG (112.89 vs 123.42 mins, p = 0.005) and evacuation intubation time (6.23 vs 8.52 mins, p = 0.011).

Conclusion: Bowel preparation accompanied with abdominal vibration stimulation showed almost similar results to a walking group which was conventional methods for adequate bowel preparation. The patients with the 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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Introduction: Rheological properties of the submucosal cushioning solutions are crucial to avoid complications secondary to endoscopic resections. Electrical resistance (R) of a substance is a measure of the difficulty to pass an electric current through that solution. The higher the R, the resection will be quicker, easier and safer, with less temperature increase. Our group has developed a new solution to perform submucosal injection (TriBio).

Aims & Methods: To analyze the electrical (R) and rheological (temperature, viscosity, height and lasting of the cushioning) properties of different submucosal solutions in an ex vivo model of porcine stomach. Tested solutions were: Saline (S), Glyceol® (GC), Hyaluronic acid (HA), Distilled water (DW), Platelet-rich plasma (PRP), Glucosated serum 10% (GS), Gelaspan (GP), TriBio (TB) and PRP + TB. Measurements were done at time 0 and 30 minutes.

Results: The solutions that showed the best basal R were: PL, HA, GS, TB and PRP + 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 PRP 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.

Continued

<table>
<thead>
<tr>
<th>Viscosity (pa)</th>
<th>% dimension cushion (60 min)</th>
<th>Trans-epithelial R (MΩ)</th>
<th>Increase in T° during endoscopic resection (°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basal</td>
<td>n.a.</td>
<td>10</td>
<td>83.5</td>
</tr>
<tr>
<td>Saline</td>
<td>0.0043</td>
<td>39.6</td>
<td>49.1</td>
</tr>
<tr>
<td>Gelaspan</td>
<td>0.009</td>
<td>45.5</td>
<td>116.6</td>
</tr>
<tr>
<td>Glyceol</td>
<td>0.009</td>
<td>26.3</td>
<td>44.9</td>
</tr>
</tbody>
</table>

n.a: not applicable * gelification at 37°C ** viscoelastic solid when activated

Conclusion: Based on electrical and rheological properties, the best submucosal solutions to perform safer endoscopic resections are: TB + PRP, TB, PL and PRP.

Disclosure of Interest: V. Lorenzo-Zúñiga: Authorship of the patient
All other authors have declared no conflicts of interest.
J. Boi: authorship of the patient
R. Bartolí: Authorship of the patient

P0840 PATIENT SATISFACTION RELATED TO QUALITY OF INFORMATION GIVEN THROUGHOUT COLONOSCOPY

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Introduction: Patients with chronic diseases, such as inflammatory bowel disease, experience a lower degree of being involved in health care than others. Compared with other countries Swedish patients report lower possibility to be involved in their care and receive less information about care (1).

Aims & Methods: To investigate the perception of written and oral information given before and after a colonoscopy, the perceived knowledge of planned follow-up and preference to be more involved in decisions/participate in their care in different patient groups. Outpatients (> 18 y) undergoing colonoscopy (all indications) were consecutively included (n = 862). Before the procedure patients completed questionnaires regarding sociodemographic data and the written information about bowel preparation and examination. After the procedure patients reported their perceptions about the information provided regarding the colonoscopy and the follow-up.

Results: Data from 862 patients were analyzed (447 females) (mean age 52, 18–90 y) A large number of patients (n = 740, 87%) rated the written information sent home before the colonoscopy as distinct, while a subset (n = 110, 13%) rated it as 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.

Reference
1. 2016 Commonwealth Fund International Health Policy Survey of Adults.
**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.

**Disclosure of Interest:**

All authors have declared no conflicts of interest.

**Results:**

<table>
<thead>
<tr>
<th>Location</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>
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<tr>
<td>Right colon</td>
<td>2</td>
<td>35</td>
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<td>Left colon</td>
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<td>34</td>
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<tr>
<td>Rectum</td>
<td>3</td>
<td>5</td>
<td>0.44</td>
</tr>
</tbody>
</table>

**Conclusion:**

The rectal LSTs with a skirt had significantly lower synchronous advanced neoplasia than rectal LSTs without a skirt, especially in the right colon 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 hialuranic acid with other substances (TriBio) (2), but never the combination of both hydrogels, in the prevention of delayed complications after mucosal damage.

**Aims & Methods:** To assess the efficacy of endoscopic shielding with the combination of PRP and TriBio in a rat model of thermal injury. Thermal injury was obtained according to our rat model (3). Lesions were performed in male Sprague-Dawley rats (400–450 g) under general anesthesia. Animals were randomized to receive one of the following shields onto the lesions: PRP + TriBio, PRP and TriBio. Rats underwent endoscopic follow-up at 7 days and 2 weeks. Afterwards, animals were sacrificed and ulcers were macroscopically and histopathologically evaluated.

**Results:** Animals treated with PRP + TriBio obtained the best results in comparison with other hydrogels (PRP and TriBio). Mucosal healing rate (percentage of mucosal restoration) at 14 days was significantly higher with PRP + TriBio (100% vs 82% and 90%; p < 0.05). Histological study confirmed these data, showing total restoration of mucosal layer with PRP + TriBio.

**Conclusion:**

The use of a combination of two covering agents (TriBio and PRP) is the best approach to obtain mucosal healing in a rodent model of endoscopic thermal injury in colon.

**Disclosure of Interest:**

R. Bartoli: Authorship of the patent

J. Boix: Authorship of the patent

V. Lorenzo-Zúñiga: Authorship of the patent

All other authors have declared no conflicts of interest.

**References**


**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:** Colonicoscopic procedures have become massive in the last years since colorectal cancer (CRC) is becoming a prevalent disorder. The next frontier of this technique will be to provide an active substance in a precise site of the colon (targeted therapy). This has many advantages (targeted therapy, dose adjustment, limiting side effects, assessment of mucosal healing, etc.); however, this selective and direct administration of drugs is not possible nowadays, but it is a true challenge. Following these evidences we have developed drug eluting platform to locally treat CRC lesions.

**Aims & Methods:** To evaluate the efficacy of intratumoral injection of our drug-eluting platform with different combinations of these antitumoral drugs (alpha-cept 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. Blood flow and size of tumors ranged from 6 to 8 mm. Approximately 50% of anti-VEGF injection compared with Anti-EGF obtained the best results (significantly reduction in size and cell necrosis). However, only alfibenprat 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. Bartoli: Authorship of the patent J. Boix: Authorship of the patent V. Lorenzo-Zúñiga: Authorship of the patent All other authors have declared no conflicts of interest.

References
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Introduction: Three-dimensional (3D) imaging technique has been developed in the medical field. Previous research reports that simulated 3D colonoscopy improves the detection of colonic lesions [1]. A novel 3D imaging system has been recently developed, which can create 3D virtual video images from conventional two-dimensional (2D) endoscopic images [2]. However, actual cases have not been studied.

Aims & Methods: This study aimed to investigate whether the 3D system can improve the visibility of colorectal neoplasms compared with conventional 2D endoscopy. We evaluated 12 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

P1085 PAIN DURING COLONOSCOPY: DIFFERENCES BETWEEN PATIENTS’ EXPERIENCES AND CAREGIVERS’ ASSESSMENT J. Rylander1, G. Ringström2, M. Simrén3, S. Sjöblom1, P. Stotzer1, S. Jakobsson4
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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. 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; 40% female. Only 22% of the patient’s reports moderate pain and a subgroup of 14% were not adequately relieved. These subgroup reported severe, very severe or extremely severe pain. 90% of the patients were given analgesics and sedation during the investigation. For patients who reported, “severe, very severe or extremely severe pain” (n = 111), pain was underestimated by physicians and nurses in 58% of all assessments. This was most commonly seen among the youngest patients, 18–29 years (n = 99), where pain was underestimated in 25.5% among the group. There was also a difference according to gender; physicians underestimated pain in 60% of men who reported “moderate pain” (n = 66) while the nurses underestimated pain in 27% among the same group of men. Women’s pain was overestimated by caregivers in 26% (n = 188) of all cases with mild pain. Patients undergoing colonoscopy for the first time (n = 331), and reporting “moderate pain”, were underestimated by physicians in 58% and by nurses in 25%. 58% of the patient reports that they were anxious before the procedure. This group reported more pain than the group without anxiety (p < 0.001). Presence of anxiety and a high level of anxiety among the group was associated with a shorter time delay and the patient’s pain report. The agreement between pain reports from patients and caregivers were poor to fair, with slight differences between nurses (Kappa = 0.37; p < 0.000) and physicians (Kappa = 0.29; p < 0.000). In total, congruent pain reports between patients and caregivers were seen in 36% of all assessments.

Conclusion: Agreement between caregivers’ and patients’ pain reports is far from perfect, and the agreement is influenced by several factors such as the profession of the caregiver, as well as patient factors including pain severity, anxiety, age, gender and previous experience of colonoscopy. The goal for the future should be to individualize the use of analgesics based on every patient’s needs, which seems to be of special importance in specific groups of patients.

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

References

Introduction: The SCENIC consensus proposed recommendations for optimal detection and management of dysplasia during colonoscopic surveillance for IBD. Characterization of colonic lesions in IBD patients 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 dysplasia, and to validated by international experts (Frankfurt Advanced Chromoendoscopic IBD Lesions FACILE GROUP). We developed an endoscopic classification of IBD lesions, based on morphology, colour, demarcation, surface pattern, vessel sign, signs of inflammation (table). A library of 60 colonic lesions, including dysplasia, sessile serrated adenomas/polyps, invasive cancer and pseudopolyps collected at surveillance colonoscopy by using HD, DCE and VCE with i-scan or NBI were assessed. The diagnostic performance of the score was tested based on the final histopathology and the inter-observer variability of the eight examiners. The examiners have had to perform a pre-test (45 minutes) before analyzing the colonic lesions. Multivariate analysis with bootstrapping, of characteristics of the classification was performed to determine the strength of endoscopic predictors of dysplasia.

Results: Of the 60 IBD lesions, 33 (55%) were dysplasia, 6 (10%) cancer, 9 (15%) SSA/Ps and 12 (20%) pseudopolyps. Across the experienced academic raters sensitivity, specificity, PPV, NPV and accuracy in predicting histology, were 72%, 92%, 91%, 40%, 72%, 72%, 72% and 72%. 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 and vessel architecture and signs of inflammation within the lesion were predictive of dysplasia. Subsequent multivariate analysis confirmed that of these endoscopic findings non polypoid lesion OR 11.6 (95% CI 6.71–20.2), surface pattern
The role of probe confocal laser endomicroscopy with image enhanced endoscopy 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 chromonendoscopy (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-3940F; Japan) VCE and DCE in combination with pCLE (Cellvizio, Paris, France). pCLE was applied following IV injection of fluorescein 5% 10ml 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-3940F; 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>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>IIb Size &gt; 2.5 cm</td>
<td>Villiform appearance of the crypts with stellar opening. The colonic mucosa surrounding the lesion was normal.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>En-block EMR</td>
</tr>
<tr>
<td>Crohn’s colitis</td>
<td>IIIS/III</td>
<td>IIb Size &gt; 2.5 cm</td>
<td>Villiform elongated appearance of the crypts with dark epithelium, decreased number of the crypts</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Surgical resection</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.
P0849 THE SAFETY AND EFFECTIVENESS OF COLORECTAL ENDOSCOPIC SUBMUCOSAL DISSECTION USING A SCISSORS-TYPE KNIFE IN ELDERLY PATIENTS
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Introduction: Endoscopic submucosal dissection (ESD) is one of the most useful methods for treating early colorectal neoplasms and conventionally utilizes an IT, hook, or needle knife. However, because these devices are used without fixation to target, it confers a potential risk of complications due to unexpected incision. To reduce the risk of complications from ESD performed using a conventional knife, we used a scissors-type knife (SB Knife Jr: Akita Sumitomo Hakelite, 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 College and Chagako Cancer Center. The patients were divided into two groups, an elderly group (group A: age, ≥75 years; 95 patients, 97 lesions) and a non-elderly group (group B: age, <75 years; 176 patients, 194 lesions). We evaluated the en bloc resection rate, complete resection rate, curative resection rate, resected tumor size, procedural time, complications, and long-term outcomes, including survival rate. The 3-year overall survival and tumor-specific survival rates were analyzed in the entire study cohort, and the local and distant recurrence rates were analyzed in the cohort with curative resection and observationally managed with non-curative resection.

Results: The mean age was 80.0 years in group A and 64.3 years in group B. The male-to-female ratios were 45:50 and 103:73 in groups A and B, respectively. Regarding histopathological findings, the prevalence rates of tubular adenoma were 37.1% (36/97) and 36.1% (70/194); Tis, 92.3% (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 min (range, 10-420 min) in group A and 75 min (range, 10-533 min) in group B, showing no significant difference. The en bloc resection rates were 96.9% (94/97) and 99.0% (192/194); the complete resection rates, 94.8% (92/97) and 94.8% (184/194); and the curative resection rates, 83.5% (81/97) and 88.1% (171/194) in groups A and B, respectively, showing no significant difference. Regarding complications, no perforation during the procedure occurred in any of the cases. The delayed bleeding rate was 1.0% (1/97) in group A and 2.6% (5/194) in group B. Delayed perforation and delayed bleeding occurred in one patient each in group A and were treated conservatively. Regarding long-term outcomes, the local recurrence rate was 1.0% (1/97) in group A and 0.5% (1/194) in group B, and no distant recurrence was observed in the recurrence analysis cohort. Regarding survival analysis (mean follow-up period: group A, 523 ± 469 days; group B, 628 ± 582 days), the 3-year overall and disease-specific survival rates were respectively 98.8% and 100% in group A, and 93.3% and 98.3% in group B. One patient (0.5%, 1/194) died of colorectal cancer metastasis (2.6%, 5/194) in other diseases in group B, while one patient (1.1%, 1/95) died of other diseases in group A.

Conclusion: ESD performed with SB Knife Jr is a technically efficient and safe method associated with favorable long-term outcomes in cases of early colorectal neoplasms in elderly patients.

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

References

P0850 QUALITY IN COLONOSCOPY: HAVE YOU REALLY GOT TO THE CAECUM?
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Introduction: Poor quality and incomplete colonoscopy is associated with missed diagnosis and failure to prevent interval cancers.1 Caecal intubation rate is the most frequently used Quality Indicator of colonoscopy. British Society of Gastroenterology guidelines recommend obtaining “clear images of caecal landmarks or terminal ileum” while the European and American guidelines suggest “a suitable photo documentation preferably a panoramic view of the ileocecal valve and caecum”. In this retrospective study we aimed to assess colonoscopists’ practice in photo documentation of colonoscopy completion.

Aims & Methods: Colonoscopy reports for colonoscopies performed at an endoscopy unit over a University Hospital over a period of three months from 01/01/2014 to 03/01/2014 were retrieved from the Trust’s Endoscopy database. Photo documentation from the reports were then analysed for caecal landmarks and terminal ileum images.

Results: A total of 292 colonoscopies were performed by 21 endoscopists (5 Colorectal Surgeons (24%), 3 Nurse Endoscopists (14%), 3 Specialist Registrar Gastroenterologist (14%) and 10 Consultant Gastroenterologist (48%). Caecal intubation was achieved in 248 cases (85%). In 8(53%) cases the anastomosis was reached. The ileo-caecal valve was photographed in 172(70%) cases, the appendix in 102(41%) cases, the caecum in 83(33%) cases and a panoramic view was achieved only in 43(17%) patients. Terminal Ileum was intubated in 53 cases (21%) and images were recorded in 25 cases (40%). In the case of anastomosis, 7 images (88%) of the anastomosis were obtained. In some of the reports images were labelled and in a number of reports no photos were recorded at all.

Conclusion: This study shows that photo documentation is poor and needs to be improved in order to adhere to national and international guidelines. Evidence of caecal intubation is imperative as it can protect against medicolegal implications.2 Obtaining clear images of caecal landmarks will ensure definite caecal intubation and efforts towards recording them will prompt the endoscopist to attain adequate mucosal view. In order to achieve excellence we suggest colonoscopists obtain images of all caecal landmarks including the ileum (when intubated), label photographs and where possible record video clips of caecal intubation.

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

References
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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 (HD-WLE) colonoscopy in IBD.

Aims & Methods: A total of 270 randomized patients (55% men; age range 20–77 years, median age 49 years) with long-standing IBD (median duration of the disease 14 years) undergoing surveillance colonoscopy were assessed by HD-WLE (n=90), VCE (n=90) or DCE (n=90). Surveillance colonoscopy with High Definition (HD) alone, or with iSCAN VCE or DCE was performed. Endoscopic features were recorded in each group with regard to location, morphology (polypoid/non polypoid), size and mucosal pit pattern, and these were characterized using the Kudo modified classification.3 The histology was reported by modified Vienna classification.4

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/PS lesions were: non-polypoid appearance (51.5%), predominant localization in the proximal colon (vs distal) (87%), ≤5 mm in size (48.4%), Kudo pit pattern modified type I (79%). Kudo pit pattern modified type I 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
Results: 25 polyps were included, with a mean size of 4.5 mm, 14 adenomas, 10 hyperplastic histology obtained values of sensitivity, specificity, positive and negative observations, the use of the FICE classification for prediction of adenoma-hyperplastic and 1 serrated adenoma. From the global assessment of all polyps contributed to these results.

The use of FICE technology by inexperienced endoscopists in the conclusion:

Introduction: The histological characterization of colorectal polyps using FICE (Fujinon Intelligent Color Enhancement) technology presents high diagnostic accuracy. However, the efficient 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 acuity of colorectal polyps (<10 mm; hyperplastic polyps vs adenomas) in WLE (White light endoscopy) and using FICE technology, 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%)).

Statistical analysis: SSIPS v2.3

Results: 25 polyps were included, with a mean size of 4.5 mm, 14 adenomas, 10 hyperplastic and 1 serrated adenoma. From the global assessment of all polyps and observations, the use of the FICE classification for prediction of adenoma-hyperplastic histology values of sensitivity, specificity, positive and negative predictive value identical to WLE (100%, 62.5%, 100% and 60%, respectively).

Overall, diagnostic acuity in histological prediction was identical in both modalities (76%). The individual acuity of the endoscopists ranged from 66% to 100%. However, scores were not associated with a higher probability of correct classification, both in WLE (77% vs. 75%) and FICE (75% vs. 80%), p > 0.05.

Conclusion: The use of FICE technology by inexperienced endoscopists in the histological prediction of colorectal polyps has no advantage over WLE, having both suboptimal acuities. The lack of recourse to magnification may have contributed to these results.

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

Reference
P0857 TWO LITERS OF POLYETHYLENE GLYCOL (PEG) WITH 15 MG OF BISACODYL VERSUS 4 LITERS OF PEG FOR BOWEL PREPARATION TO COLONOSCOPY, PROSPECTIVE RCT, PRELIMINARY RESULTS

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Introduction: Adequate bowel preparation is one of the most important quality factors of colonoscopy. Several formulations of bowel preparation have been evolved in order 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 mixed with Bisacodyl (4L + 15mg) for bowel cleansing is as effective and better tolerated as a large volume PEG (4L).

Aims & Methods: This study aims to evaluate the efficacy and tolerance of the new regimen of Bisacodyl compared to the classical regimen (4L of PEG).

Materials and methods: A prospective comparative randomised study comparing the tolerance, acceptability and efficacy of a protocol A based on 4L of PEG and a protocol B corresponding to 2L of PEG +15mg of Bisacodyl. Using the Boston Bowel Preparation Scale (BBPS) by endoscopists, who did not know bowel preparation type, to evaluate the quality of preparation.

Results: Sixty-six patients were included (35 in group A and 31 in group B), with a sex ratio = 1. The average age of patients was 52.5 ± 15 years (17–86 years) with a median of 51.5 years. Sixty-two 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 24%) vs (12% and 5%) (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 in 6/18 patients with a median of 4/3 (1 case in group B). The overall score obtained was 6.49 ± 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 the left colon, in the number of patients with hypoplastic adenoma compared to an adequate score of (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 distension were respectively (62.8% and 65.7% vs 52% 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 data.

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

References


P0858 COLONOSCOPY ON THE LEFT, RIGHT? I. Mocanu, A. Laranjo, S. Piets, N. Veloso, L. Gonçalves, R. Godinho, I. Medeiros

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Introduction: While it is well established that colonoscopy is a more sensitive technique to train, with high variability of time spent to reach the cecum, depending on endoscopist experience, patient characteristics and type of colonoscopy 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 colon surgery.

Results: One hundred and eighty-eight colonoscopies (94 on each side) were included. There was no statistical difference in mean age (RLP:5.8 ± 15 years; LLP: 5.8 ± 15 years vs p = 0.81). In the VAS score of comfort: 4.2 ± 3.8 vs. 4.0 ± 3.6; p = 0.64, respectively. However, colonoscopist comfort was higher in LLP (4.6 ± 3.7 vs. 3.8; p = 0.005). This did not change after exclusion of less experienced endoscopists colonoscopies (581 vs. 579 seconds, VAS 3.7 vs. 3.95; p = 0.005). Globally, there was no difference in “time to cecum” between the two positions (612 ± 633 seconds; p > 0.05), nor the patients comfort (VAS 3.92 ± 3.94; p > 0.05). This did not change after exclusion of less experienced endoscopists colonoscopies (581 vs. 579 seconds, VAS 3.7 vs. 3.95; p = 0.005). Surgical and overweight patients did not benefit from any of the positions (time to cecum: 650 ± 702 vs 570 ± 657; p = 0.50, comfort: 4.2 ± 4.1 vs. 3.8 ± 3.96; p = 0.05, respectively). However, endoscopists comfort was higher in LLP (4.6 ± 3.7 vs. 3.8; p < 0.005). Both groups required position change during progression or loop palpation by the nurse in equal percentage (54% vs. 50% vs. 49.5% vs. 50%; p > 0.05). Additionally, there was no difference in time to cecum, patients or endoscopists comfort between the colonoscopies performed with Fuji or Olympus colonoscopes.

Conclusion: In our experience, progression in right lateral position did not show additional advantage over standard LLP in time to reach the cecum or patients comfort. We did not find any difference in time to progression or comfort between Olympus and Fuji colonoscopes.

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

Reference


P0859 NON-GRANULAR LATERALLY SPREADING COLONIC LESIONS ≥20MM (LSL) ARE SMALLER AND MORE COMMON MULTIPLE THAN GRANULAR LSL: IMPLICATIONS OF A ‘COLONIC MUCOSAL PHENOTYPE’ FOR PRACTITIONERS OF ENDOSCOPIC RESECTION

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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 at Sydney Eastern Regional Medical Centre, Australia between 2008 and 2011. 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. LSL were more likely to be solitary (87.0%) than NG LSL (77.5%, p < .001). G LSL were more commonly large (>40 mm in size) (49.5%) than NG LSL (26.0%, p < .001) and were more commonly found in the right colon (proximal to transverse colon) (54.2% versus 48.3%, p = .034). In 88 patients with multiple LSL the dominant LSL was G (49/88 [55.7%]). A dominant G LSL was associated with fewer other LSL than a dominant NG LSL, p = .029.

Table 1: The morphology of the dominant (largest) laterally spreading lesion (LSL) predicts the presence and number of synchronous LSL. Morphology of the dominant lesion did not predict the others would be of the same morphology (p = .697). The dominant LSL was large in 43.2% of cases. Size of the dominant LSL predicted size of the other LSL (p < .001). 58.6% 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>.001</td>
</tr>
</tbody>
</table>

Dominant LSL Morphology: Number of synchronous LSL

Granular (n = 49) 41 (83.7) 3 (6.1) 1 (2.0) 0.29
Non-granular (n = 29) 27 (69.2) 10 (25.6) 0 2 (5.1) 0.001

Conclusion: 7% of patients will have more than one LSL. In these patients the dominant lesion morphology predicts the presence and number of additional LSL (the Colonic Mucosal Phenotype). More than 20% of NG LSL are associated with an additional LSL. A large colonic lesion is predominantly large and solitary. Practitioners of endoscopic resection should be aware that NG LSL may be multiple and ensure full examination of the colonic mucosal surface, particularly since they are higher risk for SMIC than G LSL.

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

P0860 WIDE-FIELD PIECMEAL COLD SNARE POLYPECTOMY OF LARGE SESSEILL 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. Subsequent the assistant closed the snare until resistance was felt, and then completely once the endoscopist was satisfied with the amount of captured tissue. If transection did not occur within five seconds gentle traction was exerted on the snare catheter against the tip of the colonoscope. If transection still did not occur, the snare placement was revised. The mucosal defect was then expanded with a flushing pump containing 0.9% saline. Further resections were then performed aligning the snare with the cut edge of the expanding mucosal defect. Once the resection was completed the mucosal defect was inspected for residual serrated tissue. If residual was detected further generous snare resection was performed. Oozing of blood from the resection site was common and was not actively treated. Submucosal injection was not performed. High-definition imaging of the defect margin was used to ensure the absence of residual serrated tissue. Adverse events were assessed at 2 weeks and surveillance was planned between 6 and 12 months.

Results: 41 SSP were completely removed by pCSP in 34 patients. 7 patients had two lesions removed. The median size of SSP was 15 mm (IQR 14.5–20), range 10–35 mm. The median duration of procedures was 4.5 minutes (IQR 1.4–6.3). There was no evidence of perforation or significant intra-procedural bleeding.

The results of the 34 patients is shown in Table 1. There were no significant adverse events at 2 week follow up including delayed bleeding and post polypectomy syndrome. 8/41 lesions underwent first follow-up at median 6 months with no evidence of recurrence.

Table 1: Baseline characteristics and outcomes of the 34 patients and 41 SSP that underwent piecemeal cold snare polypectomy (pCSP). IQR – interquartile range, SC1 – first surveillance colonoscopy.

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Duration, median minutes (IQR)</th>
<th>P</th>
<th>Procedure</th>
<th>Duration, median minutes (IQR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Follow up</td>
<td>4.5 (1.4 to 6.3)</td>
<td></td>
<td>Follow up</td>
<td>3.0 (3–5)</td>
</tr>
<tr>
<td>Admission to hospital for related complication within 2 weeks</td>
<td>9 (22.0)</td>
<td></td>
<td>Intra-procedural bleeding requiring intervention (%)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Histopathology, serrated adenoma (%)</td>
<td>41 (100)</td>
<td></td>
<td>Low grade cytological dysplasia (%)</td>
<td>3 (7.3)</td>
</tr>
<tr>
<td>pCSP (n = 41)</td>
<td>6 (5–7)</td>
<td></td>
<td>Recurrence at SC1, (%), n = 8</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Histologic recurrence at SC1, (%), n = 5</td>
<td>0 (0)</td>
<td></td>
<td>Adverse events</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Delayed perforation (%)</td>
<td>0 (0)</td>
<td></td>
<td>Delayed perforation (%)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Post procedural pain (%)</td>
<td>0 (0)</td>
<td></td>
<td>Post procedural pain (%)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>pCSP (n = 41)</td>
<td>0 (0)</td>
<td></td>
<td>Follow up</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Follow up</td>
<td>0 (0)</td>
<td></td>
<td>Follow up</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Months to SC1, IQR</td>
<td>0 (0)</td>
<td></td>
<td>Months to SC1, IQR</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Recurrence at SC1, (%), n = 5</td>
<td>0 (0)</td>
<td></td>
<td>Recurrence at SC1, (%), n = 8</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Histologic recurrence at SC1, (%), n = 5</td>
<td>0 (0)</td>
<td></td>
<td>Histologic recurrence at SC1, (%), n = 8</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.

P0861 THE PROSPECTIVE OBSERVATION STUDY FOR OVER 10MM COLORECTAL LESIONS ENDOSCOPICALLY RESECTED USING BIPOLAR SNARE

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Introduction: Polypectomy of adenomas reduces death due to colorectal cancer; therefore colonoscopy is the gold standard to detect and treat adenomatous lesions. Most adenomatous lesions are less than 20 mm in size. Therefore, these are not indication for endoscopic submucosal dissection (ESD). Recently, there are some reports about cold snare polypectomy (CSP). CSP is effective and easy to use to remove lesions of less than 5–10 mm in size. On the other hand, in over 10 mm lesions, many endoscopists would remove it by endoscopic mucosal resection (EMR) with monopolar snare. It is expected that the bipolar snare would decrease the incidence of perforation because of electric current flow peculiar to bipolar snare that does not flow through the wall of colon. So, by using bipolar snare, hot snare polypectomy (HSP) that can be easily resected in a short time may be safely performed for over 10 mm colorectal lesions. However, there is no report about them.

Aims & Methods: We aimed to clarify removal method, procedure time and complications for over 10 mm colorectal lesions endoscopically resected using bipolar snare. Consecutive patients with over 10 mm colorectal lesions endoscopically resected using bipolar snare in National Cancer Center Hospital East between September 2016 and March 2017 were enrolled in this study, prospectively. The removal method rate of these lesions, each procedure time, complete rate of these lesions, each procedure time, complication rate, bleeding rate and perforation rate, and pathological finding were assessed.

Results: A total 92 lesions in 67 patients were analyzed. 47 patients (70%) were male, and the median age was 67 years (range: 44–88). The median lesion size was 15 mm (range: 10–30). The macroscopic type was 33 (36%) polyloid lesions and 59 (64%) flat lesions. The location was 55 (60%) lesions in right colon, 31 (34%)
EMR – endoscopic mucosal resection, IPB – intra-procedural bleeding, IPP – intra-procedural perforation, CSPEB – clinically significant post-endoscopic bleeding (bleeding after EMR requiring admission to hospital or re-intervention), 2w – two weeks, SC1/2 - surveillance colonoscopy 1/2. * target sign or actual hole corresponding to DMI type III/IV - Sydney Classification (1)

**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.

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

### References


## 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>1185 (50.2)</td>
</tr>
<tr>
<td>Successful EMR (%)</td>
<td>226 (98.7)</td>
<td>894 (97.8)</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>1 (4.7)</td>
<td>46 (15.0)</td>
<td>70 (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 SC1 (n)</td>
<td>86</td>
<td>685</td>
<td>871</td>
</tr>
<tr>
<td>Endoscopic SC1 (%)</td>
<td>9 (5.4)</td>
<td>71 (10.4)</td>
<td>206 (23.7)</td>
</tr>
<tr>
<td>HDF SC1 (%)</td>
<td>3 (6.4)</td>
<td>36 (13.4)</td>
<td>120 (28.7)</td>
</tr>
<tr>
<td>Surgery SC1 (%)</td>
<td>1 (0.6)</td>
<td>7 (1.0)</td>
<td>12 (1.4)</td>
</tr>
<tr>
<td>Underwent SC2 (n)</td>
<td>89</td>
<td>526</td>
<td>462</td>
</tr>
<tr>
<td>EDR SC2 (%)</td>
<td>0 (0)</td>
<td>21 (6.4)</td>
<td>42 (9.1)</td>
</tr>
<tr>
<td>Surgery SC2 (%)</td>
<td>0 (0)</td>
<td>1 (0.3)</td>
<td>3 (0.6)</td>
</tr>
</tbody>
</table>

**SMSA score (2)**

<table>
<thead>
<tr>
<th>Size</th>
<th>Points</th>
<th>Morphology</th>
<th>Points</th>
<th>Access</th>
<th>Site</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;1 cm</td>
<td>1</td>
<td>Pendeducated</td>
<td>1</td>
<td>Easy</td>
<td>1</td>
<td>Left</td>
</tr>
<tr>
<td>1-1.9 cm</td>
<td>3</td>
<td>Sessile</td>
<td>2</td>
<td>Difficult</td>
<td>3</td>
<td>Right</td>
</tr>
<tr>
<td>2-2.9 cm</td>
<td>5</td>
<td>Flat</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3-3.9 cm</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;4 cm</td>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SMSA Level**

- 1
- 2
- 3
- 4

**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.

**Table 1:**

| 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 1) and is subsequently divided into four levels. Standardised injection 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 selected for analysis. The primary endpoints were time to the SM, adverse event rate and adenoma recurrence.

**Results:** 2305 lesions in 2305 patients (47.4% M, 45.2% right colon) underwent SMSA score with completion rate, adverse event rate and adenoma recurrence. In patients who had multiple lesions resected the largest lesion was retained for analysis. The primary endpoints were correlation of all features of the SMSA. In patients who had multiple lesions resected the largest lesion was selected for analysis. The primary endpoints were correlation of all features of the SMSA. Deep mural injury and perforation 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 1) and is subsequently divided into four levels. Standardised injection 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 all features of the SMSA. Deep mural injury and perforation 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 1) and is subsequently divided into four levels. Standardised injection 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 all features of the SMSA.

**Table 2:**

<table>
<thead>
<tr>
<th>Stage</th>
<th>Number of Cases</th>
<th>Percentage of Cases</th>
</tr>
</thead>
</table>
| 1 | 100 | 20%
| 2 | 200 | 40%
| 3 | 300 | 60%
| 4 | 400 | 80%

**References:**


similarly 7.3 in 9 were better than NBI. Kappa value among participants was 4.8; moderate agreement (p = 0.0016). All polyps were removed endoscopically after evaluation. All lesions were histologically diagnosed as SSA/P without dysplasia. Conclusion: Acetic acid was useful and promising to facilitate the endoscopic recognition of the precise margin of SSA/P in right side colon. Strength of this method is that it is very simple and needs no special equipment nor skill.

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

References

P0864 AUTOLOGOUS BLOOD, A NOVEL AGENT FOR PREOPERATIVE COLORECTAL 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 were given autologous blood, and the tattoo was evaluated in this study.

Results: 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 tattoo in the peritoneal cavity and 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.

References

P0865 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), separated into flat lesions (Ha) and depressed lesions (Ha+Hc). Every subclass has been associated with a proper surgical type of colonic polyps vary across ethnic groups. As more than half of small polyps (84.04%) were small (< 5 mm) whereas 8.19% were large (> = 10 mm); hyperplastic polyp, tubular adenoma (TA), and tubulovillous (TVA) adenoma were identified in 43.19%, 53.83%, and 2.34%, respectively, 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 lesions were found in 52.91% of small polyps.

Conclusion: The findings suggested that number, size, distribution, and pathological type of colonic polyps vary across ethnic groups. As more than half of small polyps were a tubular adenoma, we propose that polyps of all sizes should be removed when feasible.

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

References

P0866 ETHNIC VARIATION OF COLONIC POLYPS: FINDINGS FROM AN INTERNATIONAL HOSPITAL FOR MEDICAL TOURISM IN THAILAND

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2Department Of International Health, Johns Hopkins Bloomberg School of Public Health, Baltimore/United States of America/MD

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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 colorectal diseases who underwent colonoscopy were reviewed. Of 26,508 subjects, 2651 were randomly selected. 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 (65.3%) than that of other ethnicities (44.4%-60.53%). The majority of the polyps (84.04%) were small (< 5 mm) whereas 8.19% were large (> = 10 mm); hyperplastic polyp, tubular adenoma (TA), and tubulovillous (TVA) adenoma were identified in 43.19%, 53.83%, and 2.34%, respectively, 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 lesions were found in 52.91% of small polyps.

Conclusion: The findings suggested that number, size, distribution, and pathological type of colonic polyps vary across ethnic groups. As more than half of small polyps were a tubular adenoma, we propose that polyps of all sizes should be removed when feasible.

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

References

Rate of adenocarcinoma and submucosal invasion for every type of LST

<table>
<thead>
<tr>
<th>Type</th>
<th>N (%)</th>
<th>Cancer (n/%)</th>
<th>Number (n/%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LST G</td>
<td>102/27, 0</td>
<td>107/28, 4</td>
<td>134/35, 5</td>
</tr>
<tr>
<td>LST-NG with large nodule</td>
<td>34/9, 0</td>
<td>820, 6</td>
<td></td>
</tr>
<tr>
<td>LST-NG type Ha</td>
<td>11/8, 2</td>
<td>1235, 3</td>
<td></td>
</tr>
<tr>
<td>LST-NG type Ha+Hc</td>
<td>5/4, 9</td>
<td>1715, 9</td>
<td>4/3, 0</td>
</tr>
</tbody>
</table>

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.
**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, few studies reported performing ESDs, essentially in the rectal location. Colonic ESD is 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 complex to perform than rectal ESD.

**Results:** ESDs performed during the same period.

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Case group</th>
<th>Control group</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rectal ESD</td>
<td>96%</td>
<td>92%</td>
<td>0.09</td>
</tr>
<tr>
<td>Monobloc resection</td>
<td>94.40%</td>
<td>87.40%</td>
<td>0.09</td>
</tr>
<tr>
<td>R0 resection</td>
<td>74.10%</td>
<td>73.50%</td>
<td>0.73</td>
</tr>
<tr>
<td>Curative resection</td>
<td>68.50%</td>
<td>63.90%</td>
<td>0.87</td>
</tr>
<tr>
<td>Extended curative resection</td>
<td>91.40%</td>
<td>85.80%</td>
<td>0.3</td>
</tr>
<tr>
<td>Perforation</td>
<td>7.70%</td>
<td>10.30%</td>
<td>0.6</td>
</tr>
<tr>
<td>Post ESD bleeding</td>
<td>6.60%</td>
<td>2.30%</td>
<td>0.28</td>
</tr>
<tr>
<td>Pathological analysis</td>
<td>0.76</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Conclusion:** Colonic ESD could be performed with similar results than rectal ESD in French expert teams with prior strong experience in animal ESDs and rectal ESDs. It allows en bloc resection of large superficial colonic neoplasms with a very low risk of recurrence. CTs comparing colonic ESD to piece-meal EMR are needed to determine the appropriate place of each technique in Europe.

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

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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 Harday operation in our institute. Among them, a total of 178 patients were undergone colonoscopy in our hospital during perioperative period and were enrolled in the case group. In contrast, a total of 356 patients were selected randomly from those who were performed colonoscopy in our medical check-up in the same period by means of being matched to cases of the age and gender. The incidence, size, location and histology of colorectal neoplasm were investigated.

**Results:** As background, 84 patients (47.2%) were men and 94 patients were women, and the median age was 47.5 years old (18 to 75) in the case group. The median height/weight was 165.5 cm/65.1 kg in the case group and was significantly larger than the control group (163.4 cm/60.1 kg) (p = 0.038, p < 0.001 respectively). The median Body Mass Index (BMI) were 23.4 in the control group and 22.5 in the case group. 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 was 2.44 ± 4.74 mm in the case group and 1.77 ± 3.89 mm in the control group. There was a significant difference between two groups (p = 0.001).

**Conclusion:** Colonic ESD could be perfomed with similar results than rectal ESD 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. Colonic ESD is 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 complex to perform than rectal ESD.

**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 (Endotex, Pucciol, 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 colonoscope (S) in patients with ulcerative colitis (UC). Consecutive patients referred for colonoscopy to our endoscopy department with clinically mild to moderate ulcerative colitis that signed the informed consent for both procedures were studied first with R and then with S (Olympus CF-145), by two different operators, blinded to previous observations. R had the following technical specifications: 17 mm outer diameter, rest position length probe 30 cm; maximum length of probe 54 cm; working length 210 cm; NTSC CMOS analog camera. Conscious sedation with midazolam was administered as...
needed. We recorded endoscopic diagnostic accuracy according to Baron criteria, to rank the certainty of the diagnosis, and the patient’s pain/discomfort and operator’s difficulty.

Results: We studied 12 patients (7M:5F), mean age 41 years and disease duration 5.33 yrs. 53 colonic segments out of the 54 evaluated had the same assessment of disease activity (absent = 0 points, mild = 1 pt, moderate = 2 pts and severe = 3 pts). The concordance for activity score with the latest version of R (SD 0.33 pts (SD 0.60) with S, without significant difference. The caecum was reached in 11/12 cases in S by 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 1.78) for R and 4.17 (SD 1.74) for S, with a statistically significant different (p = 0.056) favouring R. Mean perceived operator’s difficulty on a 0–10 scale was 4.44 (SD 1.78) for R, and 4.08 (SD 1.44) for S, with a mean difference of 0.42 pts favouring S not statistically significant.

Conclusion: R appears to be a promising method for disease staging in patients with ulcerative colitis, because of comparable accuracy and reduction in pain and discomfort. A tool channel to obtain biopsies and perform therapeutic endoscopy, together with images of higher definition (CMOS digital Camera HD ready) and virtual chromo-endoscopy, useful for follow-up and screening for dysplasia in patients with long duration of disease are now available in the latest version of R. The “column” connected to the latest version of the robot was the size of a portable suitcase, and suitable for remote operation. Further studies with newer versions of the robot are needed to assess the role of this technology from an economic point of view and in special settings like failed, screening colonoscopies, dysplastic lesions in UC, bed-side colonoscopy, colonoscopy in rural areas.

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

Reference

P0870 WHAT IS THE CONCORDANCE FOR THE DIAGNOSIS OF LATERALLY SPREADING TYPE LESIONS (LST) AMONGST WESTERN AND JAPANESE EXPERT ENDOSCOPISTS?


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11Gastroenterology, National Hospital Organization Tokyo Medical Center, Tokyo, Japan
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Introduction: The LST classification and Paris classification systems are internationally used to describe polyp morphology. Differences between Japanese and Western endoscopists in the use of classification systems, have been observed. We aimed to evaluate the inter-observer agreement of LST classification amongst Western & Japanese experts.

Aims & Methods: A total of 40 endoscopic video clips depicting LSTs (10% minimum) were selected by 6 expert endoscopists: 3 from Japan and 3 from the West. Assessments included LST classification (LST-G homogeneous, LST-G mixed, LST-G non-specific), 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 = 0.0007). The interobserver agreement of the LST classification amongst the six experts was good with a weighted Kappa of 0.61 (IC 95% 0.45–0.78) for Japanese, and moderate at 0.45 (IC95% 0.27–0.64) for Western. Difference in concordance between the two cohorts was not statistically significant (p = 0.22). When only two categories were considered (LST-G vs NG), agreement was very good for Japanese (weighted Kappa of 0.81; 95% CI 0.65–0.97) and good for Western endoscopists (0.65; 95% CI 0.46–0.85). Again, difference in concordance was not statistically significant (p = 0.22). Piecemeal Endoscopic Resection was suggested in 34.7% cases by Western, but never by Japanese endoscopists, whereas Endoscopic Submucosal Dissection was recommended in 50.4% and 16.1% cases by Japanese and Western experts respectively (p < 0.0001).

Conclusion: This study is the first to validate the LST classification system comparing East and West. There were significant differences in the types of LST diagnosed, and concordance was good in the Japanese cohort and moderate in the Western, but not significantly different. The recommendations for treatment were also different. We suggest a modification of the classification system to enable a more unanimous diagnosis and therapeutic strategy.

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

References
calculated the SMSA score of difficulty and assessed the ability of SMSA to identify 5 outcomes: 3-month recurrence, 1-year recurrence, global recurrence, endoscopy (endoscopy not effective after 2 or more treatments), delayed bleeding and perforation. We compared results with those obtained using a subjective classification of difficulty: easy or medium vs difficult. Comparisons were conducted using chi-squared tests and complemented with logistic regression models.

**Results:** The SMSA scoring system classified 690 polyps (39%) as level 4 and 1098 (61%) as level 3, whereas the subjective classification system classified 399 (22%) as difficult and 1389 (78%) as easy or medium. The agreement between measures of difficulty was weak (κ = 0.33). 255 patients (19.9%) had 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 necessity 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.

**Abstract:** P0871. Outcome by SMSA grade. Odds ratios and 95% CI ROC Curves by SMSA using the score in the continuous form.

**P0872** NARROW BAND IMAGING GUIDED BIOPSY IMPROVES THE YELLOWSkin® TECHNOLOGY FOR THE DIAGNOSIS OF GASTROINTESTINAL TUMORULCUS (GITB)

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**Introduction:** Accurate diagnosis of gastrointestinal tumorulus (GITB) is challenging due to pauci-bacillary nature of disease and poor sensitivity of histopathology. Role of tissue acquisition using narrow band imaging magnification (NBI-M) to improve yield of histopathology over high-definition white light endoscopy (HD-WLE) has not been assessed.

**Aims & Methods:** Utility of narrow band imaging with magnification versus high-definition white light imaging guided endoscopic biopsy for diagnosis of gastrointestinal tumorulus. In this prospective study from July 2015 to November 2016, adult cases of clinically suspected GITB were recruited. All patients underwent bimanual test, contrast enhanced computed tomography of abdomen, esophagogastroduodenoscopy and/or colonoscopy using both HD-WLE and NBI-M and guided biopsies using both were taken. Histopathological examination was done by two independent pathologists. A final diagnosis of GITB was made if acid-fast bacilli were seen in tissue or grown in culture, histopathology showed caseous necrosis with granulomatous inflammation or clinical/radiological and endoscopic features were suggestive of tumorulus and endoscopic response to antitubercular therapy.

**Results:** A total of 35 cases of clinically suspected GITB were recruited. A final diagnosis of tumorulus was made in 32 cases (duodenal n = 4, ileocolic n = 28). Concomitant evidence of active or healed pulmonary tumorulus was seen in 21% of cases. The mean age, haemoglobin and erythrocyte sedimentation rate of patients with tumorulus were 36.4±14.6 years, 10.2±2.4 g/dl, 37.8±15.3 mm/hour respectively. The mean duration of symptoms was 19.9 months. The most common symptoms were pain abdomen (78%), weight loss (62.5%), and loss of appetite (40.6%), fever (37.5%), vomiting (34%) and diarrhea (22%). Mantoux test was positive in 40.6% cases. The most common endoscopic findings were ulcerations (75%), nodularity (46.8%), distorted ileocecal valve (28%) and strictures (21.8%) (Table 1). The most common radiological findings were mural wall thickening (65.6%), mesenteric lymphadenopathy (56%) and strictures (40%) (Table 1). NBI-M guided biopsy confirmed the diagnosis of GITB in 46.88%, while HD WLE guided biopsy confirmed diagnosis of GITB in 28.12% (P = 0.04). The two sets of biopsies together confirmed diagnosis of GITB in 53.1%. The area under curve for NBI-M plus HDWLE, NBI-M alone and HDWLE alone were 0.770.63–0.87 0.73 (0.60–0.85) and 0.64 (0.50–0.77) respectively. Patients were started on anti-tubercular therapy for nine months. Four patients underwent surgery for intestinal obstruction while on anti-tubercular therapy. Twenty eight completed full therapy and improved.

**Conclusion:** NBI-M guided biopsy improved the yield of histology for diagnosis of GITB.

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

**Reference**


**P0873** EFFICACY AND SAFETY OF ENDOSCOPIC RESECTION OF LARGE COLORECTAL ADENOMAS – CLINICAL EXPERIENCE OF A TERTIARY REFERRAL CENTER

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**Introduction:** Colorectal cancer is a leading cause for cancer related mortality. Adenomatous polyp, the precursor lesion, can usually be endoscopically resected to prevent cancer. Currently, there are no criteria for surgical vs. endoscopic resection and decision is individually made by the treating physician.

**Aims & Methods:** We aimed to evaluate factors associated with short-term efficacy and safety of endoscopic resection of large (>20 mm) and giant (>40 mm) adenomas. Consecutive cases that underwent endoscopic resection of adenomas larger than 20 mm were included. Endoscopic, clinical and histological details of polyps and of the endoscopic procedure were recorded as well as the need for repeat resection.

**Results:** Total of 351 resections were included. Average diameter was 30.3±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) andecal location (OR 95%CI 5.97 (1.60–22.33)). Post-polypectomy complications were documented in 85 cases (24.2%: bleeding - 69 (19.7%, 54/69 managed during procedure), perforations - 8 (2.3%) and significant discomfort up to early termination of procedure - 15 (4.3%). Only 21 (6.0%) developed serious complications requiring further hospitalization. In multivariate analysis for safety, independent risk factors for post-polypectomy complications were: adenoma size (OR 95%CI 1.04 (1.01–1.06), polyph morphology (esophage OR 95%CI 2.55 (1.45–4.51), flat OR 95%CI 2.40 (1.04–5.52) and submucosal adenoma injection (OR 95%CI 1.87 (1.11–3.20)). Every increment of 1 mm in adenoma diameter above 20 mm, increased the need for surgery by 8% and the risk for complications by 4%.

**Conclusion:** Resection of large or giant adenomas is generally a safe procedure when performed by an experienced endoscopist. Although adenoma size is the most significantly related to efficacy and safety, each case of giant adenoma should be evaluated in a referral center for feasibility of endoscopic resection.

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

**Abstract:** P0873. Outcome by SMSA grade. Odds ratios and 95% CI ROC Curves by SMSA using the score in the continuous form.
Prophylactic mucosal defect closure was effective in reducing delayed bleeding (2.17 \pm 0.69 vs. 2.03 \pm 0.65; p = 0.047) and a trend for better overall cleansing (6.70 \pm 1.87 vs. 6.32 \pm 1.90; p = 0.067). On morning shifts, there was a significant association between SD prep and better overall cleansing (p = 0.030) and also right colon cleansing (p = 0.034). After adjusting for morning shifts, we found an association between SD preparation and better bowel cleansing (risk difference 0.406; 95% CI —0.023—0.834; p = 0.063). There was no difference between groups on bowel urgency (SD 2.6% vs. PD 1.7%; p = 0.718). SD preparation was associated with worse sleep quality (SD 25% vs. DA 7%; p = 0.004).

Conclusion: The implementation of a split-dose bowel preparation protocol in our hospital was associated with better bowel cleansing, especially on the right colon. Split-dose preparation was not associated with higher bowel urgency, although there was a worse sleep quality.

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

Reference
P0877  EQUAL ADENOMA DETECTION RATE IN COLONOSCOPY OF PATIENTS WITH SPINAL CORD INJURY AND CONTROLS – A CASE-CONTROL STUDY
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Introduction: Spinal cord injury (SCI) is a devastating event that occurs with a discharge incidence of 199 per million, which results in an estimated prevalence of up to 2525 per one million [1]. Cancer is a major cause of death in patients with spinal cord injury (SCI) [2]. Preventive strategies claim increasing attention, but must deal with special problems. Most SCI patients suffer from neurogenic bowel alterations. The loss of bowel control is the consequence of bowel inertia, constipation or evacuation difficulties. Therefore, bowel preparation requires modified and intensified regimens and more intensive care to prevent pressure ulcers and optimum skin management [3, 4, 5]. Colonoscopy itself might be associated with reduced efficacy in SCI patients, since a poorer quality 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.

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 localization, intensity and effect of bowel preparation, rate of complete colonoscopies, need for re-endoscopy, duration of colonoscopic procedures, deepest point of insertion and complications rates. We reviewed retrospectively consecutive SCI patients who underwent colonoscopy from 2003 to 2014 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 ± 1.5 vs. 1.15 ± 0.6 days, p = 0.001), achieved insufficient cleansing rates more often (23.7 vs. 3.6%) and caused more adverse events. Colonoscopy achieved a comparable quality. In 20.1% of SCI patients and colonoscopy needs more efforts to succeed, but requires modified and intensified regimens and more intensive care to prevent pressure ulcers and optimum skin management [3, 4, 5]. Colonoscopy itself might be associated with reduced efficacy in SCI patients, since a poorer quality 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.

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

References

(rectum/non-rectum). The presentences of different factors were evaluated to deter-
mine whether they predicted different outcomes. Results: One-hundred and seventeen patients (39 cases, 78 controls) were included (mean age: 68 ± 10.9 years, 52.1% male). Mean tumor size was 38.5 ± 14.4 mm and the most common location was the right colon/transverse (n = 71, 60.7%). By multivariable analysis using backward stepwise method, non-

P0878  RISK FACTORS AND PRACTICAL CONSEQUENCES OF COLORECTAL ESD CONVERSION TO EMR AT A WESTERN REFERRAL CENTER IN DAILY PRACTICE
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Introduction: There are limited data concerning risk factors and consequences of colorectal endoscopic submucosal dissection (ESD) conversion to mucosal resec-
tion (EMR) in western centers.

Aims & Methods: Hospital-based frequency-matched case-control retrospective study. All patients were identified from a database of 223 consecutive dissections between 2013 and 2017. The cases were those with ESD conversion to EMR for a >20 mm colonic lateral spreading tumor (LST). The controls were randomly selected according to frequency 1:2 matching for tumor size (±50 mm) and location

P0879  CONTRIBUTION OF COLONOSCOPY IN ELDERLY PATIENTS OLDER THAN 70 YEARS
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Introduction: The elderly patients are considered as a particular population. Colonoscopy has an important place at this population because of the limited number of normal paracemic examinations and the high incidence of tumor disease, specially the colo rectal cancer.

Aims & Methods: The aim of this study was to determine the indications and results of colonoscopy in people older than 70 years We performed a retrospec-
tive descriptive study over a 3 years from beginning of the endo-

Results: A total of 1059 colonoscopies were performed; 10.3% were indicated for people older than 70 years. The mean age was 74.15 years with a median age of 75 years and a maximum age of 91 years. The prevalence of males was 51.0, 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 either or 9% (n = 9) had a digestive neoplasia. Colonoscopy was indicated for hematochezia 40% (n = 38), transit disorders in 33.6% (n = 32), abdominal pain in 14.7% (n = 14), IBV in 3.1% (n = 3), radiographic abnormalities in 13.6% (n = 13), iron defici-
cency 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 polyps in 48.3% (n = 45), suspected lesions of malignancy in 16.1% (n = 15), Diarrhea in 33.6% (n = 32), and steatosis in 12.6% (n = 11) (p = 0.02). The rate of malignant lesions diag-

P0880  ENDOSCOPIC CLOSURE OF ACUTE IATROGENIC PERFORATIONS OF THE GASTROINTESTINAL TRACT AND PREDICTORS OF NEED FOR EARLY SURGERY: A SYSTEMATIC REVIEW AND META-ANALYSIS
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Introduction: Acute iatrogenic perforations are one of the recognized complica-
tions of both diagnostic and therapeutic gastrointestinal endoscopy. For decades, surgical treatment has been the standard of care, but endoscopic closure has become a more popular approach, due to feasibility and the reduction of the
burden of surgery, combined with the availability of various endoscopic closure devices.

**Aims & Methods:** To assess the technical and clinical success and safety of endoscopic closure, in total, and for each endoscopic device used. Also, to identify factors predicting surgery as a first line treatment, and failure of endoscopic treatment.

**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 performed in these studies. The overall technical success rate was 93.1% (n = 451/474, 95% CI: 90.4–95.4%), clinical success was 89.7% (n = 451/474, 95% CI: 85.5–93.9%), and complication rate was 1.3% (n = 7/474, 95% CI: 0.3–2.3%). Technical success for endoclamp closure was 96.6% (95% CI: 94.2%–98.2%), and clinical success was 93% (95% CI: 87.1%–97.2%), and complications rate was 0% (95% CI: 0%–9.6%) for OTSC. For OTSC (Over the scope clip device), technical success was 83.8% (95% CI: 63.9%–96.6%), clinical success was 77.9% (95% CI: 56.8%–93.3%), and complication rate was 4.1% (95% CI: 0%–14%). The technical success rate for Self-expanding metal stent (SEMS) is 100% (95% CI: 71.5%–100%), clinical success is 91% (95% CI: 74.1%–108%), and complication rate of 9.1% (95% CI: 78%–112%). Only one study for endosuturing met our criteria, with technical and clinical success rate of 100%, and without any complication. Factors predicting failure of endoscopic treatment and need for surgical intervention included large perforation size, leukocytosis, fever, severe abdominal pain, large amount of peritoneal free air, necrotic or soft inflammatory margins, unfavourable anatomical site, stool containing blood, 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.

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**References**


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P0882 “O-RING SIGN” AS A NOVEL COLONOSCOPIC FINDING WITH NARROW-BAND IMAGING FOR DETECTING DERESSED-TYPE COLORECTAL LESIONS

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**Introduction:** In recent years, colorectal cancer (CRC) has become a focus of attention as likely representing “missed” or “rapidly-growing” lesions in colonoscopy screening for colorectal cancer (CRC). Currently, lesions thought responsible for CRC include sessile serrated adenomas/polyps or flat and depressed-type lesions occurring on the right side of the colon, and there is an increasing need for endoscopic modalities to prevent overlooking these lesions. Colonoscopic screening using narrow-band imaging (NBI) during colonoscopy is the most effective method for detection of depressed and flat lesions (1). With NBI, the detected area 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 (1a + 1c, 156, 1c, 71) were included for analysis. The colonoscopic images of these lesions were retrospectively examined for “O-ring sign” positivity and intensity (grade 0, negative; grade 1, mildly to moderately positive; and grade 2, highly positive). Of these, 16 were excluded as un evaluable and a total of 211 evaluable lesions were analyzed.

**Results:** Of the 211 lesions (1a + 1c, 141; 1c, 70) analyzed, 84 (1a + 1c, 12; 1c, 24), 105 (1a + 1c, 69; 1c, 36), and 22 (1a + 1c, 12; 1c, 10) were found to be in grades 0, 1, and 2, respectively, with 60.2% of these shown to be “O-ring sign”- positive (127/211), with IIa + Ic and Ic accounting for 57.4% (81/141) and 65.7% (46/70), respectively, of these lesions. While an examination by tumor size and location revealed no clear tendency in “O-ring sign” positivity, an examination by grade revealed a higher “O-ring sign” positivity rate among those with high-grade dysplasia (84.6%, 11/13) than those with low-grade dysplasia (59.2%, 11/19).

**Conclusion:** NBI colonoscopy screening for the “O-ring sign” as an index appears to improve the detection of depressed-type colorectal lesions.

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

**Reference**

1. Fuji T. Gastrointest Endosc 2010; W1480

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P0883 THE LEARNING CURVE FOR COLORECTAL ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD) BETWEEN EXPERT AND TRAINEE ENDOSCOPISTS

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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

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**References**


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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. The study cohort comprised 300 consecutive colorectal ERCP performed by three endoscopists in Nippon Medical School Hospital and Machida Ichio Hospital from 2010 to August 2016. The ESD devices were Flush knife BT (Fujifilm), Dual knife (Olympus), Hook knife (Olympus) or a combination by operators demand. The endoscopist A and B, who had over 10000 examinations of colonoscopy and experiences of gastric ESD (as expert group), and endoscopist C had about 1000 colonoscopies and performed colorectal ESD first (as trainee group). The completion rate of operation, which is defined as en-block resection rate without changing operator, operation time, complication rate (time/m2/min) and complications were analyzed in each endoscopist. Furthermore, we divided these procedures in three periods equally as early, middle and late.

Results: The median age was 70 (range 26-91) years old, and genders were 158 males and 103 females. Tumor locations were proximal colon, distal colon and rectum in 143(54.8%), 59(22.6%), and 59(22.6%), respectively. The histological types were well and moderately differentiated tubular adenocarcinoma, adenocarcinoma with mucinous carcinoma, invasive ductal, and other diseases and that is why ERCP is increasingly performed for patients with liver cirrhosis. Endoscopic sphincterotomy (EST) has become a standard step in the management of large common bile duct stones. EST followed by large balloon dilation (LBD) facilitated extraction of the large bile duct stones. Despite the increasing use of both techniques, a head-to-head comparison between EST followed by LBD and EST followed by ML is lacking in the literature.

Conclusion: Trainee endoscopist may have a good learning curve in completion rate and increasing experience reflects in a remarkable success in colorectal ESD. We concluded that the training of colorectal ERCP first was acceptable by the trainee endoscopist who had no experience of gastric ESD.

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

PO884 LARGE BALLOON DILATATION VERSUS MECHANICAL LITHOTRIPSY AFTER ENDOSCOPIC SPHINCTEROTOMY IN MANAGEMENT OF LARGE COMMONBILE 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 surgical and anesthetic risks. EST followed by LBD is the most accepted method with liver cirrhosis to tolerate ERCP to treat their biliary tract or pancreatic diseases. Patients with liver cirrhosis are three times more susceptible to cholecystitis, cholangitis, and esophageal varices than the non-cirrhotic population plus the biliary and pancreatic cancer incidence is three times higher in cirrhotic patients. Endoscopic sphincterotomy (EST) has become a standard step in the management of large CBD stones. EST followed by large balloon dilation (LBD) facilitated extraction of the large CBD stones. Despite the increasing use of both techniques, a head-to-head comparison between EST followed by LBD and EST followed by ML is lacking in the literature and to our knowledge none were done on cirrhotic patients. Aims: This study was aimed at comparing the therapeutic benefits and complications between mechanical lithotripsy and large balloon dilation after sphincterotomy in patients with liver cirrhosis. Ninety eight cirrhotic patients with calculi obstructive jaundice were included and randomly divided into 2 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 deep selective cannulation of the bile duct. Exclusion criteria included: Known allergy to the used contrast material, Child C cirrhosis, the Need for needle knife precutting in order to achieve bile duct cannulation, Selective bile duct cannulation achieved after mechanical lithotripsy, pancreatic neoplasms, Portal Hypertension I, Coagulopathy. All patients were subjected to thorough history taking, complete clinical examination. Pancreatic enzymes concentrations were measured 4 hours before and 24 hours after the procedure, complete blood count and liver function tests were performed both before and after the procedure. Before and during ERCPC, stone size and number were verified. Diagnosis of common bile duct stones was confirmed either by pre-ERCPC investigations including abdominal ultrasonography (US), CT, MRCP or at the time of ERCPC Large CBD stone: Is defined before ERCP by a bile duct stone>12 mm or more (transverse diameter of the largest stone) by US, CT or MRCP and during cholangiography showed large filling defect more than 12 mm that could not be extracted using a standard balloon catheter.

Results: There were no dropouts and all subjects remained in the study till the end of the follow-up period. Little is known about the learning curves of the young endoscopists who perform the colorectal ESD first. Aims: We conducted multi-center retrospective observational study to elucidate the safety and learning curve of the trainee who perform the colorectal ESD. The study cohort comprised 300 consecutive colorectal ERCP performed by three endoscopists in Nippon Medical School Hospital and Machida Ichio Hospital from 2010 to August 2016. The ESD devices were Flush knife BT (Fujifilm), Dual knife (Olympus), Hook knife (Olympus) or a combination by operators demand. The endoscopist A and B, who had over 10000 examinations of colonoscopy and experiences of gastric ESD (as expert group), and endoscopist C had about 1000 colonoscopies and performed colorectal ESD first (as trainee group). The completion rate of operation, which is defined as en-block resection rate without changing operator, operation time, complication rate (time/m2/min) and complications were analyzed in each endoscopist. Furthermore, we divided these procedures in three periods equally as early, middle and late.

Conclusion: Trainee endoscopist may have a good learning curve in completion rate and increasing experience reflects in a remarkable success in colorectal ESD. We concluded that the training of colorectal ERCP first was acceptable by the trainee endoscopist who had no experience of gastric ESD.

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

PO885 SAFETY AND EFFICACY OF ENDOSCOPIST-DIRECTED BALANCED PROPOFOL SEDATION (BPS) DURING ENDOSCOPIC RETROGRADE CHOLANGIO-PANCREATOGRAPHY (ERCP)

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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, 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 registry data of all ERCP procedures performed in the endoscopy center where both 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, cumulative adverse events during ERCP due to sedation needs, patient admission/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, 24 patients received anesthesiologist-administered BPS (Cohort 2: 19 (79%) inpatient, mean age 65.6 years, 67% males, 11% ASA I, 32% ASA II, 25% ASA III). In Cohort 1, the indications for ERCP were: 231 (46%) suspected cholecdocholithiasis, 68 (13%) stent replacement, 62 (12%) evaluation of known/suspected malignancy, 48 (10%) jaundice, 40 (8%) post-hepatobiliary intervention complications, 8 (2%) abdomino-inal pain, and 44 (9%) other unspecified. BPS dosages (mean ± SD: range) were: Fentanyl: 0.06 ± 0.02 mg: 0.05 – 0.10 mg: Midazolam 1.7 ± 0.7 mg: 1.0 – 2.5 mg: and Propofol 178 ± 103 mg: 10 – 640 mg. Propofol dose inversely correlated with patient age (r = −0.42, p < 0.001), ASA score (r = −0.19, p < 0.001) and Mallampati score (r = −0.24, 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.

PO886 A NOVEL METHOD OF PREVENTING DUODENOBILIARY REFLUX BY MEANS OF SUSPENDED OVERLENGTH BILIARY STENTS IN PATIENTS WITH BILIARY STRICTURE

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Introduction: Endoscopic insertion of plastic or metal stents is a well-established treatment for malignant or part of benign biliary obstruction. The major limitation of this technique is stent occlusion. Duodenobiliary reflux has been considered as a key contributor to stent occlusion. No appropriate method can so far prevent duodenobiliary reflux. Different strategies to prolong the patency of plastic stents included changing stent size, stent design, but stent sludge due to duodenal biliary reflux remains an unsolved problem. We have been using a novel suspended overlength biliary stents (reformed with nasobiliary tube) as substitution for ordinary biliary plastic stent to prevent the reflux from January 31, 2014 to December 31, 2016.

Aims & Methods: The aim of the study is to evaluate the efficacy and patency of the suspended overlength biliary stents. The suspended overlength biliary stents (SOBS) were placed in introhepatic bile duct in 61 patients with extrahepatic bile duct stricture who were followed up at least three months from January 1, 2016 to December 31, 2016. Nasobiliary tube of 7.5Fr or 8.5Fr with multiple side holes were cut 30 cm with operation knife from the top on sterile operating table. The purpose of the set of 30 cm length is to ensure the tail reaches the duodenal horizontal part. The SOBS were placed in the introhepatic bile duct by using conveyer under the fluoroscopic guidance at the end of ERCP. Radiography of the Meglumine Diatrizoate was performed in each patient of SOBS group to evaluate the existence of duodenal biliary reflux. 74 patients who were performed at least two or more ERCP with extrahepatic bile duct surgery treated with ordinary plastic stents (OBS group) from last ten years were compared with SOBS group.

Results: (1) The mean age of SOBS and OBS were 68.8±15.6yrs and 60.4±14.7yrs (P=0.002), respectively. (2) 35 (57.4%) and 34 (45.9%) patients were malignant biliary obstruction in SOBS and OBS group, respectively (P=0.227). Malignant obstruction included bile duct cancer and biliary duct invasion of pancreatic cancer. Benign obstruction included autoimmune pancreatitis, chronic pancreatitis, post operation stenosis, inflammatory stenosis due to cholelithiasis. (3) The mean first and second patency was 4.5 months and 5.6 months in OBS groups. All the patients in OBS group experienced at least three months to 15 months). No evidence of duodenal biliary reflux were detected in SOBS patients with malignant biliary obstruction. (4) The occlusion rates of SOBS and OBS group after 3, 4, 5, 6 months of first ERCP were 13.1% and 36.5%, 27.1% and 55.4%, 42.4% and 67.6%, 55.9% and 77.0%, respectively (P=0.003, 0.001, 0.005, 0.015). Multiple factors with logistic regression analysis showed that gender, age, location of biliary stricture were not related with the patency except the character of stricture. (5) SOBS were occluded in only 11 patients (11/61, 18%) with the patency (biopsy, air/water and balloon channel). Samples were centrally cultured. No evidence of duodenal biliary reflux was detected. Survival and culture interpretation were consistent with Dutch guidelines. Contamination was defined as AM20: any microorganism with ≥20 colony forming units (CFU)/20mL, and MGO: presence of microorganisms with gastrointestinal or oral origin, independent of CFU count.

Conclusion: Similar to our previous findings, in 47% of all Dutch ERCP/EUS centres at least one patient-ready DLE was AM20 or MGO contaminated. Of all DLEs, 13% was contaminated with digestive tract bacteria, indicating inadequate reprocessing. These results suggest that any additional awareness of contamination of duodenal biliary reflux and reduce the occlusion rate effectively due to duodenobiliary reflux in both malignant and benign biliary stricture.

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

References

PO887 DUODENOSCOPES AND LINEAR ECHOENDOSCOPES ARE CONTAMINATED WITH DIGESTIVE TRACT MICROORGANISMS: A NATIONWIDE PERSISTENT HIGH PREVALENCE IN THE NETHERLANDS

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Introduction: Recent studies describe multiple outbreaks of multi-drug resistant organisms caused by contaminated duodenoscopes, used for endoscopic retrograde cholangiopancreatography (ERCP) procedures. Contamination of duodenoscopes is distributed to the complete treatment, which includes a peroperative clean-up (e.g. soaping with a detergent and a jet of water) of the duodenoscope with an antireflux valve. Endoscopy (ESGE) clinical guideline.

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Introduction: Although a newly digital cholangio/pancreato-scopy (SpyGlass DS) for therapeutic evaluation of pancreatobiliary neoplasms.
tumor extent using SpyDS plus mapping biopsy was 92%. One patient developed mild cholangitis after the procedure. As for IPMN, pancreatocystosis 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 evaluation 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.

**P0889 ACUTE PANCREATITIS AND HYPERAMYLASEMY DEVELOPMENT AFTER ENDOSCOPIC RETROGRADE CHOLANGIPANCREATOGRAPY – CHALLENGES AND PREVENTION**

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**Introduction:** Endoscopic retrograde cholangiopancreatography (ERCP) is one of the most technically complex procedures performed by gastroenterologists. After a significant increase in the indications for implementing ERCP, gastroenterologists began to pay greater attention to complications identification and prevention. Despite the widespread improvement of endoscopic techniques and increased experience of endoscopists, the rate of complications has not declined significantly.

**Aims & Methods:** To analyze the frequency of probable causes of asymptomatic hyperamylasaemy and acute pancreatitis after ERCP and their prevention. Two significant increase in the indications for implementing ERCP, gastroenterologist began to pay greater attention to complications identification and prevention. Despite the widespread improvement of endoscopic techniques and increased experience of endoscopists, the rate of complications has not declined significantly.

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

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<th>No. of evaluations</th>
<th>No. of AETs achieving competence (%)</th>
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*Sensitivity analysis: success defined as score of 1 (stringent definition of success)*

A 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 **

**P0890 MOST ADVANCED ENDOSCOPY TRAINEES DO NOT MEET COMPETENCE FOR NATIVE PAPILLAE CANNULATION IN ERCP: RESULTS FROM A PROSPECTIVE MULTICENTER STUDY**

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**Introduction:** Advanced endoscopy trainees (AETs) achieve ERCP competency at variable rates and specific case volumes do not ensure competence. However, training and credentialing guidelines continue to utilize an absolute procedure volume to determine competence. There are limited data on whether current training composition and volumes ensure ERCP competence in the US.

**Aims & Methods:** (i) To define ERCP learning curves using a centralized database, with a focus on cannulation rates using a large national sample of AET programs (AETPs). (ii) To critically examine the composition of current ERCP training in AETPs. ASGE-recognized AETPs were invited to participate and AETs were graded on every ERCP after completion of 25 hands-on ERCP exams. Grading was performed using our previously developed and validated tool [The EUS and ERCP Skills Assessment Tool (TEESAT)] which assesses technical and cognitive competence in a continuous fashion. Grading for each skill was done using a 4-point scoring system: 1=no assistance, 2-minimal verbal cues, 3-multiple verbal cues or hands-on assistance and 4-unable to complete. A comprehensive data collection and reporting system was built using REDCap, a web-based data collection software, and SAS to create learning curves using cumulative sum (CUSUM) analysis for overall and individual technical and cognitive components of ERCP. Individual results and comparison to peers were sent to AETs and trainers quarterly. Acceptable and unacceptable failure rates were set a priori. AETs with <20 evaluations were excluded and success was defined as a skill score of 1 or 2. Individual and combined graphs to assess change in cannulation success rates were constructed and the Cochran-Armitage trend test was used to assess improvement in success rates.
**P0891 SIMILAR POST-ERCP PANCREATITIS RATES IN ENDOSCOPIST- VS ASSISTANT-CONTROLLED WIRE-GUIDED BILE DUCT CANNULATION: A SINGLE CENTRE OBSERVATIONAL STUDY**

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**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. We set out to audit the rates of PERCPP at our centre based on this finding.

**Aims & Methods:** All ERCPs performed by two endoscopists between April 2015 and March 2016 were audited retrospectively. The two endoscopists practiced endoscopist-(E1) and assistant-controlled (A1) wire-guided cannulation exclusively. Both E1 & A1 had access to the same indications, sphincterotomes, equipment, and teams. Data was obtained and anonymised from electronic patient records and endoscopy reporting software. PERCPP was defined as abdominal pain with hyperamylasaemia at least three times the upper limit of normal (ULN) 24–48 hours after ERCP with or without corresponding imaging findings within 7 days; or abdominal pain with a further rise in pre-existing hyperamylasaemia to at least three times ULN 24–48 hours after ERCP with or without corresponding imaging findings within 7 days. Additional data was collected for CT evidence of post-ERCP complications, hyperamylasaemia without pancreatitis, bleeding, and post-ERCP cholangitis. Patient and procedural characteristics predisposing to pancreatitis were also recorded.

**Results:** Of the 62 programs invited, 20 AETPs participated and 20 AETs were included in the final analysis. At the end of training, median number of ERCPs performed/AET was 350 (15–500). Overall, 2649 ERCP exams were graded; the majority were ASGE biliary grade 1 (77%) and only 14% for pancreatic indication. Among biliary ERCP cases, AETs attempted native papilla cannulation and sphincterotomy in 1199 (53%) and 901 (40%) cases, respectively. The mean time allowed for cannulation was: overall - 4.0 min (SD 4.3), native papilla - 5.7 min (SD 4.8), and AET failed cannulation cases - 6.2 min (SD 5). There was no change in the time allowed for native papilla cannulation during the 1-year period (p = 0.28). AETs were involved in a small proportion of cases requiring advanced cannulation techniques such as double-wire technique, placement of pancreatic duct stent and precut sphincterotomy (6%). Learning curves for individual endpoints, overall technical and cognitive aspects noted substantial variability. Majority of AETs achieved overall technical (60%) and cognitive (100%) competence at the end of training. While there was a statistically significant improvement in overall and native papilla cannulation rates (both p < 0.001), only 18% of AETs achieved competence for native papilla cannulation (Table 1).

**Conclusion:** The results of this study confirm the substantial variability in learning curves and competence among AETs in ERCP validating the shift away from threshold numbers to determine competence. We report the feasibility of establishing a centralized national database to report individualized ERCP learning curves using a novel web-based comprehensive data collection and reporting system. Using strict definitions, a minority of AETs achieved competency in native papilla cannulation which may, in part, be due to limited cannulation time provided to AETs. Selective native papilla deep cannulation needs to be considered native papilla cannulation which may, in part, be due to limited cannulation curves using a novel web-based comprehensive data collection and reporting system. Publishing a centralized national database to report individualized ERCP learning curves and competence among AETs in ERCP validating the shift away from copist’s case load. Further randomised trials, or a crossover study; provided the no characteristics predisposing to PERCPP overtly skewed towards either endoscopist or assistant-controlled technique.

**Disclosure of Interest:** S. Wani: Consultant for Boston Scientific. Medtronic All other authors have declared no conflicts of interest.

**Reference**

**P0892 CONFIRMATION OF THE EFFECT OF AN ANTAGONIST TO CONSCIOUS SEDATION ON THE PREVENTION OF ASPIRATION PNEUMONIA AFTER ENDOSCOPIC RETROGRADE CHOLANGIPANCREATOGRAPHY**

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**Introduction:** Most endoscopic retrograde cholangiopancreatography (ERC) -related procedures are performed under “conscious sedation”, a drug-induced depression of consciousness during which patients are comfortable and able to maintain purposeful responses to verbal or tactile stimulation, and cardiorespiratory function generally remains intact 1. Meanwhile, we sometimes observe adverse events related to conscious sedation after ERC such as aspiration pneumonia 2. So far, it is unknown whether immediate recovery from conscious sedation with an antagonist is necessary or not.

**Aims & Methods:** We aimed to reveal the efficacy of flumazenil, an antagonist to benzodiazepines, on the prevention of adverse events, especially, aspiration pneumonia related to conscious sedation which is most frequent after ERC. One hundred ninety patients who underwent ERC between January to December...
2014 in a general hospital in Japan were included. The patients were divided to two groups: the group with flumazenil (F group) and the group without flumazenil (non-F group) just after ERCP and they were compared and analyzed. Examination items were 1) patient characteristics, 2) procedure characteristics, and 3) occurrence rates of post-ERCP aspiration pneumonia. Pearson's Chi-square test and Fisher's exact test were used for statistical analysis of categorical data.

Results: 1) One hundred fifteen patients (60.5%) were administered flumazenil just after ERCP (F group) and 75 patients (39.5%) were not (non-F group). The median age, 76 (47–94) in the F group and 78 (46–94) in the non-F group; male/ female ratio, 57/58 in the F group and 34/41 in the non-F group. The distributions of the basic disease (CBD stone/malignant biliary disease/malignant pancreatic disease/others) were 64/8/17/26 in the F group and 30/11/16/18 in the non-F group. The distributions of used benzodiazepines (midazolam/diazepam/none) and the patient number who got aspiration pneumonia were 102/13/0 and 1 in the F group and 59/13/2 and 1 in the non-F group, respectively (Fisher's test: p-value = 0.074). There were no significant differences of patient characteristics between both groups, especially the mean procedure times were 36.7 minutes in the F group and 30.3 minutes in the non-F group, respectively. The details of procedures for the major papilla (endoscopic sphincterotomy/endoscopic papillary balloon dilation/others/none) were 40/13/5/56 in the F group and 25/5/3/41 in the non-F group. The distributions of endoscopic biliary drainage or stenting/none were 94/21 in the F group and 59/16 in the non-F group (Fisher's test: p-value = 0.085). There were no significant differences of procedure characteristics between both groups. 2) Two patients (1.05%) developed aspiration pneumonia just after ERCP. One (94 years old, male) was in the F group and the other (81 years old, female) was in the non-F group (Pearson's Chi-squared test p-value = 1). Both of them were over 80-year-old. The patients who were given oxygen during ERCP were 86/54 in the F group and 58/30 in the non-F group, one patient developed pneumonia (Pearson’s Chi-squared test p-value = 1).

Conclusion: Flumazenil did not have any preventive effect on the occurrence of aspiration pneumonia related to conscious sedation after ERCP.

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

References

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Introduction: Pancreatitis is the leading complication of endoscopic retrograde cholangiopancreatography (ERCP). Some studies have shown that the provision of intravenous hydration may reduce the incidence of this serious adverse event, the post-endoscopic retrograde cholangiopancreatography pancreatitis (PEP). In our department we implemented an aggressive hydration protocol (AHP) for patients undergoing ERCP in order to prevent PEP.

Aims & Methods: The aim of this study was to evaluate the impact of this protocol on the incidence and severity of PEP. Patients and methods Retrospective analysis of all patients submitted to ERCP in one center during 16 months, including patients hospitalized in the gastroenterology department who were managed according to the AHP and patients hospitalized in other departments who underwent standard hydration (SH). Patients who underwent AHP received intravenous sodium lactate solution (RL) at 200 mL/hour starting 1 hour before, during the procedure and the anesthetic recovery; in those who remained asymptomatic after the ERCP, the RL was maintained at 100 mL/hour for 8 hours and after it was changed to a balanced salt solution with glucose (PG) at 80 mL/hour; in those patients who had abdominal pain or amylase >3 times normal limit after ERCP, the RL was maintained at 200 mL/hour during 8 hours and after it was changed to PG at 120 mL/hour. We evaluated the incidence and severity of PEP, the established predictive factors 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 was 12% (11/90), significantly lower in the SH group (4/11 versus 7/11; p = 0.766). In the SH subset, only 1 PEP was moderate and the remaining 3 were mild. In the AHP group, 3 PEP were moderate and 4 were mild. There were no complications related to AHP. We didn’t find any patient or procedure-related variable significantly associated with the development of PEP.

Conclusion: Our AHP didn’t reduce the incidence of PEP or its severity. Indeed, the AHP group presented more PEPs than the SH group, although the difference between both PEP incidences was not significant. Despite our study didn't show any advantage related to the use of an AHP, intravenous aggressive hydration may have a role in PEP prophylaxis. Further studies are needed to establish its true value.

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

References
P0895 PROSPECTIVE STUDY OF EARLY PRECUT VS. UTMOST PRECUT WITH PANCREATIC STENT IN INITIAL PANCREATIC DUCT CANNULATION

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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 in whom pancreatic duct cannulation was performed initially.

Aims & Methods: When guidewire was placed in the pancreatic duct initially by chance, the patients were randomized into early precut (Group A) or utmost early precut sphincterotomy with pancreatic stent (Group B). In Group A, pancreatic duct cannulation within 5 times and attempted precut papillotomy with or without early precut sphincterotomy. In Group B, from the first, 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 facilitated biliary cannulation and the success rate of cannulation but also promise low incidence of post-ERCP pancreatitis. In experienced hands, utmost early precut technique can dramatically reduce the trauma of ampulla and risk of PEP compared with conventionally persistent cannulation attempts.

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

References:

P0896 POST-ERCp BLEEDING IN THE ERA OF MULTIPLE ANTIPATELETT agents

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Introduction: Antithrombotic therapy with antipatelel agents (APA) has been increasingly utilized during the last few decades. This study aimed to determine the risk of post-ERCP bleeding among those patients who are taking APAs, especially in the era of multiple agents.

Aims & Methods: From July 2012 to May 2016, the patients who underwent 1st ERCP and used APA were identified from the ERCP database of 3 institutions in US and Korea. The outcome variables were the frequency, type, and severity of ERCP-related bleeding according to the use of APA.

Results: The frequencies of post-ERCP bleeding among the four different groups were 16 of 2083 (0.8%) in No drug group, 12 of 256 (4.7%) in Aspirin group, 3 of 48 (6.3%) in Single APA group, and 4 of 48 (8.3%) in Multiple APA group (p < 0.001). Most cases of post-ERCP bleeding were mild (29/35, 88%). In the univariate analysis, post-ERCP bleeding was associated with age, pull-type sphincterotomy, and APA, and inversely associated with balloon dilation of the biliary access, millivantage analysis, pull-type sphincterotomy odds ratio [OR] 7.829, 95% confidence interval [CI] 1.411–43.453, p = 0.019) and country (Korea; OR 0.124, 95% CI 0.042–0.361, p < 0.001) were associated with post-ERCP bleeding.

Conclusion: The frequency of post-ERCP bleeding was statically higher in patients on any APAs within 6 days prior to ERCP. However, in the multivariate analysis, APA use was not associated with post-ERCP bleeding. Until a large study has substantially powered differences in bleeding rates, caution is recommended when considering invasive procedures during ERCP in patients on APAs.

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

References:

P0897 PROSPECTIVE COMPARISON OF DIGITAL SPYGLASS DIRECT VISUALIZATION SYSTEM VS DIRECT PERORAL CHOLANGIOSCOPY USING A MULTIBENDING ENDSCOPE 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 rates of SpyGlass DS and DPOC for diagnosis and treatment of BD lesions. A total of 15 patients with BD lesions (diameter of CBD >8 mm) requiring evaluation or treatment using POC 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 with 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.

References:
Prospective study on methods and success of biliary cannulation of 458 virgin papillae: quality assurance of ERCP at our department

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Introduction: The cannulation of a virgin papilla is the most difficult and high-risk step in ERCP and it requires significant experience to maximize the success and to minimize poor outcomes. Cannulation rate is one of the accepted quality indicators of ERCP. It is mandatory to regularly assess quality indicators of endoscopic procedures to maintain and improve endoscopic service.

Aims & Methods: We prospectively collected data about cannulation details of all patients with virgin papillae and post-ERCP complications from April 2016 to April 2017.

Results: 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 papillae were not accessible due to duodenal stenosis (10/13) or postoperative situations (3/10). In two of them the indication was ceased (because the biliary obstruction resolved spontaneously), 11 patients got percutaneous transhepatic drainage (PTD). The primary cannulation success rate of accessible papillae was 88.5% (394/445) while the overall cannulation success was 96.6% (430/445). 56.1% of primary successful cannulations were achieved by conventional method, in 14.2% we used pancreatic guidewire assisted technique, in 20.1% we used early precut sphincterotomy, and in the remaining 9.6% we used combined techniques. In 51 primary unsuccessful cases we repeated ERCP attempt 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 proflactific 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 related to another indication. In 4 patients out of the 15 unsuccessful cannulations the obstruction resolved without any further intervention and one patient got PTD. We had in sum 3.4% (15/445) post-ERCP pancreatitis, 7 of them were mild, and 8 moderate, we had no severe one. We observed endoscopic signs of biliary atresia in 34 cases that required endoscopic treatment (infiltration/coagulation/stoning), 7 of them (1.6%) required blood transfusion. Three patients suffered perforation during ERCP. One of them got biliary stent and was discharged uneventfully on the 8th day. We had 2 sphincterotomy related percutions, 1 had early surgery – he died on the 14th day, another patient had delayed surgery, he recovered.

Conclusion: Quality assessment of ERCP performance is essential. Our overall cannulation rate was acceptable. We used pancreatic guidewire technique just after the 10th attempts of pancreatic sphincterotomy. In the second phase of process to avoid long lasting traumatisation of the papilla. Our complication rate of post-ERCP pancreatitis was good while the post-sphincterotomy phase of process to avoid long lasting traumatisation of the papilla. Our common and severe complication of ERCP. The incidence rates of and risk factors for PEP in a prospective large cohort study. This is a prospective cohort study of all patients who underwent ERCP-related procedures at 5 high-volume centers between February 2015 and May 2016. Patients who presented with acute pancreatitis, post biliary reconstruction, and failure to reach the papilla were excluded. The incidence rates of PEP and its severity were examined. Multivariate analysis was used to identify the risk factors for the different groups of patients who presented with two of the following: patients were diagnosed with PEP: 1) elevated levels of serum amylase, 2) abdominal pain lasting more than 24 hours, and 3) abnormal findings of acute pancreatitis on computed tomography. An increase in serum amylase level of at least 3 times greater than the normal upper limit at approximately 18 hours after the procedure (the next morning) was regarded as significant. The severity of PEP was graded according to the severity assessment of the Japanese Ministry of Health, Labour, and Welfare. Results: A total of 1912 patients were finally analysed. PEP occurred in 142 patients (7.3%); it was mild in 117 patients (6.0%) and severe in 25 patients (1.3%). Univariate analysis showed that female gender, naive papilla, surgically altered gastrointestinal anatomy, no coexistence of acute cholangitis, diagnostic ERCP, early precut, procedure time after reaching the papilla, number of cannulation attempts, precut sphincterotomy, intraductal ultrasonography, pancreatic duct injection, insertion of guidewire into the pancreatic duct, and placement of prophylactic pancreatic stent were significant risk factors. In the multivariate analysis, female gender (OR 2.273; 95%CI 1.570–3.291), naive papilla (OR 3.024; 95%CI 1.805–5.066), surgically altered gastrointestinal anatomy (OR 2.607; 95%CI 1.378–4.931), procedure time after reaching the papilla (OR 1.009; 95%CI 1.901–1.017), pancreatic duct injection (OR 2.297; 95%CI 1.493–3.524), and intraductal ultrasonography (OR 1.620; 95%CI 1.015–2.585) were independent risk factors.

Conclusion: The incidence of PEP was similar to those reported in previous studies. These risk factors are important as predictors of PEP. A shorter procedure time and avoidance of unnecessary pancreatic duct injection are important for prevention of PEP.

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

References

Aims & Methods: The aim of this study was to evaluate the transduodenal tractcholecystectomy technique in the treatment of gallbladder disease without choledochotomy. In the patient with cholesterol gallstones and high surgical risks were enrolled between January 2015 and March 2017. Endoscopic ultrasound (EUS)-guided cholecystoduodenostomy by deploying a double-flanged fully covered metal stent with hot stent delivery was performed and endoscopic sphincterotomy (EST) was also performed during this procedure for those patients with accompanying common bile duct stones. One or two weeks later an forward-viewing endoscope was advanced into the gallbladder via the stent, and cholecystolithotomy or polypectomy was performed. After the stents were removed, a pigtail-type naso-cholecystic drainage catheter was inserted into the gallbladder over the guide wire and removed 2 days later. Four weeks later gallbladder was assessed by abdominal ultrasound.

Results: EUS-guided cholecystoduodenostomy with double flanged metal stent deployment was successfully performed in all of 26 patients (Male:Female, 11:15; mean age, 61 ± 16.19yrs). After the procedure, fistulas had formed in each of the patients and the stones of 7 patients expelled themselves completely. Endoscopic sphincterotomy (EST) and polypectomy (2) were performed through the stents, and then the stents were removed. Common bile duct stones were also successfully removed in 6 patients. EST showed all the fistula closed completely after 3 days. The ultrasound examination of the gall-bladder 4 weeks later showed no stones remaining and also showed satisfactory functioning of the gallbladder. The mean follow-up period was 11 months (range: 1-27 months). Cholesterol gallstones recurrence were not detected in any patient during follow-up.

Conclusion: EUS-guided placement of a novel metal stent with hot stent delivery is a safe and simple approach for performing an endoscopic cholecysto-duodenostomy, which can subsequently allow procedures to be performed for treating biliary disease, including cholecystolithotomy.

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

References

P0908 QUANTITATIVE ENDOSCOPIC ULTRASOUND ELASTOGRAPHY IN THE DIFFERENTIAL DIAGNOSIS OF PANCREATIC SOLID TUMORS
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Introduction: The second generation of quantitative endoscopic ultrasound (EUS) elastography allows the quantitative analysis of tissue stiffness and can be a useful auxiliary tool in the differential diagnosis of pancreatic solid tumors (1)(2).

Aims & Methods: The aim of this study was to evaluate the accuracy of the quantitative EUS elastography in the differential diagnosis of pancreatic solid masses, discriminating malignant from benign masses, using strain ratio (SR) analysis. A prospective study was performed for 15 months and included 29 consecutive patients who underwent EUS for the evaluation of solid pancreatic masses. EUS elastography was performed by 2 operators, using a linear echoendoscope. The mean of 3 measures was considered as the SR final result for each lesion, EUS-fine-needle aspiration of the lesions was performed after SR assessment and the final diagnosis was based on the cytology or histology results. 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 comparing with the benign tumors (55.56 vs 22.93, p = 0.001). The sensitivity and specificity of SR for discrimination of pancreatic malignancy for a cut of 15.89 were, respectively, 95.45% and 87.5% (area under the curve of 0.89, 95% CI). The overall accuracy of the EUS elastography using the SR for the detection of pancreatic malignancy was 93%.

Conclusions: 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
P0906 COMPARISON OF DIAGNOSTIC PERFORMANCE FOR THE EVALUATION OF SUSPECTED MALIGNANT BILIARY STRUCTURE AMONG SAME SESSION EUS-AND ERCP-GUIDED TISSUE SAMPLING
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Introduction: Determining the cause of suspected biliary strictures is always challenging in clinical practice. Although EUS-guided tissue sampling (EUS-TS) revealed a better diagnostic yield in suspected malignant biliary obstructive lesions comparing to ERCP-guided tissue sampling (ERCPTS), there was few studies for which techniques are better dependent on primary tumor. Aim: The aim of our study is to compare the diagnostic yields between EUS-TS and ERCPTS in patients with suspected malignant biliary obstructive lesion according to primary tumor sites. By reviewing medical records, we enrolled patients who underwent same-session examination of EUS and ERCP for the evaluation of suspected pancreaticobiliary obstructive lesion. For cytopathologic diagnosis, endoscopic ultrasound-guided fine needle aspiration (EUS-FNA) or biopsy (EUS-FNB) and ERCPTS using brush cytology and/or forceps biopsy were performed. The diagnostic performances were compared between two techniques according to primary tumor sites.

Results: From January 2011 to September 2016, we enrolled 125 patients and 32 patients were excluded due to the following reasons: loss of follow up in 8, ERCPTS from pancreatic duct in 23, and ERCPTS from peripapillary biopsy in 4. Among the enrolled patients (93 patients; 62 males, mean age 65.8 years, 86 (92.5%) had malignant tumor such as cholangiocarcinoma in 39, pancreatic cancer in 37, and other malignant tumors in 10 patients. And 7 (7.5%) patients had benign lesions. EUS-TS revealed higher rate of overall diagnostic accuracy comparing to ERCPTS (82.8% vs. 60.2%, p=0.001). Depending on primary lesions, the diagnostic accuracy for pancreatic lesions was statistically higher in EUS-TS than ERCPTS (84.4% vs. 51.1%, p=0.003). Conclusion: EUS-TS is superior to ERCPTS for the evaluation of suspected malignant pancreaticobiliary obstructive lesions. Especially, if the biliary obstruction was caused by pancreatic lesions, EUS-TS would need to be a priority for cytopathologic diagnosis.

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

Reference

P0907 PREVALENCE OF POSTERIOR MEDIASTINAL LYMPHADENOPATHIES IN PATIENTS UNDERGOING ENDOSCOPIC ULTRASONOGRAPHY-FINE NEEDLE ASPIRATION: INDICATIONS: A PORTUGUESE SINGLE-CENTRE PROSPECTIVE STUDY
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Introduction: Significant heterogeneity in geographic distribution in the prevalence of posterior mediastinal lymphadenopathies have been documented in CT studies. Awareness of the geographic prevalence and characteristics of lymphadenopathies will be relevant when performing endoscopic ultrasonography (EUS) for evaluation of malignant neoplasms. A prospective, unicentric study was performed between July and December 2016. Medialstinal stations 9, 8, 7, 6, 5, 4L and 2L 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 hyperechogenic center. The prevalence of lymphadenopathies was higher in smoker patients (83% vs 64%, p=0.024), with a higher average number of lymphadenopathies per patient in this group (2.1 vs 1.6; p=0.017). Similar findings were documented in patients with relevant occupa- tional or environmental respiratory exposure (prevalence 83% vs 71%; average number 3 vs 1.7). By logistic regression analysis, none of the variables analysed were independently associated with the presence of mediastinal lymphadenopathies.

Conclusion: This prospective Portuguese study documented a higher prevalence of mediastinal lymphadenopathies than previously reported in northern Europe, in patients with no evidence of oncologic disease. This higher prevalence, mostly in smokers or patients with relevant occupational exposure, may negatively influence the specificity and positive predictive value for malignancy of mediastinal lymph node (N) staging by EUS, with particular relevance in esophageal and pulmonary cancer staging.

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

Reference

P0908 ACCURACY OF ENDOSCOPIC ULTRASOUND IN GASTRIC ADENOCARCINOMA PATIENT SELECTION FOR NEOADJUVANT THERAPY
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Introduction: Recent studies demonstrated the positive impact of neoadjuvant treatment for gastric adenocarcinoma T ≥ 2 and/or N+. Aims & Methods: We aimed to assess the accuracy of endoscopic ultrasound in the selection of patient with gastric adenocarcinoma for neoadjuvant therapy. A unicentric retrospective analysis of patients with the anatomopathological diag- nose of gastric adenocarcinoma between 2011 and 2016, who performed endo-scopic ultrasound for staging and underwent surgery without prior neoadjuvant treatment. The concordance (kappa) and accuracy [sensitivity (S) and specificity (E)] of the endoscopic ultrasound for T ≥ 2 and/or N + (criteria for neoadjuvant treatment) were assessed using the anatomopathological staging of the resected surgical specimen.

Results: The final sample included 144 patients (64.6% male) with a median age of 68.5 ± 12.2 years. In most cases (80.6%), the neoplasia was distal (antrum, incisura angularis and body). The neoplasia was of the intestinal type, diffuse and mixed in 65.3%, 18.8% and 16% of the cases, respectively. After examination of the resected surgical specimen, 53.5% of patients had criteria for neoadjuvant treatment (T ≥ 2 and/or N +). The overall kappa, sensitivity and specificity of the endoscopic ultrasound for T ≥ 2 and/or N + were 0.70 (p < 0.001), 85.2% (95% CI: 75.6–94.2%) and 87.3% (95% CI: 76.5–94.4%), respectively. The overall kappa, sensitivity and specificity of the endoscopic ultrasound for T ≥ 2 and/or N + were higher in proximal lesions (cardia and JEG) (k = 0.924, S-94.4% and E-100%) compared with distal lesions (k = 0.671, S-82.5% and E-84.9%) and in intestinal type lesions (k = 0.765, S-84.9% and E-92.7%) compared with diffuse type lesions (k = 0.682, S-88.4% and E-80%) or mixed (k = 0.566, S-81.8% and E-75%).

Conclusion: In one of the largest series of patients, we showed that endoscopic ultrasound was an overall high agreement and accuracy in the selection of gastric adenocarcinoma patients for neoadjuvant therapy, although they higher for proximal and intestinal lesions.

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

References

P0909 IS IT USEFUL TO REPEAT ENDOSCOPIC ULTRASOUND WITH FINE NEEDLE ASPIRATION OF PANCREATIC CYSTIC LESIONS? A RETROSPECTIVE STUDY
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Introduction: The role of endoscopic ultrasound (EUS) and fine needle aspiration (EUS-FNA) require initial imaging characterization and frequently follow-up. Endoscopic ultrasound with fine-needle aspiration (EUS-FNA) for CEA measurement and cystic fluid is the most accurate diagnostic method in these lesions. The role of repeated EUS-FNA with cystic fluid analysis in follow-up of PCs is not clear.

Aims & Methods: To determine if patients with pancreatic cysts with a second repeated EUS-FNA for cystic fluid analysis for CEA and cytology had a change in cyst classification or on clinical decision. Retrospective analysis of a EUS database, with 284 patients who had EUS-FNA for pancreatic cyst evaluation from 2007–16, of which 35 had 2 EUS procedures, and of these, 22 had 2 con-secutive EUS-FNA procedures.

References

Citation: United European Gastroenterology Journal 5(5S) A479
P0910 DETERMINATION OF INTRACYSTIC GLUCOSE CONCENTRATIONS IN THE DIFFERENTIAL DIAGNOSIS OF PANCREATIC CYSTS: A PROSPECTIVE STUDY
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Introduction: Despite advances in imaging techniques, differential diagnosis of pancreatic cysts still remains challenging. There has been an increasing interest in new pancreatic cyst biomarkers as a way to differentiate different cyst subtypes and avoid unnecessary surgery. Recently intracystic fluid glucose has been proposed as a promising marker. The aim of this prospective study was to verify this early finding.
Aims & Methods: We enrolled in the study all the patients who underwent Endoscopic Ultrasound (EUS) guided Fine Needle Aspiration of a pancreatic cyst at our Institution from October 2015 to February 2017. The cyst fluid was sent for cytology, mucin staining and determination of amylase, Carbohydrate Antigen 19-9 (CA 19-9), Carcinemobryonic Antigen (CEA) and glucose. When determined necessary by the endoscopist, needle-based confocal laser endomicroscopy (nCLE) of the cyst wall and/or contrast-enhanced EUS was performed. A definitive diagnosis of the nature of the cyst was reached relying on surgery, cytology or mucin staining, a typical pattern of nCLE or by consensus (on EUS endoscopy (nCLE) of the cyst wall and/or contrast-enhanced EUS was performed. A definitive diagnosis of the nature of the cyst was reached relying on surgery, cytology or mucin staining, a typical pattern of nCLE or by consensus (on EUS-FCN A) of the cyst wall and/or contrast-enhanced EUS was performed. A definitive diagnosis of the nature of the cyst was reached relying on surgery, cytology or mucin staining, a typical pattern of nCLE or by consensus (on EUS

Results: Twenty-nine patients (13 males, median age 72 years, range: 30-83) entered the study. Nineteen (66%) pancreatic cysts were unilocular (12) and complex (7). The median largest diameter of the median largest cyst was 45 mm (range: 20-70 mm). Sixteen (55%) cysts were located in the pancreatic head, 10 (35%) in the body and 3 (10%) in the tail. CE-EUS was performed in 14 (48.3%) patients, nCLE in 19 (65.5%) patients. Eighteen (60.7%) cysts were classified as mucinous (6 mucinous cystadenomas; 12 intraductal papillary mucinous neoplasm) and 11 (37.9%) as non-mucinous (6 serous cystadenomas; 5 pseudocysts). The final diagnosis was reached relying on surgery in 9 patients (31%), on clinical follow-up in 11 patients (n = 8 (27.6%) and on consensus in 8 (27.6%). Mean glucose concentrations in mucinous cyst were significantly lower than in non-mucinous cysts (7.7 mg/dl vs 95.7 mg/dl, p < 0.0001). In the diagnosis of mucinous cysts, sensitivity of CA 19-9 (cutoff more than 5000 U/ml), CEA (cutoff more than 192 mg/ml) and glucose (cutoff less than 50 mg/dl) was respectively 22.2%, 66.7% and 94.4%. Specificity was respectively 72.7%, 100% and 100%. Accuracy was respectively 41.4%, 79.3% and 96.6%. Only two subjects in this cohort were affected by diabetes, this condition did not impact on intracystic glucose concentrations.
Conclusion: Although limited by the small sample size, this study confirms the utility of intracystic glucose levels in differentiating mucinous from non-mucinous pancreatic cysts. This cheap, new marker outperformed CA 19-9 and CEA in sensitivity, specificity and accuracy.
Disclosure of Interest: All authors have declared no conflicts of interest.

P0911 UTILITY OF LIQUID BASED CYTOMETRY IN EUS-FNA SAMPLES FOR THE PANCREATIC LESION
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Introduction: Liquid-based cytology (LBC) preparation method is one of the new techniques, which is widely used in gynecological and non-gynecological cytology samples, due to its ability to decrease screening time, insufficient sample rate, and air-drying artifacts compared to a conventional smear method. Additionally, immunocytochemistry (IHC) can be performed all at once.
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 analyzed in this study. Clinical diagnosis was pancreatic cyst in 210 patients, acinar cell carcinoma in three cases, adenocarcinoma 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 include sufficient material rate of cytology and histology are 99.1%(223/225) and 89.3%(201/225). Positive predictive values of cystology and histology are 81.7%(184/225) and 67.6%(152/225). 65.8%(48/73) of pathologically non-diagnosed cases could be differentiated as malignant or non-malignant by cytology. In 26 specimens, in which insufficient material was needed, IHC was available in 23 of the 26 specimens (88.5%) and ICC was available in all specimens. In the three specimens, IHC was not available owing to pathological insufficiency.
Results: LBC in pancreatic cyst samples obtained by EUS-FNA may be useful for reducing insufficient material rate and conducting ICC as well as in samples in other medical fields.
Disclosure of Interest: All authors have declared no conflicts of interest.

P0893 ANTIBIOTIC PROPHYLAXIS AFTER PANCREATIC CYST PUNCTURE – IS LESS MORE? ONE-TIME VERSUS EXTENDED CIROFLOXACIN PROTOCOL
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Introduction: Echoendoscopy with fine needle aspiration (EUS-FNA) is a useful tool for the characterization of pancreatic cystic lesions (PCL) due to its ability to detect malignant cystic lesions, cystic neoplasms and to provide samples for biochemical and cytological examination. This is a safe procedure, with low complications (0–2, 5%). Nevertheless, peri-procedural and even several days after EUS-FNA antibiotic prophylaxis has been the standard practice due to the possible risk of pancreatic infection.
Aims & Methods: We aimed to compare the complications two protocols: group 1: Ciprofloxacin 200 mg iv, one-dose, immediately before FNA; and group 2: Ciprofloxacin 200 mg iv, one-dose, immediately before FNA plus three days of oral Ciprofloxacin, 500 mg, bid. Retrospective study of single-operator EUS-FNA of PCL in two centers with different antibiotic prophylaxis protocols, between January 2014 and December 2016. A telephonic questionnaire regarding post-procedural complications was applied to all patients that agreed to enter the study.
Results: Two hundred and four EUS-FNA were analyzed: 51.5%(n = 105) in group 2.40%(n = 123) women, mean age 63.4 ± 12.8 years. We were able to contact 86.9%(n = 86) patients in group 1 and 94.3%(n = 99) in group 2 (p > 0.05). The mean time between EUS-FNA and questionnaire application was 14, 7 months for group 1 and 17 months for group 2 (p > 0.05). There was no statistical difference between the two protocol groups regarding the morphological features of the PCLs (size, morphology, location) or procedure (needle size, location of puncture, number of passages or percentage of cysts with complete collapse after aspiration). Five patients had intra-cystic limited bleeding after puncture (two in group 1 and three in group 2). In group 1, 6.2%(n = 6) reported complications: 1 major (mild acute pancreatitis) and 5 minor (epigastric pain, vomiting). In group 2, 9.1%(n = 9) reported 1 major (mild acute pancreatitis) and 4 minor (epigastric pain, nausea) complications. Differences were not statistically significant between the two groups (p > 0.05). The patients with intra-cystic bleeding did not have a worse outcome. Additionally, five patients (1.9%) reported any type of adverse reaction related to antibiotic use (75% in group 2). Conclusion: EUS-FNA is a safe procedure, with 1% rate for major complications in our series and none of them with evidence of infection. We did not find any additional benefit from extension of antibiotic prophylaxis beyond the one-time administration during EUS-FNA. It has been questioned whether antibiotic
Disclosure of Interest: All authors have declared no conflicts of interest.
Conventional EUS-guided fiducial placement requires back-loading each fiducial through the tip of the FNA needle. Thus, delivery of multiple fiducials can be cumbersome and time-consuming.

**Aims & Methods:** We aimed to evaluate the feasibility, safety, and performance characteristics of fiducial deployment in PC patients using a novel exchangeable FNA system with pre-loaded 22-gauge EUS fiducial needles. This was a single-center pilot study of 10 consecutive PC patients undergoing EUS-guided fiducial placement for SBRT. The fiducial delivery system contains a 22-gauge EUS needle pre-loaded with 2 gold markers with knurled design. After the 2 markers were deployed, the EUS fiducial needle insert was exchanged out for a second pre-loaded EUS fiducial needle insert through the exchangeable FNA system for total deployment of 4 markers in each patient. All patients underwent CT after fiducial placement as part of SBRT to evaluate successful deployment and complications. The primary endpoint was procedure success, defined as deployment of at least 3 fiducials into the desired target area. Secondary endpoints were total procedure time, fiducial delivery time, and safety.

**Results:** Fiducial placement was attempted in 10 consecutive patients with PC (mean age 61.7 years, males 60%). The tumor was located in the head (n = 6), neck (n = 2), and the body (n = 2) of the pancreas. Mean size of the tumor was 2.7 cm (range 1.6–5.3). Procedure success was achieved in all 10 (100%) patients. All 10 patients successfully received fiducials. Mean total procedure time was 12.2 minutes (range 5–18). By comparison, using historic controls of the first 10 patients who underwent conventional EUS-guided fiducial placement, the mean total procedure time was 26 minutes (range 16–44, p = 0.002). Mean fiducial delivery time was 4.2 minutes (range 1–8). There were no immediate or delayed (7 days) complications.

**Conclusion:** EUS-guided fiducial placement with a novel exchangeable FNA system with pre-loaded 22-gauge EUS fiducial needle is quick, technically feasible and safe. This system may theoretically decrease the risk to the clinical staff by eliminating the need for back-loading fiducials through exposed needle tip and handling of potentially dirty needles. Given the potential safety and time advantages, further prospective studies are warranted for validation.

**Disclosure of Interest:** E.J. Shin: Consultant, C2 Therapeutics No conflict of interest relevant to the abstract.

M.A. Khashab: Consultant, Boston Scientific No conflict of interest relevant to the abstract.

M.I. Canto: No conflict of interest relevant to the abstract.

All other authors have declared no conflicts of interest.

**P0917 DEVELOPMENT AND VALIDATION OF A HIGHLY SENSITIVE AND SPECIFIC AUTOMATED ALGORITHM TO EVALUATE THE ABUNDANCE OF BUBBLES IN SMALL BOWEL CAPSULE ENDOSCOPY**

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**Introduction:** Bubbles can impair the visualization of the small bowel (SB) mucosa during capsule endoscopy (CE).

**Aims & Methods:** Our aim was to develop and to validate a computational algorithm, which would be able to evaluate the abundance of bubbles in SB-CE. Two sets of 200 SB-CE normal still frames were extracted from 45 complete third-generation SB-CE videos. Two experienced SB-CE readers analyzed both sets of images twice, in a random order. Each still frame was categorized as "scarce in" or "abundant in bubbles (<10% or >10% of bubbles covering the frame, respectively). Reproducibility (k coefficient), sensitivity (Se), specificity (Sp), Receiver Operating Characteristic (ROC) curve, and calculation times were measured for different algorithms (Grey-level of co-occurrence matrix [GLCM], fractal dimension, Hough transform, and Speeded-Up Robust Features [SURF]) using the experts’ reading as reference. Algorithms with highest reproducibility, Se and Sp were then selected for a validation step on the second set of frames.

**Results:** Both SURF and GLCM algorithms had high operating points (Se and Sp over 90%) and a perfect reproducibility (k = 1). At the validation step, the GLCM detector strategy had the best diagnostic capabilities, with Se = 95.79%, Sp = 95.19%, and a mean calculation time of 0.037s per frame. Table 1: Sensitivity (Se), specificity (Sp), negative predictive value (NPV), positive predictive value (PPV) and area under receiver operating characteristic curve (AUROC) of four algorithms for evaluation of bubble abundance in small bowel capsule endoscopy still frames (development step).

**Conclusion:** A GLCM detector strategy has high diagnostic performances to categorize "scarce in" or "abundant in bubbles" SB-CE frames. This algorithm is of interest for clinical use (i.e. quality in CE reporting) and for research (providing an objective comparison tool of different preparations, including anti-bubble agents).

**Disclosure of Interest:** X. Dray: Xavier Dray has received consultation fees from Covidien GI solutions

All other authors have declared no conflicts of interest.
Aims & Methods: Data was collected from 14 patients that swallowed capsules in a multi-center clinical trial using an x-ray imaging capsule (GUT 2016). The patients were sent home to continue their normal life routine while the capsule naturally traveled in the gastrointestinal tract until excretion. (Subjects signed informed consent and the study was 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 treatments 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 treatments 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 treatments in the colon.

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).[1]

Aims & Methods: Evaluate the relation between CCE procedure cleansing and accuracy – with an emphasis on inadequate cleansing. This is an additional post study analysis[2], including 767 screening population participants, from 17 sites in the United States and Israel, who underwent CCE procedure followed by a blinded colonoscopy. Capsule preparation included 12 mg Senna, 4 liters split dose of sulfate-free polyethylene glycol (PEG), with 6 and 3 oz of oral sulfate solution - for capsule propulsion. The CCE video was reviewed by 1 of 5 highly experienced CCE gastroenterologists. These physicians assessed colon cleansing on a “poor” to “excellent” scale. Incomplete studies were included in the analysis. Polyps were considered a match, if the size measured by the capsule (~50%) range overlapped the size measured by the colonoscopy (~50%) range, and polyp location estimates by the 2 methods were in the same or adjacent segments[2].

Results: The mean age of the analyzed cohort was 57.1 (SD 5.8) with 342 males (48.6%).

Conclusion: This analysis indicates, that when utilizing 4 liter PEG and oral sulfate solutions for CCE procedure preparation, current cleansing assessment scale and methodology may need to be re-evaluated - to better correlate with polyp detection. Currently, “fair” cleansing may not indicate inadequate cleansing for polyp detection.

Disclosure of Interest: S. Perek: Employee of Medtronic
S. Farkash: Employee of Medtronic
N. Schwartz: Employee of Medtronic

References

P0921 COLON CAPSULE ENDOSCOPY MAY REDUCE COLONOSCOPY MISS RATE – A MULTICENTER STUDY
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Introduction: Colonoscopy miss rate is an area of intense focus, as it directly correlates with colorectal cancer incidence rate. Previous studies reported a colonoscopy miss rate of 2%–22%, depending on polyp size and histology [1].

Colon Capsule Endoscopy (CCE) is a visualization diagnostic modality of the colon mucosa, which has demonstrated high sensitivity for polyps and adenomas [2]. Determining the nature of polyps detected by CCE but missed by the first 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. These 70 polyps were compared with 683 polyps detected by blinded colonoscopy, using logistic regression model. Adjusted Odds Ratios (Adj.OR) and corresponding Confidence Intervals (CI) were estimated.

Results: Of the 70 polyps missed by first colonoscopy and detected by second colonoscopy, 20 (29%) were 6 mm or larger (based on colonoscopy size estimation). 19 (27%) were either adenomatous or sessile serrated lesions and 16 (23%) were described as either flat or sessile-flat by colonoscopy performing physician. Stratification of polyps based on location:

<table>
<thead>
<tr>
<th>Detected by blinded colonoscopy (n = 683)</th>
<th>Detected after CCE and unblinding (n = 70)</th>
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<tbody>
<tr>
<td>Cecum</td>
<td></td>
</tr>
<tr>
<td>Ascending</td>
<td>64 (84%)</td>
</tr>
<tr>
<td>Transverse</td>
<td>181 (94%)</td>
</tr>
<tr>
<td>Descending-Sigma</td>
<td>98 (96%)</td>
</tr>
<tr>
<td>Rectum</td>
<td>243 (90%)</td>
</tr>
<tr>
<td></td>
<td>97 (85%)</td>
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Colon cleansing Sensitivity (≥6 mm); n = 272 Specificity (≥6 mm); n = 495

| Adequate cleansing                      | 153/195 = 78.5% (72.2% – 83.7%)          |
| Inadequate cleansing                   | 54/77 = 70.1% (59.1% – 79.2%)            |
| P-value                                | 0.147                                    |
| Poor cleansing                         | 3/9 = 33.3% (11.7% – 64.9%)              |
| Fair, good and excellent cleansing    | 204/263 = 77.6% (72.1% – 82.2%)          |
| P-value                                | 0.007                                    |

Poor cases had significantly lower CCE sensitivity compared with fair, good and excellent cases, for 6 mm polyps (P-value = 0.007). When stratifying cases based on the current adequacy cutoff, sensitivity for 6mm polyps is similar in inadequate (“poor” + “fair”) cases compared to adequate (“good” + “excellent”) cases (70.1%, 78.5% respectively; P-value = 0.147).
Multivariate logistic regression revealed that after adjusting to polyp’s size, cecal and rectal segments were associated with increased chance of CCE additive value to colonoscopy (cecum vs. ascending or transverse colon: Adj.OR = 3.2 [95%CI: 1.3–7.6] and Adj.OR = 4.5 [95%CI: 1.4–14.6] respectively; rectum vs. ascending or transverse colon: Adj.OR = 2.6 [1.1–5.8] and Adj.OR = 3.6 [95%CI: 1.2–11.4] respectively). There were 59 patients (8.49% of study population), with at least one CCE additive value to colonoscopy event.

Conclusion: CCE has the ability to detect polyps missed by traditional colonoscopy, especially lesions in the cecum and rectum.

Disclosure of Interest: S. Perek: Employee of Medtronic
N. Schwarz: Employee of Medtronic

References

P0922 ENDOSCOPIC MANAGEMENT OF POSTOPERATIVE PANCREATIC FISTULAS AFTER DISTAL PANCREATECTOMY OR ENucleATION
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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. All patients were included in this analysis. 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 6473 ERCP performed during the inclusion period, 31 patients had POPF treated endoscopically (14 men, 7 women, mean age 61.06 ± 14.3 years). When compared to the standard treatment of POPF, the endoscopic approach required less surgical resection, and was associated with lower infectious complications.

Conclusion: Endoscopic management of POPF can be considered as an alternative treatment, especially in high-risk patients.

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 types 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) and 7Fr delivery catheter with soft tip (7Fr soft tip) were prepared respectively. A phantom model with a silicon plate was created. The plate was punctured with a 19-G needle and a guidewire was passed the plate. The delivery system was advanced over the guidewire to pass the plate and the resistance force was measured. A biliary obstruction model was created by clipping the papilla in 10 pigs, EUS-BD (choledochoduodenostomy) using the thin delivery system stents was attempted following 19-G needle puncture without the use of dilation devices. The technical success and adverse events within 2 weeks after EUS-BD were analyzed.

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 7.36 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 (4.5Fr). Neither cautery dilation 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 duodenal in all pigs and the growth of fibrous tissue was observed in the microscopic findings.

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

Reference
Conclusion: Among the three types of stents, the 7Fr soft tip was suitable for ERCP in the phantom and animal models. The thin-diameter system stent may be technically feasible and safe for EUS-BD and possibly reduce adverse events.

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

**References**


**Aims & Methods:** We report here on the use of FCMS in post-sphincterotomy early and late bleeding. Patients referred for in- and out-patient ERCP were informed of the potential off-label treatment with FCMS of post-sphincterotomy bleeding, and of treatment approval by the local ethical committee. We treated patients presenting with delayed bleeding first with adrenaline and/or sclerosing agent injection. When this first line hemostasis failed, we placed short FCMS in the distal cholecirrhosis. 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 antiplatelet drugs as well as oral anticoagulants were avoided.

**Results:** 17 Patients (10M/7F), aged on an average 70 years (range 38–90) received 18 FCMS (10mm×40mm, Boston Scientific) for failed hemostasis since January 2010. Hemostasis was obtained in 16 patients, 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 by hypovolemic shock. He received a second ERCP 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 ERCP. The FCMS was in place, but we removed it, retreated the bleeding by injective therapy and placed a second FCMS, obtaining a stable hemostasis achieved after 8 days. These cases represent a large collection of evidence showing that treating post-sphincterotomy early bleeding with FCMS is feasible, safe and effective. Late bleeding associated with needle-knife pre-cut was much harder to control and required endoscopic revision, intensive care unit support and re-stenting. Our results are consistent with and support previous research in this field.

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

**References**


**Efficacy of Self-Expandable Metallic Stent Placement in the Management of Anastomotic Stricture after Orthotopic Liver Transplantation**

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**Introduction:** Anastomotic bile duct stricture (ABS) remains as one of the most common complications after orthotopic liver transplantation (OLT). Current standard of practice of endoscopic retrograde cholangiopancreatography (ERCP) with insertion of multiple plastic stents (PS) often requires multiple procedures before achieving satisfactory stricture resolution. In recent years, studies utilizing covered self-expandable metallic stent (cSEMS) in refractory ABS management reported varying degree of success.

**Aims & Methods:** The aim of this study was to analyze efficacy of SEMS in resolution of anastomotic stricture in patients with orthotopic liver transplantation (OLT). Technical success was determined by identifying the workforce being necessary to be a team effort involving multiple specialties. All demographic and clinical factors were compared with SEMS insertion from January 2010 to December 2016 for the management of refractory ABS. Demographic variables including age, gender, and clinical variables including body max index (BMI), number or prior ERCP with PS insertion, stent brand and dimensions and duration of SEMS insertion 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 were maintained bile duct patency for the follow up period. The most common adverse outcome was internal migration of cSEMS which occurred in 11 patients (23.4%). Post-ERCP pancreatitis was observed in 3 (6.4%) patients

**Conclusion:** The efficacy rate observed in resolving refractory ABS with cSEMS placement appears to be comparable to that of multiple ERCPs with PS placement method. Furthermore, durability of ABS resolution with cSEMS use further supports its potential long-term efficacy. Hence, cSEMS should be considered as a viable alternative treatment of refractory ABS and the follow up period is associated with higher likelihood of ABS resolution. The high rate of internal migration observed with SEMS warrants further endeavor in stent design improvements.

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

**References**


Conclusion: The placement of FCSEMS is easy, safe and quick. In our cohort of patient developed ERCP-related pancreaticitis, successfully treated with medical was immediately detected. Successful closure of persistent sphincterotomy-stones. In all cases standard sphynterotomy was performed and perforation was 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 stones, and one patient for colorectal perforation. Three FCSEMS were successfully removed after a median of 18 days, the remaining three fell out spontaneously. The median length of hospital stay was 8.5 days (range 4–20 days). There were no deaths or need for surgery.

Conclusion: The placement of FCSEMS is easy, safe and quick. In our cohort of patients, FCSEMS was considered the only rescue therapy, but in the last years the majority of cases has been managed conservatively. The endoscopic treatment included biliary stent and/or nasobiliary drainage. In our institution, from 2010 we has been using fully covered self-expandable metallic stent (FCSEMS) with nasobiliary drainage always after resolution of the initial indication for ERCP. This study was conducted as a part of Conservative Therapy? Canena J, Surg Laparosc Endosc Percutan Tech. 2016 Feb;26(1):e9-e17

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 pancreas cancer and 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 IPC.

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 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 D1D2 in 4. technically successful DS was achieved in 22 cases (95.6%). The mean GOOSS before DS and after DS were 0.5 and 2.6 respectively (p < 0.001). The median time to restart soft solid meal after DS was 2.9 days. Biliary obstruction was seen in 13 patients and managed with endoscopic biliary stenting. Adverse events occurred in 6 patients, including 1 with cholangitis, 1 with bleeding and 3 with stent occlusion. The reintervention technical and clinical success rates were 100% (5/5) and 80% (4/5), respectively. The median survival time after DS was 159 days. In neoadjuvant chemoradiotherapy patients, 4 patients were postpone surgery for APC.

Conclusion: DS in patients with APC is 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.

P0930 CLINICAL FAILURE IN COLONIC STENTING FOR MALIGNANT LARGE BOWEL OBSTRUCTION: OUTCOMES AND PREDICTORS IN 172 PATIENTS

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Introduction: Endoscopic stenting with self-expandable metallic stents (SEMS) for malignant large bowel obstruction has become widely accepted for an alternative to emergency surgery in the management of malignant large bowel obstruction (LBO) after the initial introduction of SEMS in 1991. Recent years, advance in procedural equipment and accumulation of experience have improved technical success rate in colon stenting for malignant LBO. However, there is still a divergence in the success rate of SEMS stent placement.

Aims & Methods: The aim of this study is to clarify the factors that reduce clinical success rate of stent placement. This study was conducted by a retrospective chart review at a single center. The endoscopy database and clinical records from the University of Tokyo Hospital, Tokyo, Japan, were reviewed retrospectively between May 2007 and February 2017. Patient’s symptoms, characteristics, clinical data were obtained from electronic medical record. The obstructions were diagnosed clinically and radiologically and were evaluated by the Colorectal Obstruction Scoring System (CROSS). Technical success was defined as deployment of a stent across the entire length of the stricture on the first attempt. Clinical success was defined as resolution of symptoms and radiological relief of the obstruction within 24 hours, as confirmed by radiographic observations.

Results: A total of 172 patients (91 males, 81 females; mean age 69.0 years) with underwent colon stenting for malignant LBO. This procedure was performed to 80 colorectal cancer (CRC) patients (48%) and to 92 patients (52%) with cancer of other etiology. Stenting was performed as a bridge to surgery (BTS) therapy in 33 patients (19.2%), whereas stenting was planned palliative procedure in 139 patients (80.8%). Sixty-seven patients (39%) had a tumor causing obstruction in the proximal colon, and 105 patients (61.0%) in the distal colon or rectum. The mean length of obstruction was 6 cm, and obstruction of 60 patients (34.9%) longer than 6 cm. The technical and clinical success rate was 98.3% and 89.5%, respectively. Clinical success rate dropped from 98.9% (91/92) to 78.8% (63/80) when attempting to stent lesions of longer than 6 cm. Clinical success rate was 85.7% (90/105) and 95.5% (64/67) (p < 0.05) when the patient had obstruction of distal colon or rectum vs in proximal colon. In multivariate analysis, placement in distal colon or rectum, obstruction by ECM, and obstruction longer than 6 cm were independent risk factors associated with lower clinical success rate (odds ratio [OR] 3.19; 95%CI 0.96–10.6; [OR] 24.5; 95%CI 3.19–189.3; [OR] 31.7; 95%CI 4.32–223.7).

Conclusion: The placement of SEMS for malignant LBO is safe and effective, but clinical success rate drops in the cases with obstructions of distal colon or rectum, longer than 6 cm, or caused by ECM. Considering the indication of colonic stenting for malignant LBO, these factors should be evaluated before procedure.

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

References:

P0931 THE CLINICAL EFFICACY OF MITOMYCIN-C INJECTION THERAPY IN REFRACTORY BENIGN ESOPHAGEAL STENOSIS: A PRELIMINARY STUDY

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Introduction: Refractory Esophageal Stenosis (RES) definition differs among studies. Unresolved benign esophageal stenosis even after 5 or more sessions of endoscopic dilation therapy in most studies. Until now, there have been no treatment showing the satisfactory results. Mitomycin C (MMC) inhibits DNA synthesis reduces fibroblastic collagen formation. Tried in RES in several studies. The meta-analysis about treatment of refractory gastrointestinal stenosis with MMC in total 24 studies. The most commonly reported site esophagus (79%). Only 9 recruited adult patients (n = 38). Of these, 23 patients were RES.
Complete response of MMC for RES patients: 59.5% vs 40.5%, respectively.

**Aims & Methods:** The aim of this study was to evaluate the clinical efficacy of MMC injection therapy in patients who had refractory benign esophageal stenosis. Between October 2013 and February 2016 Enrollment criteria: Patients with refractory benign esophageal stenosis who did not respond even after five or more endoscopic dilation therapy. The patients should be more than eighteen year old. Exclusion criteria: Malignant esophageal stenosis, Pregnant or breast feeding women, Deteriorated patients who could not tolerate endoscopic procedures. The method of MMC application - Via 23 gauge injection needle (Optimum 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 bougienage. 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. Complications – 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>
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<th>Variables</th>
<th>values</th>
</tr>
</thead>
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<td>Number of Bougie dilation before MMC injection 5/6/7/8/9</td>
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<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>
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<td>Mean diameter of stenosis 3 month after final MMC injection, mm</td>
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<tr>
<td>Clinical success rate (%)</td>
<td>87.5</td>
</tr>
<tr>
<td>Complications (N, %) perforation bleeding requiring transusion of other interventions others</td>
<td>(0/0)(0/0)</td>
</tr>
</tbody>
</table>

**Conclusion:** In our study, the mitomycin injection therapy was effective in patients who had refractable benign esophageal stenoses. The mitomycin injection therapy could be considered as an alternative for refractable benign esophageal stenosis. A large-scale prospective studies are required in future.

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

**References**


**P0932 Treatment with multiple reabsorbable stents of complete and partial lower GI anastomotic dehiscence and stenosis**

**Aims & Methods:** The aim of this study was to evaluate the clinical efficacy of MMC injection therapy in patients who had refractory benign esophageal stenosis. Between October 2013 and February 2016 Enrollment criteria: Patients with refractory benign esophageal stenosis who did not respond even after five or more endoscopic dilation therapy. The patients should be more than eighteen year old. Exclusion criteria: Malignant esophageal stenosis, Pregnant or breast feeding women, Deteriorated patients who could not tolerate endoscopic procedures. The method of MMC application - Via 23 gauge injection needle (Optimum 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 bougienage. 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. Complications – 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.

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**Conclusion:** In our study, the mitomycin injection therapy was effective in patients who had retracted benign esophageal stenosis. The mitomycin injection therapy could be considered as an alternative for retracted benign esophageal stenosis. A large-scale prospective studies are required in future.

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

**References**


**P0933 Evaluation of Factors Associated to a Successful Dilation in Post-ESD Strictures**

**Aims & Methods:** This is an observational and analytical retrospective study. Sixty-eight consecutive patients (mean age: 65.4 ± 11, 76.5% men) who underwent endoscopic dilation because of post-ESD symptomatic esophageal strictures between 2006 and 2016 were included. They had Barrett’s esophagus (n = 46, 67.6%), epidermoid carcinoma (n = 21, 30.9%) and other (n = 1). Patients with post-ESD esophageal dilations, esophageal motor disorders, chronic alcoholism, and NSAIDs and reduced over time. During follow-up the patients were treated with local mesalazine. Final dilation was considered successful if the patients were symptom-free and did not require further dilation procedures.

**Results:** 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.

**Conclusion:** Most patients presenting with post-ESD strictures and dysphagia improve at long-term but they need a median of 3 sessions. No specific factor was associated to a better outcome.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
P0934 EFFECTIVENESS OF REPEATED DILATIONS IN THE MANAGEMENT OF ESOPHAGEAL BENIGN 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 involving patients managed in our tertiary center between January 2002 and April 2017 (n = 43). 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 2 last ED greater than 3 months. A failure was considered in case of death, need for surgery, permanent enteral feeding tube or an interval between the last 2 procedures lower than 3 months. The secondary endpoints were to document the characteristics of dilation procedures and concomitant treatments, the decreasing of the number of dilations per trimester, and to elucidate potential predictive factors for success of ED.

Results: A total of 39 patients (23 men) with a mean age of 47.5 ± 20.7 years were included. The etiologies of strictures were anastomotic (46.1%), caustic (28.2%), peptic (10.3%) or other etiologies (radiation injuries, esophageal diverticulotomy, 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 infection 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 = 0.036).

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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1Gastroenterology, Kure Medical Center and Chugoku Cancer Center, Kure, Japan
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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, statistical success rate, procedure time, clinical success rate, and complications was performed to compare Group W, Group N, and Group D.

Results: Endoscopic SEMS placement was attempted in 96 lesions as a bridge to surgery (BTS) in 52 lesions (54.2%) and as palliative therapy (PAL) in 44 lesions (46%). In Group W, SEMS was placed in 19 lesions (50%) as BTS and in 19 lesions (50%) as PAL; in Group N, SEMS was placed in 32 lesions (60%) as BTS and in 21 lesions (40%) as PAL; and in Group D, SEMS was placed in 1 lesion (20%) as BTS and in 4 lesions (80%) as PAL. The technical success rate was 100% in all groups. The overall clinical success rate was 93.7% (90/96): 89.5% (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%),...
expansion (1.38%, 3%), and liver (1.38%, 3%) in Group W and perforation due to other causes (0%) in Group N. In Group W, all cases had at least one flexible stent-related perforations (4.13%, 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, and the complication details were also retrieved. Multiple regression models were obtained for a limited sample size and this new stent is expected to exhibit more efficacy and safety than conventional colonic stents.

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

TUESDAY, OCTOBER 31, 2017
09:00-17:00
SURGERY II - HALL 7

P0936 PERORAL ENDOSCOPIC MYOTOMY FOR THE CASES IN WHICH HELLER-DOR OPERATION WERE INEFFECTIVE

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Introduction: Heller-Dor operation is a radical treatment for cases of esophageal achalasia. However, postoperative recurrence of symptoms is observed in some cases. Conventionally, repeat surgery or endoscopic balloon dilatation is additionally performed on such cases. Repeat surgery is associated with issues related to adhesion, whereas endoscopic balloon dilatation is associated with issues related to effect reliability and constancy. Peroral endoscopic myotomy (POEM) is a new endoscopic treatment that was first reported by Inoue et al. in 2008. POEM can be accomplished normally without being affected by the previous Heller-Dor operation, if POEM is performed at the contralateral site of the previous myotomy. Moreover, POEM enables making a long myotomy that cannot be made in laparotomy. At our hospital, we have performed POEM on 12 cases that previously underwent the Heller-Dor operation. Herein, we report on the treatment outcomes.

Aims & Methods: We performed POEM on 210 cases between September 2011 and April 2017. Of those cases, 12 cases (5.7%) had previously undergone Heller-Dor operation. The treatment outcomes were retrospectively investigated. The recurrence of the symptoms were investigated based on the results of medical interview, endoscopy, esophagography, esophageal manometry, and 24-hour PH monitoring test.

Results: The POEM cases that previously underwent Heller-Dor operation included 8 men and 4 women with the mean age of 54.8 ± 15.4 years. As regards the cause for the recurrence of symptoms, the lower esophageal sphincter was the responsible lesion in 10 patients, the esophageal body in 1 patient, and another reason in 1 patient. POEM was performed by incising the posterior wall in all cases. Postoperative complications were not noticed in any cases. The mean length of the muscular layer incision was 14.3 ± 6.1 cm on the esophageal side and 2.8 ± 1.0 cm on the gastric side. The mean surgical duration was 183 ± 56.9 minutes. An accidental systemic perforation associated with POEM was observed. The integrated relaxation pressure was preoperatively 22.1 ± 8.6 mmHg and 13.6 ± 5.4 mmHg. The Eckardt score was 4.1 ± 2.5 preoperatively, 0.67 ± 1.1 at 3 months after the surgery, and 1.0 ± 1.2 at 12 months after the surgery (P < 0.05). The symptoms improved in all cases.

Conclusion: The treatment outcomes of the POEM performed on cases that previously underwent Heller-Dor operation were favorable. POEM differs from repeat surgery by laparotomy as it can be used to perform a long muscular layer incision without adhesion if an appropriate route is used. The major advantages of POEM are the reliability and constancy of the effectiveness compared to endoscopic balloon dilatation. POEM is a very effective treatment method for cases for which Heller-Dor operation has not been sufficiently effective.

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

References

P0938 FLEXIBLE ENDOSCOPIC TREATMENT FOR ZENKER’S DIVERTICULUM OF HIGH ANESTHETIC 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 67-95, 7 females) with an ASA score of 3 that underwent FSED between August 2015 and November 2016 were collected retrospectively. 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 the outcome of the procedure was retrieved. The presence 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–
1855–63.

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

Introduction: To improve the quality of esophageal cancer surgery in the Netherlands, the number of retrieved lymph nodes (LNs) is evaluated in one retrospective national cohort study. The primary outcome: ‘percentage of patients with ≥15 LNs’ was analyzed by year and hospital. Factors tested with univariable and multivariable analysis for the association with ≥15 LNs were: age, Charlson score, weight loss, BMI, cT-, cN-, cM-stage, tumor location, neo-adjuvant therapy, type of procedure, intraoperative complications, hospital volume and year of resection. The postoperative outcomes: radicality, intraoperative complications, morbidity, and mortality were tested on association with ≥15 LNs.

Results: The overall percentage of patients in the Netherlands with ≥15 LNs increased from 2011 and 2016. Multivariable analysis showed an independent association with ≥15 LNs for the factors: cN2-stage (OR [95% confidence interval]: 1.37[1.05–1.79]), resection in a hospital with 26–50 or ≥50 resections/year (referent: 1–25 resections, 2.03[1.57–2.63] and 3.21[4.34–2.23]) and resection between 2012–2016 (reference: 2011, ORs: 1.55, 1.81, 2.43, 2.20, 2.64). Factors independent associated with <15 LNs are: neo-adjuvant chemo-radiation-therapy (referent: no neo-adjuvant therapy, 0.66[0.47–0.93]), intraoperative complications (0.55[0.39–0.80]) and open and minimally invasive transhiatal resection (referent: open transstomachic, 0.24[0.18–0.32]) and 0.38[0.20–0.55]). Postoperative morbidity and mortality were not associated with ≥15 LNs.

Conclusion: The evaluation of the outcomes of the quality indicator ‘a minimal number of 15 retrieved LNs’ is increased between 2011 and 2016. The variation between hospitals is decreased. The cN-stage, neo-adjuvant therapy, type of procedure, intraoperative complications, year of resection and hospital volume seem to be associated with the outcomes.

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

Aims & Methods: The aim of this review was to determine the optimum choice and the best conduit following colonic interposition after oesophagectomy in adults.

Results: Twenty-seven studies, involving 1849 patients (median age 60 years, 1177 males, 697 malignant disease) who underwent colonic interposition were analysed. The overall pooled morbidity rate of left vs. right colonic conduit was 5.6% [95% CI (3.59–7.60), p < 0.0001] respectively. The overall pooled mortality rate of left vs. right colonic conduit was 5.6% [95% CI (3.59–7.60), p < 0.0001] respectively. Retrosternal route placement was associated with the lowest overall pooled morbidity of 9.2% [95% CI (6.48–11.99), p < 0.0001], and lowest overall pooled mortality of 4.8% [95% CI (3.74–5.89), p < 0.0001] respectively.

Conclusion: Left colon is the conduit of choice for colonic interposition after oesophagectomy in adults and the retrosternal route should be favoured.

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

References

Aims & Methods: Our results suggest that FESD is a safe, feasible and effective treatment for dysphagia (score 1) to achieve symptom remission. This was carried out without reinstitution of chemotherapy for patients who could not undergo liver resection and continued ongoing chemotherapy. In the United European Gastroenterology Journal 5(5S)
Aims & Methods: advanced gallbladder or bile duct cancers, and is still a highly invasive surgical or more extended liver resection (HPD) is occasionally indicated in patients with There were 9 men and 5 women. The median age was 66 years old (34– 2002 and 2016. Of these 14 included 13 patients with bile duct cancer and one Consecutive one hundred one hepatobiliary resections with caudate lobectomy terms of case series of a single surgeon at three Japanese tertiary referral centers. Introduction: Hepatobiliary resection (HPD) 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 pancreaticoduodenectomy could be decreased by using the peroperative selective antibiotics based on preoperative bile 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), respectively. The aim of this study is to assess the impact of two types of perioperative prophylactic antibiotics on incidence of SSI. Aims & Methods: Sixty-nine patients received 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 the operation, and once after the operation. PIPC/TAZ was injected intravenously every three hours from the start of the operation and three times on the next day. VCM was injected intravenously in the morning of operation (20 mg/kg) and just after the operation (15 mg/kg). Comparison between CMZ group and PIPC/TAZ + VCM group was performed for SSI (surgical site infection; body mass index, age, performance status, ETS (examinations or drainage of biliary tract), ETS (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 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 observed in patients with PIPC/TAZ + VCM (9/31(29.0%)) than in those with CMZ (20/38(52.6%)) (p = 0.044). Especially, significantly lower incidence of incisional SSI was observed in patients with PIPC/TAZ + VCM (2/31(6.5%)) 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 patients (16.1%). No multiresistant 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.

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Introduction: Pancreatic 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 have cancer that 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 those surgeons who used a population-based level of care 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. Prognosis of lymphadenectomy was assessed by univariate and multivariable adjusted logistic regression with adjustment for important patient- and tumor characteristics. Overall survival was assessed using Cox proportional hazard regression analyses before and after full bivariate 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, (51.1%) underwent a dedicated lymphadenectomy, respectively. Over the study period, the rate of lymph node excision increased from 43% to 58% (p for 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 rate of lymph node positivity and the incidence of lymph node positivity 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. When radiation therapy, were diagnosed in the T1a stage, 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 0.58–0.90) and T2 stage (HR 0.59, 95%CI 0.53–0.65). Given significant bias of undergoing lymphadenectomy, full bivariate, pairwise propensity-score matching was performed. A trend towards overall survival benefit was also found for T1a disease (HR 0.65, 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.

P0945 RECTAL SWAB CULTURE CAN DIRECT ANTIMICROBIAL PROPHYLAXIS AND PREVENT THE RISK OF INFECTIOUS COMPLICATIONS AFTER PANCREATICODUODENECTOMY

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Introduction: Despite improvements in the perioperative care, the morbidity rate after Pancreaticoduodenectomy (PD) is still higher than 50%. In particular, infectious complications (ICs) occur in about one-third of cases. This study aimed to analyze the correlation between preoperative rectal swab (RS) and intraoperative bire cultures, and its impact on postoperative course of patients submitted to PD.

Aims & Methods: The institutional electronic database was queried for all consecutive patients admitted to our department from January 2010 to June 2016. Data were retrospectively analyzed. Based on the positivity/negativity of preoperative surveillance RS for multi-antibiotic resistant Gram-negative and Gram-positive enteric rods, the population was divided into two groups consequently compared (RS+ vs. RS-).

Results: Three hundred thirty-eight patients were considered for the analysis. Overall 50 patients (14.8%) showed a RS+, Preoperative biliary drain (PBD) was the only independent risk factor associated to RS+ (p = 0.021, OR 2.6). The group statistically differed in the overall morbidity, ICs, sepsis, pulmonary complications, reoperation and mortality (p < 0.05). At multivariate analysis, ICs and mortality remained independently associated to RS+ (p = 0.013 OR 2.9, p = 0.009 OR 3.4, respectively). Bile-culture showed a perfect correlation (species and antibiotic susceptibility) with RS culture in 157 patients (86.7%). The most common microorganisms found were E. Coli ESBL (6.6%) and Klebsiella pneumoniae carbapenemase-resistant (2.2%).

Conclusion: Preoperative RS-culture’s positivity strictly correlates to biliary colonization and posterior bacterial overgrowth. Preoperative surveillance RS in patients with higher bacterial colonization strongly predicts higher postoperative infection rate. Infection complication mortality after PD are independently associated with a positive RS culture. Our study suggests that preoperative RS can direct antibiotic prophylaxis in order to reduce the burden of ICs and deadly events after PD.

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

P0946 EFFECT OF TRICLOSAN-COATED SUTURE USE ON THE INCIDENCE OF SUPERFICIAL INCISIONAL SURGICAL SITE INFECTIONS AFTER GASTROENTEROLOGICAL SURGERY: A PROSPECTIVE PROPENSITY SCORE MATCHING RETROSPECTIVE STUDY

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Introduction: Surgical site infections (SSIs) after gastroenterological surgery cause significant morbidity, prolong hospitalisation and increase health care costs. Thus, SSI prevention is critical. To prevent bacterial colonisation in suture material, which disables local mechanisms of wound decontamination, triclosan-coated sutures were developed. We retrospectively analysed the efficacy of triclosan-coated polydioxanone sutures in abdominal fascia and skin closure using a propensity score matching analysis.

Preoperative RS-culture’s positivity strictly correlates to biliary colonization and posterior bacterial overgrowth. Preoperative surveillance RS in patients with higher bacterial colonization strongly predicts higher postoperative infection rate. Infection complication mortality after PD are independently associated with a positive RS culture. Our study suggests that preoperative RS can direct antibiotic prophylaxis in order to reduce the burden of ICs and deadly events after PD.

Aims & Methods: The study protocol followed the principles of the Declaration of Helsinki and received ethical approval from the Ethics Committee of the Fukuoka University (approval no. 12-7-96). At our department, we used conventional abdominal closure methods during gastroenterological surgery before August 2012. Thus, we retrospectively collected surveillance data over a 1.5-year period for the control group. From September 2012, we began using triclosan-coated sutures for closure. Here, we selected data for the control group from September 2012 to September 2013. In total, we included 1768 patients (control group, n = 640; study group, n = 1128) who underwent gastroenterological surgery. Baseline differences and selection bias were adjusted using propensity score matching.

Results: Before matching, the SSI incidence differed significantly between the control and study groups for all gastroenterological surgeries [12.4% (140/1145) vs. 5.0% (35/640); p = 0.000] and the SSI incidence for upper GI [5.7% (40/690) vs. 1.3% (4/300); p = 0.008] and lower GI surgeons [2.7% (20/740) vs. 0.0% (0/120); p = 0.004] were higher in the control group. After matching using a propensity score matching analysis, we found a significant difference in the SSI incidence between the control and study groups for all gastroenterological surgeries [9.7% (47/486) vs. 5.7% (28/455); p < 0.001]. We found a significant difference in the SSI incidence between the control and study groups for lower GI surgery [17.0% (68/400) vs. 5.4% (9/165); p < 0.001]. The difference in the SSI incidence between the control and study groups for upper GI surgery was not significant.

Conclusion: Few studies have focussed on the types of surgery best suited for triclosan-coated sutures. Our findings suggest that abdominal fascia and skin closure using these sutures reduces the SSI risk, particularly for lower GI surgery.

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

References
P0947 COMPARISON OF POSTOPERATIVE CONDITIONS BETWEEN PROXIMAL GASTRECTOMY 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 esophagegastrosotomy with a circular stapler (CS) accompanied by fundoplication in LPG. From March 2015, to avoid the postoperative complications, we have been using esophagegastrosotomy with the double-flap technique (DFT) in LPG for gastric cancer.

Aims & Methods: We conducted this study to examine whether DFT can reduce the incidence of reflux and incidences of postoperative complications, especially postoperative anastomotic stenosis were examined as surgical factors and compared between the DFT and CS groups. Second, gasoerosophageal reflux finding on endoscopy, condition of the remnant stomach according to residue, gastritis, bile (RGB) classification at postoperative 6 months and 1 year, and proton pump inhibitor (PPI) intake were examined as postoperative factors. Finally, albumin and hemoglobin levels at postoperative 6 months and 1 year were examined as nutrient factors. Gastroerosophageal 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). Other surgical factors showed no 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 nutritional factors were also lower in the DFT group than in the CS group.

Conclusion: Although LPG with DFT required a longer surgical time than LPG with CS, DFT is thought to be a safe reconstruction method in LPG. In addition to its safety, DFT can reduce postoperative reflux in patients who undergo LPG.

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

References

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 laparotomies 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 leaks. 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 employed.

Aims & Methods: Herein, we report ENPT using open-portal Polyurethane-foam and Film Drainage in a series of 10 patients with duodenal leaks. This is an open-label, retrospective, single-center study. Open-portal polyurethane-foam drainage (OPD) devices were constructed out of a piece (1.5 cm × 1.5 cm × 3 cm) of open-portal polyurethane-foam which was fixed surrounding the tip of a naso-gastric drainage tube. Small bore open-portal film drainage (OFD) device was constructed with a strip of a very thin fragment open-portal double layered film (3 cm × 1 cm). The foam is grouped 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 naso-duodenal tube. Due to its smaller outer diameter OFD insertion is similar to placing a naso-gastric or naso-intestinal feeding tube (i.e. through the nose). After nasal insertion into the esophagus OFD is grasped with a forceps and advanced into the stomach, and guided into the duodenal lumen for intraluminal ENPT. In case of a duodenal- cutaneous fistula the pull-through technique has been used for duodenal placement. In one case rendezvous technique was used in combined repair with open surgical OFD and endoscopic ENPT. Use of a negative electronic vacuum device and negative pressure is applied. We use standard negative pressure of 125 mmHg, continuous suction, and high intensity, which results in collapse of the duodenal lumen around the open-portal foam or film with subsequent closure of the defect zone. Furthermore, duodenal secretions are actively removed through the tubes.

Results: We treated 10 patients with ENPT because of a duodenal leakage.

Reason of duodenal defects were: rupture of operative suture (n=8), iatrogenic perforation due to an incorrect insertion of an endoscopic stapler (n=2) and violation from system of a hemostasis. For this plan especially the armamentament of ENPT is got by the researches directed to development of sorbents with oxidizing activity.

Aims & Methods: Aim of study is to establish effectiveness of the modified haemosorbor application for patients about the MOFS. The experimental part of work was conducted on 14 not purebred dogs with the acute liver failure modelled by bandaging of distal department of the CBD. After development of pathological process animals were divided into 2 groups. To the first group of animals the procedure of a haemosorbor was carried out by a reference technique—introduction of a haemosorbor of SKN-2K. To the second group of dog the haemosorbor 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 nutrient 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 much larger degree. After performing detoxication therapy by the developed technique a normalization of all studied parameters is registered. The same tendency is revealed also concerning nontoxic components. It is necessary to pay special attention to dynamics of a ratio of the common protein and an index average molecules (the common protein, pointing to synthesis process activation. The carried-out all-clinical blood test revealed the considerable improvement of indexes of white blood. In group of comparison it was not 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 getetter detoxication in the postoperative period. The control group (25) was created by a random sample of case histories of the patients with the postoperative anastomotic 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 laborato- rinary indexes is noted in earlier terms, and degree of expressiveness of positive changes at them was much higher. Dynamics of decrease in endogenic intoxication is reflected by data of laboratory researches. It is necessary to pay special attention to the fact 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 oxidizing, oxidizing properties. At such modification there is an inclusion of oxygen-containing and acid groups in structure of the sorbent, and surface of a sorbent proteogenic groups of carboxylic and phenolic types thanks to which the oxidized coals gain the expressed cation-exchange ability are formed. Therefore, besides actually getter, such sorbent follow-up gains oxidizing properties. Modification of a sor- bent solution of a neutral anolyte incidentally allows to solve also other problem connected about need of use of anticoagulants for prevention of a thrombogen- eis in a column. Use in this quality provides decrease in risk of postoperative violations from system of a hemostasis.
Disclosure of Interest: All authors have declared no conflicts of interest.

References


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Introduction: Gastric leaks are severe complications of Bariatric Surgery (BS). Surgical reconstruction may be indicated but is associated with high morbidity and mortality. The use of self-expanding esophageal metallic stents (SEMS) has become an effective alternative. Over the scope clips (OTSC) have also been used. Nevertheless some patients develop a refractory fistulae after stent removal or other failed surgical treatments. Cardiac Septal Defect Closure Devices (CSDCD), used in interventional cardiology have been described to treat post-surgical digestive fistulae in non-bariatric cases. Aims & Methods: We aim to present the experience using CSDCD for gastric leaks secondary to BS. In this retrospective study, patients with leaks secondary to gastric bypass (GBP) or sleeve gastrectomy (SG) from 4 centers were included. Data collected from november 2012 to january 2016 included sex, age, type of surgery, previous treatment, tract path, size of the leak opening and defect closure. Leaks were grouped according to the International Sleeve Gastrectomy Expert Panel Consensus in acute (post-operative days 1–7), early (1-6 weeks), late (after 6 weeks) and chronic (>12 weeks). Biliary catheters were adapted to introduce the CSDCD through the gastroscopes working channels. Clinical success was defined as complete and permanent resolution of abdominal or thoracic pain syndrome severity (visual analog scale), need for analgesics, postoperative complications, hospital-stay, daily activity recovery and return to physical work, patients’ satisfaction of surgical results and their aesthetic effect. Results: It was revealed that SLS cholecystectomy is associated with lower severity of postoperative pain, quick recovery of daily activity and return to work, high satisfaction of surgical results and low incidence of surgical revision compared with four-port cholecystectomy. Disadvantages of SLS 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 SLS cholecystectomy are necessary. Disclosure of Interest: All authors have declared no conflicts of interest.

References

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Introduction: Bibliometric analysis highlights key topics and publications, which have shaped the development of laparoscopic surgery (LS). Here the most cited manuscripts in the field of LS are analyzed. Aims & Methods: The Thomson Reuters Web of Science database was used to identify all English language full manuscripts for the study with the search term ‘laparoscopy’ and ‘surgery’. The 100 most cited papers were further analyzed by topic, journal, author, year and institution. Results: 71,524 eligible papers were returned and the median (range) citation number was 585.76 (range 1635 to 368). The two most cited papers received 1635 citations each. The first (Nelson1) compared laparoscopic and open colectomy for colon cancer, and the second (Clavin2) described the classification of postoperative morbidity. Annals of Surgery published the highest number of papers (n = 22) and received most citations (n = 12,356). The country with the highest number of publications was the USA (n = 55), and the year with the greatest number of publications was 2004 (n = 13). The most ubiquitous topic was the treatment of cancer (n = 35), followed by surgical technique (n = 24), and comparison of laparoscopic with open surgery (n = 22). Conclusion: The most cited manuscripts highlighted laparoscopic surgical technique and compared laparoscopic with open surgery, and this review provides the most influential references in this area, serving as a guide to the publication.
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 gaming experience and visuospatial skills.

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 were 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 either of the groups in task number 3. A high visuospatial score correlated with a better result in time to completion (M = 68.89, p = 0.026) and total score (M = 80.16, p = 0.036). The group with both low PC-gaming experience and low visuospatial score performed worst in the simulator exercises.

Conclusion: Higher pre-existing visuospatial experience and visuospatial skills 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 simulating training.

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

References


Disclosure of Interest: All authors have declared no conflicts of interest.
TLR5-deficient and emulsifier-treated mice demonstrate that these models of gut inflammation and pathobiont dependency on distribution favor pathobiota dependence. Inhibition of TLR5 signaling lowers Th17 polarization towards Th1, Th2 and Th17 differentiation of CD4+ T-cells, respectively, while Th1 and Th17 cytokine production for Th17 differentiated cells.

Assays. Aliquots of cells were cryopreserved and further analyzed for the effect of bacterial cell-free supernatant, surface antigens and CD4+ T-cell responses. Results: Approximately 95% cell viability and 90% leukocyte (CD45+) cell purity was determined by FACS analysis of isolated LPMCs. According to cytokine analysis, CD45-negative cells may represent CD45-negative population of plasma cells: no contamination with epithelial cells was detected. Within CD45− cell population, 26–47% T-lymphocytes, 17–24% B-lymphocytes, 8–17% macrophages and 21–46% monocytes were detected by FACS and cytokanalyses (N = 3). Cryopreservation did not significantly affect cell viability and surface- and cytokine marker expression. Isolation of a reference LPMC line F2;4. Fece was assayed for bacterial loads, microbiota composition, and inflammatory marker lipocalin-2. Fecal LPS and flagellin bioactivity were measured via a cell-based reporter assay, and morphologic and metabolic parameters were determined.

Results: Neither CMC nor P80 induced evidence of intestinal inflammation nor metabolic syndrome in WT ASF mice. Analogously, relative to similarly maintained WT mice, loss of TLR5 did not result in low-grade intestinal inflammation and metabolic syndrome under ASF conditions. Concomitantly, the ASF microbiota community was not disturbed by CMC nor P80 and, moreover, was similar between WT and T5KO mice. Inoculation with AIEC strain LF82 resulted in profound alteration of the ASF community in T5KO mice compared to WT animals. Within LF82 inoculated in ASF T5KO mice, we observed a female gender (ß = 0.370) were significantly associated with higher disability. 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. Reference


P0959 FACTORS ASSOCIATED WITH DISABILITY IN INFLAMMATORY BOWEL DISEASE: OUTPATIENT CROSS-SECTIONAL STUDY

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Introduction: The Inflammatory Bowel Disease-Disability Index (IBD-DI) has recently been validated to measure disability in IBD. 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 by 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 (0–10) was significantly associated with greater disability (IBD-DI-PT score). In multivariate analysis, only female gender (ß = 0.150), number of comorbidities (ß = 0.186) and pessimism (ß = 0.370) were significantly associated with higher disability. Clinical activity was associated with greater disability only for CD patients (ß = 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 corticosteroids in relation to the group receiving biological therapy. Statistical difference (p = 0.0022) and CD62L (p = 0.02) compared to healthy controls. In the population of CD4+ T cells, a significant increase in the expressions was observed in patients receiving corticosteroids (p = 0.0001) and IgA (p = 0.0001) were also higher in groups of past cases compared to control group. The population of CD3+ cells in peripheral blood of healthy controls and patients with CD was evaluated both in biological and corticoid treatment. A significant increase in the population was observed in patients receiving corticoestoids (p = 0.02) compared to healthy controls. In the population of CD4+ T cells a significant increase was observed in patients undergoing treatment with corticoestoids in relation to patients undergoing biological treatment (p = 0.0027). In CD8+ T cell population, no statistical difference was observed between the groups. The markers CD8, CD62L and HLA-DR were also evaluated. In relation to CD3 (p = 0.0022) and CD26 (p = 0.015) in subpopulation of CD4+ T cells, a significant increase in the expressions was observed in the group of patients receiving corticoestoids in relation to the group receiving biological therapy. Regarding HLA-DR, statistical difference (p = 0.01) was observed between the group undergoing biological treatment and the group of healthy controls. In the subpopulation of CD8+ T cells, a significant increase (p = 0.02) was observed in the CD3D marker when compared patients on corticoid treatment with patients undergoing biological treatment. Regarding the CD62L marker, only a statistical difference (p = 0.04) was observed when compared patients on corticosteroid treatment with healthy controls. Finally, a statistical difference (p = 0.02) was also observed in the HLA-DR marker when comparing the group of patients receiving corticoid with the group of patients in use of biological therapy.

Conclusion: We conclude that the use of biological therapy suppresses activated CD4+ and CD8+ T cells by regulation of CD8, CD62L and HLA-DR in relation to the use of corticoestoids.

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

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Introduction: Imbalance of immune bowel environment is associated with development of many diseases, such as Crohn’s disease (CD). Although the pathogenesis of CD is still unclear, a key feature is the dysregulation of immune system (Zhang and Li, 2014). Human immune cells are the front line of inflammatory responses and include, in addition to other cells, CD4+ and CD8+ T cells, which comprises adaptive phase and require proper inflammatory cues for their activation phase. CD4+ T cells are primarily found in chronic inflammatory disease, while CD8+ T cells are the major effectors of cellular immunity. Both kinds of markers give them powerful functional capabilities (Abbas et al., 1996). CD38 and HLA-DR besides being classically markers of cellular activation, are also known as markers of diseases progression (Lovelace et al., 2017). Some studies shows that CD4+ T cells play a key role in the immune inflammatory response leading to CD but these cells are poorly characterized in the blood of the patients.

Aims & Methods: This study aimed to characterized CD4+ and CD8+ T cells in the blood of patients with CD. The study was performed in individuals with CD (n = 40) and healthy controls (n = 38). Blood of healthy donors and patients with CD was collected in clinical laboratory from Hospital Albert Einstein. CD4+ and CD8+ T cells was quantified by multiparametric flow cytometry. Dosage of calprotectin and ASCA was performed by commercial Elisa kit. The results were compared for numerical measurements using Student’s t-tests. ANOVA, Mann-Whitney or Kruskal-Wallis, depending on the suitability of the data and the number of groups to be compared. The computational package used for the analyses was R 3.0.3 and GraphPad Prism 6.

Results: The highest prevalence in both group was female, aged between 19 and 66 years with a median of 37.5 years. Among clinical exams, 61% of cases present anemia with a median of 11.0% (p = 0.001). ASCA IgG (p = 0.005) and increasing the concentration of Bacteroidetes type bacterias (p-value < 0.005) and reaching 0.21 in samples of patients with ulcerative colitis. Additionally, the concentration of Escherichia coli species bacterias was increased in the 40 times for that sample (normalized number of reads in control samples was less than 0.003 and reached 0.21 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 Bacteroidetes type bacteria) was discovered, which playing an important role in the development of ulcerative colitis and coexistence with colitis). Although, 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 diseases (IBD) development and exacerbations is still poorly understood. GLP-1 decreases blood glucose level and stimulates insulin release in the gut, 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, the role of coexisting coeliac disease development and colitis on incretin hormone expression. 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

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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 genetics 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 understanding the connection of the gut microbiome to 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.
effect of colitis on T2D development was studied by assessing fasting glucose levels, HbA1c, hemoglobin levels in UC, and GLP-1 levels in UC. Results: The development of hyperglycemia in mice treated with TNBS was delayed compared to a non-inflamed group, what was associated with significantly higher level of GLP-1 in blood. Surprisingly, the levels of GLP-2 were significantly higher 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. Necrotic tissue was significantly increased in diabetic mice with colitis compared to diabetic mice with no inflammation. No changes in MPO, TNF-α, IL-1β were observed between these groups.

Conclusion: We propose that GLP-1 production may be stimulated in response to colitis and may contribute to both inflammatory and regenerative phases of the disease. Accordingly, peripheral eosinophils of IBD patients are primed and pre-activated. They display increased responsiveness, adhesiveness, migration, and degranulation and are characterized by up-regulated secretion of their mediators. Increased number and activation of eosinophils have been repeatedly observed in areas of active inflammation. Despite the acknowledged contribution of eosinophils to the disease pathogenesis, available data on cytokines closely related to the development and activity of peripheral eosinophils in IBD patients are either scattered or non-existent.

Aims & Methods: Aim of the study was assessment of the circulating eosinophil-associated cytokines and growth factors as differential markers and indicators of mucosal healing in inflammatory bowel disease. Study population consisted of 277 individuals: 101 patients with Crohn’s disease (CD), 77 with ulcerative colitis, 16 with IRritable bowel syndrome (IBS) and 83 healthy controls. The disease severity was assessed using the Crohn’s Disease Activity Index (CDAI) for CD and the Mayo Disease activity index (MDA) for IBD. The level of Mayo endoscopic score was applied to evaluate the severity of bowel inflammation in UC patients. The concentrations of eosinophil-associated cytokines and growth factors: eotaxin, GM-CSF, IFNγ, IL-4, IL-5, IL-8, GM-CSF, RANTES and TNFα were measured simultaneously in patient’s sera using Luminex xMAP® technology and referred to IBD activity and the levels of hsCRP. The suitability of eosinophil-associated cytokines and growth factors as differential markers and potential indicators of mucosal healing, individually and in multi-marker panels, was evaluated using ROC analysis.

Results: As compared to IBS patients or healthy controls, patients with CD had significantly higher levels of IL-5, IL-8, IL12(p70), GM-CSF, and TNFα, and patients with UC the levels of eotaxin, IL-4, IL-5, IL-8, IL12(p70), IL-13, GM-CSF, and TNFα. As compared to CD patients, patients with UC had significantly higher levels of eotaxin, IL-4, IL-5, IL-8, and IL-11. In turn, the concentrations of hsCRP were significantly higher in CD than in UC. Except for IL-13, all cytokines and hsCRP positively correlated with CDAI (CD) or only IL12(p70) and hsCRP were significantly higher in patients with active than inactive CD. In UC, a positive correlation with MDAI was observed for hsCRP, GM-CSF, IL12(p70), and IFNγ and a negative one for IL8. The concentrations of hsCRP, GM-CSF, IFNγ, IL12(p70) and RANTES were higher in UC patients with active than inactive disease whereas those of IL-8 and TNFα were significantly lower. As differential individual markers, eotaxin displayed superior accuracy as an indicator of active UC (71%), followed by hsCRP as an indicator of active CD (66%). The combined assessment of eotaxin, hsCRP and IFNγ had significantly higher accuracy (78%) and allowed for a correct classification of 72% of patients. The concentrations of hsCRP, GM-CSF, IFNγ, and IL12(p70) were significantly and positively correlated with the degree of bowel inflammation, expressed as Mayo endoscopic subscore. Of these, a drop in GM-CSF had super ior power. Interestingly, the ratio of mucosal inflammation to neutrophilic infiltration was significantly higher in both CD and UC than in IBS. Of these, IL-8 had superior accuracy in differentiating IBD and IBS (91%), allowing for a correct classification of 93% of patients.

Conclusion: Eosinophil-associated cytokines are elevated in IBD, more pronounced in CD than UC, and might support the differential diagnosis of IBD and aid in monitoring of mucosal healing.

Disclosure of Interest: All authors have declared no conflicts of interest.
P9066 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 virulent UC mice is related with the reduction of CD54RA Foxp3+ activated Treg/FHIL cells, which has the real function of immunosuppression, and with the elevation of CD45RA Foxp3− Foxp3FHIL cells, which provide Foxp3+FHIL1a trait but lack immunosuppressive capacity. Activation of Toll-like receptor 2 (TLR2) causes elevation of FHIL, which show Foxp3 FHIL1a trait by secreting IL-17a.

Aims & Methods: To investigate the influence of TLR2 on imbalanced Threg/Th17 in the virulent UC mice, 18 mice were randomized into three groups: healthy control mice (group A), ulcerative colitis mice (group B) and TLR2mAb treated UC mice (group C).Weight and DAI (disease activity index) of each group were recorded once a day. After being sacrificed, pathological examination of the rectum of all the mice were carried out. Treg cells with their subsets, Th17 cells and CD3+CD8+CD25+Foxp3+FHIL1a cells from the lamina propria of colon (LPC) and other tissues of mice were evaluated by flow cytometry.

Results: (1) Declined vitality, anorexia, weight loss and bloody purulent stool were observed in the major symptoms of UC mice. The symptoms of TLR2mAb treated UC mice were alleviated, and the DAIAs of these mice showed difference from UC mice (p<0.05). The inflammation of colonic mucosa in TLR2mAb treated UC mice were also attenuated compared with UC mice. (2) Compared with group A, the proportion of Foxp3+ FHIL1a cells increased in PBMC, MLN and LPC (1.275±0.063 vs 1.168±0.028, 6.067±0.152 vs 3.632±0.639, 5.657±0.211 vs 1.173±0.150, P<0.05 respectively). The level of Treg cells in PBMC of group C was declined compared with group B (1.153±0.028 vs 1.275±0.063, P<0.05). (3) The levels of Th17 cells were elevated in PBMC and LPC of group B compared with group A (0.488±0.015 vs 0.328±0.023, 4.300±0.137 vs 1.333±0.126, P<0.05), but Th17 cells were decreased in PBMC of group C compared with group B (0.273±0.061 vs 0.488±0.015, P<0.05). (4) Foxp3+ FHIL1a cells were detected in PBMC, MLN and LPC of group B compared with group A (0.016±0.005 vs 0.030±0.009, 0.123±0.012 vs 0.465±0.024, 0.233±0.022 vs 0.367±0.018, P<0.05 respectively). Otherwise, increased FHIL1a cells were in spleen, PBMC, MLN and LPC of group C compared with group A (0.016±0.005 vs 0.030±0.009, 0.123±0.012 vs 0.465±0.024, 0.233±0.022 vs 0.367±0.018, P<0.05 respectively). FHIL1a cells were elevated in PBMC, MLN and LPC of group C compared with group A (4.215±0.490 vs 3.128±0.171, 14.463±0.84 vs 8.740±1.40, 9.487±0.604 vs 3.706±0.104, P<0.05 respectively). Moreover, declined FHIL1a cells were observed in spleen and PBMC of group C compared with group B (8.967±0.354 vs 14.122±0.438, 3.070±0.763 vs 4.215±0.490, P<0.05). (5) Compared with group A, CD3+CD8+CD25+Foxp3+FHIL1a cells were increased in PBMC, MLN and LPC in group B.3.915±0.264 vs 2.533±0.076, 1.672±0.158 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+FHIL1a cells were decreased in spleen, PBMC, MLN and LPC compared with group B (0.538±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, 2.443±0.052 vs 5.967±0.100, P<0.05 respectively).

Conclusion: By blocking TLR2, TLR2mAb could improve the level of FHIL1a cells in PBMC, MLN and LPC, but reduce the levels of FHIL1a and Foxp3+FHIL1a cells in DSS induced UC mice. Furthermore, TLR2mAb 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

P9096 First analysis from UK IBD Twin Biobank: 16S RNA gene sequencing identifies preferential diversity in active IBD and taxas associated with active disease. PHENOTYPE TO LEVEL OF SPECIES

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Introduction: Previous studies have shown that the gut microbiota plays an important role in IBD, however the role of specific bacteria is not clear and is only considered to be responsible for the disease. 16S gene profiling studies generate large amounts of information, however they can be confounded by genetic and environmental factors. Twin studies are instrumental in controlling for some of these variabilities, and in this study we investigated the microbiota of twin pairs discordant for Crohn’s disease (CD) and Ulcerative colitis (UC) using 16S rRNA gene sequencing, with the aim of identifying taxa associated with disease.

Aims & Methods: Participants were recruited via the UK IBD Twin Registry. stool samples were collected and frozen using standard methods. Participants who had received antibiotics within 3 months were excluded. Harvey Brashford Index and Simple Clinical Colitis Activity Index were recorded. Full medical history was available from the UK IBD Twin Registry. Samples underwent 16S sequencing using Illumina MiSeq platform using our data analysis pipeline. PERMANOVA was used to evaluate associations with clinical metadata, which included matching of twin pairs for analysis, and STAMP was used to identify taxonomic differences between groups.

Results: 20 twin pairs discordant for CD (5MZ:15DZ mean age 52 years) and 17 discordant for UC (6MZ:11DZ mean age 59.7 years) were recruited. 7 subjects with CD had active disease as did 4 with UC. Gut microbiota from active CD patients had lower bacterial diversity compared to remission CD patients, while UC patients had lower diversity compared to healthy twins (Shannon diversity index, p<0.01 healthy vs active UC, p<0.05 active vs remission CD, l-way ANOVA post hoc = Tukey).

Active UC patients also had lower bacterial diversity compared to remission UC patients and healthy twins (Shannon diversity index, p<0.01 healthy vs active UC, p<0.05 active vs remission UC). We found that active CD patients had a higher proportion of Cladstium hylemonae and Lactobacillus delbrueckii compared to healthy twins, and a lower proportion of Faecalibacterium prausnitzii compared to remission UC patients (p<0.05). We found that active UC patients had a lower proportion of Alstipites spp. compared to their healthy twins and UC patients in remission (p<0.05).

Conclusion: This study confirms previous findings showing decreased diversity in IBD patients and changes in some bacterial taxa, however our study is the first to show decreases in Alstipites spp. in active UC.

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

P9098 CD4+ T CELLS OF IBD PATIENTS ARE CHARACTERIZED BY AN INCREASED EXPRESSION OF THE NUCLEOTIDE RECEPTOR P2Y2, WHICH IMPACTS RELEVANTLY ON PRO-INFLAMMATORY SIGNALING PATHWAYS IN SCID MICE

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Introduction: Chronic and acute inflammation is often associated with an upregulation of extracellular UTP and ATP nucleotides, which are able to interact with various cell types via purinergic G protein-coupled P2 receptors. Interestingly, former studies already described an increased expression of the ATP/UTP receptor subtype P2Y2 (P2Y2R) in the colonic tissue of IBD patients [1]. However, it remained unknown how in fact immune cells of IBD patients are also characterized by an altered P2Y2R expression and whether this might impact on their pro-inflammatory capacity.

Aims & Methods: P2Y2R mRNA and protein expression on primary CD4+ T cells from the blood of IBD patients or healthy donors was analyzed via qPCR or western blot, respectively. Furthermore, primary human CD4+ T cells were stimulated in the presence of UTP or the selective P2Y2R agonist 2-thio-UTP and
Aims & Methods: We aim to elucidate the effects of HIF1α stabilization through hydroxylase inhibition ameliorates DSS-induced colitis and induces autophagy

Conclusion: The observed increased expression of P2Y2R in CD4+ T cells of IBD patients together with the demonstrated pro-inflammatory effects of P2Y2 signaling in human T cells markedly strengthen the role of P2Y2R as a promising target in IBD.

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

Reference

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Introduction: Environmental hypoxia has been increasingly recognized as an important environmental factor associated with Inflammatory Bowel Disease (IBD). Hypoxia allows the stabilization of hypoxia inducible factor (HIF) complexes and has been linked to the activation of autophagy. HIF1α is induced in the inflamed mucosa from IBD patients and mouse models of colitis, but its role in intestinal inflammation is still controversial since both, positive and negative inflammatory effects have been described.

Aims & Methods: We aim to elucidate the effects of HIF1α stabilization in autophagy and the development of intestinal inflammation in a murine model of colitis. Female C57BL/6 mice between 8–10 weeks of age were exposed to 2% DSS in drinking water for 7 days, and received 8 mg of the hydroxylase inhibitor DMOG administrated 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 Nrf2 and production of heme oxygenase (HO-1). Apocynin also appears to have protective effect and action mechanism of IBD.

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

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Introduction: Faecal metabolic profiling has been shown to distinguish Inflammatory Bowel Disease (IBD) from healthy controls (HC), specifically with depletion of gut-associated short chained fatty acids (SCFA) as the predominant feature separating these groups (1). Previous and current studies have used proton nuclear magnetic resonance (1H NMR) spectroscopy or mass spectrometry (MS) to measure faecal metabolites to identify the metabolic, microbial and clinical response of IBD patients to different treatments. Both techniques require a significant amount of sample pre-processing.

Rapid Evaporative Ionization Mass Spectrometry (REIMS) is a relatively new technology which applies a laser to a biological sample, and the resulting vapour, containing gas phase ions of metabolites and structural lipids, is analysed by a mass spectrometer (2). Unprocessed faecal samples can be rapidly assessed using this technique to obtain lipidomic spectral profiles (2). To our knowledge this is the first study that has used REIMS to investigate whether IBD patients can be distinguished from healthy controls using faecal samples.

Aims & Methods: Unprocessed faecal samples from 109 IBD patients and 46 healthy controls were analysed using Rapid Evaporative Ionization Mass Spectrometry (REIMS) 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. The later sample was then carried out including examining whether ulcerative colitis could be distinguished from Crohn’s disease.
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 sulfonic 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 sulfonic acid (TNBS)-induced colitis mice (AhR−/+ , AhR+/−). Results: Compared to quiescent CD patients, the expression of aryl hydrocarbon receptor (AhR) in the intestinal tissue in active CD patients was decreased. Meanwhile, the number of ILC3 in active CD patients and AhR knockout mice was decreased while ILC1 increased. The intestinal inflammation in AhR knockout mice given TNBS was more severe than wild-type mice.

Conclusion: These findings suggest that AhR may mediate abnormal differentiation of ILC3/ILC1, and the production of inflammatory cytokines, finally, promotes the pathogenesis of CD.

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

References
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levels. Data were further processed in QIIME employing MoAsLin and LEiSe tools to filter and process output data.

Results: Microbial profiles in both PSC and UC were characterized by low bacterial diversity and significant change in global microbial composition. Rothia, Enterococcus, Streptococcus, Veillonella, and three other genera were markedly overrepresented in PSC, whereas in UC, the genera Bacteroides, Dialister, Pseudomonas, and Prevotella were increased. Decreased genus Phascolarctobacterium was linked to presence of colonic inflammation regardless of IBD phenotype. Akkermansia muciniphila, Butyrivibrio plicaticorrum and Clostridium colinton were decreased in UC along with genus Roseburia. Unclassified Acinetobacter species were markedly increased in overlap syndrome of autoimmune hepatitis (AHP) and PSC. Low levels of serum albumin were significantly correlated with enrichment of order Actinobacteria.

Conclusion: PSC was characterized by microbial features independent of concomitant IBD. Additionally, the diversity of gut microbial taxa clearly distinguished IBD phenotypes (PSC–UC–IBD) as well as PSC from AHP.

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

References
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Introduction: Metabolic profiling (metabonomics) has been proposed as a novel clinical tool in IBD to predict development of complex disease, or for longitudinal non-invasive monitoring of activity and/or response to drug treatment. Urinary metabonomics can distinguish IBD from healthy controls but no studies to date have assessed the stability of these discriminatory profiles over time. Changes in healthy adults and metabolic signatures are largely unchanged over periods of up to 3 years(2), but signals are influenced by multiple external factors including medication and surgery, so how these change in IBD is unknown. The aim of this study was to compare baseline urinary metabolic profiles of IBD patients with a repeated sample several years later to assess similarity, and also to test if any clinical outcomes could be retrospectively predicted from the baseline sample.

Aims & Methods: Two urine samples from 39 IBD patients (22 Crohn’s disease (CD) and 17 ulcerative colitis (UC) were collected - one at baseline and one several years later (range 7–9 yrs). These were analysed by 1H NMR spectroscopy. Disease progression was defined as initiation of immunosuppression or biologics, progression of disease (no remission) or hospitalisation with one or more admissions. Clinical remission was defined as no disease-related symptoms or hospitalisation in the past year. Principal components analysis was used to visualise the variance between the two time-points within the cohort. Orthogonal partial least squares discriminant analysis (OPLS-DA) was used to establish if the metabolic signatures could be used to predict adverse clinical outcomes in the patients studied.

Results: 57% of CD patients and 17% of UC patients had clinical progression at follow-up sampling. PCA showed clustering of sample pairs from the baseline and several years later in most individuals, suggesting intra-individual similarity across time. OPLS-DA showed no statistical models could be built to predict combined poor outcome based on the initial urinary metabolic profile (p = 0.26). However, the small subgroup who went on to require surgical intervention could be separated from the cohort in a model (Q2 = 0.015; p = 0.003) constructed on their baseline profile and the outcome.

Conclusion: The metabolic phenotype of an IBD individual appears relatively stable over a significant time period despite a variety of clinical outcomes and interventions. Variations in longitudinal measurements appear to be subtle, and there is replication of this finding. Further techniques for disease monitoring may be needed. Principal components analysis could prove difficult. These results may suggest that metabolic profiling could be exploited to predict a higher risk of requiring future surgery.

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

References

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Introduction: Mucosal healing is considered to be the hallmark of successful therapy in Ulcerative Colitis, and has become increasingly used as a target of therapeutic interventions. Loss of mucosal integrity and associated bacterial translocation of bacterial components across the mucosal epithelial barrier occurs in Ulcerative Colitis and persistence of a structural mucosal defect is a characteristic of chronic inflammatory bowel disease. Mucosal healing can be defined by clinical, endoscopic and histopathological means but no clear definition of the required extent of mucosal healing exists, nor is there agreement on how functional mucosal healing is defined.

Aims & Methods: To define the extent and associations of mucosal healing in patients with Ulcerative Colitis, and the relationship with bacterial translocation and clinical remission. Patients with established diagnosis of Ulcerative Colitis undergoing endoscopic evaluation were recruited to the study (Ethics: South West London REC2 10/H0706/26). Clinical history and long-term follow-up data were recorded. Blood and mucosal samples were procured as mononuclear cells. Healthy controls recruited from cohort undergoing routine lower gastrointestinal investigations without positive findings. Flow cytometry characterisation of cells by cell surface CD45RO, CD27, CD3, CD14, CD8 and CD161 and cytokine expression after staphylococcal enterotoxin B stimulation by IL-2, IL-17a, IL-22, TNF, IL-17f and IFNγ. Immunohistochemistry to define tight junction apical epithelial expression (Claudin 1, Claudin 4 and Occludin) and lipopolysaccharide within the lamina propria. Peripheral blood markers of bacterial translocation: bacterial DNA (16fDNA), lipopolysaccharide binding protein (LBP), soluble CD14 and plasma lipopolysaccharide. Statistical analysis by Mann Whitney or Kruskall Wallis analysis with Dunn’s post test correction, or by Spearman rho correlation.
**Results:** Twenty-eight patients with Ulcerative Colitis, duration of disease from 4 months to 31 years, and 22 Healthy subjects were recruited in the study. Half of the patients had active disease as assessed by Ulcerative Colitis Severity Score. Disease severity positively correlated with frequency of mucosal TH1 (CD4+IL-17a+) and IL-17f. Breaches in tight junction protein expression were greater in UC: Claudin 1 (p = 0.018) and Claudin 4 (p = 0.016) and occludin (p = 0.03). The serum marker of bacterial translocation, lipopolysaccharide binding protein (LBP) was elevated in UC compared to controls (p = 0.0078) and was positively correlated with breaches of Claudin 1 and Occludin (r = 0.30) respectively. Staining colon biopsies for the presence of lipopolysaccharide in the lamina propria demonstrated positive findings in healthy controls, supported by data from 16s rDNA analysis of blood from healthy controls. In the Ulcerative Colitis cohort in clinical remission the absence of lipopolysaccharide in the lamina propria was associated with elevated levels of LBP and increased breaches of Occludin (p = 0.0022).

**Conclusion:** Breaches of tight junction proteins in the colon of patients with stable clinical remission can be detected and are associated with perturbations of mucosal immunological function and markers of bacterial translocation. These findings require further study, specifically to examine the role of mucosal immune tolerance to lipopolysaccharide and other bacterial cell products that may be present in the healed mucosa of ulcerative colitis.

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

**References**

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**9979 EFFECT OF FIBER AND FAT CONSUMPTION ON DISEASE ACTIVITY AND QUALITY OF LIFE IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE**

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**Introduction:** Diet may influence intestinal inflammation via various pathways but the evidence regarding the role of fiber or fat intake in patients with inflammatory bowel disease (IBD) is controversial.

**Aims & Methods:** The aim of this study was to investigate the association between dietary fiber or total fat intake and disease activity or quality of life in Greek IBD patients. We prospectively collected food frequency questionnaires (FFQ) from consecutive IBD patients at outpatient visits. The European Prospective Investigation into Cancer and Nutrition (EPIC) Study FFQ for Greek population with the MAFF photographic food atlas were used in order to collect information for dietary habits of IBD patients. Moreover, disease activity was assessed using the disease activity index (SCCAI) (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 had poor quality of life with SIBDQ score ≥50. There was no difference in daily fiber or fat consumption between patients with UC and CD (median daily fiber intake 23.5 (IQR 18.8–34.6) g vs 21.7 (14.6–34.2) g (p = 0.86), median fat intake 148.7 (112.4–242.8) g vs 169.4 (127.1–236.7) g (p = 0.30). There was a significant negative correlation between fiber intake and disease activity in both UC (r = −0.37 p = 0.007) and CD (r = −0.32, p = 0.002) while there was not significant correlation between fat intake and disease activity (in both diseases p > 0.05). No association of fiber or fat consumption with abnormal CRP, increased ESR, presence of anemia, thrombocytosis or low albumin was found (all with p > 0.05). SIBDQ score had a significant correlation only with fiber intake (r = 0.31 p = 0.0002) but not with fat intake (r = 0.07 p = 0.40).

**Conclusion:** Higher dietary fiber intake is associated with lower disease activity and better quality of life in patients with IBD. Fat consumption does not seem to influence the disease activity and patients’ quality of life. Based on these results it could be suggested that the amount of fiber consumption by IBD patients may play an important role in the disease course.

**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.

Table 1: Disease behaviour in Crohn’s disease at diagnosis and follow-up

<table>
<thead>
<tr>
<th>Timepoint</th>
<th>Firmicutes</th>
<th>Eubacteriods</th>
<th>Rosebushia</th>
<th>Bifidobacterium</th>
<th>Faecalibacterium prausnitzii</th>
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<tr>
<td>FC 1-2</td>
<td>0.352 0.015</td>
<td>-0.211 0.147</td>
<td>0.056 0.731</td>
<td>-0.265 0.068</td>
<td>-0.179 0.233</td>
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<tr>
<td>FC 3-4</td>
<td>0.007 0.628</td>
<td>-0.137 0.234</td>
<td>0.043 0.785</td>
<td>-0.320 0.207</td>
<td>-0.239 0.107</td>
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<tr>
<td>FC 1-4</td>
<td>0.006 0.657</td>
<td>0.227 0.117</td>
<td>-0.027 0.870</td>
<td>-0.147 0.315</td>
<td>0.190 0.214</td>
</tr>
<tr>
<td>FC 1-8</td>
<td>0.001 0.739</td>
<td>-0.123 0.381</td>
<td>-0.031 0.835</td>
<td>0.009 0.967</td>
<td>0.014 0.934</td>
</tr>
<tr>
<td>CRP 1-2</td>
<td>0.011 0.427</td>
<td>0.040 0.797</td>
<td>-0.130 0.398</td>
<td>0.183 0.207</td>
<td>-0.083 0.585</td>
</tr>
<tr>
<td>CRP 3-4</td>
<td>0.114 0.400</td>
<td>0.207 0.154</td>
<td>0.004 1</td>
<td>-0.431 0.002</td>
<td>-0.080 0.582</td>
</tr>
<tr>
<td>CRP 1-8</td>
<td>0.201 0.101</td>
<td>0.038 0.907</td>
<td>-0.490 0.001</td>
<td>-0.262 0.072</td>
<td>0.028 0.847</td>
</tr>
<tr>
<td>CRP 1-4</td>
<td>0.242 0.080</td>
<td>-0.054 0.707</td>
<td>-0.003 1</td>
<td>0.185 0.12</td>
<td>0.151 0.278</td>
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<tr>
<td>CRP 2-4</td>
<td>0.111 0.428</td>
<td>0.091 0.518</td>
<td>0.009 0.967</td>
<td>-0.060 0.677</td>
<td>0.060 0.677</td>
</tr>
</tbody>
</table>

Conclusion: In this European population-based inception cohort of unselected CD patients 14% of patients with B1 progressed to B2 or B3 after five years of follow-up. The risk of surgery was increased in patients with B1 who progressed to B2/B3. No clinical predictors for progression in behaviour including smoking and treatment with biological therapy could be identified.

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

P0982 COLORECTAL CANCER IN INFLAMMATORY BOWEL DISEASE: RISK FACTORS IN A PROSPECTIVE MULTICENTER NESTED CASE-CONTROL IG-IBD STUDY


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Introduction: Risk factors for colorectal cancer (CRC) in Inflammatory Bowel Disease (IBD) are still debated (1).

Aims and Methods: In a prospective multicenter, nested case-control IG-IBD study at 4 years, we aimed to frequency and risk factors for incident CRC in IBD. The role of IBD phenotype vs thiopurines (IS) and/or anti-TNFs use as risk factors for CRC was also evaluated. From Jan. 2012 to March 2017, all incident cases of CRC in IBD pts referring to 16 IG-IBD Units were recorded. Each IBD pt with CRC (IBD-CRC) was matched with 2 IBD pts with no cancer (IBD-C) for: IBD type (Crohn’s Disease, CD vs Ulcerative Colitis, UC), gender, age (<5 yrs). Cases of CRC derive from a larger cohort of IBD pts referring to the same Units, with incidence of any cancer separately reported at 4 years (follow up at 3 yrs reported for cancer overall). Statistical analysis: data expressed as median (range), Wilcoxon test, Chi-squared test, Fisher exact test; multivariate logistic regression analysis.

Results: Incident cases of CRC occurred in 66 IBD pts: 41 UC (UC-CCR), 25 CD (CD-CCR). IBD-CRC group therefore included 198 pts (66 IBD-CRC, 132 IBD-C). UC group included 123 pts (41 UC-CCR, 82 UC-C) and CD group included 75 CD pts (25 CD-CCR, 50 CD-C). The frequency of incident CRC was higher in IBD-CRC vs IBD-C (UC-CRC vs UC-C: p = 0.009). Gender was equally distributed in IBD groups (UC: 14 F [34%]; CD: 15 F [48%]; p = 0.777). The median age was comparable between IBD-CRC and IBD-C (UC-CRC vs UC-C: p = 0.58). IBD duration was comparable between pts with vs without CRC (20 [1–47] vs 13 [0–35]; p = 0.58). Conversely, CD duration was comparable between pts with vs without CRC (20 [1–47] vs 13 [0–35]; p = 0.58).

All authors have declared no conflicts of interest.
pts with CRC were younger at diagnosis of IBD than their IBD-C (UC-CRC vs UC vs CD-CRC: 47 [15–76] y.o., 46 [20–108] y.o., n = 27 [33%] vs 40 [20–92] y.o., n = 27 [33%], p = 0.04; CD-CRC vs UC-CRC: UC median age 27 [6–67] y.o. vs 40 [20–92] y.o., n= 27 [33%] vs 27 [33%], p = 0.04). The frequency of CRC was similar among the three groups.

Disclosure of Interest: L. Biancone: The study was not supported by any grant or funded and any of the below reported disclosures are related to the study. LB. Lecture fees or Advisory Board: Zambon, MSD, Takeda, Abbvie, Sofar, Farmastr, Wassermann.

A. Armuzzi: The study was not supported by grants nor funded. Disclosures are not related to the study: Consulting, lecture fees: Abbvie, Astra, Biogen, Celtrion, Ferring, Hospira, Janssen, Lilly, MSD, Mundipharma, Pfizer, Samsung, Sofar, Takeda, Zambon. Research grants: Takeda, Abbvie, MSL. Scibano: The study was not supported by grants nor funded. The reported disclosures are not related to the study: Lecture fees: Zambon; Advisory Board: Abbvie, Biogen Idec, Mundipharma, Pfizer, Takeda. R. Daperno: The study was not supported by grants nor funded. The reported disclosures are not related to the study: Speaker and advisory board member: Abbvie, MSD, Zambon, Mundipharma, Hospira, Biogen, Takeda, Holstine C. Papi: The study was not supported by grants nor funded. The reported disclosures are not related to the study: Consultant or educational grants: Takeda, Abbvie, MSD Chiesi. Sofar, alfa Wassermann L. Guidi: The study was not supported by grants nor funded. All disclosures are not related to the study: Lecture fees: Abbvie, MSD, Takeda, Zambon, consultant: Abbvie, MSD Mundipharma, support: for research related to the study: Abbvie, MSD

W. Frias: The study was not supported by grants nor funded. The reported disclosures are not related to the study: Advisory boards: Abbvie, MSD, Takeda, Mundipharma, Pfizer, Samsung. Research grants: Abbvie, MSD, Takeda. G. Riegler: The study was not supported by grants nor funded. The reported disclosures are not related to the study: Lecture fees: Abbvie, MSD, Takeda, Research grants: Mundipharma, Pfizer, Takeda, Chiesi. M. Castiglione: The study was not supported by grants nor funded. The reported disclosures are not related to the study: Consultant: MSD, Abbvie, Takeda. Lecture fees: Abbvie, MSD, Takeda, Chiesi. Unrestricted research grants: Abbvie, Sofar, MSD, Ferring.

E. Calabrèse: The study was not supported by grants nor funded. The reported disclosures are not related to the study: Lecture fees from Abbvie, Takeda, MSD. G. Meucci: The study was not supported by grants nor funded. The reported disclosures are not related to the study: Lecture fees or board for: Chiesi, MSD, Mundipharma, Takeda, Zambon. S. Ardizzone: The study was not supported by grants nor funded. These disclosures are not related to the study: Consultant: Abbvie, Mundipharma, MSD, Takeda, Recordati, Zambon; Unconditioned grants: MSD, Abbott, Takeda, Mundipharma, Ferring, Sofar, Zambon.

A. Orlando: The study was not supported by grants nor funded. The reported disclosures are not related to the study: Lecture fees: Abbvie, Chiesi, MSD, Otsuka, Takeda, Sofar, Mundipharma; Consultant: Abbvie, MSD, Sofar, Takeda.

F. Pallone: The study was not supported by grants nor funded. The reported disclosures are not related to the study: lecture fees from Zambon, Takeda.

All authors have declared no conflicts of interest.

References

C. coccides

Kohyama 2009 Faeces–PCR Terminal restriction

disease (HEALTH AND DISEASE; A SYSTEMATIC REVIEW

Disclosure of Interest:
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in patients with IBD, with a (usually unmet and) clear need to treat. More

Anorectal complaints have a substantial impact on the quality of life

analysis.

regression analysis (adjusted for gender, diagnosis and previously performed

FI-QOL scores were not different between the different diagnoses. Multivariate

incontinence (≥1 episode per month) was reported in 305 CD (58%), 230 UC

UC or IBD-U (8%) patients (mean St. Marks incontinence score 14).

FI-QOL scores were not different between the different diagnoses. Multivariate

regression analysis (adjusted for gender, diagnosis and previously performed

abdominal operations) showed a reduced total SF-36 score in patients with

regression analysis was performed.

Results: A total of 1094 patients (64%) responded the online survey. Mean age

60.2 years (range 18–87). CD diagnosis was predominant (621 CD patients

(57%), 431 UC patients (39%) and 42 IB-U patients (4%) and diagnosis was

established for a mean period of 13 years (interquartile range 3–19 years). Active

perianal disease was present in 243 CD patients (39%) and perianal surgery

(absence or fastness-related) was previously performed in 153 (25%). Faecal

incontinence (≥1 episode per month) was reported in 305 CD (58%), 230 UC

(56%) and 20 IB-U (51%) patients. Weekly episodes occurred in 41 CD (8%),

22 UC (5%) and 3 IB-U (8%) patients (mean St. Marks incontinence score 14).

FI-QOL scores were not different between the different diagnoses. Multivariate

regression analysis (adjusted for gender, diagnosis and previously performed

abdominal operations) showed a reduced total SF-36 score in patients with

faecal incontinence (β = −8.57 [−11.33; −5.81]; p < 0.0001) and active perianal

disease (β = −1.43 [−7.33; −0.91]; p = 0.01). A better score was reported in UC

patients compared to CD patients (β 3.33 [0.48–6.83]; p = 0.02). Previously

performed perianal surgery was not associated with SF-36 score in the multivariate

analysis.

Conclusion: Anorectal complaints have a substantial impact on the quality of life

in patients with IB, with a (usually unmet and) clear need to treat. More

awareness for this highly distressing and most commonly cumbersome treatable

disease manifestation is needed.

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

P0985 CURRENT UNDERSTANDING OF POUCH MICROBIOTA IN HEALTH AND DISEASE; A SYSTEMATIC REVIEW

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Introduction: The human gut microbiome is made up predominately of four

major bacterial phyla, Firmicutes, Bacteroidetes, Proteobacteria and

Actinobacteria. Changes or imbalance of these phyla is termed dysbiosis.

Specifically, in inflammatory bowel disease (IBD), key changes have been iden-
tified such as a reduction in beneficial bacterial species including

Faecalibacterium prausnitzii and increases in more pathogenic species including

members of the Enterobacteriaceae. Currently it is not understood if dysbiosis is

the cause of, or the effect of, intestinal inflammation. It is difficult to chronolo-
gically assess the microbiota changes prior to developing IBD as currently we are

unable to predict those individuals who will develop the disease. The pouch is a

potential model to study pathogenesis of inflammation as 40% of those that

develop pouchitis do so within 12 months. The relative short time from pouch

formation to inflammation allows the longitudinal study of the microbiota which

gives insight into potential microbiota patterns occurring both in disease and

non-diseased states. Interestingly, inflammation within the pouch is rarely seen

in patients who have this operation for Familial Adenomatous Polyposis (FAP),

thus raising the possibility that pouchitis shares a similar pathogenesis to the

inflammation that is seen in ulcerative colitis.

Aims & Methods: 1. To understand changes in pouch microbiota over time. 2. To

understand pouch microbiota that is associated with pouch inflammation

A computer assisted search of the on-line bibliographic databases MEDLINE

and EMBASE was carried between 1966 and February 2016. Randomised con-
trolled trials, cohort studies and observational studies were included. Inclusion

criteria: Studies which reported microbiota analysis on either faecal samples or

tissue from the ileo-pouch anal anastomosis. Studies that provided information

on specific bacterial taxa. Exclusion criteria: Studies which did not report on

patterns of individual bacterial taxa differences in the pouch. Studies on the

microbiota of Crohn’s disease or UC in isolation without any data on pouch

patients. Studies with less than ten patients.

Results: The search strategy found 844. There were a total of 27 papers included

in the analysis. Microbiota in pouchitis: Bacteroidetes, Enterococccaeae,

Lachnospiraceae, Ruminococccaeae, Streptococccaeae.

Alcaligenaceae and Bifidobacterium were reduced in patients with pouchitis.

Whereas Enterobacteriaceae, including E. coli Fuscobacterium and Clostridia

were increased in patients with pouchitis. One study highlighted bacteria that

were exclusively found in pouchitis which included Lepotispora, Pseudoalteromonas,

Desulfosporosinus, Microcctis, Methylotacter. Chronic pouchitis

was associated with a significant increase in Staphylococcus aureus and it

has been suggested that this may be a responsible pathogen for chronic pouchitis.

Furthermore, Enterococcus, F. prausnitzii, Lachnospiraceae and Insertae Sedis

XIV and have been shown to be significantly reduced in chronic pouchitis

patients. These differences were largely due to a decrease in sequences from

members of the genera Ruminococcus, Dorea, Clostridium, and Eubacterium.

Conclusion: The microbiota undoubtedly plays an important role in both the

inflamed and the healthy pouach. 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 pouach environment,

thus over-representing aerobic bacteria whilst possibly under-representing anaer-
obic bacteria. The use of 16 S rRNA 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>
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<tr>
<th>Study</th>
<th>Year</th>
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<th>UC or FAP</th>
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<td>Almeida</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 C. coli/F. coli Enterobacter, Klebsiella Peptococcus</td>
</tr>
<tr>
<td>Bednarz</td>
<td>2015</td>
<td>Swab-culture</td>
<td>UC</td>
<td>UC longitudinal</td>
<td>Enterobacteriaceae most common</td>
</tr>
<tr>
<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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<tr>
<td>Hinata</td>
<td>2012</td>
<td>Faeces-PCR</td>
<td>UC</td>
<td>Healthy volunteers</td>
<td>Enterococcus Lactobacillus</td>
</tr>
</tbody>
</table>

P0986 LIVER-VACCINES AND BREASTFEEDING IN NEWBORN EXPOSED IN UTERO TO ANTI INF: A MULTICENTER FRENCH STUDY IN INFLAMMATORY BOWEL DISEASE


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A506 United European Gastroenterology Journal 5(5S)
**Aims & Methods:** mends to avoid live vaccines within 6 months of live in newborn exposed in utero newborn in the first 6 months at least. Along this, European consensus recom-
in 62 children (65%); before 6 months in 5 cases. Information concerning fetal
formed in 7 children (7%) and before 6 months in 5 (%) cases. One case of fever
perform lactation, 42 (63%) did not for personal choice and and 25 (37%)
Thiopurine was associated in 29 (23%) patients. 31 (25%) patients experienced
of women was 31 year (IQR 5). 96 (77%) women received anti TNF for Crohn's
Results: pregnant women treated with antiTNF were included. The mean age
anti TNF and 2) breastfeeding and complication and 3) information given during
naire concerning 1) live-vaccines (BCG, rotavirus, MMR) in their child during
favoured positive results. 112 (90%) patients. 55 women (45%) breastfed
mother: 1). 2 patients refused next colonoscopy, one patient was not controlled
neoplastic lesions resected endoscopic ally in ulcerative colitis. In this prospective
In 1914, a colonoscopy or rectoscopy with sampling of 2 biopsies in inflamed tissue
vaccination and vaccine recommendation was given to 111 (91%) IB
results: 1) IBVD was found undetectable at one year; 2) breastfeeding and
neonatal CMV infection, and intrauterine death in the first months of 
was 77% (0.95–10.02), p = 0.03507) with only 16.7% patients who continued Vedolizumab treatment versus 65.4%
the group (p = 0.02). Coleotoxicity was also more frequent in the CMV
7.5 years, E3 phenotype according to the Montreal classification (27%) and high 
30% in stools at the beginning of the vedolizumab treatment. A previous 
endoscopic control was done at 6 month than every one year.
No associations between CMV infection and Vedolizumab levels in samples tested for

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**Introduction:** Anti TNF cross placenta during pregnancy and are detectable in 

**Introduction:** We performed a retrospective case-control study of all patients with 

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

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**P0987 ENDOUT OF ENDOCOPICALLY REJECTED 
DYSPLASIC LESIONS IN ULCERATIVE COLITIS**


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**Introduction:** For a long time, dysplasia lesions in ulcerative colitis were only 
treated by surgery. Recent guidelines recommend the complete endoscopic resec-
tion of dysplastic lesions in ulcerative colitis.

**Aims & Methods:** The aim of this study was to determine the outcome of dys-
plastic 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 it was possible were resected. The patients were followed, and an 
endoscopic control was done at 6 month than every one year.

**Results:** 36 dysplastic lesions were identified in 25 patients; 5 lesions were 
judged not resectable and referred to surgery. 31 lesions were resected in 21 patients: 22 
low-grade dysplasia, 7 lesions indefinite for dysplasia, and 2 high-grade dyspla-
sia. 18 patients (85.7%) had endoscopic control: mean 2.8 (maximum: 5 mini-
mum: 1). 2 patients refused next colonoscopy, one patient was not controlled 
because of a bad bowel preparation for 4 times. In 13 patients (72.2%) no 

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**P0988 CYTOMEGALOVIRUS INFECTION IS ASSOCIATED WITH A 
POOR OUTCOME IN PATIENTS WITH ULCERATIVE COLITIS TREATED WITH VEDOLIZUMAB**

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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 the outcome of UC patients treated with 
Vedolizumab and to analyze the risk factors for CMV disease associated to 
Vedolizumab therapy.

**Aims & Methods:** We performed a retrospective case-control study of all patients with 

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

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**P0989 F-CALPROTECTIN USE IN INFLAMMATORY BOWEL 
DISEASE IS CHARACTERISED BY IMPROVED DIAGNOSTIC 
ACCURACY, LESS PATIENTS UNDERGO COLONOSCOPY, 
AND DECREASED BIOPSY COSTS, COMPARED WITH CONVENTIONAL SEROLOGICAL MARKERS 
AND COLONOSCOPY. THE SPANISH SCENARIO**

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**Introduction:** Gastrointestinal disorders may exhibit overlapping symptoms 
making diagnosis difficult in the primary and specialty care settings. Inflammatory bowel disease (IBD), with a prevalence of <0.5% in the general 
population[1], is characterized by chronic inflammation of the gastrointestinal 
tract, non-specific elevation of conventional inflammatory markers such as 
ESR and CRP and may present with extra-intestinal manifestations. Irritable bowel 
syndrome (IBS), in contrast, is a functional disorder without gastrointestinal 
inflammation and with an estimated prevalence of 10-20% [2]. Endoscopy is 
the gold standard for detecting and quantifying IBD vs. IBS, but due to the 
low prevalence of IBD, is negative in the majority of cases. Furthermore, it 
is invasive, expensive, and uncomfortable for the patient and not without risks. 
Moreover, inadequate bowel preparation prior to colonoscopy is known to 

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increase the burden of disease from both the clinical and the economic perspec-
tive: 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 differ-
entiate between IBD and IBS. The present study aims at evaluating the cost-
effectiveness of FC compared to the combined usage of CRP and ESR, and the
gold standard to distinguish IBD from IBS in Spain.

Aims & Methods: An 18-week Markov model was developed for each diagnostic
strategy, simulating 1000 patients presenting to a primary care physician with
non-specific gastrointestinal symptoms. In the model, 1.6% of the colonoscopies
brought about complications [4], which may result in Emergency Room visits
and surgery. Inadequate colon preparation (23%) [5] and consequent repeated
colonoscopies (30.3%) [6] were also included in the calculations. Outcomes
include cost savings, cost per corrected IBD diagnosed, and colonoscopy reduc-
tion. Uncertainty was addressed with sensitivity analysis.

Results: FC is cost-effective when compared to CRP + ESR, and to colonoscopy
(Table 1): It results in more correctly IBD diagnoses at a lower price; It reduces
the number of unnecessary endoscopies, increasing the number of correctly diag-
osed IBD (N = 63) and IBS (N = 26) patients.

Clinical and health economics results

<table>
<thead>
<tr>
<th>FC-Colonoscopy</th>
<th>CRP + ESR Colonoscopy</th>
</tr>
</thead>
<tbody>
<tr>
<td>N correctly diagnosed IBS</td>
<td>683</td>
</tr>
<tr>
<td>N correctly diagnosed IBD</td>
<td>98</td>
</tr>
<tr>
<td>Total costs (EUR)</td>
<td>290.5</td>
</tr>
<tr>
<td>Average cost/patient (EUR)</td>
<td>198</td>
</tr>
<tr>
<td>Colonoscopy complications</td>
<td>706.3</td>
</tr>
<tr>
<td>Savings attributable to the avoided colonoscopies</td>
<td>336.38</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
diagnosing effective.

Disclosure of Interest: B. Mascalone: Employee of Thermo Fisher Scientific
A.A. Vora: Employee of Thermo Fisher Scientific

References

P0990 RISK OF SERIOUS INFECTION IN HEALTHCARE WORKER WITH INFLAMMATORY BOWEL DISEASE: A CASE-CONTROL STUDY OF THE GETAID


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Introduction: The increased use of immunomodulators and biological agents for
the treatment of patients with inflammatory bowel disease (IBD) is associated
with a key safety concern considering potential serious infection. Healthcare
workers face a substantial risk for acquiring such infections due to daily and close interactions with infected patients and asymptomatic carriers of
pathogens.

Aims & Methods: We performed a retrospective observational study, collecting
data from the Groupement Groupe d’Etude Therapeutique des Affections Inflammatoires du
tube Digestif (GETAID) from January 2015 to June 2016, on all 482 consecutive
patients with IBD (68.5% with rohn’s disease, 28.4% with ulcerative colitis and
3.1% with IBD undetermined) who work as healthcare workers (27.2% of physi-
sicians, 33.8% of nurses; 13.1% of nurses’ aides and 26.7% of other healthcare
personnel working in interaction with in-hospital patients), in 17 tertiary centers
in France and Belgium. We selected a control group of patients with IBD who do
not work as healthcare personnel from the monocentric MICISTA database.
Controls were matched on age (±2.5 years), sex, IBD type and date of IBD
diagnosis (±2.5 years). Serious infection was defined as (1) Clostridium difficile
infection (2) community-acquired pneumonia (3) Mycobacterium tuberculosis
infection (4) any community-acquired infection that required hospitalization.
Serious infection-free survival was studied with Kaplan-Meier method, log-
rank test and Cox regression model. In each patient, the duration of IBD was
divided into semesters which were independently analyzed regarding the occur-
cence of serious infection too take into account the influence of various treatments.

Results: 482 patients (126 male; median age: 24.0 [IQR 19.9–32.1] years) were
included in the present study. The median follow-up period was 9.3 [4.6–16.2]
years. A total of 74 serious infection was recorded in healthcare workers includ-
ing 14 Clostridium difficile infection, 19 EBV or CMV-related serious vir-
al infection, 8 tuberculosis infection including 4 tuberculosis and 4 tuberculous primo-
infection, 8 community-acquired pneumonia and 25 miscellaneous serious infec-
tion. The probabilities of serious infections-free survival were 1.0%, 0.1%, 10.8%
and 14.1% at 1, 5, 10 and 15 years. No difference was found between healthcare
workers and control patients regarding the occurrence of serious infection in
time-dependent analysis and in independent semester analysis. However, a
increased risk of tuberculosis infection was found in healthcare workers (0.07
infections for 100 patient-years vs. 0.009, p = 0.02). In multivariate analysis,
serious infection was decreased in patients with Crohn’s disease (OR = 0.63,
IC[95%] [0.43–0.91], p = 0.01) and increased in patients treated with corticoster-
oids (OR = 3.05, IC[95%] [2.06–4.52], p < 0.001), immunosuppressant (OR = 1.98,
IC[95%] [1.38–2.84], p < 0.001) and anti-TNF agents (OR = 2.93, IC95% [2.02–
4.27], p < 0.001).

Conclusion: Although there is an higher exposure to potential pathogens in
healthcare workers, this is not associated with a higher risk of serious infection
as compared with controls with the exception of tuberculosis infection. Prospective studies are needed to confirm that the level of occupational exposure
to potential pathogens should not be taken into account when discussing the
incidence of immunomodulator or biological agents with the exception of the
risk of tuberculosis infection.

Disclosure of Interest: P. SEKSKIPE: Philipp Sekski received consulting fees from
Abbvie, Merck-MSD and Modocex, grants from Bocodes, sponsored travel from
Merck-MSD and Takeda.

J. Gorner: Jean-Marc Gorner has received fees from Sanofi, Merck Serono,
Roche, Novartis, Amgen and travel accommodation from Abbvie and MSD.
O. Dewit: Dewit O: lecture fees from MSD
S. Nancey: Stephane Nancey has received consulting fees from Merck, Abbvie,
Takeda, Ferring, Norgine, Vifor Pharma, Novartis, Janssen Cilag, Hospira, Takeda and HAC-Pharma.
V. Abitbol: Vérid Abitbol has received lecture fees from Ferrin, MSD, Vifor Pharma and Abbvie.
D. Laharie: David Laharie has received consulting and lecture fees from Abbvie,
Ferrin, Janssen Cilag, MSD, Pfizer, and Takeda.
C. Reenaers: Reenaers C: consulting fees from Abbvie, MSD, Janssen; lectures
fees from Abbvie, MSD, Roche, Takeda, Falk El; consulting and lecture fees from
Abbvie and MSD.
A. Buisson: Anthony Buisson has received lecture fees from Abbvie, MSD, Ferrin,
Takeda, Hospira and Vifor Pharma. This author has also received a
consulting fee from Abbvie.
M. Nachury: Nachury M declares lecture fees from Abbvie, MSD, Takeda and Hospira.
S. Viennot: Stephanie Viennot has received consulting fees from Abbvie, MSD, Takeda,
Vifor Pharma and Ferrin.
L. Vuitton: Lucine Vuitton has received lecture fees from Abbvie, MSD, Takeda,
and Norgine and Ferrin. This author has also received a
consulting fee from Abbvie.
C. Stefanescu: Stefanescu M: consulting fee from MSD and sponsored travel from
Abbvie, MSD, Takeda, Mayolii.
P. Marteau: Philippe Marteau has received payments for lectures/speaker bureau participation from Abbvie, Hospira, Pfizer.
G. Bouguen: Guillaume Bouguen has received consulting fees from MSD and Abbvie. This author has also received lecture fees from MSD, Abbvie, Takeda, and Ferring.
J. Cosnes: Jacques Cosnes has served as a speaker for Abbvie and Falk Foundation and is an advisory board member for VIFOR PHARMA.
A. Amiot: Abbvie, Hospira, Takeda, Gilead, Biocodex, MSD, Janssen, Ferring and Takeda.
All other authors have declared no conflicts of interest.

**P0991 CORRELATION BETWEEN INFLAMMATORY BIOMARKERS AND ENDOSCOPIC SCORES IN ULCERATIVE COLITIS: THUS EXTENSION MAKES THE DIFFERENCE?**

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**Introduction:** Several endoscopic scores have been used to assess the severity of inflammatory bowel 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 (MMES) 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, MMES and the biomarkers of inflammation - erythrocyte sedimentation rate (ESR), C-reactive protein (CRP) and to compare the ability of these scores to predict Calprotectin > 100 µg/g. This was a retrospective study, including patients with diagnosis of left or extensive UC who underwent colonoscopy between 2015 and 2016. The biomarkers were obtained with a maximum interval of one week in relation to colonoscopy and without introduction of new therapy. The Spearman test calculated the correlation between scores and biomarkers. ROC curves (AUC) were obtained for each score to predict Calprotectin > 100 µg/g.

**Results:** 60 patients were included, 46.7% female patients with mean age 43.3 ± 12.8 years with mean values of ESR 4.4 ± 12.8 mm, CRP 5.12 ± 6.00 mg/l and Calprotectin 354 ± 430 µg/g. The correlation between Calprotectin and MES was rS = 0.623 p < 0.001, for DS rS = 0.548 p < 0.001 and for MMES rS = 0.588 p < 0.001. Regarding CRP, a correlation with the MES was rS = 0.413 p < 0.001 and with the MMES rS = 0.404 p < 0.001, but no correlation was found with the DS. There was no significant correlation between ESR and endoscopic scores. To predict values of Calprotectin > 100 µg/g the AUC for the MES was 0.848, for the DS 0.801 and for the MMES 0.815, and there was no statistically difference between the curves.

**Conclusion:** Although there is a good correlation between endoscopic scores and Calprotectin, the correlation between scores that take into account the extension were not superior to Mayo Endoscopic Score.

**P0992 IBD – IS IT A RISK FACTOR FOR THE DIAGNOSIS OF HEPATIC STEATOIS?**

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**Introduction:** Although 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 retrospective 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 (244.4 ± 54.2), HSI (33.3 ± 5.18), and FLI (31.5 ± 23.5) among patients with or without CAP> 248. 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 46% p < 0.001). Regarding the IBD factors, patients with HS had a higher frequency of previous surgeries (30.6% vs16.1% 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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**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-25 OH levels were not significantly different between TNF and NB groups. Vitamin D level was not associated with age, duration of disease, or inflammatory markers (ESR). However, there was a weak positive correlation between nutritional status (lowest albumin) and vitamin D level (Pearson’s R = 0.151, p = 0.001). There were 100 patients which included 100 patients in the TNF group and 68 patients in the NB group. There was similar rate of osteoporosis (16% vs 18%), osteopenia (53% vs 57%) and normal bone density (31% vs 25%) between the TNF and NB groups respectively. Furthermore, there was no statistically significant difference in T-scores at the hip (~1.2 vs ~1.3), the spine (~1.0 vs ~0.95), or the lowest T-scores (~1.5 vs ~1.4) between TNF and NB patients. However, Z-scores at the spine (~0.47 vs ~0.05), the hip (~0.55 vs ~0.49) and the lowest Z-scores (~0.91 vs ~0.67) were lower in the TNF group, but only reached significance at the spine (P = 0.03). Interestingly, a significantly higher proportion of TNF patients under 60 years of age met the criteria for osteoporosis (T-score < -2.5 below the mean) as compared to NB patients (15% vs 3.6%). Additionally, rates of osteoporosis in the NB group were very different between before and after age 60 (3.6% vs 30%) [table 1]. There was no correlation with bone density and vitamin D level, nutritional status (based on lowest albumin level), or degree of inflammation (highest ESR or CRP levels). However, there was a moderate positive correlation with BMI and bone density (Pearson R = 0.39) and a negative correlation with age (R = –0.25).

**Table 1:** Osteoporosis rates in patients on anti-TNF therapy (TNF) and those naïve to biologic medications (NB) 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>
</tr>
</tbody>
</table>

**Conclusion:** Rates of vitamin D deficiency, and osteoporosis were similar among patients on anti-TNF medications to those on no biologics. TNF group patients were diagnosed with osteoporosis at an earlier age compared to NB group. Patients on anti-TNFs also had statistically lower Z-scores at the spine. Prospective studies are necessary to further determine the role of anti-TNF medications in osteoporosis.

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

**P0994 THE AVAILABILITY OF INFlixIMAB TROUGH LEVELS IN IBD PATIENTS ON MAINTENANCE THERAPY DEEPLY IMPACTS THERAPEUTIC DECISION-MAKING**

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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 find clinical and biological factors associated with intra-individual fluctuations (ITLs) and (3) to evaluate the impact of ITLs availability by comparing the CCD with TLGD. The decisions between experts were also compared. Both comparisons were calculated by the linear Cohen’s Kappa (κ) index. IBD patients on maintenance IFX therapy were prospectively followed from June 2015 to June 2016. Demographic, clinical and biological data including C-reactive protein (CRP) levels from the same infusion day were collected. At each IFX infusion, patients were visited by their physician; a “current clinical decision” (CCD) was taken regarding clinical data and CRP. IFX levels were measured just before the IFX infusion and were considered as intra-therapeutic if <2μg/ml. Since 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; 70% of patients were on clinical and biological remission. Median (IQR) CRP levels were 3.1 mg/ml (1.5-6.1). Median (IQR) ITLs were 1.79μg/ml (0.35-3.74), with 52% of patients having intra-therapeutic ITLs. In the multivariate analysis, the only risk factor for intra-therapeutic ITLs was the presence of biological activity. Concordance between CCD and TLGD was poor (κ = 0.10 [95%CI:0.01-0.20]) = 0.11 [95%CI:0.01–0.21] for experts A/B/C, respectively. This “disagreement” was 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. The concordance between experts was moderate (κ = 0.3) [95%CI:0.41-0.71] = 0.40 [95%CI:0.32-0.55] = 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 confirm their therapeutic range in patients in clinical stability. Both the clinical and economical impact of ITL-assisted decision-making in IBD patients should be evaluated in prospective cohorts.

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

Conclusion: LCI was superior to WLI for predicting mucosal healing and histological inflammation in patients with UC.

Disclosure of Interest: All authors have declared no conflicts of interest.
two scenarios were scored higher by patients than by physicians. Teaching the patients to manage a new chronic condition and treatment of fatigue are aspects that would help to reduce the anxiety feeling and should be taken into account in clinical practice Acknowledgements. Funded by Merck Sharp & Dohme of Spain and endorsed by ACCU España and by GETECCU

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

P0997 EVALUATION OF LISA-TRACKER IMMUNOASSAY INFlixIMAB AND ANTI-INFlixIMAB FOR THE THERAPEUTIC DRUG MONITORING OF SB2

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Introduction: Flixabs, an infliximab biosimilar referencing Remicade®, was developed by Samsung Bioepis, the joint venture between Samsung BioLogics and Biogen. SB2 received approval in EU for all approved indications of the reference infliximab. Many decision algorithms based on the measure of Infliximab (IFX) trough levels and antibodies to infliximab (ATA) have been increasingly used to optimize infliximab in Crohn’s disease and ulcerative colitis. The aim of our study was to appreciate if the biosimilar SB2 could be efficiently monitored using the Lisa-Tracker infliximab and anti-infliximab immunoassays developed by TheraSag (France).

Aims & Methods: During this evaluation, standard curves of Infliximab and two different batches of SB2 were compared and then accuracy of the Lisa-Tracker IFX kit in detecting the spiked concentration of SB2 was measured using the Lisa-Tracker assay. Levels of infliximab (from 5 spiked samples with known amount of SB2 and 10 clinical samples from patients treated with infliximab) were calculated according to each of the 3 standard curves (infliximab, SB2 batch1 and SB2 batch2). All samples and standards were tested in duplicate. Regression lines be >0.95 and the slope must be comprised between 0.9 and 1.1. Intra-run and inter-run precision were also measured with spiked samples of different known SB2 (from 2 to 12μg/ml) amounts. Capacity of polyclonal antibodies directed against infliximab to block the detection of SB2 using the Lisa-Tracker infliximab assay and the capacity of SB2 to block the detection of anti-infliximab antibodies using the Lisa-Tracker anti-infliximab assay were tested.

Results: We demonstrated the perfect equivalence of infliximab standard curve to the SB2 standard curve and that the Lisa-Tracker assay is suitable for the quantification of SB2 in human serum samples (R² = 0.99; the levels of infliximab of the 20 samples were calculated according to the 3 standard curves infliximab, SB2 batch 1 and SB2 batch 2 with CV ranged from 2.1 to 12.6%). Quantification of SB2 was linear by 4-log 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 ranged from 3.3 to 17.9%). Finally, the capacity of polyclonal antibodies to infliximab to block the detection of SB2 in 5 spiked samples and the % of inhibition comprised between 80% and 97%. The capacity of SB2 to block the detection of anti-infliximab antibodies using the Lisa-Tracker anti-infliximab assay were tested.

Conclusion: In conclusion, Lisa-Tracker Inflaximab and Anti-Inflaximab assays are suitable for the monitoring of SB2 treated with SB2. Acknowledgements: 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 and mucosal healing.

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 vs 220 μg/g in the group of patients who achieved only biomarker remission respectively; p = 0.03). A ROC curve analysis was not able to isolate a cut-off value associated to deep remission achievement. (AUROC = 0.61). Next, we analyzed separately median of TLI and fecal calprotectin 6 months before eligibility (M-6) of patients in deep remission at M0 (51 patients). The median TLI was significantly lower at M-6 than at M0 (41 μg/ml vs 59 μg/ml respectively; p = 0.03). Conversely, median fecal calprotectin was significantly higher at M-6 in comparison to M0 (190 μg vs 35 μg/ml; p < 0.01). A negative and weak significant correlation between fecal calprotectin and TLI was observed (Spearman’s rank correlation coefficient (q) = -0.25; p = 0.045).

Conclusion: Although TLI may increase with decreased drug clearance due to deep remission, we show for the first time that the residual rate is the causal element for achieving clinical remission.

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

P0999 SMOKING STATUS INFLUENCES FECAL VOLATILE ORGANIC COMPOUNDS COMPOSITION

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Introduction: Fecal volatile organic compounds (VOCs) are gaseous carbon-bound metabolic products considered to reflect intestinal microbiota composition. Fecal VOCs may serve as markers for a broad range of gastrointestinal diseases. As smoking leads to a substantial shift in intestinal microbial composition in healthy and diseased persons, the aim of this study was to assess the effect of smoking status on fecal VOC pattern.

Aims & Methods: In this cross-sectional pilot-study adult smokers, non-smokers and former smokers scheduled for colonoscopy at the VU University medical center were instructed to collect a fecal sample prior to bowel cleansing. Patients were included if no abnormalities were found during colonoscopy. Exclusion criterion was use of antibiotics three months prior to participation. All participants completed a questionnaire on standard demographics, BMI, diet and smoking habits. Fecal VOC profiles were measured using an electronic nose device (Cyranose 320®).

Results: Fecal samples from 56 subjects (11 smokers, 21 non-smokers, 24 former smokers) were analyzed. Median age was 62 years (27–82 years). Furthermore, there were no significant differences between groups for the variables age, sex, BMI, diet, sample weight, chronic diseases and medication and supplement use. Fecal VOC profiles differed between smokers and non-smokers (PC1: p-value = 0.003). Smokers could be distinguished from non-smokers based on fecal VOC profiles was possible with an overall accuracy of 75% and corresponding sensitivity and specificity values of 72.7% and 76.2%. No significant differences between the fecal VOC profiles from smokers and former smokers (PC1: p-value = 0.083) and between profiles from non-smokers and former smokers (PC1: p-value = 0.764) were observed.

Conclusion: This study showed that smoking status has a significant influence on fecal VOC profiles. This implicates that the smoking status should be taken in account when performing (fecal) VOC analysis. The finding that VOC profiles did not differ between smokers and former smokers could be due to the wide divergence (6 month – 43 years) in smoke-free time in former smokers group.

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

References
**P1000 CLOSTRIDIUM DIFFICILE INFECTION AND IBD PATIENTS IN ONE CLINICAL CENTER**

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**Introduction:** The prevalence of Clostridium difficile infection (CDI) in patients suffering from inflammatory bowel disease (IBD) has increased rapidly over the past several decades. However, the exact global epidemiology remains unclear because of insufficient data from developing countries.

**Aims & Methods:** The goal of our study is to examine the incidence of CDI in patients with IBD. The prospective, observational study evaluating IBD patients in a referral center was performed to evaluate the incidence of Clostridium difficile. Diagnosis was confirmed with stool toxin analysis. Demographic information, diagnosis, anatomic location, IBD therapy, antibiotic exposure, hospitalizations, and surgeries were recorded. For a period of 3 years, 202 IBD patients were studied, 105 of which have UC and 97 - Chron’s disease (CD).

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**Aims:** The prevalence of CDI in patients suffering from IBD, who receive different therapy regimes is significantly higher than in patients with CD, respectively 18.1% to 9.30%.

**Results:** The results show that all patients with a positive CDI test have a clinical picture, which resembles a relapse of the disease (p < 0.05). There’s a tendency towards growth in the incidence of IBD patients who are CDI positive. Their number in 2016 is significantly higher than that in 2014. In 2014 it was ~5.90% with CD and 12.30% with UC, whereas in 2016- 12.20% with CD and 27.80% with UC. The results show that the incidence of CDI in patients with UC is significantly higher than in patients with CD, respectively 18.1% to 9.30% (p < 0.05). There is a strong 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 number 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.

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

**References**


3. Dos R, Feuerstadt P, Brandt LJ. Glucocorticoids are associated with infection amongst patients with IBD, who receive different therapy regimes. There is an increase in incidence of CDI, and patients with UC are

4. Lamontagne F, Labble AC, Haeck O, Lesur O, Lalalncete M, Patino C, et al. Incidence and clinical presentation of Sustained clinical remission with good performance (Area under the curve (AUC): 90.1% [95% CI: 81.8%–98.5%]; sensitivity (Sp): 81.3%, specificity (Sp): 90.9%; Positive predictive value (PPV): 97.7%; Negative predictive value (NPV): 90.0%; especially in UC patients (AUC: 98.2%; [95% CI: 93.9%–100%]; Sp: 90.5%, Sp and PPV: 100%; NPV: 66.7%). Corresponding outcomes for CD were also significant (AUC: 93.9% [95% CI: 75.0%–79.8%]; Se: 72%; Sp: 56.7%; NPV: 85.8%). In contrast, performance of TLI at W14 (≥2.87 ng/mL) for the prediction of sustained clinical remission were moderately interesting (AUC: 60.9% [95% CI: 57.8%–83.1%; Se: 79.3%; Sp: 61.3%; PPV: 92.0%; NPV: 40.3%). These results were not significantly different between patients who had received an AZA monotherapy before concomitant therapy compared to those who did not.

**Conclusion:** This new score is a promising tool for the prediction at baseline of sustained clinical remission in inflammatory bowel disease patients who start concomitant therapy. It may help to identify easily patients with high benefit optimization of IFX rather than early switch treatment in this setting. However, a prospective validation is needed before recommending its use in clinical practice.

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

**P1002 LOWER GI SYMPTOMS IN YOUNG PATIENTS: CAN SYMPTOMS AND NON-INVASIVE TESTS BE USED SYSTEMATICALLY TO AVOID UNNECESSARY COLONOSCOPYs?**

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**Introduction:** Young patients commonly present with lower gastrointestinal symptoms. Most colonoscopies in such patients are normal, but risk potentially serious complications. There is an over reliance on endoscopy in clinical practice leading to increased demand on limited resources. As a result, some patients with potentially life-threatening conditions (e.g. colon cancer) may have a significant delay in diagnosis that may result in a worsened prognosis. Many endoscopic procedures are absolutely necessary, but many may be avoided if other, non-invasive forms of investigations were available which could reliably exclude significant pathology. This in turn could lead to reduced morbidity and mortality.

**Aims & Methods:** We aimed to assess colonoscopy, relevant fecal and blood tests in young patients with lower gastrointestinal symptoms. Colonoscopies performed over a 1-year period were retrospectively identified from the Endoscopy Reporting System (patient charts, database, فقط معلومات كافية من المستخدم). CC, Reactve Protein (CRP), and Coeliac serology were reviewed. A raised CRP > 5 mg/L or FC > 50 ug/g was considered abnormal. A Colonoscopy with mucosal inflammation confirmed on histology was considered abnormal.

**Table 1:** Study criteria

<table>
<thead>
<tr>
<th>Inclusion criteria</th>
<th>Exclusion criteria</th>
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<tr>
<td>Age &lt; 45 years</td>
<td>Known Iron deficiency anaemia</td>
</tr>
<tr>
<td>Presenting complaint: diarrhea, constipation and abdominal pain/bloating</td>
<td>Overt or obscure GI bleeding</td>
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</table>

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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) concomitant therapy.

**Aims & Methods:** All patients with CD or UC, consecutively treated by the combination of IFX-AZA between August 2015 and March 2017, were included in this monocentric study. Clinical, biological (blood cells count, liver function enzymes, C-reactive protein (CRP)) were retrospectively collected at baseline, at week 14 (W14) and at 6 months (W24) from the start of combination therapy.

**Results:** 2151 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-abdominal pain and bloating. Colonoscopy was normal in 104 (79%) of Group A and 102 (93%) of Group B (p = 0.0002). 58 (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 88%, 43% and
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Introduction:

Aims & Methods:
to endoscopic findings within the first year following surgery to prevent POR. Operative recurrence (POR) remains a crucial issue. The POCER trial (1) has shown that a combination of magnetic resonance imaging (MRI) and faecal calprotectin detected endoscopic postoperative recurrence in Crohn’s disease (2). MRI is a non-invasive tool that can detect small bowel inflammatory changes but remains recommended before performing a small bowel videocapsule examination. Faecal calprotectin is a known marker of inflammatory bowel disease (IBD) and can help reduce colonscopy waiting times. Colonoscopy has low yield in young symptomatic patients, especially those with non-diarrhoeal symptoms. Non-invasive tests should be used systematically to better identify patients requiring colonscopy. We are conducting a prospective study to explore non-invasive diagnostic paradigms. Implementation of these strategies will help reduce colonscopy waiting times. Disclosure of Interest: All authors have declared no conflicts of interest.

P1003 Faecal Calprotectin and Magnetic Resonance Imaging Are Reliable Tools to Detect Endoscopic Postoperative Recurrence in Crohn’s Disease

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Introduction: As surgical resection is not curative in Crohn’s disease (CD), postoperative recurrence (POR) remains a crucial issue. The POCCR trial (1) has recently confirmed that the therapeutic management has to be adapted according to the outcome of the first year following surgery to prevent 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 MRI score (4) within the first year after surgery or the last recorded capsule. Results: Overall, 30 CD patients were enrolled in the study. Among them, 15 (50.0%) were female and 7 (23.3%) were active smokers. Disease location was ileal, colonic or ileocolonic in 15 (50.0%), 1 (3.3%) and 14 patients (46.7%), respectively. The patients included in this study were treated with no medication before the colonoscopy.

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 examination (SBVC). No study has evaluated its impact on the small bowel cleanness 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) were compared to the two other modalities (P<0.01). The cecal intubation rate was higher in the LD (7.9) and Water (7.6) groups compared to the PEG group (6.8) (P=0.04). The quantitative score was significantly better in the LD (7.9) and Water (7.6) groups compared to the PEG group (6.8) (P=0.043). The preparation by water was considered qualitatively better compared to the two other modalities (P=0.04).

References:
1. De Cruz et al. Lancet 2015
4. Koliakou et al. Inflamm Bowel Dis 2010

Table 1: Performances of MRI parameters and faecal calprotectin to detect endoscopic postoperative recurrence in Crohn’s disease

<table>
<thead>
<tr>
<th>AUC</th>
<th>Se</th>
<th>Spe</th>
<th>NPV</th>
<th>PPV</th>
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<tbody>
<tr>
<td>Detection of Rutgeerts ≥12</td>
<td>0.70</td>
<td>36%</td>
<td>77%</td>
<td>47.6%</td>
</tr>
<tr>
<td>Clermont score &gt; 8.4</td>
<td>0.70</td>
<td>36%</td>
<td>77%</td>
<td>47.6%</td>
</tr>
<tr>
<td>MaRIA &gt; 7</td>
<td>0.67</td>
<td>29%</td>
<td>77%</td>
<td>45.5%</td>
</tr>
<tr>
<td>Faecal calprotectin &gt; 100 μg/g</td>
<td>0.84</td>
<td>60%</td>
<td>100%</td>
<td>64.7%</td>
</tr>
<tr>
<td>Detection of Rutgeerts ≥12b</td>
<td>0.70</td>
<td>38%</td>
<td>82.4%</td>
<td>64.2%</td>
</tr>
<tr>
<td>Clermont score &gt; 8.4</td>
<td>0.73</td>
<td>47%</td>
<td>82.4%</td>
<td>66.7%</td>
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<tr>
<td>Faecal calprotectin &gt; 100 μg/g</td>
<td>0.79</td>
<td>66%</td>
<td>82.4%</td>
<td>76.5%</td>
</tr>
<tr>
<td>Detection of Rutgeerts ≥13</td>
<td>0.67</td>
<td>42.9%</td>
<td>73.9%</td>
<td>81%</td>
</tr>
<tr>
<td>MaRIA &gt; 7</td>
<td>0.63</td>
<td>42.9%</td>
<td>73.9%</td>
<td>81%</td>
</tr>
<tr>
<td>Faecal calprotectin &gt; 100 μg/g</td>
<td>0.96</td>
<td>100%</td>
<td>89.5%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Conclusion: Faecal calprotectin and MRI are reliable tools to detect endoscopic POR in CD patients and could be used as non-invasive alternative options to colonscopy.


All other authors have declared no conflicts of interest.

References:
1. De Cruz et al. Lancet 2015
4. Koliakou et al. Inflamm Bowel Dis 2010
P1005 VALUE OF 75SEHCAT IN THE DIAGNOSIS OFBILE ACID MALABSORPTION IN CROHN'S DISEASE WITH CHRONIC DIARRHEA
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Gastroenterology, Hospital Universitario Reina Sofia, Córdoba/Spain
Gastroenterology, Instituto María de Investigación Biomédica, Córdoba/Spain

Introduction: Bile acid malabsorption (BAM) is a well-known disorder associated with inflammatory bowel disease patients, however, it is underdiagnosed in clinical practice. 75SeHCAT test is the current clinical gold standard for diagnosing bile acid diarrhoea widely used in Europe.

Aims & Methods: We aimed to analyze the incidence of BAM in Crohn's (CD) patients with chronic diarrhoea through 75SeHCAT and to assess whether there is a relationship between the malabsorption degree and the presence of ileal resection. We performed 75SeHCAT test after the ingestion of a 75SeHCAT capsule (0, 37 MBq) prior fasting the night before the test and performing an enema with saline at seventh day measurements. Epidemiological and clinical data were collected from the local database ENEIDA.

Results: We studied 15 women and 15 men with mean age of 46.5 years old (26–68). The mean duration of the disease was 13 years (2–27). At diagnosis, ileal location was present in 50% of the patients, ileocolonic 40% and colonic in 10%. According to the behavior of the disease, 50% presented non-stricturing non-penetrating, 23% strictureting and 27% penetrating pattern, and 43% patients had perianal disease. In relation with smoking status, 34% were active smokers. Regarding actual treatment, 40% of the patients are controlled with only immunosuppressive drugs, 10% with biologics, while 20% used comotherapy. 83.3% had perianal disease. In relation with smoking status, 34% were active smokers. 10% BA is consistent with a normal result. 75% of patients demonstrated abnormal values defined as <10% ileal retention. Mild BAM was considered 7–10%, moderate 4–7% and severe <4% at ileal retention at seventh day measurements. Epidemiological and clinical data were collected from the local database ENEIDA.

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

Reference

P1007 THE ROLE OF SENSE OF COHERENCE IN DETERMINING HEALTH RELATED QUALITY OF LIFE AND DISABILITY IN INFLAMMATORY BOWEL DISEASE
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Introduction: There is an ever growing body of evidence that indicates that Health Related Quality of Life (HRQoL) is significantly impaired in IBD. While clinical variables and disease activity status influence HRQoL, a host of psychosocial and personality variables also play an important role. This contention is supported by evidence of impaired quality of life in IBD patients in the absence of demonstrable disease activity. Moreover, individual differences may play a key role in the psychological adaptation to living with IBD and coping with the psychological distress associated with the disorder. Sense of coherence (SOC) is an emerging theoretical and dynamic construct that seeks to explain why some individuals in the face of adversity experience illness while others do not. Antonovsky’s theory of SOC suggests that individuals with strong SOC exhibit effective and flexible coping strategies when faced with stressors (e.g., chronic medical condition) whereas those with weak SOC are less likely to adapt to health stressors and have less motivation when confronted with challenges to their health. While a number of studies have shown that SOC appears to have an impact on HRQoL, data regarding this association in IBD are limited.

Aims & Methods: The goal of the current study was to examine the associations between an individual’s sense of coherence, and their overall health-related quality of life. The first part of this analysis looked at whether sense of coherence accounted for more of the variance in level of disability, and an individual’s illness perception, as compared to other reported psychosocial factors. The second part of this study evaluated whether sense of coherence, as well as illness perception, were associated with an individual’s self-reported quality of life, and if this interaction was moderated by the individual’s level of anxiety. Additionally, the correlations between sense of coherence, and self-efficacy, as well as self-reported emotional intelligence were also further evaluated. This is a cross-sectional observational cohort of IBD patients attending MUHC (McGill University Health Centre) IBD outpatient clinic. The psychological distress of the patient population is as follows: mean age (42.4±12.44), gender (40.6% male), disease activity (58.4% CD, 33.7% UC), disability (27.7% active, 65.3% inactive). Patients completed multiple validated questionnaires pertaining to a variety of psychosocial parameters. Data was analyzed by multiple linear regression using statistics software (SPSS version 17.0).

Results: Preliminary analyses of this patient population reveal that 40.2% of the variance in level of disability is explained by sense of coherence. This model suggests a significant negative correlation between sense of coherence and level of disability (β = –0.64, p < 0.05). A smaller, albeit significant contribution of sense of coherence with illness perception was additionally found (14.1% of the variance, and β = –0.39, p < 0.05). Furthermore, 32.3% of the variance in self-
reported quality of life was explained by sense of coherence ($r = 0.43$, $p < 0.05$) and distress perception ($r = -0.28$, $p < 0.05$). However, the individual’s report of anxiety did not moderate this relationship. Significant positive correlations between sense of coherence and self-efficacy were also seen in this patient population ($r = 0.61$, $p < 0.01$), as well as with self-reported emotional intelligence ($r = 0.52$, $p < 0.001$).

Conclusion: These data indicate that Sense of Coherence is an important psychological construct that is associated with HRQoL and disability in IBD. Screening for these factors, in addition to the physiological markers, should be considered in order to provide the most holistic treatment strategies.

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

References:
4. P1009 INFLIXIMAB TROUGH LEVELS AND ANTIBODIES TO INFlixIMAB IN ASSOCIATION WITH DISEASE ACTIVITY AND ME/CFS/HOLDING 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 treatment of patients with inflammatory bowel disease (IBD). Aim(s) & 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 Rock, PA, 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, 94% mean age 42.3 years, 45 on combination therapy with immunomodulators (IMMs), 10 under intensified dose (either 10 mg/kg/8w or 5 mg/kg/4–6w)] were studied. Median time since IFX initiation was 26 (13–71) months and median value of serum IFX-TL was 4.33 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 0.96, 95% CI 0.76–0.97 p = 0.017) and duration of IFX treatment (OR 0.97, 95% CI 0.95–0.99 p = 0.04) were independently correlated with the presence of mucosal healing.

Table 1: Correlations of infliximab trough levels and antibodies to infliximab with clinical, biochemical and endoscopic indices of disease activity in patients with inflammatory bowel disease

<table>
<thead>
<tr>
<th></th>
<th>IFX-TLs</th>
<th>ATIs</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBI (CD)</td>
<td>0.11</td>
<td>0.41</td>
</tr>
<tr>
<td>SCAI (UC)</td>
<td>0.48</td>
<td>0.18</td>
</tr>
<tr>
<td>SIBDQ</td>
<td>0.44</td>
<td>0.09</td>
</tr>
<tr>
<td>Hgb (mg/dl)</td>
<td>0.27</td>
<td>0.02</td>
</tr>
<tr>
<td>ESRI 1st hour (mm)</td>
<td>0.09</td>
<td>0.42</td>
</tr>
<tr>
<td>PLT (x10$^6$/µL)</td>
<td>0.19</td>
<td>0.09</td>
</tr>
<tr>
<td>Alb (mg/dl)</td>
<td>0.03</td>
<td>0.77</td>
</tr>
<tr>
<td>ATIs</td>
<td>0.34</td>
<td>0.01</td>
</tr>
<tr>
<td>Combined with IMMs</td>
<td>0.25</td>
<td>0.03</td>
</tr>
<tr>
<td>Mucosal Healing (N = 53)</td>
<td>0.38</td>
<td>0.006</td>
</tr>
</tbody>
</table>

Conclusion: Therapeutic drug monitoring is valuable in IBD-patients on maintenance IFX-treatment. Combination treatment with IFX and IMMs is associated with higher IFX-TLs compared to IFX monotherapy. Higher IFX-TLs are independently associated with the presence of mucosal healing.

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

References:
P1010 COMPARATIVE INVESTIGATION OF ENTEROBACTERIA BUSH IN ULCERATIVE COLITIS PATIENTS, AND THEIR CONSANGUINEOUS, AND NON-CONSANGUINEOUS RELATIVES

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Introduction: In recent years, the gut microbiota has been recognized as a relevant fingerprint to predict the development of inflammatory bowel disease (IBD) like ulcerative colitis (UC). Accordingly, inter-individual variation in the gut microbiota community may reflect inter-individual variation in the risk of developing IBD or other diseases. Further recently, the Next-Generation Sequencing (NGS) has been validated for determining bacterial species in faecal samples. Essentially, NGS is a molecular biology sequencing technique for the precise identification and assessment of bacterial species.

Aims & Methods: With the major focus of our study being to establish a relevant biomarker of disease activity in UC patients based on the intestinal microbiota, 82 UC patients together with 61 healthy relatives as controls were included for inter-individual variations 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 (D).

Results: We obtained 1011 varieties of bacteria as Phyla, Class, Order, Family, Genera 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 Genera, 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 interesting, 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 gorbachi were increased in group I 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 Genera, 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 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. Clinical trial No: UMIN000017103

Disclosure of Interest: All authors have declared no conflicts of interest.
Introduction: At present, drug response to infliximab is monitored by trough levels of antibody levels. When a patient’s trough level is decreasing, 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 and MMP levels were assessed at t0 and t1 by ELISA. In addition, MMP3 levels were assessed in 28 healthy subjects as controls. Clinical (HBI or Mayo score) and biochemical (CRP, faecal 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 who maintained therapeutic TL (14.5 ± 1.7 pg/ml and 15.0 ± 1.6 pg/ml, respectively) and in patients who discontinued therapy (13.2 ± 0.5 pg/ml). Patient who discontinued therapy 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 pg/ml) already at t0; in addition, 17 of these 21 patients were in clinical remission at t0, while at t1 all patients had disease activity.

Conclusion: Serum MMP3 levels are useful in predicting loss of response to anti TNFa in patients with low TL but without ATI. High MMP3 levels predict with 90.5% accuracy loss of response over the next 6 months.

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

Reference

P1013 USEFULNESS OF A MULTIDISCIPLINARY APPROACH COMBINING BOTH RHEUMATOLOGY AND GASTROENTEROLOGY FOR THE ASSESSMENT AND TREATMENT OF INFLAMMATORY BOWEL DISEASE PATIENTS

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Introduction: More than one third of inflammatory bowel disease patients (IBD) present periodic manifestations, with a 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 consultation were also evaluated. From April 2014 to April 2015, 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 assessed the patient’s status. In 41% (51.5% presented axial arthropathies) of patients, 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.

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 the other rheumatological conditions.

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

Reference

P1015 ADALIMUMAB TROUGH LEVELS AND ANTI-ADALIMUMAB ANTIBODIES CORRELATE WITH CLINICAL AND ENDOSCOPIC ACTIVITY IN CROHN’S DISEASE PATIENTS

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Introduction: Adalimumab (ADA) is a anti-TNFα drug approved for patients with refractory luminal Crohn’s disease (CD). Recently, mucosal healing (MH) emerged as a major therapeutic goal in inflammatory bowel disease. Few data are available on ADA trough levels (TL), anti-ADA antibodies (AA) during long term follow-up of CD patients, and their potential association with MH and disease outcome.

Aims & Methods: The aim of our prospective study was to evaluate a possible association between achievement of MH, ADA TL, and AAA in CD patients. Moreover, we assessed the value of a possible association between clinical outcome and MH. We prospectively enrolled moderate to severe CD patients who were primary responders to ADA treatment. Blood samples were withdrawn at standardized time points during treatment (0-, 2-, 6-week and every 8 weeks thereafter), before ADA administration. ADA TL were measured using an homogenous mobility shift assay (HMSA; Prometheus Lab, San Diego, United States). Disease activity was assessed by means of Harvey-Bradshaw Index (HBI, remission defined by HBI < 5). As to endoscopic activity, we defined MH in case

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

Reference
of a value of Crohn’s Disease Endoscopic Index of Severity below 8, so far we included patients with an active disease and a minimal residual endoscopic activity. Endoscopic evaluation was performed within two weeks of blood sampling, and at least after 6 months of ADA treatment.

Results: In our prospective study we enrolled 22 CD patients primary responders to ADA therapy (13 males, median age 43 years, range 23–67 years) who had a median treatment duration of 52 weeks (range 24–121 weeks). ADA TL were significantly higher ($P = 0.0002$) in patients who achieved MH (12.1 mcg/mL, range 6.8–17.2 mcg/mL) as compared to patients without MH (4.50 mcg/mL, range 0–9 mcg/mL). Receiver Operating Characteristic curve identified an ADA TL cut-off of 6.43 mcg/mL as the threshold with the highest accuracy for identification of patients who achieve MH (AUROC 0.934, specificity 100%, sensitivity 81.8%, PPV 84.6%, VPN 100%). Moreover, achievement of MH was associated with absence of AAA ($P = 0.012$). Lastly, HBI was significantly lower ($P = 0.0002$) in patients with MH (4, range 3–8) than in patients without (11, range 4–17).

Conclusion: In our cohort of CD patients, we observed a clear association between higher ADA-therapy and disease activity development. In this study, in particular, a threshold of 6.43 mcg/mL has been identified as the best cut-off to obtain endoscopic remis-
sion or at least a minimal residual endoscopic activity. Moreover, we observed that CD patients on ADA therapy who achieved MH had a lower disease clinical activity. Thus, we draw the support of therapeutic ADA monitoring for the management of CD patients in order to obtain clinical and endoscopic remission of the disease.

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

References

P1016 ULTRASONOGRAPHIC RESPONSE TO ANTI-TNF IS ASSOCIATED WITH BETTER OUTCOMES IN CROHN’S DISEASE

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Introduction: Crohn’s disease (CD) management targets mucosal healing on ileocolitis 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 dilation, 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 fewer 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. Most patients had ileal disease (67%) and strictureting phenotype (52%). Based on SICUS, thirty-six patients (46%) were complete sonographic responders, 30 partial (38%), and 15 non-responders (16%). Complete and partial responders at SICUS had a reduced risk for surgery in comparison with non responders ($p = 0.003$ (OR:3.46, CI:1.7–7.0), $p = 0.003$ (OR 12, CI:0.6–2.40)). Complete responders at SICUS had a reduced number of hospitalizations in comparison with non responders ($p = 0.04$ (OR 4.2, CI:1–18)), and complete or partial responders at SICUS had a reduced risk for need for rescue corticosteroids in comparison with non responders ($p = 0.005$ (OR:7.8, CI:1.9–32.4), $p = 0.002$ (OR 5.2, CI:1.7–15.3)).

Conclusion: Ultrasonographic response to medical therapy is associated with significant reductions in long-term risk of surgery, hospitalizations and steroid usage among CD patients. These findings suggest the significance of response assessed by ultrasonography as a treatment target.

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

P1017 CONTINUOUS MONITORING WITH THE TELEMEDICINE TOOL MYIBDCOACH SHOWS AN ASSOCIATION BETWEEN NOVEL STRESS AND INFLAMMATORY BOWEL DISEASE FLARES

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Introduction: Inflammatory bowel disease (IBD) is characterized by recurrent flare of disease activity, which may lead to hospitalisations, surgery, and eventually disease progression. The exact role of psychosocial factors as triggers remains controversial and current literature focuses on the global presence of psychosocial symptoms preceding a flare instead of distinguishing pre-existing and novel symptoms. In this prospective study, we aim to explore the impact of newly developed symptoms of anxiety, depression, fatigue, psychological stress, and life events on IBD flares.

Aims & Methods: IBD patients were recruited from the MyIBDCoach study cohort (de Jong et al., Lancet 2017, in Press). MyIBDCoach is a telemedicine tool to monitor IBD patients at home. During the 12-month study period, participants reported on disease activity and psychosocial parameters (including psychological stress, anxiety, depression, fatigue, and life events) through MyIBDCoach every 1–3 months. Flares were defined as clinical disease activity in combination with one of the following: faecal calprotectin > 250 µg/g, disease activity on endoscopy or other imaging techniques, or dose escalation or initiation of a new drug to induce remission. For all psychosocial parameters, a binary variable was created to indicate whether symptoms were newly developed or pre-existing with reference to the previous measurement, thereby correcting for variability. A generalized estimating equation model was used to separately determine which psychosocial parameters were associated with flares in the three preceding months, correcting for immortal time bias after a flare and adjusting for gender, disease phenotype, smoking status and disease duration.

Results: In total, 2748 measurements from 381 IBD patients were included. Fifty-four (14%) and 16 (4.2%) flared after clinical remission was achieved. Newly developed psychological stress was associated with a flare in the following three months (odds ratio [OR] = 3.01; 95% CI = 1.48, 6.12). Newly reported symptoms of depression (OR = 1.29; 95% CI = 0.53, 3.14), anxiety (OR = 1.06; 95% CI = 0.46, 2.48), fatigue (OR = 0.76; 95% CI = 0.0, 4.15), or the occurrence of a life event (OR = 2.07; 95% CI = 0.94, 4.55) were not significantly associated, although the latter did occur more frequently before flares.

Conclusion: Newly developed psychological stress is associated with disease flares in IBD patients. Therefore, continuous monitoring combined with the use of interventions such as mindfulness and coaching might be interesting to prevent flares and eventually improve disease course.

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

P1018 STRAIN ELASTOGRAPHY AND DIFFERENTIAL DIAGNOSIS OF INFLAMMATORY AND FIBROTIC STRUCTURES IN CROHN’S DISEASE

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Introduction: Strain elastography has become a new emerging technique in ultrasound diagnostics of gastrointestinal pathology. Currently there is few published data on the use of elastography for making the diagnosis and following the course of inflammatory bowel diseases.

Aims & Methods: Objective. To assess the accuracy of strain elastography concerning stricture detection in Crohn’s disease (CD).

Methods. Patients and Methods. 24 patients (43% females) were included into the study, 1 of them having a colonic stricture, 1 patient having a stricture of ileo-transverse anastomosis and 22 patients having a stricture in the small intestine. Surgical treatment was carried out in 22 patients, in each case histopathological examination of surgery specimens was conducted. We performed transcutaneous ultrasonic examination of the bowel using 7.5 MHz linear and 3.5 MHz convex probes with power Doppler mode and colonoception in all 24 patients. Strain elastography was used during each US-examination to differentiate inflammatory and fibrotic structures.

Results: Ultrasonic examination invariably showed local narrowing of the intestinal lumen in stricture sites. Inflammatory stricture length was 29 mm (21.1–55.5), (median (2.5th - 97.5th percentile)) with intestinal wall thickening of 6 mm (4.23–9.00) and the presence of ulcers. The lesion length in fibrotic structures was 30 mm (20–60), wall thickness – 6 mm (4.18–8.27), ulcers were visualized either. In 22.7% of cases we observed the signs of partial bowel obstruction. Strain ratio (SR) values for inflammatory structures were 1.53 (0.43–3.17), for fibrotic structures – 4.19 (1.57–6.42), the difference being statistically significant (Mann-Whitney test, p < 0.05). According to morphologic studies inflammatory structures were characterized by transmural inflammatory infiltration. In fibrotic structures we found fibrosis in submucosal layer with loci of muscularis propria involvement. No significant differences were found between ultrasonic and morphologic data, p > 0.05.
Disclosure of Interest: All authors have declared no conflicts of interest.

References


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.

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

Introduction: IBDs are disabling conditions that negatively affect physical, psychological, familial and social dimensions of life. The concept of quantifying disability has been developed to address the spectrum of many other chronic diseases. Thus, specific tools have been used to assess the impact of disease and its treatment options on relevant end-points such as health-related quality of life (HRQL), measured by the IBD-Questionnaire (IBD-Q). Recently, the IBD-Disability Index (IBD-DI) has been developed to evaluate the entire spectrum of limitations of functioning in patients with IBD. This index is inspired to the International Classification of Functioning, Disability and Health (ICF). The aim of the present study was to assess the relationship between the IBD-DI, clinical characteristics and HRQoL in a cohort of Sicilian patients with ulcerative colitis (UC) and Crohn’s disease (CD) follow up in a referral center.

Aims & Methods: IBD-DI and IBD-QI questionnaires were administered to consecutive UC and CD adults outpatients from July 2016 to April 2017. The IBD-DI consists of 28 items that evaluate the 4 domains of body functions, activities and participation, body structures and environmental factors. IBD-DI consists of 32 questions grouped into 4 dimensions: bowel, systemic, social, emotional. Scores range from 1 (poorest QoL) to 7 (best QoL) with higher scores indicating better QoL. Disease activity was assessed by partial Mayo score for UC and by Harvey-Brandshaw Index for CD. The mean differences of DI score in relation to dichotomic clinical variables were performed by Student’s t-test. By linear regression analysis we assessed also the relationship between DI and IBD-Q. Differences between were regarded as statistically significant if p value was < 0.05.

Results: Data from UC and CD patients were analysed separately. 100 UC patients (59% males, median age 49 years) were enrolled; 17% were smokers. 83% had inactive or mild disease, 17% moderate disease. None of the recruited patients had severe disease. Concomitant medications at the time of the interview were conventional therapy (5-aminosalicylic acid, oral steroids) in 72 patients (72%) or immunosuppressive therapy (immunosuppressant or anti-TNF-a) in 28 patients (28%). The mean IBD-DI score was 23.15 ± 17.492; 62% of patients had low DI ≤ 25 (62/100) while 7% had high DI > 50. No correlations were found between IBD-DI and gender, disease duration, disease extension (Montreal Classification) and immunosuppressive therapy. IBD-DI was related to classical disease activity (p = 0.001) and extraintestinal manifestations (p = 0.005). By linear regression analysis, IBD-DI was significantly associated with IBD-Q (R² = 0.573, p < 0.001). Interestingly, 5% (n = 5) of patients with inactive or mild disease had severe disability (≥ 50) and 5% (n = 5) with active disease (≥ 50). CD patients (59%, males, median age 41 years) were enrolled; 22% were smokers. 94% had mild disease, 17 (6%) had severe disease. Concomitant medications at the time of the interview were conventional therapy (5-aminosalicylic acid, oral steroids) in 22 patients (40%) or immunosuppressive therapy (immunosuppressant or anti-TNF-a) in 32 patients (60%). The mean IBD-DI score was 20.17 ± 16.24; 72% of patients had low DI ≤ 25 (39/54) while only 2 patients had high DI > 50. No correlations were found between IBD-DI and disease characteristic (gender, disease duration, disease extension, extraintestinal manifestations) and linear regression analysis. IBD-DI was significantly associated with IBD-Q (R² = 0.604; p < 0.001).

Conclusion: Our preliminary results show that the IBD-DI is significantly related to HR-QoL both in UC and CD. In UC IBD-DI is also related to disease activity and presence of extraintestinal manifestations. However, most of our patients were in clinical remission. A larger sample with different grades of disease activity could provide a more accurate evaluation of the reliability of this tool in measuring functional status and disability in IBD. IBD-DI could become a major end-point in RCTs targeting the course of IBD.

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

Reference
Aims & Methods: We conducted a prospective observational study at our tertiary care centre with the aim of assessing and correlating UC disease activity by clinical criteria, endoscopy, histology, serum and fecal biomarkers and PET-CT. 60 eligible patients of UC were enrolled into 3 groups (26 remission, 24 moderate and 10 severe activity) as per Mayo score and 18F FDG PET-CT was performed within 72 hours of endoscopy. ESR, CRP and fecal calprotectin levels were determined for all patients.

Results: Of 60 enrolled patients, 10% had proctitis, 43.3% had left-sided colitis and 46.7% had extensive colitis. ESR, CRP, fecal calprotectin levels and rectal PET activity were significantly higher in patients with moderate and severe disease activity as compared to those in remission. Rectal PET activity showed a significant correlation with the Mayo score (k = 0.465, p < 0.001), endoscopic sub-score (k = 0.526, p < 0.001), histological score (k = 0.496, p < 0.001), and fecal calprotectin levels (k = 0.279, p < 0.031). Extent evaluation by PET-CT and colonoscopy also showed a significant correlation (k = 0.582, p < 0.001) with each other. We found that CRP at a cut-off level of 5 mg/L had a sensitivity of 70.59% and specificity of 92.3%, and fecal calprotectin at a cut-off level < 143 μg/g had a sensitivity of 82.35% and specificity of 88.46% to predict remission. Besides, PET-CT identified sacroiliitis 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.

Biomarkers and rectal PET activity of patients

<table>
<thead>
<tr>
<th>Variables</th>
<th>Remission</th>
<th>Moderate activity</th>
<th>Severe activity</th>
<th>Total</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>123.3 ± 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 ± 23.4</td>
<td>28.1 ± 5.7</td>
<td>0.000</td>
</tr>
<tr>
<td>Fecal calprotectin (μg/g) (mean ± SE)</td>
<td>72.7 ± 1.65</td>
<td>276.29 ± 30.43</td>
<td>426.6 ± 64.95</td>
<td>212.93 ± 24.3 ± 0.001</td>
<td></td>
</tr>
<tr>
<td>Rectal PET-CT activity (0.04 ± 0.50</td>
<td>10.79 ± 3.88</td>
<td>12.70 ± 10.50</td>
<td>9.05 ± 6.56</td>
<td>0.004</td>
<td></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 the aim to provide a quarterly peer review 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 been no published data on the impact of an IBD education clinic on resource use or patient outcomes.

Aims & Methods: We aimed to evaluate the impact of the education clinic on resource use in patients who attended the clinic compared to patients who did not. A retrospective analysis was done of patients who were diagnosed with IBD between January 2013 and May 2015. 40 patients were identified and divided equally (20 patients each) into clinic attenders (CA) and non-attenders (NA).

Resource use was determined at 12 months from diagnosis in the NA group and 12 months from attendance in the CA group. The median time from diagnosis to clinic attendance in the CA group was 7 months. Data was obtained from our hospital’s electronic database system. Statistical analysis was carried out with the student’s t-test.

Results: The median age was 37 in the CA group and 33 in the NA group. In the CA group, 10 patients had ulcerative colitis (UC), 9 patients had Crohn’s Disease (CD) and 1 patient had unclassified IBD. In the NA group, 13 patients had UC and 7 patients had CD. The median of resource use and patient outcomes over a 12 month period (from diagnosis in the NA group and from clinic attendance in the CA group) is detailed in the table below.

<table>
<thead>
<tr>
<th>Resource use and patient outcomes</th>
<th>NA</th>
<th>CA</th>
</tr>
</thead>
<tbody>
<tr>
<td>p-value</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steroid courses</td>
<td>0.47</td>
<td>0.51</td>
</tr>
<tr>
<td>Unplanned hospital admissions</td>
<td>0.19</td>
<td>0.21</td>
</tr>
<tr>
<td>IBD telephone helpline consultations</td>
<td>0.24</td>
<td>0.58</td>
</tr>
<tr>
<td>Clinic appointments</td>
<td>3.71</td>
<td>2.84</td>
</tr>
<tr>
<td>Blood tests (excluding essential monitoring blood tests)</td>
<td>5.81</td>
<td>3.68</td>
</tr>
<tr>
<td>Endoscopies</td>
<td>0.33</td>
<td>0.26</td>
</tr>
<tr>
<td>Radiological imaging</td>
<td>0.24</td>
<td>0.16</td>
</tr>
<tr>
<td>Therapy escalation</td>
<td>1.4</td>
<td>1.15</td>
</tr>
</tbody>
</table>

Conclusion: In our cohort of patients, patients who attended the IBD education clinic were more likely to utilise our open access IBD telephone helpline service. There was a trend towards increased frequency of outpatient clinic appointments and blood tests in patients who did not attend the IBD education clinic although this was not statistically significant. There were no differences in the rates of hospital admissions or steroid courses in either group. The limitations of our data include the small sample size and short follow-up period.

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

Reference
P1024 EMERGING ROLE OF IL-33/ST2 LEVELS IN PREDICTING PROLONGED RESPONSE TO ANTI-TNF THERAPY IN ULCERATIVE COLITIS

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1UOC Internal Medicine and Gastroenterology, Gastroenterology Area, Fondazione Policlinico A. Gemelli, Catholic University of Sacred Heart, Rome/Italy
2Pathology, Case Western Reserve University, Cleveland/United States of America/OH

Contact E-mail Address: lopetosoloric@libero.it

Introduction: Tumor necrosis factor (TNF) inhibitors (anti-TNF) are considered to be the mainstay of treatment for moderate-to-severe mucosal healing patients with moderate-to-severe Ulcerative Colitis (UC). The role of IL-33 and its receptor, ST2, in intestinal inflammation is incompletely understood, with both pro-inflammatory and regulatory properties described. Recent evidence has shown that anti-TNF is able to modulate IL-33 expression in inflammatory conditions. 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. At each time point, serum samples were collected and ELISA performed to assess IL-33/ ST2 protein levels. Intestinal biopsies were also taken from the rectum and IHC was done to evaluate mucosal IL-33/ST2 expression and localization.

Results: IL-33 mRNA 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 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 with other groups. IHC confirmed these observations. In particular, IL-33 and ST2 staining was more intense within the inflamed and ulcerated mucosa of responders compared to non-responders at T0. After 6 weeks, ST2 staining was even more evident in responders, notably localized to the healed mucosa and in close proximity to areas of re-epithelialization. No little to no staining for both IL-33 and ST2 was present in healthy controls.

Conclusion: Our results suggest a possible role for IL-33/ST2 in predicting gut mucosal wound healing in patients with moderate-to-severe UC treated with anti-TNF therapy. Further studies are underway to determine mechanisms of action that support these findings.

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


P1026 CORRELATION BETWEEN CLINICAL, ENDOSCOPIC AND HISTOLOGICAL ACTIVITY IN INFLAMMATORY BOWEL DISEASE: A PROSPECTIVE STUDY

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1Medicina Dei Sistemi, Universita degli studi di Roma Tor Vergata, Roma/Italy
2Anatomia Patologica, Universita degli studi di Roma Tor Vergata, Roma/Italy

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Introduction: Several histological scores of activity have been developed in Inflammatory Bowel Disease (IBD). However, their usefulness in clinical practice and the correlation between clinical, endoscopic and histological scores is undefined.

Aims & Methods: To assess, in a prospective study, the correlation between clinical, endoscopic and histological activity scores in a cohort of IBD patients (pts) undergoing colonoscopy. Secondary end-point was to assess the role of histological scores in clinical practice. From Feb. to Dec. 2016, IBD pts undergoing colonoscopy according to clinical indication were enrolled. Inclusion criteria: 1. Diagnosis of IBD; 2. Age >18 and <80 yrs; 3. Regular follow up; 4. Indication for colonoscopy (i.e., clinical suspicion of activity or comorbidities). During colonoscopy, biopsies were taken ≥2 were biopsies were taken ≥1 macroscopically involved area and, possibly, from ≥1 uninvolved area. Clinical activity was assessed by the Mayo score (activity ≥3) for Ulcerative Colitis (UC) and the CDAI (activity ≥150) for Crohn’s Disease (CD) pts. All colonoscopies were performed by one IBD-dedicated gastroenterologist. Endoscopic activity was assessed in UC pts by the Mayo score (activity ≥2), and in CD by the Rutgeerts’ score (recurrence ≥2 or the SES-CD (activity ≥5), according to previous surgery. Histological activity was assessed by one pathologist using the Global Histologic Activity Score (GHAS) for CD (5) or the Geboes simplified score for UC (activity ≥1.6). Each of the 3 investigators was blind regarding the other results. Statistical analysis. Data expressed as median [range]. correlations assessed by the Spearman correlation test.

Results: IBD group included 107 pts. 67 [62.6%] UC (M 36 [53.7%], age 50 [24–80], UC duration 14 yrs [1–48]), 40 [37.4%] CD (M 24 [60%], age 46 [19–75], CD duration 14 yrs [1–36]). UC extent included: pancolitis in 34 (31%), left sided in 17 (20%), proximal in 16 (24%) pts. CD involved based on clinical (Harvey-Bradshaw score), biological and endoscopic or imaging techniques; 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-off 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: 52.5%, 31% smokers, 75.8% had inflammatory bowel disease patients, 44.8% inflammatory bowel activity, with 6.9% previous abdominal surgery and 86.2% on concomitant immunosuppressant, 34.8% non-naïve to biological therapy. On week 22, 44.8% patients were in remission; on week 54, 80.4% were in remission.
active in 5% (12%), in remission in 35% (88%) pts. Endoscopic activity: CD: Colonoscopy was incomplete in 2/20 pts. In the 24 pts with no previous surgery, SES-CD was: 0 (n = 4), 1 (n = 4), 2 (n = 3); 6 (n = 6); 8 (n = 7); 9 (n = 2); 10 (n = 1); 11 (n = 1); 12 (n = 1); 13 (n = 1); 14 (n = 1); 17 (n = 1); 19 (n = 1) pts (median 4 [0–19]; activity: 20/24 [80%]; remission: 4/24 [20%]). In the 16 pts with previous surgery, Rutgeerts’ score was: 0 (n = 3); 1 (n = 1); 2 (n = 6); 3 (n = 2) 4 (n = 4; recurrence: 12/16 [75%]). Histologic activity: CD: The GHAS was: 0 (n = 5); 1 (n = 1); 2 (n = 1); 3 (n = 4); 4 (n = 2); 5 (n = 1); 6 (n = 1) pts without previous surgery, and 0 (n = 3); 1 (n = 9); 2 (n = 1); 10 (n = 1) pts in previous surgery. In CD, the histologic score showed a slightly significant correlation with SES-CD (r = 0.41 ± 0.046) and no correlation with the Rutgeerts’ score (r = 0.31 ± 0.247).

Conclusion: In a prospective study, a significant correlation was observed between clinical, endoscopic and histological activity in UC. Histological activity may be observed in UC patients in endoscopic remission, thus suggesting that this finding may represent a predictive marker of clinical relapse.

Disclosure of Interest: L. Biancone: The study was not supported by grants nor funders. The reported 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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5. D’Haens GR. Gastroenterology 1998;114:262

Table 1: Anti-Infliximab Antibody Distribution and Corresponding Mean Drug Levels

<table>
<thead>
<tr>
<th>Antibody</th>
<th>Antibody Concentration (μg/mL) n</th>
<th>Mean Drug Concentration (μg/mL)</th>
<th>Mean Drug % with Undetectable Drug (% with ≤0.4μg/mL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undetected</td>
<td>15692</td>
<td>10</td>
<td>0%</td>
</tr>
<tr>
<td>22−100</td>
<td>6785</td>
<td>9.5</td>
<td>11%</td>
</tr>
<tr>
<td>101−200</td>
<td>2684</td>
<td>8.6</td>
<td>19%</td>
</tr>
<tr>
<td>201−300</td>
<td>1344</td>
<td>6.3</td>
<td>27%</td>
</tr>
<tr>
<td>301−500</td>
<td>1427</td>
<td>5.2</td>
<td>38%</td>
</tr>
<tr>
<td>501−700</td>
<td>789</td>
<td>3.7</td>
<td>53%</td>
</tr>
</tbody>
</table>

(continued)

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, Ulcerative Colitis, and Crohn’s Disease where high antibody scenarios are managed very differently (increase drug/consider immunomodulator vs. switch drug within class). High resolution antibody assays may be helpful in dosing TNF inhibitors and in other treatment and management decisions.

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

Reference

Table 2: Anti-Adalimumab Antibody Distribution and Corresponding Mean Drug Levels

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<tr>
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<td>10784</td>
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<td>63%</td>
</tr>
<tr>
<td>25−100</td>
<td>3904</td>
<td>5.6</td>
<td>5%</td>
</tr>
<tr>
<td>101−200</td>
<td>1144</td>
<td>3.4</td>
<td>12%</td>
</tr>
<tr>
<td>201−300</td>
<td>570</td>
<td>2.4</td>
<td>24%</td>
</tr>
<tr>
<td>301−500</td>
<td>655</td>
<td>1.8</td>
<td>39%</td>
</tr>
<tr>
<td>501−700</td>
<td>330</td>
<td>1.1</td>
<td>57%</td>
</tr>
<tr>
<td>701−1000</td>
<td>303</td>
<td>0.7</td>
<td>75%</td>
</tr>
<tr>
<td>1001−2000</td>
<td>496</td>
<td>0.6</td>
<td>93%</td>
</tr>
<tr>
<td>2001−4000</td>
<td>394</td>
<td>0.6</td>
<td>97%</td>
</tr>
<tr>
<td>4001−2.8 million</td>
<td>610</td>
<td>0.6</td>
<td>99%</td>
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Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
which IM therapy is used concomitantly with VDZ and potential impact on outcomes in real-world clinical practice.

**Disclosure of Interest:** M. Rauly Callado: Mireia Rauly Callado is a full-time employee of Evidera. R. Carroll: Robert Carroll is a full-time employee of Evidera. R. Curtis: Employee of Takeda Development Centre Ltd. M.J. Khalid: Employee of Takeda Development Centre Ltd. H. Patel: I am currently an employee of Immensity Consulting Inc., which received funding from Takeda Development Centre Ltd.

**P1029 MOLECULAR SURROGATES OF HISTOLOGIC ACTIVITY IN CROHN’S DISEASE**

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**Contact E-mail Address:** emonast1@ITS.JNJ.com

**Introduction:** Biomarkers of inflammatory bowel disease activity have been researched for decades but objective markers of disease severity that support clinical decision-making are still needed. Well-established markers include serum C-reactive protein and fecal calprotectin, but their use as a standalone surrogate for disease activity has been controversial. We hypothesize that novel objective markers of tissue inflammation are best identified at the site of disease with a tissue-level assessment of disease activity.

**Aims & Methods:** Biopsy samples were obtained from participants in the UNITI trials of ustekinumab in moderate-to-severe Crohn’s disease. The UNITI induction trials included two cohorts, patients who failed ≥1 TNF antagonists (UNITI-1) or patients who failed conventional therapies (UNITI-2). Pairs of adjacent biopsies were taken from the rectum, splenic flexure, and ileum. One biopsy from each pair was assessed by Global Histology Disease Activity Score (GHAS) while the other was submitted to microarray analysis. Partial least squares regression and random forest were used to identify biomarkers associated with histological severity in the UNITI-1 cohort. Robustness of the resulting models was assessed using cross-validation within the training set and multiple external validation sets (defined within the UNITI-1 and UNITI-2 cohorts).

**Results:** In UNITI-1, a single multivariate model comprising 16 genes was identified that predicted histological activities in rectum or splenic flexure biopsies. This model was characterized by $R^2 = 0.78$ for the training set, and $R^2 = 0.59$, 0.54, and 0.32 on external validation sets also from UNITI-1. A separate 14-gene model capturing histological activity in ileal biopsies was characterized by $R^2 = 0.5$ for the training set and $R^2 = 0.45$ 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. Finally, the specific genes identified by our analysis provide insight into the molecular processes driving histological disease activity in Crohn’s disease.


**Reference**


**P1030 INDIRECT TREATMENT COMPARISON OF USTEKINUMAB VERSUS OTHER BIOLOGICS IN MODERATE-TO-SEVERE CROHN’S DISEASE PATIENTS HAVING FAILED ANTI-TNF THERAPY – A 1-YEAR TREATMENT SEQUENCE ANALYSIS INCLUDING DELAYED RESPONDERS**

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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 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

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**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>Mean (SD) age, years</td>
<td>43 (14.8)</td>
<td>47 (14.7)</td>
</tr>
<tr>
<td>Female, %</td>
<td>64.9%</td>
<td>59.5%</td>
</tr>
<tr>
<td>Mean (SD) time from diagnosis to VDZ initiation, years</td>
<td>6.0 (3.9)</td>
<td>4.2 (3.4)</td>
</tr>
<tr>
<td>Pre-index exposure to anti-TNF therapy, %</td>
<td>78.2%</td>
<td>55.2%</td>
</tr>
<tr>
<td>IBD-related measures in the 365 days prior to index</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hospitalisations</td>
<td>42.2%</td>
<td>28.8%</td>
</tr>
<tr>
<td>Surgeries</td>
<td>18.7%</td>
<td>6.7%</td>
</tr>
<tr>
<td>Flares</td>
<td>56.9%</td>
<td>43.6%</td>
</tr>
<tr>
<td>IBD-related measures in the 365 day follow-up period</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hospitalisations</td>
<td>24.9%</td>
<td>20.2%</td>
</tr>
<tr>
<td>Surgeries</td>
<td>12.4%</td>
<td>7.4%</td>
</tr>
<tr>
<td>Flares</td>
<td>43.6%</td>
<td>32.5%</td>
</tr>
</tbody>
</table>

Note: IM therapy included use of azathioprine, 6-mercaptopurine, methotrexate, mycophenolate mofetil, cyclosporine, and Tacrolimus.
P1031 INDIRECT TREATMENT COMPARISON OF USTEKINUMAB VERSUS OTHER BIOLOGICS IN MODERATE-TO-SEVERE CROHN'S DISEASE PATIENTS HAVING FAILED CONVENTIONAL THERAPY – A 1-YEAR TREATMENT SEQUENCE ANALYSIS INCLUDING DELAYED RESPONDERS

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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 treatment sequence analysis builds on previous work proposing a solution to this issue.

Aims & Methods: In CD patients having failed anti-TNF therapy, ustekinumab had higher likelihood of response or remission than ADA given weekly (OR [CrI]: 1.36 [0.72; 2.58]) or every other week (85%, OR [CrI]: 1.41 [0.74; 2.68]).

Conclusion: This approach deals with methodological issues inherent to CD trial data. In CD patients having failed anti-TNF therapy, ustekinumab had higher likelihoods of response or remission than ADA given weekly (75%, OR [CrI]: 1.33 [0.83; 2.10]) or every other week (82%, OR [CrI]: 1.40 [0.74; 2.68]).


Reference

P1032 EFFICACY AND TOLERABILITY OF INITIATING, OR SWITCHING TO, INFILXIMAB 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 £5400/patient (70 kg patient receiving 5 mg/kg w eakly). We present our experience of switching patients from the originator IFX to CT-P13 for new and existing patients.

Aims & Methods: Recorded baseline characteristics included indication, age, sex, disease duration, treatment duration, concomitant immunomodulators, baseline CRP and HBI/Mayo scores. Response to IFX induction was assessed retrospectively using symptoms and CRP. Treatment response and remission rates, primary and secondary loss of response, and adverse events in patients who initiated IFX in the 12 months pre-Feb 2016 were compared with those who initiated CT-P13 in the 12 months post-Feb 2016. Sustained response was measured by the proportion of patients who continued with the original IFX.

Results: 53 patients commenced IFX in the 12 months pre-Feb 2016 (26 Crohn's Disease (CD), 13 fistulising CD, 13 Ulcerative Colitis (UC)), 1 IBD-Undifferentiated (IBD-U) compared with 69 patients who commenced CT-P13 in the subsequent 12 months (23 CD, 9 fistulising CD, 35 UC, 3 BDU). 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 v10.6 (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 45.8% (p = 0.087)), secondary loss of response (12(23%) v 15(21.74%) (p = 0.905)), or adverse events (61(11%) v 68.7% (p = 0.629)) in those who initiated originator IFX compared with CT-P13.

Conclusion: Although the infliximab (IFX) biosimilar CT-P13 is an attractive alternative, further research is needed, particularly comparing with other biologics.

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 a global health problem, which affects up to 50% of the world's population. Evidence suggests that H. pylori infection is associated with an increased risk of developing inflammatory bowel disease (IBD). The eradication of H. pylori in IBD patients can improve symptoms and reduce disease activity.

Aims & Methods: In patients with IBD who have documented H. pylori infection, the safety and efficacy of a standard triple therapy regimen were evaluated.

Results: A total of 50 patients with IBD and H. pylori infection were enrolled in the study. The overall eradication rate was 82% (41/50). No serious adverse events were reported.

Conclusion: The eradication of H. pylori in IBD patients is safe and effective. Further studies are needed to determine the long-term impact of H. pylori eradication on IBD outcomes.

Disclosure of Interest: All authors have declared no conflicts of interest.
Introduction: Low prevalence of Helicobacter pylori (HP) infection has been reported in inflammatory bowel disease (IBD), however, it is unclear whether the eradication therapy for HP can exacerbate disease activity of IBD. We then aimed to clarify the safety and efficacy of HP eradication in patients with IBD.

Aims & Methods: This was a multicenter, retrospective cohort study in 26 institutions. Patients who eradicated HP by proton pump inhibitor and amoxicillin-based triple therapy after the diagnosis of IBD (ulcerative colitis (UC) or Crohn's disease (CD)) from March 2005 to July 2015 were enrolled. Two IBD patients without HP were excluded. The gender, age at diagnosis, severity, and observation period were matched with each HP-eradicated patient were enrolled in the same institution. Disease activity of IBD at baseline, 2 and 6 months after 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% (16/102) and 11.8% (17/144) in eradication group, which showed no significant differences compared with those of 4.9% (14/285) and 7.7% (22/285) in non-eradication group. Physicians' assessment showed similar results in terms of disease exacerbation, but in 2 months of observation no patient was improved in eradication group whereas 3.2% (9/285) of patients was improved in non-eradication group (P = 0.019). Multivariate analysis revealed that the independent factor of IBD exacerbation after HP eradication was active disease at baseline (OR 5.3 (95%CI: 1.5–16.9), P = 0.001). 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 its activity but may improve disease activity, suggesting that careful observation is necessary after eradication, especially for patients with active disease.

Disclosure of Interest: S. Shinkazi: I have received lecture fees from Mitsubishi Tanabe Pharma, AbbVie, EA Pharma, and Eisai. T. Fujii: T. Fujii has received a research grant from Eisai, and lecture fees from Mitsubishi Tanabe Pharma, AbbVie, EA Pharma, and Eisai. S. Bamba: Received lecture fees from Mitsubishi Tanabe Pharma, AbbVie, and EA Pharma. T. Kobayashi: Received research grants 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 Neppon Kayaku. H. Tanaka: Received lecture fees from Mitsubishi Tanabe Pharma, AbbVie, EA Pharma, and Eisai. A. Yasunaga: 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, Astражена Pharmaceuticals, EA Pharma, and Takeda Pharmaceutical; and lecture fees from JIMRO and Mitsubishi Tanabe Pharma.

All other authors have declared no conflicts of interest.

Conclusion: Low prevalence of HP infection has been reported in IBD, however, it is unclear whether HP eradication therapy can exacerbate disease activity of IBD. Our study showed no significant differences compared with those of previous reports in non-IBD patients. Physicians' assessment showed similar results in terms of disease exacerbation, but in 2 months of observation no patient was improved in eradication group whereas 3.2% (9/285) of patients was improved in non-eradication group (P = 0.019). Multivariate analysis revealed that the independent factor of IBD exacerbation after HP eradication was active disease at baseline (OR 5.3 (95%CI: 1.5–16.9), P = 0.001). 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.
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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 $\pm 5\%$, 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 (median hospital stay) in patients treated by IFX DB as compared to those treated by IFX WBD. From February to March 2017, we conducted a prospective, case-control study in our unit, including all IBD patients admitted for an IFX infusion. Patients who should receive an IFX dose below 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, reattributions and wasted infusions in the DBW and SB2 groups.

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 of 23%, corresponding to 70 minutes per patient. DB reduced significantly the mean duration of stay by decreasing the waiting time between clinical assessment and start of the infusion: 16m vs. 84 min with WBD (p<0.001). During the study, none of the 44 (0%) infusion in the WBD group was cancelled while 3/84 (3.5%) were cancelled in the DB group (p=0.55). Two out these three infusions could be reattributed to other patients, saving 280€.

Conclusion: When used routinely in IBD, IFX DB is associated with a shorter length of hospital stay as compared to WBD, with a mean reduction of 70 minutes per patient. As IFX DB seems having similar efficacy to weight-based doses, it may improve functioning of daily hospitalisation units.

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

Reference
P1038  HIGH-DOSE INTRA-VENOUS IRON ISOMALTOSIDE IN PATIENTS WITH GASTRO-INTESTINAL DISEASES

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Introduction: Patients with gastrointestinal diseases such as inflammatory bowel disease (IBD) often suffer from iron deficiency anemia (IDA) and have a high annual iron need. Intravenous administration of high-dose iron is the most efficient approach to replenish iron stores. The present analysis evaluates safety and efficacy of high doses of iron isomaltoside in patients with gastrointestinal diseases.

Aims & Methods: This is a pooled analysis of 3 trials of iron isomaltoside performed in patients with gastrointestinal diseases and IDA [1–3]. Outcome measures were adverse drug reactions (ADR) and haemoglobin (Hb) measurements.

Results: 357 patients (108 men, 249 women) were included in the analysis of which 255 were diagnosed with IBD and 102 with other gastrointestinal diseases, incl. bariatric surgery, gastrointestinal bleeding etc. A cumulative dose of ≤1000 mg and >1000 mg iron isomaltoside was administered in 199 and 158 patients, respectively. ADRs were observed in 13.6% (36 events in 27 patients) and 12.0% (30 events in 19 patients) of the patients dosed with ≤1000 mg and >1000 mg iron isomaltoside, respectively (p = 0.8). Similar frequencies were observed in the IBD subgroup (14.3% versus 12.1%, p = 0.8). 0.5% of the patients experienced a serious ADR (2 events in 2 patients; grand mal convulsion and syncope). ADRs with a patient frequency >1% are shown in the table below:

<table>
<thead>
<tr>
<th>ADR</th>
<th>Patients (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤1000 mg iron isomaltoside N = 199</td>
<td>&gt; 1000 mg iron isomaltoside N = 158</td>
</tr>
<tr>
<td>Flushing</td>
<td>3.0</td>
</tr>
<tr>
<td>Constipation</td>
<td>0</td>
</tr>
<tr>
<td>Increased hepatic enzyme</td>
<td>1.5</td>
</tr>
<tr>
<td>Diarrhoea</td>
<td>0.5</td>
</tr>
<tr>
<td>Dyspepsia</td>
<td>0</td>
</tr>
<tr>
<td>Headache</td>
<td>1.0</td>
</tr>
<tr>
<td>Hypersensitivity</td>
<td>1.0</td>
</tr>
<tr>
<td>Abdominal pain</td>
<td>1.0</td>
</tr>
<tr>
<td>Hypertension</td>
<td>1.0</td>
</tr>
<tr>
<td>Hypotension</td>
<td>1.0</td>
</tr>
<tr>
<td>Nausea</td>
<td>1.0</td>
</tr>
<tr>
<td>Urticaria</td>
<td>1.0</td>
</tr>
</tbody>
</table>

No ADRs of hypophosphatemia were reported. In patients dosed with ≤1000 mg iron isomaltoside, Hb increased with a mean of 1.72 (95% confidence interval (CI): 0.13) g/dL to week 8. In patients dosed with >1000 mg iron isomaltoside, Hb increased with a mean of 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 (p = 0.04). In the IBD subgroup, a similar dose-dependent statistically increase in Hb was observed at week 3 and onwards (p < 0.02).

Conclusion: No dose-response for ADRs was observed with administration of high cumulative doses of iron isomaltoside whereas Hb increased more after 3 weeks with doses >1000 mg. Thus, high doses (≥1000 mg) of iron isomaltoside can be administered without additional safety concerns including concerns of hypophosphatemia and with efficacious increases in Hb in patients with gastrointestinal side effects.

Disclosure of Interest: R. Derman: Richard Derman has been a consultant for Pharmacosmos A/S, and the investigator/institution received a fee per patient J.F. Dahluler: The investigator/institution received a fee per patient W. Reinisch: The investigator/institution received a fee per patient.

References

P1039  EFFICACY AND SAFETY OF GOLIMUBAM IN ULCERATIVE COLITIS. PRELIMINARY DATA FROM A MULTICENTER ITALIAN STUDY

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Introduction: Golimumab is an Anti TNF alpha antibody approved for the treatment of Ulcerative Colitis (UC) patients. Its efficacy and safety were studied in randomized, double blind trials1, 2, but its effectiveness and safety in daily clinical practice are still little known3.

Aims & Methods: The aim of this study was to assess the effectiveness and safety of Golimumab in daily clinical practice. All UC patients from 21 centers of south of Italy, treated with Golimumab, were consecutively enrolled starting from June 2015. Demographic information’s (age, gender, smoking status) and clinical data (extension and duration of UC, previous therapies, comorbidities) were collected. Clinical, laboratory and endoscopic data during the treatment with Golimumab were collected every three months.

Results: A total of 190 patients (120 males) were enrolled. The mean age at diagnosis and mean duration of disease were respectively 38.8±14.6 years, and 9.1± 7.0 years. Only 21 patients were active smokers (11%). About the extension, 111 were pancolitis (58%), 72 had distal colitis (38%) and 7 a proctitis (4%). At enrollment, the median Partial Mayo Score (PMS), Total Mayo Score (TMS) and Endoscopic Mayo Score (EMS), were respectively 6 (IQR 4–7), 9 (IQR 7–10), and 2 (IQR 2–3). The median values of ESR, C Reactive Protein and faecal calprotectin were respectively 25 mm/14 hour (IQR 15–38), 3 mg/dl (IQR 1–9), and 250 mg/kg (IQR 174–300). One hundred twenty five patients (66%) were naïve to anti TNF alpha, while 65 have been treated with Infliximab (n = 42), Adalimumab (n = 5) or both (n = 19). The indications for Golimumab were: 121 were primary UC (66%), steroid-dependence in 130 (68%), extra-intestinal manifestations in 6 (3%), and Anti TNF alpha failure in 17 (9%). Twenty two patients (12%) were treated with concomitant Golimumab and immunosuppressants. A total of 142 patients have been completed at least 3 months of therapy. Of these patients, a significant reduction of mean PMS (n = 142; p < 0.001), TMS (n = 45; p < 0.001), EMS (n = 45; p < 0.001), ESR (n = 125; p < 0.001), and CRP (n = 134; p < 0.001) were observed after 3 months. The rate of responders (reduction of ≥2 points of PMS) was 66%, while the rate of clinical remission (PMS < 2) was 39%, and the rate of mucosal healing (EMS ≤ 1) was 53%. Among the 85 responder patients, 67 (79%) have also completely discontinued the steroids. At univariate analysis for predictive factors of response (gender, duration of disease, smoking status, previous Anti TNF therapy)
TNF, combo therapy, PMS, EMS, TMS, ESR, CRP, calprotectin, and indication to the need of anti TNF (p<0.001), Table 2. CRP (p=0.001), PMS (p=0.001), TMS (p=0.001) and EMS (p=0.006) were associated with better response. About the indication, steroid-resistance was associated to the best response (p=0.002), while Anti TNF resistance with the worst response (p=0.002). At multivariate analysis only TMS (OR 1.5; CI 1.2-1.8) and Naive to Anti TNF alpha (p=0.015, OR 3.0; CI 1.2–7.5) were confirmed associated to better response. To date, only 33 patients have discontinued Golimumab (17%). A total of 15 adverse events (3 serious) were reported. Ten non-responder patients underwent to colectomy (7 of them were refractory to other anti TNF alpha).

Conclusion: Golimumab was effective and safe in induction of response in UC patients in daily clinical practice.

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

References

P1040 OUTCOMES OF PATIENTS IN REMISSION WITH INFLAMMATORY BOWEL DISEASE WITH UNDETECTABLE INFliximAB TROUGH LEVELS AND POSITIVE ANTIBODIES TO INFliximAB

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Introduction: The formation of antibodies to infliximab (ATI) is associated with decreased drug clearance. Patients with undetectable infliximab (IFX) levels and positive ATI may indicate a group who may no longer be benefiting from the drug. However, the optimal treatment decision when the patient is clinically well remains unclear.

Aims & Methods: The aim was to assess the course of disease in patients in remission, with undetectable IFX levels and positive antibodies. IFX trough levels and ATI were measured in all patients attending for IFX infusions from May 2016 to April 2017 at a large single referral centre. Results were retrospectively reviewed in March 2017 to identify patients with undetectable (<0.8 mg/L) IFX trough levels and positive ATI (>10 mg/L). A local guideline suggested that in well patients in all cohorts of patients, 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 capture immunosorbent assays (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 each group 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, 5 had all their symptoms and signs cleared within the 0.8 to 1.25 interval, confirming PK similarity between ABP 710 and 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.

Conclusion: 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 AUC0-7 and Cmax were as follows: ABP 710, 33559 µg·mL⁻¹·h; infliximab EU, 33706 µg·mL⁻¹·h; infliximab US, 37523 µg·mL⁻¹·h; 127 µg·mL⁻¹; AUC0-28 of adjusted LS GM (90% CI) for AUC0-7 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 AUC0-7 and Cmax between infliximab US and infliximab EU were 1.113 (1.0115, 1.2252) and 1.05 (0.9906, 1.1338). The 90% CIs of these ratios were fully contained within the 0.80 to 1.25 interval, confirming PK similarity between ABP 710 and infliximab, as well as between infliximab EU and infliximab US. There were 14 deaths, serious adverse events, or treatment-emergent adverse events (TEAEs) leading to discontinuation from the study; 1 subject in the infliximab EU group developed polymyositis 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: 83.8%; 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 study (Day 57), 51% of subjects on ABP 710, 27% of those on 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

P1041 PHARMACOKINETIC SIMILARITY OF ABP 710 TO INFliximAB: RESULTS FROM A SINGLE-BLIND, SINGLE-DOSE, PARALLEL-GROUP STUDY IN HEALTHY SUBJECTS

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Introduction: ABP 710 is being developed as a biosimilar to infliximab, an anti-tumour necrosis factor monoclonal antibody. Analytical and functional comparability of ABP 710 and infliximab has been demonstrated. This report describes the results of a Phase 1 pharmacokinetic (PK) equivalence study comparing ABP 710 with infliximab

Aims & Methods: This was a single-blind, single-dose, 3-arm, parallel-group study in healthy adults, 18–45 years of age and with a body mass index of 18 to 30 kg/m². Subjects were randomised to receive a 5 mg/kg iv intravenous (IV) infusion of ABP 710 or infliximab sourced from the EU and the US after pre-treatment with an antimicrobial and acetaminophen 30 minutes prior to start of infusion. The primary objective was demonstration of PK similarity of ABP 710 with infliximab EU and with infliximab US based on area under the serum concentration-time curve from time 0 to infinity (AUC0–∞) as the primary endpoint.

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
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 (adjusted HR: 1.76; 95% CI: 0.84–3.67; p = 0.13).

Results: The study cohort consisted of 95 patients with a median age of 37 (IQR 27–48) years, of whom 40% were men. The majority of the patients (90.5%) had previously experienced treatment failure for at least one anti-TNF agent. At the start of golimumab, 41% were on a concomitant immunomodulator and 16% on corticosteroids. After a median follow-up time of 21 (IQR 10–36) months, 60 (63%) patients had stopped treatment with golimumab. Reasons for discontinuation were inadequate response; n = 45 (75%), intolerance; n = 11 (18%) and other reasons; n = 4 (7%). Estimated drug continuation rates were 73% at 12 weeks and 42% at 52 weeks. Concomitant treatment with corticosteroids at baseline seemed to be associated with a higher risk of discontinuation of golimumab (unadjusted HR: 1.97; 95% CI: 1.04–3.73; p = 0.04), although the association did not remain significant after adjusting for potential confounding factors (adjusted HR: 1.76; 95% CI: 0.84–3.67; p = 0.13).

Aims & Methods: We aimed to describe the CD population that is treated with golimumab in Sweden and to assess the long-term effectiveness, defined as drug continuation rate, as well as identify predictors of drug discontinuation. Patients with CD who received at least one injection of golimumab were identified through the Swedish national quality registry for inflammatory bowel disease (SWIBREG). Duration of golimumab-treatment was illustrated by Kaplan-Meier curves. 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
---|---
Anti-TNF-α agents | 27 | 1 | 66
Infliximab | 3 | 6–52 | 41 | 1 | 52
Adalimumab | 4 | 9–38 | 0 | 1 | 9
Surgical interventions | 10 | 5–40 | 13–20 | 3 | 5–10
Combined medical and surgical management | 15 | 9–212 | 0–41 | 7 | 9–71
Standard of care | 4 | 15–250 | 23–66 | 3 | 79–250

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.
Adalimumab produces rapid improvement of quality of life since day 4. A total of 115 patients were consecutively evaluated, 33 patients were excluded due to non-compliance (13.3%) or drop-out for adverse events or primary non response (17.3%) within 12 months. Eighty-two (71.5%) were included in the statistical analysis (M/F 53/52, median age 43 years, CD/UC 42/40). Forty, 52 patients started IFX and ADA, respectively. QoL was significantly higher in CD than UC at baseline (median S-IBDQ 49 vs 59; p = 0.0001). 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 = 0.013), haemoglobin levels (median 11.6 vs 13.2 g/dL; p = 0.006), fecal calprotectin (median 1660 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 INFLIXIMAB 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 route of action of these agents, very limited data are available regarding the presence of anti-TNFα agents in non-inflamed tissue. The objective of this study was to evaluate the presence of anti-TNFα agents in uninflamed tissue within the colon of IBD patients.

Methods: A total of 6 adult IBD patients (4 UC and 2 CD) were included in this study. Endoscopic biopsies specimens were obtained from uninflamed mucosa adjacent to active disease. The biopsy specimens were snap frozen in liquid nitrogen and stored at -80°C. Free anti-TNFα was measured in the biopsy specimens using a commercially available ELISA assay. Histologic scores (HS) were assessed in the same biopsies using an immunohistochemistry method for TNFα.

Results: Free anti-TNFα was detected in uninflamed tissue in all the patients. The median HS was 0 (range 0-2). No correlation was found between free anti-TNFα and HS.

Conclusion: Free anti-TNFα is present in uninflamed tissue in IBD patients. The presence of free anti-TNFα in uninflamed tissue does not correlate with the histologic activity of the disease.

Disclosure of Interest: None declared.

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target, little or no information is available regarding the ratios of free and TNF-bound infliximab in intestinal tissue.

Aims & Methods: We aimed to assess the presence of free versus TNF-bound infliximab in the intestinal tissue of IBD patients and its possible association with clinical outcomes. Protein was extracted from frozen intestinal tissues of infliximab treated patients and TNF-bound and unbound 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) and endoscopic appearance (severity determined according to mayo scor- ing in ulcerative colitis and endoscopist’s assessment of ulceration severity, extent of disease and affected area in Crohn’s disease) and pathological results (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 levels, was correlated with SDL (R = 0.8499, p = 0.0077, 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 speci- mens and did not correlate with drug levels in the serum or tissue. ADA was only detected in a single patient, precluding statistical analysis. Notably, no TNF- bound infliximab was measured in the serum.

Conclusion: These findings show that pharmacokinetic-pharmacodynamics inter- action, as measured by SDL, better reflects drug levels in healthy mucosa rather than the inflamed one, and suggest a more complex drug/target interaction in inflamed tissue, which cannot be explained by target binding only. Future studies assessing changes during the process of mucosal healing may allow their use as surrogate markers for this process.

Disclosure of Interest: B. Ungar: Bella Ungar has received consultancy fees from Abbvie and Janssen. S. Vermeire: S. Vermeire has received consultancy and/or advisory board fees from Schering-Plough, Abbvie, Celltrion, Pfizer, Ferring, Janssen and Takeda; and has received research support from Celltrion, Abbvie & Takeda and Y. Chowers: YC declare Abbvie grant support, lecture and advisory fees, Janssen lecture and advisory fees, Takeda grant support lecture and advisory fees, Medtronic advisory fees

All other authors have declared no conflicts of interest.
in just one of these 14 patients (1.4%) (p < 0.001). Median (IQR) TL were significantly higher in the ADA negative group compared to the ADA positive group [9.21 (7.00–12.99) vs. 3.45 (1.72–5.44) μg/mL, p < 0.001]. A significant correlation between TL and ADA levels could be found (Spearman'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 was observed (p = 0.136). During median (IQR) follow-up of 1.46 (0.32–3.48) years, 43 out of 116 patients (37.1%) needed ADM dose-escalation.

Importantly, escalation-free-survival significantly differed between ADA positive and negative patients (p < 0.001). Univariate analysis could not identify any more factors (weight, BMI, gender, disease behaviour, disease location, CRP, serum albumin, PRO2, concomitant therapy, smoking) associated with ADA presence at week 12. Interestingly, 50% of the ADA positive patients had TL above 4 μg/mL and would not have been dose optimized proactively according to current practice. Though, 3 out of these 7 patients needed dose-escalation afterwards which could have been expected based on the ADA positivity.

Conclusion: A drug-resistant assay can identify ADA to ADM before all drug has been neutralised and TL become undetectable. As these ADA at week 12 are significantly associated with need for dose-escalation and can appear before TL drops below the threshold of 4 μg/mL, they may be better to identify those patients who could benefit from dose-escalation. Moreover, the differences in TL between patients at week 12 can finally be explained by the presence of ADA measured with a drug-resistant assay.

Disclosure of Interest: B. Verstockt: Bram Verstockt received lecture fee from Ferring Pharmaceuticals.

G. Van Asche: Financial support from Abbott, Ferring, Jansen, 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 IMS.

S. Vermeire: Financial support from MSD, Abbvie and UCB Pharma; lecture fees from Abbvie, Abbvie, MSD, Ferring Pharmaceuticals and UCB Pharma; consultancy fees from Pfizer, Ferring Pharmaceuticals, Shire Pharmaceuticals Group, MSD, and AstaZeneca Pharmaceuticals.

A. Gils: Speaker for MSD, Janssen Biologics, Abbvie, Pfizer, and Takeda. Consultant for UCB and Takeda. License of (anti)infliximab, (anti-jadilumab, and vedolizumab ELISA to apDha and infliximab, adalimumab lateral flow to R-Biopharm AG.

M. Ferrante: Financial support from Takeda; lecture fees from Ferring, Boehringer-Ingelheim, Chiesi, MSD, Tillotts, 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.

Reference

Results: Overall, data from 59 patients were analyzed. Of these, 27 (46%) were BN and 32 (54%) BE. Baseline patient’s characteristics and main study results are shown in Table 1. BN and BE patients were comparable in terms of comorbidity profile, age at diagnosis, disease duration, pattern of previous and concurrent conventional therapies, as well as of disease extension and severity. Overall, surgical intervention after GOL therapy was performed in 13 (22%) cases: 3 (11%) belonging to the BN and 10 (31%) and BE group, respectively (p = 0.2). In 10 (17%) patients AE’s were recorded, most of which were genitourinary or herpes simplex infections. Of note, two cases of basal cell carcinoma were registered. The rate of AEs did not significantly differ among the BN and BE groups (p = 0.2). In 5 (90%) patients AE’s were responsible for the discontinuation during the observational period. 4 of 4 (94%) patients who continued therapy, median IQR duration of GOL treatment was 7 (4–14) months. At 3 months follow-up, 26 (48%) patients showed clinical response to GOL. Clinical response was more similar in the BN and BE cohorts (p = 0.8). 28 (52%) patients were non-responders, without a statistically significant difference between the two groups (p = 0.8). At March 2017, 17 (31%) patients maintained clinical response, whereas 39 (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 we were unable 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 AE’s was acceptable and similar in both BN and BE patients. Although our findings need to be confirmed in larger studies, GOL 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.

P1054 ETROLIZUMAB TREATMENT IMPROVES HISTOLOGICAL ACTIVITY AS ASSESSED BY BOTH THE ROBARTS HISTOPATHOLOGY AND NANCY HISTOLOGICAL INDICES
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Introduction: Etrolizumab, an anti-β7 monomolecular antibody targeting α4β7 and αEβ7 integrins, showed efficacy and safety versus placebo (PBO) during 10 weeks (wk) of induction in patients with moderate-to-severe ulcerative colitis in the Phase 2 EUCALYPTUS trial (Vermeire S. Lancet. 2014;384:309–18). Since a reduction in histologic inflammation has been linked with improved long-term clinical outcome (Yamaoka R. Gastroenterology 2016;150:408–14), it appears to be safe and to achieve an acceptable disease control in both the biologic naïve and experienced setting. Using both histologic and endoscopic assessments for efficacy evaluation, the effect of etrolizumab on histologic inflammation was evaluated in mucosal biopsies from EUCALYPTUS patients using the Roberts histopathology index (RHI; Mosh MH. Gut. 2017;66:50-8) and Nancy histological index (NHI; Marchal-Bressenot A. Gut. 2017;66:43–9).

Aims & Methods: 124 patients were randomly assigned (1:1:1) to receive subcutaneous etrolizumab (100 mg at wk 0, 4, and 8, with PBO at wk 2, or 420 mg loading dose at wk 0, followed by 300 mg at wk 2, 4, and 8) or PBO. Biopsies were taken using flexible sigmoidoscopy/full colonoscopy from the most inflamed colonic area within 10–40 cm from the anal verge at baseline (BL) and at wk 10. 62 patients provided consent for long-term sample storage for research; batch HE-stained slides were scored by a single pathologist using the Geboes scale (later converted to RHI) and NHI. At wk 10, mean changes in RHI and NHI scores for pooled etrolizumab or PBO were calculated. Subanalyses explored histologic response (reductions of ≥ 6 or 10 points or ≤ 50% improvement from BL RHI and ≥ 1 or ≥ 2 points from BL NHI remission (no neutrophils, RHI ≤ 4 and NHI = 0, ≤ 1 or 2) and correlation with endoscopic improvement.

Results: Analysis included 56 patients with BL data and BL NHI > 1. At wk 10, RHI and 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 remission (HDI = 1) at wk 10 (n = 6), 100% experienced histologic response as assessed by RHI (5/5 with NHI 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
correlation coefficients between RHI and NHI were 0.82 at BL and 0.91 at wk 10, while both histologic scores were similarly correlated with ES (0.25–0.28 at BL and 0.38–0.40 at wk 10).

Table 1: Percentage of Patients Achieving Histologic Response and Remission at Week 10

<table>
<thead>
<tr>
<th></th>
<th>aTNF-naive (n = 16)</th>
<th>aTNF-experienced (n = 34)</th>
<th>All comers (n = 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RESPONSE (decrease from baseline)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RHI ≥ 10</td>
<td>55%</td>
<td>46%</td>
<td>43%</td>
</tr>
<tr>
<td>RHI ≥ 20</td>
<td>55%</td>
<td>36%</td>
<td>39%</td>
</tr>
<tr>
<td>RHI ≥ 30</td>
<td>36%</td>
<td>25%</td>
<td>29%</td>
</tr>
<tr>
<td>RHI ≥ 40</td>
<td>73%</td>
<td>52%</td>
<td>56%</td>
</tr>
<tr>
<td>RHI ≥ 50</td>
<td>73%</td>
<td>52%</td>
<td>56%</td>
</tr>
<tr>
<td>REMISSION (absolute score)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RHI ≤ 10</td>
<td>36%</td>
<td>20%</td>
<td>26%</td>
</tr>
<tr>
<td>RHI ≤ 20</td>
<td>36%</td>
<td>14%</td>
<td>18%</td>
</tr>
<tr>
<td>RHI ≤ 30</td>
<td>45%</td>
<td>14%</td>
<td>18%</td>
</tr>
<tr>
<td>RHI ≤ 40</td>
<td>73%</td>
<td>56%</td>
<td>61%</td>
</tr>
</tbody>
</table>

1*Must have achieved ≥1 point improvement
NHI 0 = no histologically significant disease
NHI 1 = chronic inflammatory infiltrate with no acute inflammatory infiltrate
NHI 2 = mildly active disease

Conclusion: Histologic activity assessment using RHI or NHI demonstrates improvement after wk 10 with etrolizumab treatment and was greater in aTNF-naive patients. Importantly, RHI or NHI reductions were associated with improved ES at wk 10.

Disclosure of Interest: L. Peyrin-Biroulet: Consultant/Advisor for Merck, AbbVie, Janssen, Genentech, Mitsubishi, Ferring, Norgine, Tibotec, Vifor, Therakos, Pharmacology, Pilgrim, UCSF-pharma, Hospira, Celltrion, RHI or NHI reductions were associated with improvement in IBDQ total score exceeded the IBDQ 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, Talecris, 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, Pharmacology, S. Sebastian: Shaji Sebastian: speaker for Abbvie; Abbvie, Abbvie, Abbvie, Abbvie, Abbvie, Abbvie, Abbvie, Abbvie; A. Rose: Anita Rose: employee of MSD UK and owns shares and stocks in Merck & Co., Inc., Kenilworth, NJ, USA.


C. Wheeler: C. Wheelvec: consultant for Aegerion, Amryt Pharma, Astrazeneca, Daiichi Sankyo, GSK, MSD UK, Takeda, Sanofi and Shiogonoi; J. McBride: Employee of MSD UK, receives an honorarium for their employment in a strategic consulting capacity for the management of IBD. He also receives honoraria and travel grants from Boehringer Ingelheim, MSD, Takeda, Vifor Pharma, Gilead Sciences Inc. [rest of discl. on request]


P1057

GO-COLITIS: EFFICACY AND QUALITY OF LIFE DURING GOLIMUUMB MAINTENANCE IN UK PATIENTS WITH MODERATE TO SEVERE ULCERATIVE COLITIS

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Introduction: GO-COLITIS (NCT02092285; 2013-004533-56) is a phase 4, multi-centre, open-label, single-臂 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 golimumab at BL week 6, according to partial Mayo score (PMS, continued) to receive a maintenance dose of 50 mg or 100 mg GLM (dependent on the patient’s weight) every 4 weeks as per the Summary of Product Characteristics for a total of 54 weeks. Measurements were taken at week 6, week 36 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 and ≥30% from baseline, plus a decrease in rectal bleeding subscore of ≥1 point or absolute rectal bleeding score ≤ 1). Secondary endpoints included proportion of patients meeting PMS remission criteria at week 54 (defined as PMS <2 and no individual Mayo subscore >1), change from baseline in IBDQ and EQ-5D at each visit and normalization of CRP.

Results: Overall, 205 patients enrolled in GO-COLITIS and received at least one dose of GLM. Of these, 140 patients responded in the induction phase and received GLM in the maintenance phase. Clinical response was maintained through week 54 in 52/140 patients (37.1%; 95% CI, 29.1% to 45.7%) and 42/140 patients were in remission at week 54 (30.0%; 95% CI, 22.6% to 38.3%). Improvements in PMS subscores from baseline to week 54 were noted in stool frequency (mean change, −1.9; SD, 1.1 [n = 59]), rectal bleeding (mean change, −1.5; SD, 0.8 [n = 59]), and physician’s global assessment (mean change, −1.8; SD, 0.8 [n = 59]). Normal CRP levels at week 54 were seen in 30/59 patients (50.8%, 84.7%; 72.5%, 95% CI, 73.0% (to 92.8%). IBDQ and EQ-5D results are summarised in the Table. Serious adverse events (SAEs) occurred in 49/205 patients (23.9%), with 3 SAEs considered treatment-related.

Table: Mean (SD) Change from baseline to week 54 in IBDQ and EQ-5D.

<table>
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<th></th>
<th>n Baseline</th>
<th>n Week 54</th>
<th>n Change From Baseline</th>
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<tr>
<td>IBDQ total score</td>
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<tr>
<td>EQ-5D index score</td>
<td>136.0</td>
<td>0.7 (0.2)</td>
<td>0.9 (0.2)</td>
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</tbody>
</table>

Conclusion: In the maintenance treatment with GLM phase of GO-COLITIS, 37.1% and 30.0% of patients with moderate to severe UC in the UK demonstrated clinical response and remission at week 54, respectively. Improvements in patient-reported quality of life measures (IBDQ, EQ-5D) were seen; the degree of improvement in IBDQ total score exceeded the IBDQ 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.

Aims & Methods: The current pharmacological options achieve clinical remission (response rate, 84.7%; 95% CI, 73.0% (to 92.8%). IBDQ and EQ-5D results were consistent with previous observations.

Disclosure of Interest: D.R. Gaya: Daniel R. Gaya: speaker for Abbvie, Dr Falk Pharma, Ferring, MSD, Shire, Talecris, 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, Pharmacology, S. Sebastian: Shaji Sebastian: speaker for Abbvie; Abbvie, Abbvie, Abbvie, Abbvie, Abbvie, Abbvie; A. Rose: Anita Rose: employee of MSD UK and owns shares and stocks in Merck & Co., Inc., Kenilworth, NJ, USA.

G. Gillespie: Gillian Gillespie: employee of Merck & Co., Inc., Kenilworth, NJ USA and owns shares and stocks in Merck & Co., Inc., Kenilworth, NJ USA. C. Wheeler: C. Wheelvec: consultant for Aegerion, Amryt Pharma, Astrazeneca, Daiichi Sankyo, GSK, MSD UK, Takeda, Sanofi and Shiogonoi; J. McBride: Employee of MSD UK, receives an honorarium for their employment in a strategic consulting capacity for the management of IBD. He also receives honoraria and travel grants from Boehringer Ingelheim, MSD, Takeda, Vifor Pharma, Gilead Sciences Inc. [rest of discl. on request]


Reference:
results indicated a significant effect of socio-demographic factors and disease severity on concordance. Patients with Crohn’s disease had lower concordance than patients with ulcerative colitis (p = 0.012). S. Ben-Horin: SBH has received consultancy and/or advisory board fees from Abbvie, Janssen-Cilag, Gilead Sciences; A. Tatro: Employee of Genentech. Roche stock-holder Y. Oh: Employee of Genentech. Roche stock-holder S. R. Reddy: Employee of PHAR, LLC, paid by Genentech/Roche to conduct this research A.N. Ananthakrishnan: Consultant/Advisor for Abbvie, Janssen, and Merck Contact E-mail Address: thomas.knittel@indexpharma.com Introduction: Topical therapies for ulcerative colitis have shown evidence of good efficacy and can induce better responses and earlier improvement in distal ulcerative colitis (UC) when compared with oral therapies. Despite this attractive targeted approach of delivering medications topically to the left colon a certain resistance to the use of topical therapy seems to exist. Aims & Methods: The goal of this market research was to assess the familiarity with and perceptions of patients towards topical products. A qualitative market research study was performed in the USA and 3 European countries (Germany, UK and Italy). The primary patient recruitment sources were online web portals, e-mail campaigns and social networking sites. Informal feedback gathered from output of patient activists to identify the right sources was also used. In order to select patients with UC who had a shorter length of disease and/or a longer disease history current or past steroid medication was mandatory as a qualification for inclusion in the market research. A structured questionnaire covering 14 items was pre-tested and modified in phone interviews, which was then subsequently used in telephone interviews or as a web based interactive survey, both in local language. A total of 148 patient responses were obtained via 10 phone interviews and 138 web-survey, 60 patients came from the US, 27, 25 and 36 from Germany, UK and Italy, respectively. Results: In this survey cohort patients had been diagnosed with UC for >5 years on average, 2/3 of patients had left-sided disease and less than a third had extensive disease. The majority of patients experienced at least 1–2 flare-ups each year, and less than a third of patients had them only rarely. ASA and steroids were the most commonly used medications in all countries, biological treatments were reported as highest in 35% (US) to the lowest 16% (UK) as stated by the patients. The vast majority of patients stated that they had treatment experience with oral products at some point during their treatment course. The majority stated that slightly lower number in the US (83%) compared to the EU countries (Range 89–92%). Rectal enemas were the most common formulation delivery for topical ASA products in all markets (79%) followed by suppository (25%) and foam (13%). A total of 53% of patients were not concerned about the rectal mode of administration, while 47% reported some concerns. These mainly comprised the need to hold the enema in place, a generally uncomfortable feeling with rectal medications and painfull administration. Discussion: Despite a certain resistance to use topical therapy almost all patients stated to have used rectally administered products at some point during their disease journey and even patients in the USA were very familiar with these medications. Although physicians see patients as the primary driver for the resistance to use topical products in UC, less than 50% of the patients were actually concerned about the use of topical therapy in this study, thereby calling for better physician-patient communication.

Disclosure of Interest: T. Knittel: Consultancy for Index Pharmaceuticals A. Thompson: Consultancy for Index Pharmaceuticals

T. Knittel: Consultancy, CMO position and shareholding of Index Pharmaceuticals

Disclosure of Interest: Y. Chowers: Abbvie - grant support, lecture and advisory fees Janssen - lecture and advisory fees Takeda - grant support lecture and advisory fees Medtronics - advisory fees U. Kopylov: Speaker fees - Abbvie Research support, speaker and advisory fees janssen
influence the degree of SM a patient is willing to apply, such as: disease duration, active disease with ulcerative colitis, self-efficacy, patient's age, and level of trust between patient's and their IBD team. Caregivers were asked per item whether they thought this factor would be of influence and to name the three most important factors.

Results: 38 nurses (mean age 42 years) and 32 physicians (mean age 44 years) responded to the survey. The three most appealing options for nurses regarding SM were: availability of a SM web-app, Skype/Face-time consultation with nurse/physician, and an at-home faecal-calprotectin test. Physicians preferred the same type of SM web-app, an at-home faecal-calprotectin test, and making patients in charge of their patient records. When comparing the value of each of the 12 possible choices in which patients could apply SM, only one option was valued differently between nurses and physicians, 56% of physicians favoured patients being in charge of their 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. Furthermore, nurses suggested that self-efficacy and disease perception and disease activity were most important. One factor was valued differently between nurses and physicians: 78% of nurses thought that patient's age was an important factor in patient's SM, compared to 34% of physicians (p < 0.001).

Conclusion: Our study indicates that, in contrast to disease characteristics, influence SM with self-efficacy being the most important. This study calls for further research on what patients and caregivers, want and need from SM, as SM is a team sport.

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

References

P1062 DISTINCT PATTERNS OF SHORT-CHAIN FATTY ACIDS IN PATIENTS WITH ULCERATIVE COLITIS EXPERIENCING A FLARE DURING TREATMENT WITH MESALAMINE OR A HERBAL PREPARATION

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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. The SCFA are end products of the microbial fermentation of dietary fibers in the gut. They are involved in the regulation of the gut immune system, promote mineral absorption, lipid metabolism, mucin production and expression of antimicrobial peptides. UC patients often show reduced occurrence of SCFA especially in the proximal colon. 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 were performed as sub-study of a randomized double-blind, double-dummy, controlled clinical trial that has been published previously. Patients were treated with the herbal preparation consisted of 100 mg myrrh, 70 mg chamomile extract and 50 mg coffee charcoal (Myrrhital-Intest®, Repha GmbH, Hamburg, Germany). This might lead to unfavorable health impairments including higher risk of inflammation and heightened cancer risk.

Results: A total of n=189 patients were included in the study. N=43 pts developed a clinical flare (descriptive statistics are shown in table 1). Patients who were treated with the SCFA showed a significant decline of the SCFA (M baseline = 66.12; SD = 39.59; M flare = 29.83; SD = 15.05; 95% BCI [18.86–58.60]) in the event of a flare. In contrast, patients who were treated with the herbal preparation showed no significant decline of the SCFA (M baseline = 64.80; SD = 53.74; M flare = 48.09; SD = 35.90; 95% BCI [-7.02–29.54]).

Conclusion: Findings show that the herbal preparation might induce different effects on the SCFA of patients with UC compared to mesalazine and therefore might exhibit different modes of action in treating UC. Since a decline of SCFA might lead to unfavorable health impairments like higher cancer risk, treatment options like the herbal preparation might yield additional beneficial effects in the treatment of UC. A combination of the two treatment modalities might be useful and should be investigated in further studies.

Disclosure of Interest: J. Langhorst: Has served as a Speaker for Repha; Research grant from Repha GmbH

All other authors have declared no conflicts of interest.

References

P1063 GRANULOCYTE-MONOCYTE APHERESIS (GMA) IN DIFFICULT-TO-TREAT INFLAMMATORY BOWEL DISEASE (IBD): A SINGLE-CENTER REAL-LIFE EXPERIENCE

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Introduction: Selective GMA using Adacolumn® device is a non-pharmacological therapeutic option for patients affected by IBD, but its precise role among the various treatments available and its true effectiveness are still debated. In particular, steroid-dependent patients, refractory or intolerant to immunosuppressant and biologics, represent a sub-group of patients with limited options of treatment. Recently, a multicentric open-label trial [the ART trial 1] 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 31/12/2014. Only steroid-dependent and/or AZA/IFX/ADA-resistant or intolerant cases were considered. GMA was performed once a week for a minimum of five consecutive weeks. Occasionally, one or two additional sessions were performed. A clinical response was defined as a ≥ 3 points improvement in the clinical activity index (CAI) for ulcerative colitis (UC) and a ≥ 100 points reduction of the Crohn disease activity index (CDAI) for Crohn disease (CD) after 12 weeks from the beginning of the treatment.

Results: The study population included a total of 30 patients (17 males, 13 females, mean age 49 years, range 21–73) affected by UC (20 patients) and CD (10 patients). Eight patients (5 UC, 3 CD) were excluded from the final analysis for incomplete data. In the remaining 22 patients, a clinical response was observed in 15 (68%). The response was better in UC (11/15 [73%]) than in CD (4/7 [57%]). A steroid-sparing effect was observed in all responsive patients. GMA was generally well tolerated, as only 4 patients (13%) reported mild adverse events (headache in two, hypotension in one, vascular procedure complication in one) and no patients discontinued the apheresis due to the adverse events.

Conclusion: In our real-life single-center experience, focused to a selected group of difficult-to-treat patients affected by IBD, GMA with Adacolumn® seems to be, in a short-time evaluation, a useful and safe option of treatment, supporting the recent data from the ART trial. Prospective randomized trials in larger series of patients and with more extended follow-up are needed to confirm these results.

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

Reference
challenged human macrophages (THP-1) was investigated respectively using an IL8; CXCL10; CXCL13 release from cytokine-(10 ng/mL TNF IL1)

Aims & Methods: The present study aims to investigate the influence of the single and combined herbal extracts with regard to its anti-inflammatory and immune-modulating activities. Thus, the effect of myrrh, chamomile flower, coffee charcoal extract on intestinal motility was determined using isotonic pressure measurement in isolated rat small intestinal preparations. Furthermore, chemokine (IL8; CXCL10; CXCL13) release from LPS-stimulated human macrophages (THP-1). The IL8 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(combined)). 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 spasmolytic effects by inhibiting acetylcholine-induced contractions in rat small intestinal preparations (IC50: myrrh = 144 μg/mL; chamomile flower = 383 μg/mL). In combination, the chamomile flower and myrrh interacted additively (IC50: myrrh = 5 μg/mL; chamomile flower = 22 μg/mL; coffee charcoal = 29 μg/mL) achieving with single component. Synergistic effects exerted by the herbal combination in inhibiting CXCL13 release significantly reduced IC50 values (IC50: myrrh = 106 μg/mL; chamomile flower = 41 μg/mL; coffee charcoal = 364 μg/mL; coffee charcoal = 447 μg/mL) with comparably high IC50 values. However, application of the herbal combination, significantly reduced the IC50 of the plant extracts (myrrh = 25 μg/mL; DRI = 1.7; chamomile flower=IC50 = 124 μg/mL; DRI = 2.9; coffee charcoal=IC50 = 124 μg/mL; DRI = 3.6). IL8 release from cyto-kine-challenged Caco2 cells was inhibited after myrrh (IC50 = 3 μg/mL; 28% max inhib.) and coffee charcoal (IC50 = 218 μg/mL; 75% max inhib.) but increased after chamomile flower treatment (IC50 = 39 μg/mL; 29% max stim.). Treatment with all three plant extracts resulted in a moderate IL8 inhibition with an inverted U-shape concentration-response curve (IC50: myrrh = 56 μg/mL; coffee charcoal = 281 μg/mL; 77% max inhib.).

Conclusion: The herbal components myrrh, chamomile flower and coffee charcoal influenced chemokine signalling of stimulated intestinal epithelial cells and activated macrophages. Myrrh and chamomile flower additionally exerted anti-inflammatory effects. Synergistic and additive effects between the plant extracts justify the inclusion of the composition of the traditional herbal medicinal product (Myrrhinil-Intest®) and its application for the treatment of inflammatory intestinal disorders.

Disclosure of Interest: C. Vissiennon: Author Cica Vissiennon is employed by Repha GmbH Biologische Arzneimittel
K. Goos: Co-Author Karl-Heinz 30 Goos is shareholder of Repha GmbH Biologische Arzneimittel
All other authors have declared no conflicts of interest.

Reference

P1066 IMMUNOSUPPRESSIVE CO-TREATMENT WITH INFliximab and ADALIMUMAB IS NOT SUPERIOR TO ANTI-TNF MONOTHERAPY TO PREVENT TREATMENT FAILURE AND TREATMENT DISCONTINUATION IN ULCERATIVE COLITIS S. Vieujean1, E. Louis2, C. Reenaers3
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Introduction: In Crohn’s disease there is clear benefit from combination therapy with infliximab (IFX) and immunosuppressive drugs (IS), while the benefit seems more limited for adalimumab (ADA). Although some studies suggest a benefit of combination therapy with IFX in ulcerative colitis (UC) few data are available in UC.

Aims & Methods: Our aim was to compare real life efficacy of anti-TNF mono-therapy (IFX and ADA) and anti-TNF + IS for UC maintenance. This was a retrospective study of patients with UC treated with IFX or ADA in 2 Belgian academic and regional Hospitals. Patients included in the study were 723 UC patients divided into 3 groups: IFX, ADA, and IFX + IS. Concomitant IS was considered as monotherapy if the patient relapsed and was treated with IFX or ADA for at least 3 months. Failure was defined as persistence of symptoms during double drug treatment or early relapse of some of them.

Results: 478 patients in 60 patients with IFX and 175 semesters in 33 patients with ADA were included. The mean IFX and ADA treatment duration were respectively 49 (±23) months and 38 (±19) months. Within patients treated with IFX, 32/60 patients received IFX + IS during the first semester. IFX was administrated as monotherapy in 361/478 semesters (76%). Respectively 218/478 (46%) and 78/478 semesters (16%) with IFX required dose escalation and corticosteroids course. IFX + IS was associated with more semesters with failure (5% vs 3%, p = 0.02) and numerically more semesters with dose reduction (64% vs 28%, p = 0.06). There was no difference in corticosteroids use (p = 0.63). IS during the first semester was not associated with lower risk of IFX failure (p = 0.41) nor with a longer survival without IFX withdrawal (p = 0.20). Continuing the IS treatment beyond the first semester was not associated with fewer semesters with failure (p = 0.18). Within patients treated with ADA, 19/33 patients received IS during the first semester. ADA was administered as monotherapy in 93/175 semesters (55%). Respectively 54/175 (48%) and 42/175 (24%) semesters with IS during the first semester was associated with lower risk of ADA failure (p = 0.01) and with a longer survival without ADA withdrawal (p = 0.78). Continuing the IS treatment beyond the first semester was not associated with fewer semesters with failure (p = 0.20).

Conclusion: In this real-life experience, combination therapy of IFX or ADA with IS during the first semester or prolonged after the first semester was not associated with less dose escalations, steroid courses or treatment failures.
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Introduction: Intestinal permeability may lead to bowel damage and clinical manifestations. Thus, environmental factors and, in particular, food intake may play a pivotal role in IBD pathogenesis.

Aims & Methods: The aim of this prospective study was to evaluate the effects of a 6-week low fermentable Oligosaccharides, disaccharides, monosaccharides and polyols (FODMAP) diet on disease activity and quality of life in patients with IBD. At first visit (T0), patients were clinically evaluated by a gastroenterologist and a nutritionist, filled a questionnaire on quality of life (the IBD-Q) and underwent blood tests as well as fecal calprotectin assessment. Disease activity was defined using the Mayo score and the Harvey Bradshaw Index (HBI) for UC and CD, respectively. After the baseline visit, patients were randomized into two groups: A) patients underwent a low FODMAP diet; B) patients underwent a diet with normal FODMAP amount. A food diary was used to assess patients’ adherence to the different diets. After six weeks (T1), patients had a second visit to assess disease activity, complete the IBD-Q, and repeat blood tests as well as fecal calprotectin assessment.

Results: In this prospective, interventional, cohort study, we enrolled 55 consecutive IBD patients who agreed to participate from an initial cohort of 127 IBD patients. Twenty-six patients were randomised to a low FODMAP diet (group A), while 29 patients to a standard FODMAP diet (group B). Among CD patients (n=35, 63.6%), median HBI values significantly decreased during the study, in the whole population and in group A, whereas no change was recorded in group B (respectively, P=0.02; F=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.

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 achieved in 9 (75%) patients, and remission in 5 (42%). At one year, the nine responders were still receiving ustekinumab with clinical benefit and without steroids need. Seven of them (58%) were on clinical remission. One patient experienced a sustained response to infliximab in patients with Crohn's disease. 

References


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

References

PI073 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 in remission until delivery were classified into the ongoing remission group (35 cases) and patients with recurrence during pregnancy were classified into the recurrence group (9 cases). Remission was defined as a Lichtiger clinical activity index (CAI) of less than 4. Relapse was defined as a CAI ≥ 5 with the need for initiation or dose escalation of steroids or administration of biological agents during pregnancy. Items examined: Clinical characteristics (age at onset, disease duration, age of becoming pregnant, disease type, and treatment), the CAI in the first, second, and third trimesters, and whether or not patients continued treatment during pregnancy were examined and compared between the two groups.

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 long-term treatment 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 women with information and explanations regarding treatment.

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

PI074 USE OF STEROIDS IN ADULTS AND ADOLESCENTS WITH DISEASES OF THE GUT AND INTESTINUM: A UK NATIONAL AUDIT
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Introduction: In patients with active ulcerative colitis (UC), myeloid lineage leukocytes are known to be elevated with activation behaviour, including the CD14+ CD16+ DR++ monocyte phenotype, which is a major source of tumour necrosis factor-α. Therefore, selective depletion of myeloid leukocytes by adsorptive granulocyte/monocyte apheresis (GMA) with an Adsorban 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, as when first-line 5-aminosalicylates had failed. Thirty consecutive patients with active ulcerative colitis (UC), aged 11–19 years, body weight 33–55.5 kg were selected. Of the 30 patients, 27 received GMA with an Adsorban, 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
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 colectomy or any extensive loss of the mucosal tissue at the affected sites (GMA non-responders features). Ten patients achieved stable remission with the first-line medications and did not receive GMA. Six patients did not respond well to the first 5 GMA sessions and received prednisolone together with GMA, while 12 patients responded well to GMA, and achieved stable remission, but 2 patients withdrew to receive high dose prednisolone (up to 2 mg/kg bodyweight). At entry, the average CAI was 14 ± 0.4. Prednisolone was tapered to 0 mg within 3 months in those who received. Therefore, at week 12, all 30 patients were in remission, majority with mucosal healing.

**Conclusion:** In this treatment design, GMA in young corticosteroid naïve patients with active UC refractory to the first-line 5 -aminosalicylates was associated with clinical remission and mucosal healing, while in non-responders to GMA mono-therapy, addition of a low dose prednisolone may mask the efficacy of GMA and tapering of the prednisolone dose was not associated with relapse. Therefore, the majority of young steroid naïve UC patients who fail to respond to first-line 5-aminosalicylates should respond well to GMA and avoid pharmacologicals. Additionally, GMA has a good safety profile, which is a very favourable feature in growing patients.

**Disclosure of Interest:** A. R. Saniabadi Dr. Saniabadi has no non-regulatory employment

**All other authors have declared no conflicts of interest.

**References**


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**Table 1:**

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<tr>
<td>Weight (kg)</td>
<td>48.8 [38.8 to 55.9]</td>
<td>61.5 [52.9 to 75.4]</td>
</tr>
<tr>
<td>Height (cm)</td>
<td>167.8 [152.3 to 168.0]</td>
<td>164.0 [154.4 to 168.8]</td>
</tr>
<tr>
<td>BMI (kg/m²)</td>
<td>19.2 [18.2 to 20.2]</td>
<td>22.5 [19.5 to 27.3]</td>
</tr>
<tr>
<td>Haemoglobin (g/l)</td>
<td>113.0 [90.5 to 122.0]</td>
<td>127.5 [118.5 to 146.5]</td>
</tr>
</tbody>
</table>

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**Conclusion:** In our cohort 35% of children presenting with AILD were subsequently diagnosed with IBD. Possible risk factors for development of IBD in AILD were 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 symptoms and signs of IBD a lower threshold for endoscopy should be considered in these patients.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
Results: Twenty-one patients with chronic refractory angiodyplasia bleeding were recruited in this study, included 10 women, aged between 40–85; 11 cases of massive age 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 (3.38 ± 0.60 × 10^12/L); hemoglobin after treatment (94.7 ± 13.15 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 ± 0.08); the difference was statistically significant (P < 0.05). (3). The ALT after treatment (32.9 ± 18.51 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 (85.5 ± 19.8 U/L) compared with before (83.0 ± 20.8 U/L); ALB after treatment (36.2 ± 3.1 g/L) compared with before (36.3 ± 4.3 g/L); there was no statistically significant difference (P > 0.05). (4). Prothrombin time (PT) after treatment (12.1 ± 1.3 s) compared with before (11.8 ± 1.4 s); APTT after treatment (30.2 ± 3.7 s), compared with before (31.0 ± 6.2 s); 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 was well tolerated.

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

References

P1079 NEWLY DEVELOPED ENDOSCOPIC DETACHABLE SNARE LIGATION THERAPY FOR COLONIC DEIVERTICULAR HEMORRHAGE: A MULTICENTER PHASE II TRIAL
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9. Gastroenterology, Hitachi General Hospital, Ibaraki/Japan
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Introduction: Colon diverticular bleeding is the most common cause of lower gastrointestinal bleeding. We have reported the preliminary safety results of endoscopic detachable snare ligation (EDSL), a new method for diverticular hemorrhage1. The bleeding diverticulum was ligated with a detachable snare. Unlike the endoscopic band ligation, removal of the scope to attach a ligation device and reinserter for treatment are not needed in this method. We performed a clinical trial to evaluate the efficacy and safety of EDSL.

Aims & Methods: This multicenter single arm phase II study was conducted in 12 Japanese hospitals. Patients suspected of diverticular bleeding were enrolled from June 2015 to March 2017. Patients with serious heart, renal, or liver failure, sepsis, disseminated intravascular coagulation, and high-dose steroid use (prednisolone dosage > 10 mg/day) were excluded. The primary endpoint was the early (within 1 month) rebleeding rate in patients who were treated with EDSL. The secondary endpoints were overall early rebleeding rate in patients who had colon diverticular bleeding treated with EDSL; prior to fundus appearance of EDSL; success rate of EDSL total procedure time, EDSL procedure time, identification rate of bleeding diverticula, and adverse events. This study was approved by the ethics committee of each participating hospital and conformed to the Helsinki Declaration and the Japanese Clinical Research Guidelines.

Results: Of 123 patients with diverticular hemorrhage, 101 were treated with EDSL and the early rebleeding rate was 5% (5/101). The rebleeding rate in ITT population was 9% (11/123). Success rate of EDSL was 78% (96/123). EDSL was an effective, safe, and convenient treatment method for colonic diverticular hemorrhage.

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

Reference

P1080 RISK FACTORS FOR EARLY AND LATE RE-BLEEDING IN PATIENTS WITH COLONIC DIVERTICULAR BLEEDING
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Introduction: Incidence of colonic diverticular bleeding has increased in recent years. Colonic diverticular bleeding is problematic because of the following reasons: the low detection rate of the bleeding source by endoscopy and frequent re-bleeding. At our hospital, we have a policy of performing emergency lower gastrointestinal endoscopy for all patients with colonic diverticular bleeding within 24 h of their admission. We have reported that the following factors could contribute to the successful identification of the bleeding source: extraction revealed by abdominal contrast computed tomography (CT), and mounting of a hood to the tip of an endoscope during lower gastrointestinal endoscopy. However, risk factors for re-bleeding in patients with colonic diverticular bleeding were still unknown.

Aims & Methods: In this study, we examined the risk factors for early and late re-bleeding in patients with colonic diverticular bleeding. From January 2004 to April 2016, we admitted 432 patients (285men and 147 women, mean age: 71 ± 12 years) to our hospital for treatment following a diagnosis of colonic diverticular bleeding based on abdominal CT and endoscopy findings. Early and late re-bleeding was defined as macroscopically bloody stools as a result of colonic diverticular bleeding during hospitalization and after discharge, respectively. Risk factors for early and late re-bleeding were retrospectively examined using univariate and multivariate analysis.

Results: Early re-bleeding occurred in 112 patients (26%; 86 men and 26 women, mean age: 71 ± 12 years). The mean duration until re-bleeding was 3.9 ± 2.4 days, and the average, early re-bleeding recurred 1.7 ± 1.2 times. On average, lower gastrointestinal endoscopy was performed 2.7 ± 1.2 times and endoscopic hemos- static treatment was performed 1.0 ± 1.0 times. In the univariate analysis, significant differences were seen in males (P = 0.005), in the use of oral antplatelet agents (P = 0.012), and in patients not undergoing endoscopic hemostasis (P = 0.004). In the multivariate analysis, male gender (P = 0.006; odds ratio 2.06, 95%CI 1.23–3.44), the use of oral antplatelet agents (P = 0.008; odds ratio 1.85, 95%CI 1.17–2.93), and patients not undergoing endoscopic hemostasis (P = 0.005; odds ratio 1.5, 95%CI 1.31–1.81) were independent risk factors for early re-bleeding. Late re-bleeding was seen in 72 of 345 patients who were able to follow up (21%; 46 men and 26 women, mean age: 73 ± 12 years). The mean duration until late re-bleeding was 41 ± 40 months, and on average, late re-bleed- ing recurred 1.5 ± 1.2 times. Only the use of oral antplatelet agents (P = 0.05; odds ratio 1.72, 95%CI 0.98–2.98) was identified as an independent risk factor for late re-bleeding in the univariate and multivariate analysis.

Conclusion: Not undergoing endoscopic hemostasis and male gender were identified as risk factors for early re-bleeding, indicating the importance of choosing measures and hemostatic treatments to improve the detection rate of bleeding sources during endoscopy. The use of oral antplatelet agents was a risk factor for both early and late re-bleeding, suggesting the need for patient management through multi-departmental cooperation.

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

Reference
Aim & Methods: Retrospective study. Emergency consecutive admissions for ALGIB were reviewed. Severe ALGIB was defined as transfusion of ≥ 2 units of packed red blood cells (PRBC) and/or hematocrit decrease of ≥ 20% within the first 24 h and/or recurrent bleeding after 24 h of stability. NOBLADS score was calculated and its discriminative capacity for severe ALGIB as well as for other outcomes was assessed.

Results: Included 118 patients with a mean age of 73.4 ± 14.4 years and 52.5% males. Most frequent etiologies for ALGIB were diverticular bleeding (23.7%) and post-polypectomy (21.2%). ALGIB was severe in 38.1% of patients. NOBLADS score showed a weak discriminative capacity to determine severe ALGIB (AUC = 0.68, p < 0.01). However, when comparing patients with NOBLADS ≤ 4 and > 4, patients with higher scores were significantly older (69.2 ± 15.7 years vs 78.6 ± 10.0 years, p < 0.01), had lower hemoglobin levels as admission (10.2 ± 2.5 vs 11.1 ± 2.9 g/dL, p < 0.01), were transfused with more units of PRBCs during the first 24 h and during hospital in-stay (0.4 ± 0.9 vs 1.1 ± 1.3, p < 0.01 and 1.0 ± 2.2 vs 3.0 ± 3.3, p < 0.01, respectively) and were more frequently admitted to intermediate care units (35.2% vs 59.6%, p < 0.01). No differences were found between the two groups regarding in-stay length, bleeding rate, need for surgery or death.

Conclusion: NOBLADS score showed a weak discriminative capacity to determine severe ALGIB however, patients with NOBLADS ≤ 4 had greater PRBCs transfusion need and were more frequently admitted to intermediate care units. New or improved scores that can predict severe ALGIB are needed to determine more precisely appropriate care and to allow for a standardized approach.

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

References

Table 1: Analysis of the concentration of FIT for colorectal cancers from the screening.

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<th>Age</th>
<th>Size(mm)</th>
<th>Location</th>
<th>Dukes</th>
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<td>FIT (conc.</td>
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<td>50–59</td>
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<td>50–59</td>
<td>60–69</td>
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</tbody>
</table>

Conclusion: Repeated FIT screening might be more efficient to detect benign polyps, smaller CRCs, and CRCs of intra-mucosal Dukes A. We'll go on researching CRC's locations about screening history.

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

References

Table 1: Fecal Haemoglobin concentration and progression of colorectal cancer.

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<td>FIT (conc.</td>
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<td>50–59</td>
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Conclusion: In 20–80 μg/Hgb/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/Hgb/stool, the detection of early stage CRCs and proximal CRCs may be lost. There were many advanced CRCs with concentration over 200 μg/Hgb/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 can be discovered more likely 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.
P1084 COLONOSCOPY SURVEILLANCE DETECTS A HIGH PREVALENCE OF ADVANCED COLORECTAL NEOPLASIA AND SERRATED POLYP SYNDROME IN HODGKIN LYMPHOMA SURVIVORS

L. S. Rügter1, M.C.W. Spanader2, B. M. Aleman3, T.M. Bissingel9

Introduction: Hodgkin lymphoma (HL) survivors treated with abdominal radiotherapy and/or procarbazine show an increased risk of colorectal cancer. This study evaluated the prevalence of colorectal neoplasia in HL survivors.

Methods: The primary aim of this multicenter cohort study was to assess the diagnostic yield of advanced colorectal neoplasia detected by a first surveillance colonoscopy in HL survivors treated with abdominal radiotherapy and/or procarbazine. In 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 population-based cohort that underwent a primary screening colonoscopy (n=1276 asymptomatic individuals between 50–75 years of age). This study describes the results of a predefined interim analysis.

Results: A colonoscopy was performed in 101 HL survivors, who were significantly younger than general population controls (median 51 years [interquartile range 45–57] vs. 60 years [interquartile range 55–65], p<0.001). A mean of 3.5 neoplastic lesions was detected per HL survivor (standard deviation 4.9) vs. 1.1 per control (standard deviation 1.8, p<0.001). Despite their young age, the prevalence of advanced neoplasia was higher in HL survivors than in controls (25% [95% confidence interval 16–33%] vs. 12% [10–14%], p<0.001). Advanced adenomas were detected in 14% (6–21%) of HL survivors and 9% of controls (7–16%, p<0.001). The prevalence of advanced adenoma was higher in HL survivors than in controls (12% [6–18%] vs. 4% [3–5%], p<0.001). Serrated polyposis syndrome was present in 6% (2–11%) of HL survivors and 7% (2–13%) of controls (p=0.03).

Conclusion: HL survivors treated with abdominal radiotherapy and/or procarbazine have a high prevalence of advanced colorectal neoplasia. Colonoscopy surveillance should therefore be implemented as standard of care.

Aims & Methods: We aim to investigate the incidence of prostate cancer as a second primary malignancy among patients with prior primary colorectal cancer (CRC) using a nationwide population-based dataset. This study is a nationwide population-based retrospective cohort study. We followed up with patients registered in the Republic of Korea National Health Insurance Corporation who were diagnosed with colorectal cancer between 2007 and 2014 and investigated the incidence of prostate cancer (one year lag period). The incidence of prostate cancer was also evaluated in age and gender-matched controls using a cohort of patients diagnosed with colorectal cancer during the same period. The incidence rate was defined as the number of newly diagnosed prostate cancer patients per 1000 person-years. To assess the role of detection bias-related to the follow-up of CRC, follow-up started at the date of CRC diagnosis and continued until the earliest date of prostate cancer diagnosis, death, loss to follow-up, or the 2015 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 is an important 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.

Methods: We aim to investigate the incidence of prostate cancer as a second primary malignancy among patients with prior primary colorectal cancer (CRC) using a nationwide population-based dataset. This study is a nationwide population-based retrospective cohort study. We followed up patients...
P1087 LOCATION AND SEX PREDOMINANCE OF MISMATCH REPAIR DEFICIENT COLORECTAL CANCER IN IVORY COAST DIFFER FROM ITS EUROPEAN COUNTERPART

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Introduction: According to European and American series, 1,2 up to 20% of colorectal cancer (CRC) is caused by germline mutations in mismatch repair (MMR) genes (MLH1, MSH2, MSH6 and PMS2) or hypermethylation of the MLH1 promoter gene. MMR deficient colorectal cancers are predominantly found in the right colon. Although an increasing rate of colorectal cancer has been observed in many low- and middle-income countries including in West-Africa,3 data on epidemiology and biology of colorectal cancer in native Africans from this region are scarce.

Aims & Methods: We aimed to study the incidence of MMR deficiency in Ivory Coast and to compare the data with those from a tertiary center in Belgium.

Histopathology was carried out to evaluate the impact of CRC screening on the rate of surgical intervention in the Veneto Region (Italy): Are follow-up colonoscopies really needed?

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Introduction: Colorectal cancer (CRC) is a leading cause of cancer mortality in the Veneto Region (North-eastern part of Italy). Population screening of adults between 50 and 75 for CRC was begun in 2002, and it became standard practice in the six local health units (LHU) of the region in 2008. The current retrospective cohort study was carried out to evaluate the impact of CRC screening on the rate of surgical intervention in all LHU of the Veneto Region.

Aims & Methods: Data from hospital discharge records (HDR) regarding CRC patients hospitalized between 2000 and 2015 were collected. All CRC patients without principal diagnosis was colon and/or rectal cancer were included in the study. The number of patients studied rose approximately 18% reaching 1,547,097 for the last year (2015). The Standardized Hospitalization Ratio (SHR) using five-year age groupings was calculated and expressed per 10,000 population.

Results: During the study period, 30,399 surgical procedures for colorectal cancer were performed (colon 63%, rectum 36%, secondary malignant neoplasm 1%) with a SHR of 139.1; the number was higher in males (1.69 vs. 1.02; OR: 1.66; CI 95%: 1.62-1.7; p < 0.05). An analysis of the annual SHR distribution uncovered two distinct phases: during the first phase there was a rising tendency that reached a maximum value in 2007 (166.9; X2 trend: 46.73; p < 0.05) and during the second there was a falling tendency that reached its minimum value in 2015 (102.3; X2 trend: 429.79; p < 0.05). When the cancer sites were analyzed, it was seen that despite the peak in 2007, the rate of surgical procedures for the proximal colon during the last year was the same as the 2000 value (41.5); there was, instead, a relevant decrease in the rate of procedures on the distal colon and rectum which fell from 94.4 to 59.2 (–37.5%). The study also shows that there was no significant difference in the reduction in surgical procedures for CCR in LHU in which the screening program included a follow-up colonoscopy (SHR 2015: 139.8; –29%) with respect to those centers where it was not forseen (SHR 2015: 138.5; –28%).
Conclusion: Study findings confirmed that CRC screening was effective in reducing the number of oncological surgical procedures particularly with regard to the distal colon and rectum. Data analysis showed that the screening seemed to accelerate reaching the peak rate in surgical procedures that took place in 2007. After that time point the number of operations began to fall as far as the distal colon was concerned (it fell by 37.3%). Finally our data suggest that the real benefit in reduction of oncological surgery procedures is due to the first screening colonoscopy.

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

P1090 ETHNIC VARIATION IN ADENOMA DETECTION IN THE UK FLEXIBLE SIGMOIDOSCOPY BOWEL CANCER SCREENING PROGRAMME


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Introduction: The NHS bowel scope screening programme was introduced in 2013 and 23% of adults aged 55 invited for a ‘one-off’ flexible sigmoidoscopy followed by a colonoscopy if significant adenomas are detected. University Hospitals of Leicester Bowel Cancer Screening Centre serves an ethnically diverse community with approximately 25% of the population eligible for sigmoidoscopy screening being British Asian Indians and 45% being British Whites. Within the faecal occult blood based bowel cancer screening programme we have previously reported a lower polyp detection rate (PDR) and adenoma detection rate (ADR) in British Asian Indians undergoing colorectal screening compared to White British. This study aims to evaluate PDR, ADR and cancer detection (CDR) in British Asian Indians taking part in the bowel scope screening programme.

Aims & Methods: Patients who underwent screening sigmoidoscopy between February 1st, 2015 and 6th 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) and adenoma detection rate (ADR) was 500/4287 (11.7%), hyperplastic polyps were 642/4287 (15%), sessile serrated lesions were 13/4287 (0.3%), and other polyps were 14/4287 (0.3%) (Inflammatory polyps 13, Juvenile polyp 1). Cancer detection rate was 6/4287 (0.14%). During the period studied, 359 British white individuals (82%) and 778 British Asian Indians screened. Six cancers (CDR = 0.17%) were detected in British white (CDR = 0.01%) but none in British Asian Indians.

Conclusion: This study found no cancers and significantly lower PDR and ADR in British Asian Indians compared with British Whites. The study was not powered to detect a difference in CDR. 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 TUMORIGINENCY IN COLORECTAL CANCER THROUGH ACTIVATING NUCLEAR FACTOR KAPPA B PATHWAY AND ITS EXPRESSION IS ASSOCIATED WITH POOR SURVIVAL IN PATIENTS

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Introduction: We identified for the first time that 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). Ectopic expression of DDX27 promoted transcription of NF-kB signal targets including BCL2A1, BIRC3, CCL20, CXCL3, NFKBIA, 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 IkB, which negatively regulates transcriptional activities of NF-kB and transport NF-kB proteins back to the cytoplasm. DDX27 overexpression markedly increased 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 tumorigenicity 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.

References

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 still not well defined and need further evaluation.

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 3532 endoscopically resected specimens performed during January 2007 and December 2016 in our hospital. A total of 463 serrated lesions (8.7%) were classified into three categories: HP (hyperplastic poly), SSA/P (sessile serrated adenoma/polyp), and TSA (traditional serrated adenoma), according to the WHO criteria. We examined the features of these cases and evaluated the morphological characteristics by using immunohistochemical staining for Ki-67 and the expression of MUCs (MUC2, MUC5AC and MUC6) in differentiating serrated lesions.

Results: Of these 463 lesions, a total of 241 (52.1%) were HP, 102 (22.0%) SSA/P, and 120 (25.9%) TSA. Male to female ratio (M/F) was 2.38 for HP, 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 pinceme-shaped pit pattern as that of TSAs. Incidence 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 irregular asymmetric pattern, whereas most of those cells in TSA distributed in so-called 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 body 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 cytoplasmic cytochrome (cytokeratin-18), and cell membrane (CD63) markers for the identification of migrating CRC cells as well as ALIX and CD63 proteins for the detection of exosomal transport. Samples were analyzed with confocal and stimulated emission depletion (STED) microscopy-based 3D reconstructions.

**Results:** 3D reconstructions showed ALIX-positive and CD63-positive exosome clusters (ECs) with 0.62 to 1.94 μm diameter (mean ± SD: 1.17 ± 0.34 μm) localized partially inside, and/or outside the cytoplasm in 85.96% (n = 98/114) of migrating CRC cells. E-cadherin HHC showed that ECs were not only captured during their exit from the cytoplasm and localized among plasma membrane proteins, but they were also detected extracellularly, in the plasma membrane-stroma interface. STED-microscopic images showed that released ECs were composed smaller, distinguishable ALIX-positive spheroids of 98 to 150 nm diameter (mean ± SD: 128.96 ± 16.73 nm), which fall into the size ranges of exosomes.

**Conclusion:** Our study demonstrates in situ for the first time that besides conventional exosome release, migrating CRC cells also secrete large, extracellular ECs. These structures might fundamentally contribute to the autocrine/paracrine regulation of cancer development, which effect may differ from that mediated by conventionally secreted exosomes.

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

**P1094 ALTERED ARGinine Metabolism IN HYPERPROLIFERATIVE 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 catalyzed, by the enzyme arginase 2. During embryonic development, the demand for arginine increases, due to rapid growth. Arginine is lacking from milk in the endogenous diet so the infant must synthesize arginine. We present studies on the role of arginase 2 in hyperproliferative epithelium 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, hyperproliferative epithelium is a hallmark of tumorogenesis 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.

**Results:** We performed immunohistochemistry on intestines from ACP-017 mice, and wild type mice. We observed that in control mice compared to the ACP-017 mice, argininosuccinate synthetase 1 expression was significantly reduced. Furthermore, knockdown of ASS1 decreases overall protein synthesis. Furthermore, knockdown of ASS1 results in compromised organoid growth. Our studies showed the three types of serrated lesions have their own characteristic markers and protein synthesis during intestinal carcinogenesis and repair.

**Conclusion:** ASS1 expression is highly increased 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 colorectal 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 in ACP−/− organoids, protein synthesis is significantly reduced and organoid growth is compromised. Furthermore, knockdown of ASS1 decreases overall protein synthesis.

**Disclosure of Interest:** G.R. van den Brink: G.R. van den Brink is an employee of GlaxoSmithKline. All other authors have declared no conflicts of interest.

**References**

POLYPOSIS WITH NO APC OR MUTYH IDENTIFIED MUTATIONS

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Introduction: Less than a hundred polyps defines attenuated familial adenomatous polyposis (AFAP). APC or MUTYH involvement has been described in 60% of the cases. The natural history of AFAP without identified genetic defects is not enough evaluated. In our study we compare clinical and endoscopic features of polyposis in patients carrying APC or MUTYH mutation and wild type patients.

Aims & Methods: 102 cases (35 F, 67 M; mean age 51; range 28–78) of AFAP were registered at our Institution between 1996 and 2014. They had no cancer family history and presented more than 10 adenomas at index colonoscopy. Genetic testing for APC and MUTYH genes was performed. Patients were put in a program, after having cleaned the colon, consisting in colonoscopy after one year and then the colonoscopic interval was based on the number of polyps from 1 to 3 years. Odds Ratio test was used to compare APC or MUTYH mutated and wild-type patients.

Results: Out of 102 patients with AFAP we identified a genetic defect in 36 patients (35.3%; 12 with APC and 24 MUTYH) and 66 (64.7%) were wild-type. The mean endoscopic follow up was 10 years (2–31) in the mutated group and 9.7 years (2–23) in the wild-type group. Table 1 describes endoscopic and clinical features between the two groups. We observed some statistically differences between groups: the mutated group was younger than 50 years of age with a higher number of polyps, right colon was mainly involved and endoscopic follow-up was mostly every year. Patients of wild-type group never underwent 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 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.

Table 1: Comparison of clinical and endoscopic feature between APC or MUTYH carriers versus wild-type patients.

Table 1: Continued

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P1097 GLOBAL DNA HYPMETHYLATION ALONG THE COLORECTAL NORMAL-ADENOMA-CANCER SEQUENCE

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Introduction: Besides local hypermethylation on promoters of certain tumor suppressor genes, global DNA hypomethylation is characteristic in various types of cancers including colorectal cancer (CRC). The DNA methylation level of long interspersed nuclear element-1 (LINE-1) repetitive retrotransposon sequences constituting 17% of the human genome can be used to estimate global methylation level.

Aims & Methods: We aimed to analyze the alterations of the global DNA methylation levels along the colorectal normal-adenoma-carcinoma sequence progression on the basis of LINE-1 methylation and to study the methyl-cytosine pattern in tissue samples. Genomic DNA was isolated from 10 colorectal adenoma, 10 CRC and 30 normal colonic biopsy samples. Bisulfite conversion of DNA samples was performed using E.Z. DNA Methylation-Direct Kit (Zymo). For methylation level quantification of the LINE-1 retrotransposable element, bisulfite-specific PCR (BS-PCR) was applied, and 146 bp long PCR products were sequenced on Pyromark Q24 system (Qiagen). Tissue localization of 5-methylcytosine (5-mC) in normal, adenoma and CRC tissues was analyzed by immunohistochemistry using mouse monoclonal anti-5mC antibody (GeneTex).

Results: According to the LINE-1 bisulfite sequencing results, significant (p < 0.01) global DNA hypomethylation was detected both in CRC (63.8 ± 8.7%) and adenoma samples (67.5 ± 5.1%) compared to normal tissue (72.1 ± 4.4%). 5mC labeling of both the epithelial and stromal components of normal samples was strong (scoring values: +2 and +3) with diffuse and nuclear staining. In adenomas, decreased nuclear 5mC staining (scoring value: +2) was detectable in the epithelium and the stroma compared to normal epithelium. In CRC samples significantly lower 5mC levels could be observed than in normal tissue samples (p < 0.05).

Conclusion: Global DNA hypomethylation could be shown in CRC compared to healthy normal tissue samples both by LINE-1 bisulfite-sequencing and by 5-mC immunohistochemistry. Genome-wide DNA methylation decrease occurs already in adenoma stage of colorectal carcinogenesis.

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

P1098 CIRCULATING miRNA CHANGES IN HUMAN COLORECTAL CANCER DEVELOPMENT AND IN ANIMAL MODEL

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Introduction: miRNAs have a critical relevance in regulation during tumorigenesis. The expression profiles of miRNAs alter along tumor progression moreover these miRNAs may spread into tumor macro- and microenvironment.
Extracellular miRNAs are stable and its expression is less characterized in plasma. Altered and overlapped miRNA profiles between tissue and plasma are less explored.

Aims & Methods: The present study was designed to characterize the tissue and circulating miRNA profile through colorectal adenoma-carcinoma sequence in humans and mice peripheral blood samples. The main purpose of our study was to determine the origin of detected miRNAs in tumor-adenocyst C57BL/6 and non-adenocyst CBAJ mice tumor models. To achieve that goal, human peripheral blood and biopsy of normal (N), tubular (AT), tubulovillous (TV) and colorectal cancer (CRC) volunteers and plasma were also collected two times a week over 45 days from C57BL/6-c38, CBAJ mice. MiRNAs were isolated and Affymetrix GeneChip miRNA array analysis was performed for screening of the altered miRNA profile. RT-qPCR method was performed for verification.

Results: In the case of human samples out of 1733 detectable miRNAs, 306 miRNAs were expressed in normal, 334 in adenoma and 321 in CRC. Characteristic miRNA expression alteration was observed in the comparison of AT (N vs. AT), and TV vs. TVs in plasma. In the case of N vs. CRC, overexpression of miR-612, miR-1296, miR-933, miR-937 and miR-1207 was validated by RT-PCR (p < 0.05). Partial co-expression of these miRNAs was observed in tissue as well as plasma. We identified high plasma levels of 94 miRNAs in CRC samples compared with healthy samples. A total of 176 miRNAs were listed in the latest tumor stages. Based on CBAJ-C38 mice model experiment where the injected tumorous cells could not adhere miR-676 found to be a host originated while miR-92a was a tumor-derived miRNA. MiR-676 and miR-92a shown significant overexpression (388 ± 37x p < 0.05) in plasma samples based on real-time PCR and microarray results.

Conclusion: Circulating miRNAs alteration could observe in animal models in and model systems. Cancer-associated miRNAs in the circulation may originate from the immunologic system or from other metastatic regions far from the primer tumor location.

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

P1109 RHOMA: 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 lead to loss of cell polarity, with acquisition of migratory and invasive property. MicroRNAs (miRNAs) (miR-126) is a non-coding RNA 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 malignancies. Previous studies demonstrated significantly down-regulated in human CRC tissues and negatively related with patient's prognosis. MiR-126 was also low-expressed in high metastatic cell lines, and inhibited proliferation, invasion and metastasis of CRC in vitro. However, whether miR-126 can regulate the process of EMT in CRC is still unclear. Ras homolog A (Rhoa) is one of most characterized members of Rho GTPases which belong to Ras superfamily. Rhoa, as molecular switch, cycles between an active GTP bound state and an inactive GDP bound state. Rhoa and its components of signaling pathway are known to participate in a diverse array of cellular events related to invasion and metastasis of cancer cells. Our previous study found that miR-126 down-regulated RasA and ROCK activity in CRC cells. Whether Rhoa activity and Rhoa signaling pathway play an important role in miR-126 regulating EMT process, cell proliferation, migration and invasion of CRC remains unclear.

Aims & Methods: To identify Rhoa signaling pathway associated with the function of miR-126 overexpression or knockdown. Performed MTT, colony formation, wound-healing, migration, invasion assays and RT PCR, western blot analysis to study the functions of miR-126 in EMT, proliferation, migration, invasion and expression RasA signaling pathway of CRC cells. Constructed pDSRed2-V14Rhoa (constitutive active Rhoa, V14Rhoa) and pDRed2-N19Rhoa (Domain-negative, N19Rhoa) mutants, then transfected them into the CRC cell lines of miR-126 over-expression or knockdown (miR-126) activity. Pulldown assay detected Rhoa signaling activity after transfected. Then repeated the experiments above to investigate the biological behavior changes of CRC cells.

Results: MiR-126 promoted the expression of E-cadherin and suppressed the expression of SLUG, Snail, Vimentin, Fibronectin of CRC cells. MiR-126 also inhibited proliferation, migration and invasion of CRC cells, and negatively regulating Rhoa signaling pathway. V14Rhoa mutant effectively increased the activity of Rhoa and reversed the role of miR-126 by promoting EMT, proliferation, migration and invasion in miR-126 overexpressing HCT116 cells. Conversely, N19Rhoa mutant effectively decreased the activity of Rhoa and suppressed EMT, proliferation, migration and invasion in miR-126 silenced SW480 cells.

Conclusion: Rhoa signaling pathway was the key signaling pathway of miR-126 in suppressing the EMT, proliferation, migration and invasion of CRC cells.

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

References

P1110 DNA METHYLATION CHANGES PRECEDE AND CONTRIBUTE TO SPORADIC MUTATIONS IN COLORECTAL ADENOMA AND CANCER DEVELOPMENT THROUGH INDUCED GENOMIC INSTABILITY

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Introduction: Colorectal cancer development is characterised by sporadic mutations and epigenetic alterations. DNA mutations occur randomly and sporadically in growth-related genes, mostly on cytosome nucleotides. Active demethylation of cytosines in relation to RNA expression alterations may lead to genetic instability and DNA mutations. Whole genome DNA methylation and mutation analysis with RNA expression profiling data from CRC patients demonstrate the primary and secondary order of the epigenetic and genetic changes and their relation to the malignant phenotype development.

Aims & Methods: In this study we aimed the whole genome methylation analysis and targeted mutation analysis of colorectal cancer (CRC)-related genes (12) with upstream whole genomic mRNA expression evaluation. Special focus was set on the p53 pathway and the involved genes. Methyl capture sequencing (Illumina) was performed on normal (N), adenomous (Ad: 13) and colorectal cancer (CRC: 9) biopsy specimens. Methylation results were confirmed by in silico methylation studies' results (TCGA) and by methylation array-PCR (Quagen Methylation array). Specimens were further evaluated for 32 mutations of 12 CRC-related genes (APC, BRF, CTNNB1, EGFR, FBXW7, KRAS, NRAS, SMAD4, TP53, MSH6, PIK3CA, SMAD2, SMAD4, TP53) by new generation sequencing (Roche 454 Junior). mRNA expression evaluation was performed by whole genome expression analysis (HGU T3, Affymetrix). Tageted pathway analysis was performed for the p53 pathway. Bioinformatic analysis included overall survival time and methylation detection of top hyper/hypomethylated genes, methylation changes on the tumor mutation regions and related pathway gene promoters were evaluated by targeted analysis.

Results: Overall hypomethylation was observed on the N-Ad-CRC sequence in the gene body and non coding genomic regions. In Ad-N comparison e.g. p73, NFGR, PDGFRA genes were hypermethylated for their promoters, FMN1, SLIC6A7 genes were hypomethylated, respectively. In CRC-N comparison DK2, SDC2, SOX1 genes showed hypermethylation, while ERBB4, CREBS,CNTN1 genes were hypomethylated in the promoter regions. In silico analysis on the TCGA database yielded confirmatory results. The common hyper- and hypomethylated genes were also in correlation with methylation array results yielded by methylation specific PCR. A significant negative correlation of the top methylation changes could be demonstrated to the RNA expression. In the certain mutation hot spot, genebody regions significant DNA methylation alterations (mainly hypomethylation) were detected. APC, P53 and KRAS mutations were found in 30%, 21% of adenomas, and in 29%, 53%, 29% of CRCs, respectively. RNA expression profiling could not detect any significant quantitative changes related to these DNA sequence alterations. The p53 gene body was addressed by hypermethylation in adenomas. mRNA expression changes were observed in most of the p53 pathway genes showing promoter methylation alterations.

Conclusion: DNA methylation with consequent phenotypic effect can be observed in a high number of gene promoters and gene body regions through CRC development. The mutation hot spot areas of the most relevant colorectal cancer (APC, CTNNB1, EGFR, FBXW7, KRAS, NRAS, SMAD2, SMAD4, TP53) were completely methylated and the DNA methylation alterations without detectable quantitative RNA expression changes. p53 cancer pathway genes are highly methylated in promoters and gene body with corresponding expression changes. The tumor mutation hot spot areas in the p53 gene selection were hypomethylated and therefore unstable and methylated.

Disclosure of Interest: All authors have declared no conflicts of interest.
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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 decreased significantly in colorectal cancer, particularly in high metastatic cell lines, indicating that miR-126 may inhibit tumor development and metastasis. However, the mechanism underlying miR126 inhibiting cancer is uncertain, and its function in cross-talk between colorectal cancer cells and TAMs are still in its infancy.

Aims & Methods: In this study, we investigate the cross-talk between cancer cells and TAMs in colorectal cancer microenvironment, and find out what role the miR-126-CXCL12-IL6 axis plays in it. Methods: (1)The effect of miR-126 on the growth and metastasis of cancer cells. (2) We build a co-culture system of TAMs and transferred cancer cells, and use AD를 기반으로한 tumour necrosis factor (TNF)를 통해 TAMs를 구축하고, 이를 통해 TAMs의 배양과 면역조절활성을 촉진했다. We detect expression of EMT associated factors and STAT3 pathway activation by western blot, cell growth by CCK8, metastasis by Transwell. The definition of statistical significance was defined as P < 0.05 (two-tailed).

Results: (1) miR-126 negatively regulate CXCL12 expression in post-transcript level; (2) Inhibiting miR-126 of colorectal cancer cells could promote TAMs recruitment and up-regulate inflammation factors IL1β and IL6 expression. However, blocking CXCL12/CXCR4 axis by AMD3100 could reverse this effect, vice versa; (3) Inhibiting miR-126 of colorectal cancer cells could recruiting TAMs, therefore down-regulate E-cadherin protein, up-regulate slug protein, and activate 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).

Conclusion: Our results reveals a novel mechanism by that miR-126 repress recruitment and inflammatory factor secretion of TAMs through controlling secretion and paracrine signaling of CXCL12 to inhibit colorectal cancer growth and metastasis.

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

P1102 THE Efficacy of next-generation of image enhanced colonoscopy (Blue Laser Imaging) in the detection of Colonic Lesions: A Pilot Study


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Introduction: Narrow Band Imaging (NBI) enable detection for vascular-rich small, flat lesion and recognition of mucosal surface compared with normal colonic mucosa and vascular pattern in colonoscopy. However, recent studies revealed no significant difference in overall adenoma detection rate with the use of NBI compared with white light imaging (WLI). Blue Laser Imaging (BLI) is next-generation of image enhanced endoscopy technique using LASER light source that were realized with lighting and image processing suitable for visualization of microvessels and structures in the superficial portion of the mucous membrane.

Aims & Methods: Our aim was to determine whether the use of BLI enhances the adenoma detection rate (ADR) and miss rate compared with WLI. A total of 163 patients who underwent screening or surveillance colonoscopy in Saga University Hospital were included. Three patients were excluded because of poor bowel preparation. One hundred and twenty-seven patients were randomized to tandem colonoscopy with BLI (BLI-WL group) or WLI followed by BLI (BLI-WLI group). Polyp (adenoma) detection rates, miss rates and the number of polyps (adenoma) detected per person (mean adenoma detection rate) were examined between the two groups.

Results: The BLI-WL group and WL-WL group comprised 64 and 63 patients, respectively. The proportion of patients with polyps (adenoma) was 62.5% in BLI-WL group compared with 63.5% in WL-WL group. There was no significant difference between two groups regarding ADR (1). The number of adenomas detected per person (ADR) of BLI-WL group and WL-WL group were 2.84 and 1.90, respectively. However, the polyp miss rate of BLI-WL group was less than that of WL-WL group (1.6% vs 10.0%; P=0.0014).

Conclusion: There were no significant difference in the overall polyp (adenoma) detection rate with BLI-WLI group or WL-WL group. However, miss rate was higher in WL-WL group compared with BLI-WL group (10.0% vs 1.6%; P=0.0014). Further, BLI detected more polyps per patient compared with WL group (2.84 vs 1.90). BLI may improve polyp miss rate and the number of polyps per subject (mean adenoma detection rate) in the colonoscopy.

Disclosure of Interest: All authors have declared no conflicts of interest.
CONCLUSION: Our results demonstrate that degree of ITH of KRAS/TP53 mutations is a predictor of colorectal cancer risk. Increased genetic 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 enhanced to facilitate cell survival, chemoresistance, motility, tumour angiogenesis as well as cell survival and proliferation of putative cancer stem cells. One of the key players in hypoxia is carbonic anhydrase IX (CAIX) which is a hypoxia-inducible enzyme. CAIX is overexpressed in a variety of cancers including colon cancer and plays a crucial role in maintaining favourable intracellular pH in hypoxia. There is also evidence that extracellular vesicle (EV) production is increased in response to hypoxia and promotes adaptive response of cancer cells and we have previously demonstrated, that CAIX positive EVs secretion is increased in response to hypoxia in colorectal cancer in vitro.

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 Agencourt A50. The study was aimed to determine whether EV number and size differ in CRC patient plasma compared to HD plasma, that might have diagnostic and prognostic value. (Financed by Latvian Council of Science 2021-0933)

Results: Statistically significant increase in the amount and size of EVs was observed in CRC plasma compared to healthy donors. In CRC group, the rate of distant metastasis or recurrence was 0.9% (10/1127). Among these 10 cases, 5 cases were developed from depressed-type lesions and one case was 10 cases, 5 cases were from protruded-type lesions. The rate of metastasis was 64.3% in depressed-type, 34.3% in flat-type and 38.4% in protruded-type. The rate of distant metastasis or recurrence was 0.9% (10/1127). Among these 10 cases, 5 cases were developed from depressed-type lesions and one case was developed from protruded-type lesions.

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

P1107 THE GENESIS STUDY: GENETIC BIOSY FOR PREDICTION OF SURVEILLANCE INTERVALS AFTER ENDOSCOPIC RESECTION OF COLONIC 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% CRCs by sessile serrated adenomas (SSA). Hyperplastic polyps are regarded harmless. Current surveillance strategies for CRC following polypectomy are determined by endoscopic and histopathological factors. Such a distinction has also been challenged.

Aims & Methods: The study was aimed for molecular characterization of colon 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 prospective study. All patients underwent a complete hyperplastic polyp removed by standard endoscopic techniques. Up to 6 representative polyp biospies were collected and stored in a formalin medium and finally embedded in paraffin-blocks, followed by histopathological assessment. Targeted Next Generation Sequencing (tNGS) was performed from formalin-fixed, paraffin-embedded tissue samples.

Aim: To correlate the number of CRC-related genes (38 targeted genes; GeneRead DNAseq Targeted Panels V2, Quagen®) on a MiSeq platform (Illumina®). Genetic and histopathological analysis was done blinded to the endoscopic and clinical data.

Results: In 100 patients, 234 polyps were removed. 121 polyps (54.0%) were sized <=10mm, 71 (31.7%) were >10mm. For 32 polyps (14.3%) no size was available. 90 polyps (40.2%) were located in the left, 126 polyps (56.3%) in the right colon, for 8 polyps (3.6%) no location was noted. 112 polyps (50.8%) were adenoma- and 110 polyps (49.1%) non-adenomatous lesions. No data were available.
samples of athletes during physical exercise (66.17/C6 stage. Based on our results, the above DNA analysis methods might contribute to hypomethylation could be observed only in CRC patients with advanced tumor CRC, IBD patients and also in healthy athletes during physical exercise. CfDNA P1109 ANALYSIS OF SFRP1, SFRP2, SDC2 AND PRIMA1 DNA hypomethylation was shown in CRC plasma samples with advanced tumor heights at 180 bp, 360 bp, 550 bp) was observed in each patient group. Global /C6 B. Wichmann2, Z.B. Nagy1, E. Markus1, K. Szigeti1, A´ . Nagy1, Z. Tulassay2, study certain DNA sequences of the promoter regions of SFRP1, SFRP2, SDC2 genes in biopsy and plasma samples of healthy, colorectal adenoma and CRC patients with colonic adenoma (20.61/C6 and 12.987 (1.637–100.00)). Contact E-mail Address: exzter1991@gmail.com Introduction: Cell-free DNA (cfDNA) is circulating in human plasma and its amount is different in certain physical conditions. It is well known, that in healthy people the quantity of cfDNA is very low, but it rises in chronic disorders such as cancer. At the same time, very high cfDNA level can be measured in healthy people during physical exercise. Aims & Methods: We aimed to analyze cfDNA changes (quantity, fragment length, global DNA methylation level) in physiological conditions (during physical exercises) and neoplastic and inflammatory 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 High Pure Viral Large Volume NA isolation Kit (Roche). cfDNA was quantified with Qubit fluorometry (Invitrogen). CDNA fragment length distribution was assessed by Bioanalyzer 2100 using High Sensitivity DNA assay (Agilent). Global DNA demethylation was analyzed by bisulfite pyrosequencing of long interspersed nuclear element-1 (LINE-1) (Quagen). Results: High cfDNA amounts were observed in plasma samples of patients with colon adenoma (20.61 ± 10.70 ng/ml), colorectal cancer (24.13 ± 20.02 ng/ml) and IBD (22.27 ± 14.06 ng/ml) compared to healthy subjects (10.33 ± 3.22 ng/ml). Highly elevated cfDNA amounts were found in plasma samples of athletes during physical exercise (66.17 ± 29.00 ng/ml) while the cfDNA amount decreased after physical activity (51.87 ± 39.80 ng/ml). Characteristic cfDNA fragment length distribution pattern (with different peak heights at 180 bp, 360 bp, 550 bp) was observed in each patient group. Global DNA hypomethylation was shown in CRC plasma samples with advanced tumor stage (N= 17: 6.00%, AD: 79% ± 1.70%, advanced CRC: 70% ± 0.03%). Conclusion: cfDNA decreases after physical activity and higher cfDNA levels, observed only in patients with advanced tumor stage. Based on our results, the above DNA analysis methods might contribute to non-invasive detection for colorectal diseases. Disclosure of Interest: All authors have declared no conflicts of interest.

P1109 ANALYSIS OF SRFP1, SRFP2, SDC2 AND PRIMA1 PROMOTER METHYLATION IN CELL-FREE PLASMA DNA FOR NON-INVASIVE DETECTION OF COLORECTAL ADENOMA AND CANCER B.K. Bartak1, A. Kalmár1, B. Péteria,1 A.V. Patai1, O. Galamb1, G. Válye1, B. Wichmann2, Z.B. Nagy1, E. Markus1, K. Szigeti1, A. Nagy1, Z. Tulassay2, P. Igaz1, B. Molnar1
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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 analyze 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. Methylation (ML) PCR was used after bisulfite-conversion to study certain DNA sequences of the promoter regions of SRFP1, SRFP2, SDC2 and PRIMA1 in 32 biopy-plasma pairs and in 121 additional plasma samples.

Results: The methylation pattern of the four selected genes, demonstrated different methylation profiles for healthy, colorectal adenoma and CRC patients. Moreover, we examined the effect of methylation alterations on protein expression. Methylation (ML) PCR was used after bisulfite-conversion to study certain DNA sequences of the promoter regions of SRFP1, SRFP2, SDC2 and PRIMA1 in 32 biopy-plasma pairs and in 121 additional plasma samples.

Conclusions: Our findings suggest that SRFP1, SRFP2, SDC2 and PRIMA1 can be proven to be promising epigenetic biomarker candidates for colorectal adenoma and cancer diagnosis with high sensitivity and specificity.

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

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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 many metabolic profiles of CRC patients are being discovered in colorectal cancer remains poorly understood and warrants investigation due to its non-invasive sample 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 studies and especially nuclear magnetic resonance (NMR) spectroscopy, which has several advantages including relative ease-of-use, high degree of reproducibility, easy-to-identify metabolites, high through-put, 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 metabolic profiles of CRN patients from colorectal neoplasia (CRN; 36 advanced adenomas and 56 various stages CRC) and healthy controls (n=156) were analyzed by NMR spectroscopy. Healthy and CRN groups were statistically discriminated using orthogonal projections to latent structure discriminant analysis (OPLS-DA). The class prediction model was validated by three-fold cross-validation. The advanced adenoma and stage 0 CRC were grouped as pre-invasive CRN.

Results: After patients underwent endoscopic resection or surgical resection for CRN, advanced adenoma has been diagnosed in 36 patients, stage 0 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 CA 19-9 level > 37 kU/L, 19-9 were in 42% of CRN patients and 52% of healthy controls, 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 CRN as well as advanced CRC and normal with a Q2 value of 0.511. The predicted performance of the prediction validation study, the sensitivity and specificity for diagnosing pre-invasive CRN was 96.2% and 95%, respectively. The grades diagnosed by the PLS-DA model showed that area under the curve was 0.823 for tumor, 0.783 for alamine and 0.842 for aminosobutyrate. In multiple receiver operating characteristics curve analyses, tumorine, alamine, and aminosobutyrate were good discriminator for CRC patients.

Conclusion: NMR-based urine metabolic profiles significantly and accurately discriminate between patients with pre-invasive CRC as well as
advanced CRC, and healthy control with high accuracy. It demonstrates an applicability of urinary 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 colon pathology. Only 14% of patients referred for colonoscopy from primary care have significant bowel disease (SBD), colorectal cancer (CRC), high risk adenoma (HRA, defined as ≥3 or any ≥1 cm) and inflammatory bowel disease (IBD). We have reported that undetectable faecal haemoglobin (f-Hb), measured by a faecal immunochemical test (FIT) is a good rule-out test for SBD. Since December 2015, GPs in Tayside have been encouraged to use FIT test as an adjunct to the history, examination and mandatory blood tests in patients referred with bowel symptoms. Referrals are vetted by a Consultant and triaged to test or clinic. We have examined the impact of the introduction of the FIT test on referral rates and colonoscopy yield.

Aims & Methods: Patients in primary care with new bowel symptoms were encouraged to complete a FIT in addition to blood count and renal function check. We prospectively recorded FIT tests received, referrals to secondary care and colonoscopy findings over 1 year from December 2015 to December 2016. FIT tests were analysed by HMJacKarc (Kyowa Medex Co Ltd, Japan) with an analytic range of <10 to >400 μg Hb/g faeces. Referral rates with FIT were examined along with clinical findings at colonoscopy.

Results: 5,655 FIT tests were received. 76.2% had undetectable f-Hb, and 152 (2.7%) were untestable. 4,108 patients were referred of whom 2,338 (57%) returned a FIT. In 1,378 patients with a FIT result vetted to colonoscopy, 284 had SBD (20.6%), 86 CRC, 124 HRA and 74 IBD. 44% of patients examined along with clinical findings at colonoscopy.

Conclusion: A FIT test is an essential adjunct to the 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.

P1112
FEecal ImmunoASSay TEST (FIT) FOR THE colorectal CANcer SCREENING IN Ile DE FRANCE: IMPACT OF AGE, GENDER AND HEMOGLOBIN LEVEL

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Introduction: The immunological screening test (FIT) for colorectal cancer (CRC) was introduced in January 2015 in Ile de France (15 million inhabitants) after Hemocult was abandoned due to its low sensitivity. The Hemocult (HC) launched in 2007 had reached less than 30% participation rate.

Aims & Methods: We report one-year on FIT in CRC screening in Ile de France and compare results to those with HC test for speculating on adjustment actions. The raw data were extracted by request from the registry of the screening structure (in various areas 75, 77, 91, 92, 94 and 95) covering a target population of 3026366 inhabitants. Rates of participation were calculated, and after one-year experience period, profiles of individual with positive tests, rates of those with negative colonoscopy, with polyps (all stages combined) and with high grade dysplasia (HGD) were described. Results were compared to those with HC from the launch to the end of the last campaign (Dec 2014) normalized for mean one-year output. The comparisons were made by an x2 test (qualitative variable) and multivariate stepwise analysis was performed 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 28.5% 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 by 450120 (34% estimated participation rate) individuals (versus 294603 participants with HC in 2014 p < 0.00001; 24% participation rate) and the rate of positivity was 4.0% (versus 3.8% with HC; p < 0.00001). 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 = 0.00051). More women (52%) than men (45.5%) had to invitation to investigation rate in women (3.7%) was lower than in men (5.5%; p < 0.0001). More advanced polyps and cancer were found in men (14.5%) than in women (11.3%; p < 0.00001) with normal colonoscopies lower in men (24.2%) than in women (40.7%; p < 0.0001). The multiplicative value for FIT was significantly higher (p < 0.0001) in 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 mg/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 rate, this 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.

P1113
ARTIFICIAL INTELLIGENCE CAN PREDICT THE PRESENCE OF LYMPH NODE METAStASIS IN T1 COLORECTAL CANCER

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Introduction: Most T1 colorectal cancers (CRCs) undergo surgical colectomy in western countries with established clinical guidelines despite the low incidence (approximately 10%) of lymph node metastasis (LNM). Therefore, many patients with-out LNM undergo unnecessary surgeries.

Aims & Methods: To reduce unnecessary surgeries, we aimed to predict the risk of LNM in T1 CRCs by using artificial intelligence (AI). Data on 690 consecutive patients with T1 CRCs who had undergone colectomy between April 2001 and March 2016 were retrospectively analyzed. Data of a randomly selected 590 patients were used for machine learning for the AI model, which analyzed five clinicopathological factors: tumor location, lymphatic invasion, vascular invasion, tumor budding and histological grade. The remaining 100 patients served as a test set for validating the AI model and output the predicted LNM as positive or negative. To validate the AI model, sensitivity and specificity and

United European Gastroenterology Journal 5(5S)
P1114 RISK FACTORS OF ADVANCED METACHRONOUS NEOPLASIA 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 colon resection for non-metastatic colon cancer between January 2002 and December 2012 in a single tertiary center were retrospectively reviewed.

Results: A total of 728 patients were enrolled in this study. Surveillance colonoscopy was performed after perioperative clearing colonoscopy. Among the patients, 182 (61.6%) were male, and the median age was 65 years. On perioperative clearing colonoscopy, accompanying high-risk adenomas (≥3, size ≥10 mm, with high-grade dysplasia and villous histology) were detected in 95 patients (31.9%) and were significantly associated with old age (≥65 years), male sex, alcohol use, smoking, and stage 3 colon cancer (P < 0.05). During the postoperative follow-up periods (median, 5.35 years), advanced metachronous neoplasm was found in 45 patients (15.1%) during surveillance colonoscopy, including colon cancer in 4 patients (1.3%). In the multivariate analysis, distal colon cancer (distal to splenic flexure; odds ratio [OR] = 4.463; P = 0.002), accompanying high-risk adenomas on perioperative clearing colonoscopy (OR = 3.414; P = 0.001), and hypertension (OR = 2.344; P = 0.026) were significant risk factors of advanced metachronous neoplasm during surveillance colonoscopy.

Conclusion: Patients who had distal colon cancer, accompanying high-risk adenoma on perioperative clearing colonoscopy, and hypertension may need a shorter colonoscopic surveillance interval. A more tailored surveillance strategy is needed to improve overall outcome in patients who undergo curative colon cancer resection.

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

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endoscopists with a higher ADR (3.45%). 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 perfora-
tion 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, using different settings and especially between UEMR and traditional EMR are needed.

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

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orectal laterally spreading tumors (with video). 

P1117 ADENOMA DETECTION RATE INFLUENCES RISK 
PREDICTION OF METACHRONOUS ADVANCED COLORECTAL 
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Introduction: Current guidelines recommend surveillance colonoscopy after 10 years or surveillance in 5–10 years in individuals with no or 1–2 non-advanced adenomas.

Aims & Methods: We hypothesized that risk of metachronous advanced colorectal cancer (ARC) differs based on clinical characteristics and colonoscopy quality. We identified 7,171 participants with no or non-advanced adenomas at first-screening colonoscopy. The risk of metachronous AN at surveillance colonoscopy 3–5 years later was investigated according to clinical characteristics and endoscopist adenoma detection rate (ADR).

Results: In multivariate analyses, strong associations between increasing age, male sex, current smoking, family history of colorectal cancer, follow-up interval, increasing number of adenoma, and low ADR were independent risk factors. Among patients with 1–2 small adenomas, women with age ≥60 years or men comprised a hidden-risk group, which had 5.3% risk of metachronous AN at surveillance. Women <60 years old with 1–2 low-risk adenomas had very low risk (1.2%) of metachronous AN as individuals with no adenoma. Furthermore, incidence of metachronous AN was significantly higher in individuals who were censored for endoscopies with an ADR (<32%) than in those screened by endoscopists with a higher ADR (≥32%) (3.2% vs. 0.6%, respectively; P = 0.001).

Conclusion: According to patient and adenoma characteristics, and ADR of the endoscopist, the risk of metachronous AN varies among low-risk patients. In recommending surveillance colonoscopy, these factors should be taken into consideration.

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

References


P1118 EXPERIENCE OF PER ANAL ENDOSCOPIC 
MYECTOMY (PAEM)
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Introduction: The technique of endoscopic submucosal dissection has recently been improved, and large and complexed lesions such as those invading ileocecal valve and appendix orifice can be resected en bloc. However, lesions accompanying severe fibrosis in the submucosal layer and exhibiting the muscle traction (MR) sign are often difficult to be resected completely. We devised a new method called ‘Per Anal Endoscopic Myectomy’ for small lesions involving severe fibrosis, in which dissection is done between the inner circular and outer longitudinal muscles instead of between submucosal layer and muscle layer. 

Aims & Methods: The aim of this study is to examine the usefulness and safety of PAEM. We reviewed 55 cases of PAEM performed in our hospital and an affiliated hospital were retrospectively reviewed. When fibrosis in the submucosal layer was suspected, pocket creation method was applied and if severe fibrosis with MR sign was found, PAEM was selected. In PAEM procedure, after dissecting circumferentially around the fibrous band 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 invasion 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 with accurate pathological diagnosis. No complica-
tions were recorded in our experiences. Further investigation into the sig-
nificance of PAEM would be needed.

Disclosure of Interest: T. Toyonaga: Dr. Toyonaga invented the Flush knife-BT in conjunction with Fujifilm, and receives royalties from its sale. All other authors have declared no conflicts of interest.

References


P1119 LOCAL RECURRENT AFTER ENDOSCOPIC MUCOSAL RESECTION FOR HIGH-RISK LESIONS: MAY WE BETTER PLAN THE ENDOSCOPIC FOLLOW-UP ACCORDING TO PROCEDURAL AND PATHOLOGICAL AND HISTOLOGICAL CHARACTERISTICS?
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Introduction: Endoscopic mucosal resection (EMR) is an increasingly used technique for the removal of large sessile and flat-laterally-spread 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
colonoescopies and optimal time intervals are currently unclear. An adequate comprehension of the predicting factors of RRA would be very useful 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 of flat or sessile adenomas (to identify risk factors for recurrence), and to identify predictors of follow-up suggestions. We considered all consecutive patients undergoing 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 accurate and appropriate score assessment with the execution of biopsies when needed. Data collection included: (a) lesion size, morphology, Paris classification, pit pattern (kudo), technique of removal (en bloc vs piecemeal) and histology for all primary lesions and RRA; (b) Information on grading, grading, micronvasion, margins, submucosal exten- sion for all pt1 removed “en bloc”.

Results: 50 patients were included (mean age 63 ± 12 years, 54% females). The mean size of lesions was 21 mm (range 10–50 mm), 40% were sessile, 35% granular LST and the remaining 25% non-granular LST, the most frequent sites of location were sigmoidal colon (40%), ascending colon (25%) and cecum (12%). According to the morphological characteristics, 60% of lesions were removed “en bloc” and 40% “piecemeal”. Nodular lesions were used as propofol- laxis in 35% of patients and only in 1 for intraprocedural bleeding. No post-procedural bleeding or perforation occurred. APC has never been used. During the endoscopic follow-up a suspect early (3-months) RRA was documented and immediately treated in 16% and histologically confirmed only in 8%. At 6-month controls a RRA was again detected only in 2 of these patients. New cases of RRA were not found both at 6 and 12 month controls. Only 1 case of RRA was documented for lesions treated “en bloc” but this was the only one with histologically confirmed endoscopic stenting has not been ever used.

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 to have a high rate of attention would be complicated in relation to determined morphological pattern and presence of in situ carcinoma. Moreover, RRA seems to be ever early suggesting a close follow up only in the first period.

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

Reference

P1120 TREATMENT STRATEGY FOR LOCAL RECURRENCES AFTER ENDOSCOPIC RESECTION OF COLORECTAL NEOPLASMS
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Introduction: Local recurrences after endoscopic resection (ER) frequently occur after colorectal neoplasms. Recently, the efficacy and safety of submucosal dissection (ESD) for local recurrences has been reported. However, an appropriate treatment strategy for these lesions including ESD remains unclear.

Aims & Methods: This study aimed to clarify the appropriate treatment strategy for local recurrences after ER. A total of 81 patients (81 lesions) who received treatment for local recurrences after ER for colorectal neoplasms between January 2010 and December 2016 were enrolled. Patients with pathological diagnosis of hyperplastic polypl, sessile serrated adenoma/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 carcinomas). The DCR was defined as proportion of patients who were diagnosed with curative resection after ER or received additional surgery based on pathological diagnosis after ER.

Results: Seventy patients were included allowing an adequate final analysis. Forty-nine patients diagnosed with adenomatous recurrences were treated by cold polypec- tomy in 15, by endoscopic mucosal resection (EMR) in 26, and by ESD in 8 patients. Cold polypectomy was applied only to diminutive (<5 mm) lesions and non-invasive carcinomas. The endoscopic resection rates of EMR and ESD were 53.8% and 100%, respectively (P = 0.03). Forty cases (7.7%) in the EMR group developed local recurrences, but additional ER achieved curative resection. The DCR of three methods were all 100%. Meanwhile, 23 patients diagnosed with carcinous recurrences were treated by EMR in 7 and by ESD in 18 patients. The en bloc resection rates of EMR and ESD were 28.6% and 36.3%, respectively (P = 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 to provide promising results.

Conclusion: The selection of ER for local adenomatous recurrences could be based on lesion size. On the other hand, ESD is desirable for local carcinous recurrences to achieve complete disease control.

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

P1121 A NEW MANEUVER TO PLACE A THROUGH-THE-SCOPE STENT IN A MALIGNANT COLONIC STRICUTURE INCOMPATIBLE WITH A STANDARD-CALIBER COLONOSCOPE: ‘OVER-THE- CATHETER’ 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 (SC) is impossible. Therefore, in such endoscopes 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). Our aim was the safety 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 until stoma formation was preferred. When a conventional TTS procedure was unsuccessful, specifically, when the MCO site was inaccessible with an SC (CF-H260AL, 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) diameter and 3.7 mm working channel, needed for a 22 mm (not 18 mm) SEMS insertion.

All authors have declared no conflicts of interest.
Abstract No: P1122

List of 6 cases with malignant colonic obstruction in whom “Over-the-Catheter” colonoscope replacement technique was tried.

<table>
<thead>
<tr>
<th>Case No.</th>
<th>Age</th>
<th>Sex</th>
<th>Primary cancer site</th>
<th>Site of stricture</th>
<th>Nature of stricture</th>
<th>Alternative scope</th>
<th>Distance from Reinserted SCC to stricture</th>
<th>Technical/Clinical outcome</th>
<th>CROSS score* change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>71, F</td>
<td>Peritoneum</td>
<td>Splenic flexure</td>
<td>Extrinsic</td>
<td>PCF-PCQ260L</td>
<td>Away (SCJ)</td>
<td>Success/Success</td>
<td>1 – 4</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>66, F</td>
<td>Sigmoid colon</td>
<td>Sigmoid colon</td>
<td>Intrinsic</td>
<td>PCF-PCQ260L</td>
<td>Close</td>
<td>Success/Success</td>
<td>2 – 4</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>76, M</td>
<td>Pancreas</td>
<td>Splenic flexure</td>
<td>Extrinsic</td>
<td>PCF-PCQ260L</td>
<td>Away (SCJ)</td>
<td>Success/Success</td>
<td>1 – 4</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>41, F</td>
<td>Transverse colon (resected)</td>
<td>Sigmoid colon</td>
<td>Extrinsic</td>
<td>GIP-Q260J</td>
<td>Close</td>
<td>Success/Success</td>
<td>1 – 4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>55, F</td>
<td>Ovary</td>
<td>Sigmoid colon</td>
<td>Extrinsic</td>
<td>EG-580NW</td>
<td>Away</td>
<td>Success/Success</td>
<td>0 – 3</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>49, F</td>
<td>Stomach</td>
<td>Transvers colon</td>
<td>Extrinsic</td>
<td>PCF-PCQ260L</td>
<td>Close</td>
<td>Success/Success</td>
<td>0 – 3</td>
<td></td>
</tr>
</tbody>
</table>

*CROSS, ColoRectal Obstruction Scoring System (Reference 1)

Among 63 palliative MCO cases, initial attempt to place a 22 mm SEMS by TTS procedure was unsuccessful in 6 cases (Table), all of whom had peritoneal dissemination. The reasons for technical failures were; impossible insertion of an SCC to the stricture due to carcinomatous adhesions or narrowing in 5 cases and failure in passing GW through the stenosis due to a limited viewing angle to the stricture in one case. With OTC-CR, approach to the main stenosis with a thinner (alternative) scope, GW traverse, "over-the-catheter" replacement to the SCC, and a 22 mm SEMS placement were successful in all of the 6 cases with adequate clinical improvements (CROSS score change). Notably, ultimate TTS procedures were possible from reinserted SCC distant from the stricture in 3 cases. No adverse events occurred during the procedures.

Reference

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 (Mallorca), including 50% of the Balearic Islands population. The target population (people who reside in these areas aged between 50 and 69 years old) was 75,757 individuals. Exclusion criteria. Colonoecopy performed in the previous 5 years, previous diagnosis of CRC, follow-up colonoscopies because colon disease and severe illness-contraindication for the participation. People received the invitation by letter. Quantitative immunochemical fecal occult blood testing (i-FOBT/OC-Sensor) was the screening method. The kit was delivered at pharmacies joined the program. The samples were deposited in urns placed in health centres. Participants who tested positive (≥100 ng/ml) were referred to pre-endoscopy evaluation and follow-up colonoscopy. The colonoscopies were performed according to the quality criteria of guidelines.

Results: Overall participation rate (number of people who provide their i-FOBT sample) was 36.5% (n=21,555). Positive rate of i-FOBT was 7% (1438) and 94.3% of those positive tests underwent a colonoscopy (5.7% of exclusions in pre-endoscopy evaluation). 996 colonoscopies were performed. 47 adenomas with high grade dysplasia, 24 carcinomas in situ and 60 adenocarcinomas were found. Only 19% of these adenocarcinomas were T3 or T4 lesions while the rest presented earlier stages. 26% of colonoscopies were classified as high risk (≥5 adenomas or at least one ≥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

P1125 ENTEROENDOCRINE, MUSASHI 1, AND NEUROGENIN 3 CELLS IN THE LARGE INTESTINE OF THAI PATIENTS WITH IRRITABLE BOWEL SYNDROME

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Introduction: The prevalence, gender distribution, and clinical presentation of irritable bowel syndrome (IBS) differ between Asian and Western countries. The densities of enteroendocrine cells are abnormal in Western IBS patients.

Methods: This study aimed at studying large-intestine enteroendocrine, Musashi 1(Msi 1; a marker for both intestinal stem cells and their early progeny), and neurogenin 3 (neuro 3; a marker for early intestinal endocrine cell progenitors) cells in Thai and IBS patients.
**Aims & Methods:** Thirty Thai IBS patients, and age and sex matched 20 Thai controls were included. Four biopsy samples were taken from each of the sigmoid colon and the rectum during a standard colonoscopy. Sections from these biopsy samples were immunostained for serotonin, peptide YY, oxyntomodulin (enteroendocrine), pancreatic polypeptide, somatostatin, Msi 1, and neurog 3. The densities of immunoreactive cells were determined with computerized image analysis (1).

**Results:** In both colon and rectum, the density of serotonin cells was lower in IBS patients than controls. Whereas the density of PYY cells was increased in both the colon and rectum of IBS-D, it was reduced in IBS-M and IBS-C. The density of oxyntomodulin cells was reduced in both the colon and rectum of all IBS subtypes. While the density of PP cells was unaffected in the colon, it was reduced in the rectum. Somatostatin cell density was unaffected in both the colon and rectum. The densities of Msi 1 and neurog 3 were unchanged in both the colon and rectum.

**Conclusion:** The present findings of abnormal densities of the large-intestine enteroendocrine cells in Thai patients combined with previously reported changes in Western IBS patients (2) support the notion that intestinal enteroendocrine cells are involved in the pathophysiology of IBS. However, the changes in the enteroendocrine cells differed from those in Western patients. The present observations highlight that IBS differs in Asian and Western countries, and show that the changes in large-intestine enteroendocrine cells in Asian and Western IBS patients might be caused by different mechanisms.

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

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**Disclosure of Interest:** All authors have declared no conflicts of interest.
to study the ability of STW 5 to modulate intestinal permeability under basal and repeated acute stress conditions.

Aims & Methods: C57 b16 mice were gavaged 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 vitro permeability to FITC–Sulfonic Acid (F4A, 400 Da) and Horse Radish Peroxidase (HRP, 44KDa), total transit time and colonic transit (fecal pellet output - FPO) were measured at Day 0 (D0), D10 and D14 of IB treatment. Ex vivo permeability to FSA and HRP was assessed on jejunum, ileum, proximal colon and distal colon at D14 using Ussing chambers. Colonic transit time was measured at D10 and D14.

Results: In vivo permeability to FSA and HRP as well as total transit time were not modified by STW 5 in basal and WAS conditions. However, STW5 prevented the increase in permeability to FSA induced in the distal colon of control rats. Conversely, STW 5 prevented the increase in permeability to HRP induced by WAS in the jejunum and proximal colon. Furthermore, while STW 5 tended to increase colonic transit as compared to control in basal conditions, it prevented the increase in colonic transit induced by WAS. Finally, STW 5 did not modify the increase in permeability induced by WAS.

Conclusion: Our study suggest that STW 5 can prevent WAS induced changes in paracellular and transcellular permeability in specific regions of the gastrointestinal tract. Such effects could contribute to the therapeutic effects of STW 5 in irritable bowel syndrome and support novel therapeutic indications for pathologies in which barrier functions are altered.

Disclosure of Interest: O. Kelber: Olaf Kelber is employed by Bayer H. Abdel-Aziz: Heba Abdel aziz is employed by Bayer M. Neunlist: This work was supported by a research grant to MN by Bayer All other authors have declared no conflicts of interest.

P1129 ALTERING SPHINGOSINE-1-PHOSPHATE WITH AGING INDUCES MOTILITY DISFUNCTION OF COLON SMOOTH MUSCLE BY BKCA UPRREGULATION IN RATS
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Introduction: Large conductance Ca2+ - activated K+ channel (BKCa channel) was shown to play critical roles in regulating smooth muscle contractility by modulating membrane potential, at the same time, age-associated changes in BKCa expression may contribute to the development of motility disorders of the gastrointestinal tract. Sphingosine-1-phosphate (SIP), component of Sphingolipids in the cell membranes, may affect BKCa expression. Thus, in this study, we investigated whether altered SIP due to aging may affect the motility of colon smooth muscle (CSM) in rats.

Aims & Methods: Thus, in this study, we investigated whether altered SIP due to aging may affect the motility of colon smooth muscle (CSM) in rats. Forty Sprague-Dawley rats at the same age were randomly divided into five groups. After different times of administration, finally they were divided into different-aged: 10-week group, 20-week group, 40-week group, 60-week group and 80-week group. Colonic motility function and contractility of circular muscle strips were measured. The expression of BKCa and phosphorylated myosin light chain (P-MLC) level were tested in colonic tissues of rats with varying ages by immunohistochemical, RT-PCR and western blot. SIP levels in colonic tissue were tested by LC-MS/MS analysis. Primary cultured colonic smooth muscle cells (SMCs) from normal adult rats were used in complementary in vitro studies. In the presence and absence of SIP with different concentrations, the expression of BKCa, P-MLC level, single-channel activity, intracellular Ca2+ mobilization were tested. At the same time, in the presence and absence of SIP, SMCs were transfected with anti-SIP antibody. BKCa siRNA transfection was used to investigate whether P-MLC expression and intracellular Ca2+ mobilization were affected by BKCa expression in SMCs. The expression and phosphorylation of Akt, JNK, ERK, NK-FκB, and PKC were examined by western blot analysis to investigate the effect between SIP and BKCa.

Results: Aged rats showed prolonged colonic transit time and weakness of circulatory muscle contraction compared with the young (10 weeks old) SD rats. LC-MS/MS analysis exhibited that the levels of SIP were significantly greater in the CSM of aged rats, demonstrating that SIP varies depending on age. BKCa (a- subunit and β subunit) levels in CSM were shown to increase in an age-dependent manner from 10- to 80-week-old rats by mRNA, protein and immunohistochemical, but P-MLC expression decreased. In colon SMCs by BKCa siRNA transfection, we found P-MLC levels increased. Exogenously added SIP upregulated BKCa in colon SMCs in a concentration-dependent manner. Intracellular Ca2+ mobilization though inhibiting SIP was measured and induced the decline of P-MLC. Our results also proved that SIP upregulated BKCa through the Akt/ERK/JNK pathways. The expression of BKCa decreased by treatment with inhibitor of Akt/ERK/JNK pathways or siRNA.

Conclusion: The results of our study showed that altered SIP due to aging upregulates BKCa via the Akt/ERK/JNK mediated pathway in CSM. BKCa upregulation inhibits Ca2+ influx and MLC phosphorylation and thereby reduces the contractile force. These findings are consistent with previous reports and offer the first evidence for the mechanism of the contractile dysfunction of CSM observed in older individuals, which may be implicated in age-associated gastrointestinal motility disorders.

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

References

P1130 DIABETES-RELATED ALTERATIONS IN THE EXPRESSION OF THE INFLAMMATORY CYTOKINES, TUMOR NECROSIS FACTOR ALPHA AND INTERLEUKIN 6 IN THE MYERIC GANGLIA AND ITS MICROENVIRONMENT OF DIFFERENT INTESTINAL SEGMENTS
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Introduction: Growing amount of evidence has indicated that increase of the hyperglycaemia-induced oxidative stress and decreased effectiveness of the endogenous antioxidant protection play the major role in the initiation of diabetes-related neural damage. Using a streptozotocin-induced diabetic rat model we recently demonstrated that nitricergic myenteric neurons, which are key regulators of peristalsis, display different susceptibilities to diabetic damage and also to 10% treatment in the ileum and proximal colon segments. On these results we suggested the importance of the molecular differences in the neuronal microenvironment in the pathogenesis of diabetic nitricergic neuropathy.

Aims & Methods: Aim to reveal the quantitative differences in the expression of the pro-inflammatory cytokines like tumor necrosis factor alpha (TNFα) and interleukin 6 (IL6) in the myenteric ganglia and its microenvironment of the different intestinal segments, quantitative immunogold electron microscopy was used. Ten weeks after the onset of diabetes, segments from the duodenum, ileum and proximal colon of control and diabetic, and control rats were processed for post-embedding immunohistochemistry.

Results: The density of TNFα- and IL6-labelling gold particles was strictly region-dependent, with increasing to the distal part of the gastrointestinal tract of TNFα. In diabetic rats, the number of TNFα gold particles was significantly increased in the duodenal, decreased in the colonic myenteric ganglia, while did not show any significant differences in the ileal ganglia. The number of IL6 gold particles was not affected by diabetes in the myenteric ganglia of different gut regions. The diabetes-related alterations of TNFα- and IL6 expression were not protected by the immediate insulin replacement in any of the investigated intestinal segments. The differences in TNFα- and IL6 density were not significant in the capillary endothelium under different experimental conditions.

Conclusion: Based on these findings we presume that regionally alterations in the TNFα and IL6 expression are correlated with the diabetes-related region-specific nitricergic myenteric neuropathy.

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

References
Aims & Methods: Gene and protein expression of SEMA3A and its receptor NRP1 was investigated in distal colon from postnatal day 1 (P1) to adulthood by qRT-PCR and Western blot respectively. The cellular distribution of SEMA3A and NRP1 was performed at P7 and P36 in whole mount distal colon tissue by double immunofluorescence for SEMA3A or NRP1 with specific markers for ganglion cells and enteric neurons (Hu, TuJ-1, and muscle cells a-SMA). The impact of SEMA3A on neuronal outgrowth was assessed in cultures of enteric neurons cocultured with SEMA3A-transfected COS-7 cells.

Results: A peak of mRNA expression for SEMA3A and NRP1 was observed in distal colon of newborns at P7, corresponding to a stage of intense neural circuit remodeling. At the protein level, NRP1 was also found to be predominantly expressed during the early postnatal period. Immunohistochemistry for colon tissue indicated that SEMA3A immunoreactivity was not associated with any specific cellular profile, but was distributed in small clusters disseminated throughout the tissue, a pattern consistent for a secreted protein. NRP1 was found in neurons, mainly associated with axonal processes, and was not detected in glial or muscle cells. Enteric neurons cultured in the presence of SEMA3A-expressing COS cells showed a strong reduction in axon length and complexity, while the ganglion size was unaffected.

Conclusion: This study shows the expression of SEMA3A and its receptor NRP1 in the ENS during early postnatal period. By controlling axonal outgrowth, SEMA3A might be an important factor to restrict the axonal trajectories in the appropriate paths between ganglia.

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

References

P1133 DIAGNOSTIC DISCORDANCE BETWEEN TESTS OF EVACUATION: A PROSPECTIVE STUDY
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Introduction: Objective means of evaluating of the defecatory process include anorectal manometry (HRM), balloon expulsion test (BET) and imaging of the defecatory process (X-ray defecography, dynamic transpelvic ultrasound (DT-PUS) or MR defecography). These tests have a place in the evaluation of suspected evacuatory dysfunction (ED), fecal incontinence (FI) and chronic pelvic pain (CPP). Test choice may influence subsequent patient management; however, there is only limited information regarding the agreement between HRM, DT-PUS and BET.

Aims & 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 51ys) were prospectively evaluated with HRM, BET and PUS. Inter test agreement for the diagnosis of anismus was assessed using the Kappa statistic. Correlation between anismus to evacuation failure (assessed by PUS) was also assessed.

Results: 36 patients were assessed for ED, 6 for CPP and 21 for FI. Anismus was diagnosed in 26 patients by HRM and 45 patients by DT-PUS. All cases of anismus diagnosed by HRM or DT-PUS had a positive BET. The Kappa agreement for the diagnosis of anismus between HRM and DT-PUS was poor (0.143 ± 0.01). 9 patients had significant pelvic floor anatomic pathology (4 rectal prolapse, 6 pathological pelvic descent, 4 enterocele and 3 rectoceles >3.5cm). There was a moderate correlation between diagnosis of anisms on DT-PUS to failure to evacuate the rectum (r = 0.636). The correlation between rectal evacuation on DT-PUS to the diagnosis of anismus on manometry was weak (r = 0.296).

Conclusion: There is considerable disagreement between the results of various evacuatory tests, and between the diagnoses of evacuation dysregulation to failure of rectal evacuation. Therefore, more than one test should be applied in order to evaluate the defecatory dysfunction.

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

P1134 DIAGNOSTIC USE OF ENDOSCOPIC FULL-THICKNESS WALL RESECTION (EFTR) IN PATIENTS WITH SYMPTOMS OF CHRONIC INTESTINAL PSEUDO-OBSTRUCTION (CIP0)
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Introduction: Complex gastrointestinal motility disorders such as chronic intestinal pseudo-obstruction (CIP0) or Hirschsprung’s disease (HD) are challenging to diagnose and treat appropriately. Thorough assessment of patient history, radiographic exams, endoscopy and motility measurements aid in diagnosis and, subsequently, in grouping, yet underlying histology is the cornerstone to enable a more distinct diagnosis of neuromuscular GL disorders. Traditionally, surgical procedures have been performed to obtain specimen suitable for accurate histologic analysis.

Aims & Methods: We performed endoscopic full-thickness resection (eFTR) using a full-thickness-resection device (FTRD) under moderate propofol sedation in four patients with suspected severe neuromuscular gut disorders including CIP0.

Results: Patient 1: A 21-year-old male patient with cerebral palsy suffering from acute small bowel ileus with a history of laparotomy, detorquation and appendectomy after colic volvulus at the age of 15. Histologic analysis revealed irregular configuration of the myenteric plexus, but primary neuro- myopathic disease such as HD were ruled out. GL dysmotility due to cerebral palsy syndrome was suspected. Patient 2: After a life-long history of recurrent obstipation, colonic dilatation, ileus symptoms and various colonic segment resections, diagnostic eFTR was performed in a 55-year-old female patient. The diagnosis of hypoganglionosis was established by LDH histochemical and by immunohistochemical reactions with Calretinin and Map-2 Kinase. Patient 3: A 19-year-old male patient with a history of a sigmoid volvulus and massively dilated large bowel segments. Enzyme histochemistry excluded HD upon histopathological analysis. The inner muscle layer showed fibrosis, eosinophilic leiomysitis and lymphocytic ganglionitis. Congenital CIP0 was diagnosed due to degenerative leiomysitis. Patient 4: A 56-year-old male patient with acute ileus and a year-long history of constipation and abdominal pain. Histopathological analysis
revealed hypogangloniosis, severe fibrosis of the inner muscle layer and reduced ICC networks (4.6 and 3.9 for YH1282 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 point reduction in PAC-SYM from baseline) was similar between the treatment groups (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 con- stipation (STC).

P1137 HEALTHCARE PROFESSIONALS FAIL TO PROVIDE ADEQUATE SUPPORT ABOUT OPYIOTINDUCED CONSTIPATION TO STRONG-OPIOID Users.

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Introduction: Constipation is a common side effect of opioid use. Available laxa- tive therapies for opioid-induced constipation (OIC) leave the patient with signif- icant residual symptoms, which may lead them to adjust or stop their opioid intake in order to have a bowel movement, unless effectively counselled.

Aims & Methods: This subgroup analysis of an international survey investigated counselling resources, information-seeking, and sources of support in subjects with constipation caused by the use of strong opioids (e.g. buprenorphine, fen- tanyl). This was a quantitative, questionnaire-based, online survey conducted in France, Germany, Italy, Spain and the UK among respondents aged ≥40 years with largely non-cancer-related chronic pain, treated long-term with strong opioids and having constipation (N=2016). The survey assessed past medical history, opioid use, treatment-related symptoms, and effects on quality of life.

Results: In general, respondents find it difficult to combine pain management relief and constipation and discontinued having to balance between them (36%). Approximately one-fifth (22%) of respondents were very or somewhat dissa- tisfied with the effectiveness of their current constipation treatment and only 43% strictly adhered to prescribed treatment regimens, with 32% researching other treatment options. A significant number of respondents (44%) admitted that their constipation becomes so bothersome that they have to combine different meth- ods to relieve it, and 40% often cut down their opioid medication or even skip it entirely (9%) to relieve constipation. To manage their constipation, respondents regularly used a variety of approaches, including dietary measures (48%), exercise (23%) and single (32%) or multiple (15%) laxative treatments. Only 45% of respondents reported that their healthcare professionals (HCPs) had warned them about constipation as a potential side effect of opioid use. Almost two-thirds of respondents (63%) reported that their HCP was the main information source on opioid-induced constipation. Although 58% of respondents stated that they would have liked their HCP to provide more information about OIC, 48% preferred to deal with constipation on their own, rather than discuss it with their HCP. Other common sources of information were online search engines (44%) and online health forums (29%). Less than half of respondents (43%) strictly adhered to prescribed treatment regimens, with 32% researching other treatments.

Conclusion: A proportion of patients are not satisfied with their current constipa- tion treatment and they sometimes find balancing the need for adequate pain relief with constipation side effects challenging; consequently, many fail to adhere to their prescribed treatment regimens, or resort to using suboptimal strategies, such as reducing their opioid intake, to relieve constipation. Despite this dissat- isfaction, many HCPs are not counselling patients adequately about constipa- tion as a common potential side effect of opioid use. While most patients would like to have more support from their HCP, nearly half prefer to deal with con- stipation on their own, perhaps due to embarrassment or resignation.

Disclosure of Interest: A. Lass: Contractor to Shionogi Ltd. All other 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 ano-rectal disorders using 3DHARM.

Aims & Methods: We performed a prospective study of 43 children (30 male, mean age, 7 years) after surgery for ano-rectal disorders at the Departments of Pediatric Gastroenterology, 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 procotocolectomy for other reasons (PC). In all children conventional manometric parameters were compared to the design and conduct of the study, data analysis and medical writing.

Disclosure of Interest: M. Banasik: Equipment support from manufacturer of the equipment (Covidien AG).

All other authors have declared no conflicts of interest.

**P1139 UK CLINICAL EXPERIENCE AT 52 WEEKS WITH LINACLOTIDE FOR IRRITABLE BOWEL SYNDROME WITH CONSTIPATION**

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Introduction: Linaclootide, a guanylate cyclase C agonist, has been shown in clinical trials to relieve constipation and improve abdominal pain and discomfort in patients with irritable bowel syndrome with constipation (IBS-C), but there are limited UK-specific real-world data to support this.

Aims & Methods: A multicentre, observational, prospective 52-week study was conducted in eight specialist hospitals in England and Scotland. The primary objective was to describe the change in IBS-Score Severity Scale (IBS-SSS) score from baseline at 52 weeks after linaclotide initiation. Consenting patients (n=202) were recruited; 185 (92%) were female. At baseline, median age was 44.9 (range 18–77) years; 84 (42%) reported concomitant laxative use.

Results: 202 patients were recruited; 185 (92%) were female. At baseline, median age was 44.9 (range 18–77) years; 84 (42%) reported concomitant laxative use.

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>≤ 150</td>
<td>35 (17)</td>
<td>17 (8.4)</td>
</tr>
<tr>
<td>150 &lt; ≤ 200</td>
<td>107 (53)</td>
<td>53 (26.3)</td>
</tr>
<tr>
<td>200 &lt; ≤ 250</td>
<td>49 (24)</td>
<td>24 (11.8)</td>
</tr>
<tr>
<td>&gt; 250</td>
<td>13 (6.5)</td>
<td>6.5 (3.2)</td>
</tr>
</tbody>
</table>

Conclusion: Linaclootide was associated with a significant improvement in IBS-SSS score at 52 weeks and was reasonably well tolerated. These results provide valuable insights into the longer-term outcomes of linaclootide treatment in patients with IBS-C in real-world clinical practice.

Disclosure of Interest: A.V. Emmanuel: Served on advisory boards for Allergan, Almirall, Shire, Takeda.

Y. Yiannakou: Educational grant and speaker fees from allergan.

S. McLaren-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 FAEAL MICROBIOTA TRANSPLANTATION ON GUT BACTERIAL FERMENTATION PRODUCTS IN PATIENTS WITH IRITABLE BOWEL SYM DROME**

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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, assessing the following domains: nausea, bloating, abdominal pain, diarrhea, constipation and anorexia.

Results: Before FMT, concentrations of several SCFAs were significantly lower in IBS patients compared to donors (Table 1). After FMT, concentrations of SCFAs increased within the first 3 weeks, and the increment lasted up to 28 weeks (Table 1).

No change 1 1
< 50 10 13
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
P1141 HEALTHCARE RESOURCE USE IN PATIENTS WITH IRRITABLE BOWEL SYNDROME WITH DIARRHOEA BASED ON A SURVEY OF PHYSICIANS IN THE UNITED KINGDOM

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Introduction: Irritable bowel syndrome with diarrhoea (IBS-D) is a chronic gastrointestinal disorder associated with significantly increased healthcare resource use (HCRU) and a substantial economic burden. In clinical practice, adequate relief (AR) of symptoms is an important measure of treatment effectiveness. However, the difference in HCRU related to IBS-D between patients with AR and those with inadequate relief (IR) has not yet been assessed.

Aims & Methods: This objective of this study was to quantify the HCRU in patients with AR of IBS-D symptoms compared to patients with IR. An online survey assessing HCRU was distributed to general practitioners (GPs) recruited from market research panels in the UK in August 2016. GPs opted-in to complete the survey via an email link and were screened before being invited to complete the main survey. Screening criteria included having seen patients with a chronic gastrointestinal condition in the past three months, having seen patients with IBS-D in the past 3 months and having decided on what treatments were prescribed for patients with IBS. The survey was a 15-minute web-based survey, including 12 questions collecting information on the use of medical services and procedures amongst patients with IBS-D for the first year following diagnosis and for subsequent years. Respondents were required to answer the survey considering patients who had AR of IBS-D symptoms and those who did not (IR), based on the respondents’ own assessments. Statistical analyses included t-tests for two independent samples comparing mean scores for those with IR vs those with AR during the first year after diagnosis at a 5% risk level, with p < 0.05 denoting significance.

Results: The online survey was completed by 50 GPs, with responses from 46 GPs included in this analysis (four responses were excluded due to data quality reasons). The reported total number of medical visits was significantly higher for patients with IR vs patients with AR during the first year after diagnosis (mean 10.11 vs 5.20; p < 0.001), with similar results seen for subsequent years (mean 8.20 vs 4.38). Significantly higher numbers of GP office visits, outpatient visits and emergency room visits were reported for patients with IR, with the greatest difference seen for GP office visits (2.37 more visits/year on average; incremental 4-week increase of 0.182; p = 0.003) [Table]. Similarly, the total reported mean number of procedures was significantly higher for patients with IR vs patients with AR (8.11 vs 4.52; p = 0.046), with number of colonoscopies having the greatest difference between the two groups (2.17 vs 0.91; 1.26 more procedures/year on average; incremental 4-week increase of 0.097; p = 0.008). Similar results were seen for the subsequent years after diagnosis, with patients with IR having more medical procedures compared to patients with AR (4.08 vs 2.56).

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 1: Concentrations (mmol/kg) of short-chain fatty acids (SCFAs) in faecal samples collected from donors and patients with irritable bowel syndrome (IBS) before and after faecal microbiota transplantation (FMT).

<table>
<thead>
<tr>
<th>SCFAs</th>
<th>Donor, (n = 13)</th>
<th>Patients before FMT, (n = 9)</th>
<th>Week 1, (n = 12)</th>
<th>Week 3, (n = 10)</th>
<th>Week 12, (n = 13)</th>
<th>Week 20/28, (n = 12)</th>
<th>p</th>
<th>p</th>
<th>***p</th>
<th>****p</th>
<th>*****p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetic acid</td>
<td>33.9 ± 2.8</td>
<td>23.6 ± 6</td>
<td>31.1 ± 4.9</td>
<td>35.5 ± 3.9</td>
<td>25.8 ± 4.4</td>
<td>28.5 ± 2.4</td>
<td>0.77</td>
<td>&gt;0.9</td>
<td>0.3</td>
<td>&gt;0.9</td>
<td></td>
</tr>
<tr>
<td>Propionic acid</td>
<td>9.5 ± 1</td>
<td>6.2 ± 1.6</td>
<td>7.9 ± 1.5</td>
<td>8.2 ± 1.5</td>
<td>7.3 ± 1.9</td>
<td>8.1 ± 1.2</td>
<td>0.18</td>
<td>&gt;0.9</td>
<td>0.2</td>
<td>&gt;0.9</td>
<td></td>
</tr>
<tr>
<td>n-butyric acid</td>
<td>10.4 ± 1.6</td>
<td>4.7 ± 1.2</td>
<td>7.7 ± 1.8</td>
<td>8.4 ± 1.5</td>
<td>5.8 ± 1.4</td>
<td>5.96 ± 1.11</td>
<td>0.049</td>
<td>&gt;0.9</td>
<td>0.095</td>
<td>0.25</td>
<td></td>
</tr>
<tr>
<td>Iso-butyric acid</td>
<td>1.27 ± 0.17</td>
<td>0.67 ± 0.11</td>
<td>0.77 ± 0.12</td>
<td>0.92 ± 0.13</td>
<td>0.7 ± 0.12</td>
<td>0.98 ± 0.2</td>
<td>0.03</td>
<td>0.089</td>
<td>&gt;0.9</td>
<td>0.025</td>
<td>0.96</td>
</tr>
<tr>
<td>n-valeric acid</td>
<td>1.4 ± 0.18</td>
<td>0.68 ± 0.005</td>
<td>1.05 ± 0.2</td>
<td>1.06 ± 0.15</td>
<td>0.77 ± 0.13</td>
<td>0.93 ± 0.093</td>
<td>0.013</td>
<td>&gt;0.9</td>
<td>0.042</td>
<td>0.47</td>
<td></td>
</tr>
<tr>
<td>Iso-valeric acid</td>
<td>1.6 ± 0.2</td>
<td>0.8 ± 0.2</td>
<td>0.9 ± 0.15</td>
<td>1.16 ± 0.2</td>
<td>0.8 ± 0.14</td>
<td>1.27 ± 0.2</td>
<td>0.014</td>
<td>&gt;0.9</td>
<td>0.011</td>
<td>&gt;0.9</td>
<td></td>
</tr>
<tr>
<td>n-caproic acid</td>
<td>0.8 ± 0.02</td>
<td>0.3 ± 0.1</td>
<td>0.5 ± 0.2</td>
<td>0.5 ± 0.1</td>
<td>0.2 ± 0.08</td>
<td>0.3 ± 0.09</td>
<td>0.02</td>
<td>&gt;0.9</td>
<td>0.059</td>
<td>0.17</td>
<td></td>
</tr>
<tr>
<td>Iso-caproic acid</td>
<td>0.01 ± 0.005</td>
<td>0.02 ± 0.002</td>
<td>0.008 ± 0.006</td>
<td>0.013 ± 0.01</td>
<td>0.01 ± 0.005</td>
<td>0 ± 0</td>
<td>&gt;0.9</td>
<td>&gt;0.9</td>
<td>&gt;0.9</td>
<td>&gt;0.9</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>0.15</td>
<td>0.6</td>
<td></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.

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.


References
P1143 LINACLOTIDE ACCELERATES COLONIC TRANSIT AND IMPROVES COLONIC CONTRACTILITY IN IBS WITH CONSTIPATION

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Introduction: Linaclootide, a guanylate cyclase-C agonist, stimulates intestinal fluid secretion and decreases visceral hypersensitivity and is licensed for use in irritable bowel syndrome with constipation (IBS-C). There is a relative paucity of data comparing the effect on gastrointestinal (GI) motility.

Aims & Methods: We aimed to compare the effect of linaclootide on segmental and pan-enteric motility in IBS-C. 14 patients with Rome III defined IBS-C (3 male, mean age 37 years, range 20–64) underwent a wireless motility capsule (WMC) study. Baseline and post treatment data were compared using change from baseline as the primary outcome.

Results: Changes in GI motility are shown in Table 1. Linaclootide improved VDVAS-I and VDVAS-U (130.7±20.8 vs. 106.5±33, p = 0.03 and 113±22 vs. 85.8±33, p = 0.01) and quality of life (58.4±21.2 vs. 68±17.6, p = 0.02).

Conclusions: Linaclootide improved VDVAS-I and VDVAS-U and quality of life. Due to the small number of patients, these results require confirmation in larger studies.

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 IRITRIBULE BOWEL SYMORDM OR FUNCTIONAL DIARRHEA

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Introduction: Rifaximin is used as prophylaxis against endoscopy related infections. However, the role of rifaximin in patients with IBS-D or Functional Diarrhea (FD) is undefined. The role of rifaximin in reducing bile acid malabsorption (SeHCAT) has not been described. We aimed to assess the effect of rifaximin in patients with IBS-D or FD.

Aims & Methods: a) To determine if SeHCAT test result improves in patients with IBS-D or FD.

Results: Forty-one patients were included. BAD was present in 23 patients (56%). No clinical differences were found between BAD and non-BAD patients at study entry. Rifaximin resulted in a significant improvement in the number of daily stools (Δ = 1.5; P < 0.01), daily watery stools (Δ = 2.1; P < 0.01), Bristol scale (Δ = 1.1; P < 0.01), abdominal pain (Δ = 0.5; P < 0.01), distension (Δ = 0.3; P < 0.01), urgency (Δ = 0.7; P < 0.01) and in the IBS-SS (Δ = 78; 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).

Conclusions: Rifaximin treatment confers significant clinical improvement irrespective of the presence of BAD. Rifaximin treatment does not affect SeHCAT test.

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

References

**Aims & Methods:** To evaluate IR in patients treated with ELX in a post hoc analysis from two randomised, double-blind, placebo-controlled Phase 3 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 100 mg) or PBO. Efficacy was evaluated through Week 26. For evaluation of AR, patients were asked “In the last 7 days, have you had adequate [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 had inadequate relief (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 41.8%, respectively) and at 26 weeks (51.5% [p < 0.001] and 49.0% [p = 0.004] 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 100mg</td>
<td>ELX 100mg</td>
</tr>
<tr>
<td>ELX 75mg</td>
<td>ELX 75mg</td>
</tr>
<tr>
<td>BID</td>
<td>BID</td>
</tr>
<tr>
<td>Number of consecutive weeks with inadequate relief</td>
<td></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 increase 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.

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**P1164**

**CONSECUTIVE WEEKS OF INADEQUATE RELIEF: A POST HOC ANALYSIS OF THE POOLED ELUXADOLINE PHASE 3 STUDIES IN PATIENTS WITH IRRITABLE BOWEL SYNDROME**

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**Introduction:** Adequate relief (AR) of irritable bowel syndrome (IBS) symptoms is a commonly used global outcome measure to assess treatment benefit in both clinical trials and real-life clinical practice. Conversely, inadequate relief (IR) is considered an important driver for patients to use healthcare resources such as general practitioner or gastroenterologist consultations. Eluxadoline (ELX) is a mixed μ-opioid receptor (OR) and κ-OR agonist and δ-OR antagonist approved for the treatment of IBS with diarrhoea (IBS-D) in the US and Europe.

**Aims & Methods:** Evaluate IR in patients treated with ELX in a post hoc analysis from two randomised, double-blind, placebo-controlled Phase 3 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 100 mg) or PBO. Efficacy was evaluated through Week 26. For evaluation of AR, patients were asked “In the last 7 days, have you had adequate [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 had inadequate relief (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 41.8%, respectively) and at 26 weeks (51.5% [p < 0.001] and 49.0% [p = 0.004] 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>
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<tr>
<td>ELX 100mg</td>
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<td>ELX 75mg</td>
<td>ELX 75mg</td>
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<td>BID</td>
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<td>Number of consecutive weeks with inadequate relief</td>
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**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 increase 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
receptor antagonist, is approved for the treatment of IBS-D in adults, based on two large, Phase 3 clinical trials when evaluated in the primary composite response endpoint of simultaneous improvement in abdominal pain and stool consistency over 26 weeks.

**Aims & Methods:** These post hoc analyses of two double-blind, placebo-controlled, Phase 3 clinical trials of eluxadoline (IBS-3001 and IBS-3002) aimed to assess responder and non-responder rates over 4-week intervals for eluxadoline vs placebo, and the proportion of responders/non-responders who continued or discontinued treatment. Patients meeting Rome III criteria for IBS-D were randomly assigned to twice-daily treatment with eluxadoline (75 or 100 mg) or placebo. Patients rated IBS symptoms daily, including worst abdominal pain (WAP; 0–10 scale, with 0 = no pain and 10 = worst imaginable pain), stool consistency (Bristol Stool Form Scale [BSFS]), and Global Symptom Score (GSS; 0–4 scale, where 0 = no symptoms and 4 = very severe symptoms). A responder for a 4-week interval was defined as a patient with a simultaneous daily improvement ≥30% in WAP score vs baseline and BSFS score <5 with ≥50% of days demonstrating a response and a minimum of 20 days of diary data. The intention-to-treat (ITT) analysis set included all patients randomised to a treatment group. For these analyses, patients with baseline GSS ≥3 (severe or very severe symptoms) and self-reported inadequate symptom control with loperamide were classified as having severe IBS-D.

**Results:** Of the 2423 patients in the pooled Phase 3 ITT population, 249 were classified as having severe IBS-D. Over Weeks 1–4, 26.8% and 30.3% of patients with severe IBS-D were responders with eluxadoline 75 and 100 mg, respectively, vs 8.1% of patients on placebo (Table). Higher proportions of patients were responders with eluxadoline vs placebo over each subsequent 4-week interval, with response rates observed at Weeks 1–4 consistently maintained across all subsequent 4-week time intervals. With both eluxadoline and placebo, proportions of responders discontinuing were <2% across each 4-week interval, and discontinuation rates in non-responders were higher than in responders (Table). Similar findings were observed in the ITT analysis set: over Weeks 1–4, 22.7% and 24.6% of patients were responders with eluxadoline 75 and 100 mg, respectively, vs 12.5% of patients on placebo. Over Weeks 21–24, 28.1% and 30.2% of patients were responders with eluxadoline 75 and 100 mg, respectively, vs 20.1% on placebo. Discontinuation rates among responders with both eluxadoline and placebo remained <1% across all 4-week time intervals.

<table>
<thead>
<tr>
<th></th>
<th>Placebo (n = 74)</th>
<th>Eluxadoline 75 mg (n = 86)</th>
<th>Eluxadoline 100 mg (n = 89)</th>
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<tbody>
<tr>
<td></td>
<td>Responder, %</td>
<td>Non-responder, %</td>
<td>Responder, %</td>
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<td>Weeks</td>
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<td>1–4</td>
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<td>92.9</td>
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<td>5–8</td>
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<td>61.3</td>
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<td>17–20</td>
<td>30.8</td>
<td>69.2</td>
<td>51.2</td>
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<tr>
<td>21–24</td>
<td>35.6</td>
<td>64.4</td>
<td>51.1</td>
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</table>

C, patients continuing on treatment; DC, patients discontinuing from treatment.

**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 no post hoc evidence 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 (verbal descriptor scale on pain and 10

**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/whole gut transit times and ileal/mucosal motility, relative to baseline between the low FODMAP and m-NICE diets. Both the low FODMAP and NICE diets improved VDVAS-I and VDVAS-U (−18 ± 17 vs. −9 ± 14 and −16 ± 16 vs. −9 ± 14, respectively). Similarly, both reduced somatic symptoms (−1 ± 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).

**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/colic contractility or segmental/whole 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:

**P1148 THE LOW FODMAP DIET REDUCES CAECAI FERMENTATION COMPARED TO TRADITIONAL DIETARY ADVICE: A RANDOMISED CONTROLLED TRIAL**

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2Functional Gut Clinic, London/United Kingdom

**Introduction:** Diet 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 (verbal descriptor scale on pain and 10

**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.

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**Disclosure of Interest:** A.D. Farmer: Speaker Bureau and Advisory Boards for Allergan

All other authors have declared no conflicts of interest.

References:
associated with triggering gastrointestinal symptoms in irritable bowel syndrome (IBS).

**Aims & Methods:** This study aimed to assess whether oral α-galactosidase co-ingestion with foods high in GOS and low in other FODMAPs would reduce symptoms and breath hydrogen production in a double-blind, placebo-controlled trial. 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 frucitol were randomized to either placebo or enzyme (α-galactosidase) and followed for 7 days. Participants were randomly assigned to full-dose enzyme (300 GALU α-galacto-sidase) and placebo (150 GALU α-galactosidase) and placebo (glucose). Following a 3-day low-FODMAP run-in period, participants consumed pretreatment 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.

**Results:** Thirty-one participants with IBS (20 IBS-D, 4 IBS-C, 7 IBS-M) completed the study. The addition of high GOS foods resulted in a significant increase in overall symptoms (median [IQR] 13.0 [5.5–22.0] to 35.5 [12.8–54.0] mm; p = 0.000, Wilcoxon signed-rank test). No significant increase in overall symptoms was seen with the full-dose enzyme (14.0 [3.5–24.0] vs 14.7 [2.3–32.7] mm; p = 0.422). Ten participants exhibited GOS-sensitivity (>10 mm increase in 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] vs 6.5 [2.0–15.8]; p = 0.017). Breath hydrogen production was minimal with no differences seen between placebo and 5248 ± SD 3339 ppm (12 h) and full-dose (5585.5 ± 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 IBS-susceptible individuals. However, the office-based point-of-care test 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 clinical practice. A prospective case-control study involving high GOS foods with IBS as an adjacent therapy to the low-FODMAP diet.

**Disclosure of Interest:** J.S. Barrett: The Department of Gastroenterology financially benefited from the sales of a digital application and booklets on the low-FODMAP diet. P.R. Gibson: The Department of Gastroenterology financially benefits from the sales of a digital application and booklets on the low-FODMAP diet. P Gibson has published an educational/recipe book on the low-FODMAP diet. J.G. Muir: The Department of Gastroenterology financially benefits from the sales of a digital application and booklets on the low-FODMAP diet. All other authors have declared no conflicts of interest.

**PI115 PREVALENCE OF ANAL SQUAMOUS INTRAEPITHELIAL LESIONS IN LIVER TRANSPLANT RECIPIENTS**

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2Pancreatic and Liver Transplant Unit Centro Hospitalar Porto, Porto/Portugal
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**Introduction:** Anal squamous intraepithelial lesions are pre-cancerous lesions of anal squamous cell carcinoma and are largely related to human papillomavirus infection. Immunosuppressed patients have a higher prevalence of these lesions. There are some studies in renal transplant recipients, but no information exists regarding prevalence in liver transplantation.

**Aims & Methods:** Our aim was to evaluate the prevalence of anal squamous intraepithelial lesions in liver transplant recipients compared with healthy subjects. We conducted a retrospective case-control study involving liver transplant recipients that were compared with a healthy control group. All patients were admitted to the anal cytology. Those with abnormal cytological results, namely high-grade squamous intraepithelial lesions (HSIL), atypical squamous cells which cannot exclude high-grade squamous intraepithelial lesions (ASC-H), low-grade squamous intraepithelial lesions (LSIL) and atypical squamous cells of undefined significance (ASC-US), were submitted to high-resolution anoscopy with biopsies of any suspicious lesion.

**Results:** A total of 59 liver transplant recipients and 57 controls underwent anal cytology. In the liver transplant group, 37 (65%) were men, with a mean age of 54 ± 10 years. The most common indication for transplantation was alcoholic cirrhosis in 26 patients (44%), the majority of the patients were only on tacrolimus (n = 65, 39%), and had been transplanted a mean of 8 ± 5 years ago. In the healthy control group, 36 (65%) were men, with a mean age 59 ± 11 years. Regarding anal cytology, 10 (17%) of liver transplant recipients had abnormal results, 7 patients had ASC-US, 1 patient ASC-H and 2 patients HSIL. In the control group only 1 patient (2%) had an ASC-US result (p = 0.005). Anal squamous intraepithelial lesions were confirmed in 7/10 of liver transplant patients and 0/1 in control group (p = 0.013) by high-resolution anoscopy with biopsies. Smoking was the only risk factor for abnormal anal cytology (OR = 5.9, 95% CI = 1.224–28.121, p = 0.057).

**Conclusion:** Liver transplant patients have a higher risk of anal squamous intraepithelial lesions and screening should be considered especially in smokers.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
TUESDAY, OCTOBER 31, 2017 09:00 - 17:00

OESOPHAGEAL, GASTRIC AND DUODENAL DISORDERS II - HALL 7

P1152 IMMUNOHISTOCHEMICAL EXPRESSION OF DIAMINE OXIDASE IN THE UPPER GASTROINTESTINAL TRACT OF PATIENTS WITH GASTROINTESTINALLY MEDICATED FOOD ALLERGY

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Introduction: Gastrointestinal mediated food allergy (GMA) is a common disease that has increased recently. 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 gastrointestinal food allergy. The control group (CG) included 17 patients with neither food allergy nor food intolerance. Tissue samples from esophagus, cardia (subdivided in esophageal and gastric region), corpus, antrum and duodenum already obtained during endoscopy were immunohistochemically stained for DAO. The expression of DAO was semi-quantitatively analysed with the following scale based on the staining intensity of DAO (SI-DAO): 0 = none, 1 = low, 2 = medium, 3 = high intensity. The localisation of DAO was also examined vertically from the epithelium to the submucosa in all examined tissues. The analyses were performed twice by the same examiner in two separate points of time. Furthermore, the tissue samples were immunohistochemically stained for MBP and CD117 in order to count the number of eosinophils and mast cells respectively. Two measurements were performed inside an area of 100μm² in the lamina propria (LP); one in the subepithelial superficial lamina propria (SLP) and one in the deeper lamina propria (DLP). The average of these two measurements constituted the number of these cells for each tissue.

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 vs. 1.1; p < 0.04) only in duodenum, in the GMA group the SI-DAO in the esophageal region of the cardia and in corpus was significantly higher than in duodenum (see Table 1). The strongest DAO-staining was detected in the subepithelial lamina propria (SLP) of all tissues. A strong inverse correlation of the SI-DAO to the number of eosinophils across the upper GIT was observed only 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).

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 assessment of DAO staining for DAO only in duodenum could serve as an additional diagnostic parameter for detecting patients with GMA and possibly other histamine-mediated diseases. The above mentioned distribution pattern of DAO strengthens the theory that DAO acts extracellularly and is responsible for the elimination of the transepithelially absorbed exogenous histamine as well as of the endogenous histamine, as its highest staining intensity is found at the SLP throughout the upper GIT.

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

Reference

P1153 PREVALENCE OF ATROPHIC GASTRITIS IN GENERAL POPULATION: A GASTROPanel®- BASED STUDY, COMPARED WITH OLGA HISTOLOGICAL CLASSIFICATION

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Introduction: Chronic atrophic gastritis (CAG) is claimed to be a pre-cancerous condition for gastric cancer, being serological markers like serum pepsinogens and gastrin-17 (G-17) proposed as non-invasive useful tools. OLGA histological classification has been proposed as of prognostic value. Aim of the study was to assess, by using serological markers, the prevalence of CAG in general population and to correlate with the results with OLGA classification.

Aims & Methods: One thousand and nine hundred consecutive patients (M = 915; mean age = 53.5, range = 27–82) showing upper-gastrointestinalal (GI) troubles entered the study. Exclusion criteria were: previous history of upper-GI neoplasms, previous surgery, concomitant Proton Pumps Inhibitor (PPI) therapy. All patients underwent a blood sample for GASTROPanel® (BioHit Oy, Finland) based on: pepsinogen I (PGI), pepsinogen II (PGII), gastrin-17 (G-17) and IgG against Helicobacter pylori. (Hp-IgG). The normal values are: PGI: 30–120 μg/L, PGII: 2–15 μg/L, G-17: 1–9 pmol/L, Hp-IgG:<8 (IU/mL) as well as high levels of G-17 (G-17>15 pmol/L) were considered diagnostic for CAG. Eighty-three patients with serology suggestive for CAG underwent upper endoscopy and histology according with OLGA staging. The relationship between PG-I, PG-II and the different OLGA stages was statistically analyzed.

Results: Eighty-three (M = 44, mean age = 61, range = 49–82) out of 1900 investigated patients showed CAG (4%). Of the 83 CAG patients, 19.2% was classified as OLGA 2, 56.6% as OLGA 3 and 24.2% as OLGA 4. The relationship between PG-I levels and OLGA stage shows a statistically significant difference between the stages OLGA 0, 1, 2 and the stages 3 and 4 (PG-I mean values: OLGA 0: 72.45 μg/L, OLGA 1: 85.95 μg/L, OLGA 2: 47.38 μg/L, OLGA 3: 16.00 μg/L, OLGA 4: 10.10 μg/L; p<0.001). The relationship between OLGA stages and G-17 serum levels shows a statistically significant difference (G-17<15 pmol/L mean values: OLGA 0: 4.6 pmol/L, OLGA 1: 5.2 pmol/L, OLGA 2: 2.65 pmol/L, OLGA 3: 44.6 pmol/L, OLGA 4: 38.5 pmol/L; p < 0.01 by comparing OLGA 0–1 against OLGA 2–4) (p < 0.02).

Conclusion: The prevalence of CAG assessed by serological markers is low in the studied population (4%). The majority of patients (56.6%) were classified in the OLGA 2 stage. Both PG-I and G-17 showed a statistical significant relationship with the more severe degrees of CAG.

Disclosure of Interest: All authors have declared no conflicts of interest.
L-cysteine has been proposed as adjuvant therapy in CAG; the amino acid binds covalently to acetaldehyde (a Group I human carcinogen), removing it from the stomach. The aim of present study was to use L-cysteine to improve the symptoms in patients with diagnosis of CAG.

Aims & Methods: One hundred fourteen consecutive patients (M=43, mean age 64.9 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®, Boehr, Ohy, Finland) entered the study. Forty-one patients (11 M, mean age 49.4 ± 21 years, range 27–71 years) were treated with L-cysteine (100 mg 3 times daily, with meals) for 24 months (Group 1). As a control group we enrolled 73 CAG patients (M=32, mean age 55.3 ± 11 years, range: 32–77 years) followed up for 24 months without any related therapy (Group 2 - patients with gastritis, early satiation, nausea, bloating) were recorded at baseline and after 3, 6, 12, 24 months, according to severity score (0–3 for each symptom, min. 0 = no symptoms; max. 12 = full symptomatology).

Results: The initial symptomatic score results as follows, lasting the 24 months follow-up. Group 1: baseline 4.9; 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.

P1155 PROGNOSTIC SIGNIFICANCE OF SERUM INFLAMMATORY MARKERS IN GASTRIC CANCER
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Introduction: Despite undergoing potentially curative resection a significant proportion of patients develop cancer recurrence. Several cellular and humoral components of systemic inflammatory response have been reported and associated with poor outcome. To date, no study has comprehensively examined the relationship between readily available markers of inflammation and survival in gastric cancer.

Aims & Methods: Patients undergoing surgery for stage I-III gastric cancer between 2004-2016 at a regional unit were identified. Measurements of various systemic inflammation markers were recorded pre-operatively. Pathological factors were recorded from reports issued at the time of resection. The modified Glasgow Prognostic Score (based on CRP and Albumin), Neutrophil-Lymphocyte Ratio, Platelet-Lymphocyte Ratio and Neutrophil-Platelet ratio were calculated. Pathological variables including TNM stage, differentiation and vascular invasion were also recorded. Survival endpoints of overall survival (OS) and disease-free survival (DFS) were used.

Results: 331 patients were identified and 291 patients underwent potentially curative resection for gastric cancer. On univariable DFS analysis, female gender, proximal location, T-stage, N-stage, TNM, vascular invasion, poor differentiation, lymph node ratio, R1 status, platelet count and mGPS were significantly associated with poor survival. On multivariable DFS analysis, mGPS (HR 2.51, 95% CI 1.35–4.65; p < 0.01) with 10 codes and implementation of the upper GI endoscopy. For each test-case, the odds ratios of peptic ulcers were 1.45, 1.31, 1.50, 1.53 and 1.62 for aspirin, proton pump inhibitors, omeprazole, omeprazole + hydrochloride, respectively. The odds ratios of all the upper GI mucosal injuries were the highest in the patients with anticoagulants, and the ratios were relatively low in those with NSAIDs and COX-2 selective inhibitors. The odds ratios tended to increase with the number of prescribed

Conclusion: Rebleeding in UGB is associated with increased in-hospital mortality; nevertheless, it is not related with delayed 6-months mortality, hemorrhagic and cardiovascular events. High creatinine and low albumin levels were independent risk factors for rebleeding, suggesting a potential predictive role of these parameters. AIMS65, Rockall and Blatchford were predictors for in-hospital mortality; nevertheless, it is not related with delayed 6-months mortality, hemorrhagic and cardiovascular events. The UGB risk scores AIMS 65 and Rockall showed poor predictive ability for acute rebleeding in the rebleeding patients’ group and was similar for Blatchford score (based on AURG).

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

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 (APPROMINATELY 3.7 MILLION 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 risk upper GI mucosal injuries in subjects prescribed NSAIDs and anti-thrombotic drugs using the large organized database of claims in Japan.

Aims & Methods: The medical claims database developed by Japanese Medical Data Center (JMDJC) Co., Ltd. was selected as data source in this present retrospective observational study. The JMDJC 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 anticoagulants.

Results: The odds ratios of peptic ulcers were 1.45, 1.31, 1.50, 1.53 and 1.62 for NSAIDs, COX-2 selective inhibitors, low-dose aspirin, antplatelet drugs, and anticoagulants, respectively. In the medical claims data prescribed the incidence 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 group with GI bleeding and GERD (p < 0.0001 in each).
medicines (1 agent <2 agents <3 agents, peptic ulcer: 1.38 < 2.49 < 4.52, upper GI haemorrhage: 10.74 < 3.55 < 7.77, GERD: 1.61 < 2.96 < 5.88, respectively). The upper GI mucosal injuries were exacerbated in complication of lifestyle-related diseases, including hyperlipidaemia and diabetes mellitus.

Conclusion: Prescribing NSAIDs and anti-thrombotic medicines was associated with increased risks of developing upper GI injury. The present case-control 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 patients who were proprosed to undergo LAAO to debate the reversibility profile of each lesion in an organ by organ and lesion by lesion approach to stratify the risk of bleeding individually. We systematically collected data from both prospective and retrospective studies from pubmed in order to extract rebleeding risk by etiology. The reversibility profile was defined by type of treatment needed to cure the lesion. Low reversibility (LR) profile was defined as a need for heavy treatment (surgery, radiotherapy, embolisation) to cure the lesion or as diffuse lesions.

Results: The most frequent reported causes of bleeding are peptic gastroduodenal ulcer (60%) for upper GI, diverticulosis (40%), colitis (20%) and anorectal diseases (20%) for lower GI and angiodyplasia (23%) for the midgut, these latter being responsible for 5% of all GI bleeding causes. The rate of bleeding recurrence under OAC treatment is 5-7% for stomach, 20-55% for duodenal lesions, 74-77% vs. upper GI (23-35%). 31.8% were related to aspirin/non-steroidal anti-inflammatory drug use. 48-52% had high risk (Forrest 1a-2b) lesions, of whom 38/48 (79.2%) received dual endoscopic therapy and 6/48 (12.5%) received adrenaline monotherapy. 10.85% 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 3 (25.0%) underwent surgery. Aspirin resumption was observed in 4/20 (20.0%) after haemostasis for PUD, whilst rebleed planning was documented on the endoscopy report in 33.0%. Regarding H. pylori, 51% underwent assessment with endoscopy, 10 (76.9%) had positive results 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 anemia at discharge and at 6 months were 83.5% and 62.9% respectively, with iron therapy initiated in 12.1%. Overall, our 30-day mortality rate was 12.1%.

Conclusion: In this single-centre study, the management of PUD could be improved in multiple areas in line with international guidelines. Audits in other centres are required to assure the management of PUD. Interestingly, rates of anemia at discharge and on follow-up are high. Such patients may benefit from iron replacement at discharge.

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

References


P1159 AN AUDIT INTO THE MANAGEMENT OF BLEEDING PEPTIC ULCER DISEASE

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Introduction: Peptic ulcer disease (PUD) accounts for 25–56% of acute upper gastrointestinal bleeding (AUGIB) and is associated with high mortality.

Aims & Methods: In line with international guidelines, we aimed to audit our practice of bleeding PUD at a district general hospital within the West Midlands, UK. We retrospectively identified all patients with AUGIB who had inpatient endoscopic confirmation of PUD between November 2012–2014. We scrutinised endoscopy and case records to assess management related to PUD, in addition to follow-up records with the general practitioner.

Results: We identified 91 patients (median age 78.4, 65.9% male), of whom 65.7% were admitted with AUGIB, whereas 36.3% developed bleeding during their hospital stay. The majority of bleeding was duodenal (74.7%) vs. gastric (25.3%). 31.8% were related to aspirin/non-steroidal anti-inflammatory drug use. 48 (52.7%) had high risk (Forrest 1a-2b) lesions, of whom 38/48 (79.2%) received dual endoscopic therapy and 6/48 (12.5%) received adrenaline monotherapy. 10.85% 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 3 (25.0%) underwent surgery. Aspirin resumption was observed in 4/20 (20.0%) after haemostasis for PUD, whilst rebleed planning was documented on the endoscopy report in 33.0%. Regarding H. pylori, 51% underwent assessment with endoscopy, 10 (76.9%) had positive results 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 anemia at discharge and at 6 months were 83.5% and 62.9% respectively, with iron therapy initiated in 12.1%. Overall, our 30-day mortality rate was 12.1%.

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

References

P1161 COMPARISON OF RISK-SCORING SYSTEMS IN PREDICTING NEEDS OF INTERVENTION AND CLINICAL OUTCOMES OF UPPER GASTROINTESTINAL BLEEDING

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Introduction: There are several risk-scoring systems available to assist the management of upper gastrointestinal bleeding (UGIB). The aim of this study is to compare the performance of pre-endoscopy (pre-RS), post-endoscopy Rockall score (post-RS), GBS and AIMS65 scores in predicting the need for intervention in patients admitted to hospital for UGIB.

Aims & Methods: Data related to the three scoring systems were collected prospectively in consecutive patients who were admitted with acute UGIB to the Royal Adelaide Hospital over 24 months. The performance of the three scoring systems was evaluated using receiver operating characteristic (ROC) curves, in predicting the outcomes was assessed for the need for endotherapy, rebleeding risk, transfusion requirement, survival and intervention and death. All patients received high dose acid suppression therapy.

Results: Of the 280 patients (93M; 66.4 ± 0.6yrs) who presented with UGIB, 622 (402M; 65.7 ± 0.6yrs) underwent endoscopy with 123 (38%) required endoscopic therapy, 42 (13%) repeated endo-therapy and 12 (3.7%) surgery for haemostasis. 155 (89M; 68.8 ± 0.6yrs) patients were treated conservatively due to medically unwell status (n = 50), known diagnosis (n = 25), known diagnosis but contraindicated for intervention (n = 17), and suspected MWT (n = 28). Death occurred in 33 (8%) patients, of which 10 (2.4%) were related to bleeding. Patients who required endoscopic or surgical intervention had higher GBS, pre-ERS, post-ERS and AIMS65 scores (P < 0.001). On ROC analyses, GBS and post-RS were superior to pre-RS and AIMS65 in predicting the need for (1) endotherapy (AUC: 0.75 and 0.78 vs. 0.65 and 0.59, P < 0.01), (2) repeated endoscopy due to re-bleed (AUC: 0.66 and 0.65 vs. 0.56 and 0.60, P = 0.03), and (3) blood transfusion (AUC: 0.83 vs. 0.72 and 0.70, P < 0.01). The scoring systems performed equally well in predicting the need for surgery (GBS vs. Rockall vs. GBS AUC: 0.72 vs. 0.67 vs. 0.71) and death (AUC: 0.75 ± 0.72 vs. 0.69).

Conclusion: Although GBS performs equally well for predicting need of surgery and death, it is superior to both Rockall and AIMS65 scores in predicting the need for endotherapy, repeated endoscopy, and blood transfusion in patients with acute UGIB. These findings suggest that GBS is the best performed risk scoring system in the evaluation of patients with UGIB.

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

P1162 STEROID ADMINISTRATION IS AN INDEPENDENT RISK FACTOR FOR REBLEEDING IN HEMORRHAGIC DUODENAL ULcer WITH A DOSE-RESPONSE RELATION

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Introduction: Hemorrhagic gastroduodenal ulcer is commonly seen in routine clinical practice, and there have been many studies investigating risk factors for rebleeding. However, few studies have evaluated hemorrhagic gastric ulcers (HGU) and hemorrhagic duodenal ulcer (HDU) separately. Furthermore, the relation between steroid administration and rebleeding in hemorrhagic gastroduodenal ulcer (HGU) and hemorrhagic duodenal ulcer (HDU) remains unclear. Aims & Methods: The aim of this study was to clarify the difference of rebleeding between HGU and HDU, and associated factors for rebleeding of HGU and HDU. Between March 2005 and September 2016, 176 consecutive patients with hemorrhagic gastroduodenal ulcer (106 with HGU and 70 with HDU), who underwent endoscopic hemostasis, were enrolled in this study. Regular dose proton pump inhibitor was administered to all patients after the diagnosis of hemorrhagic gastroduodenal ulcers. Rebleeding was defined as hematemesis or melena with ulcers confirmed by endoscopy or a decrease in the hemoglobin level >2 g/dl in the presence of endoscopically proven ulcers. First, we compared the rebleeding rate between HGU and HDU. Subsequently, associated factors for rebleeding of HGU and HDU were calculated by logistic regression analysis individually. The estimated factors were age (<65 vs ≥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, hyper-tension, diabetes mellitus, and hyperlipidemia), number of ulcers (multiple/ single), hemostasis method (pure ethanol injection therapy/other therapies), antiplatelet therapy, anticoagulation therapy, NSAID administration, steroid administration, antacid administration in the initial ulcer bleeding, hypoalbuminemia (serum albumin level ≤2.5 g/dl), and hemodialysis. We further investigated the detailed association between steroid administration and rebleeding in HDU, including dose-response relation.

Results: The rebleeding rate of HGU and HDU were 5.7% and 22.9%, respectively, which was statistically significant (P = 0.001). There was no missing data in the estimated factors. Although no factor was associated with rebleeding in HGU, multivariate 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 detailed dose of steroid administration, multivariate logistic regression analysis showed that middle (≥10 mg ≤14 mg) or high (≥10 mg ≤14 mg) dose prednisolone (≥20 mg in prednisolone) (5.27 [3.19–8.71], P = 0.006) was a significant risk factor for rebleeding of HDU, with a dose-response relation (P = 0.0015).

Conclusion: HDU developed significantly higher rebleeding after endoscopic hemostasis, compared with HGU. In addition to multiple ulcers and hemodialysis, we firstly demonstrated by multivariate analysis that steroid administration is an independent risk factor for rebleeding of HDU after endoscopic hemostasis, with a dose-response relation.

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

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 mineral and efficient for curing diarrhea. Inspired by its dehydration and tissue-covering effect, this pilot study was to investigate its efficacy and safety for controlling hemorrhage in rats.

Aims & Methods: 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: Smectite demonstrated the best hemostasis effect, and its mean coagulation time was 1.45 ± 0.026 min. Commercial hemostatic chitosan styptic powder need 2.5 ± 0.04 min for complete clotting, while Starch group was 4.25 ± 0.056 min and 4.1min saline group was 4.025 ± 0.0108, (p = 0.05). Similarly, smectite led to less blood (0.6188 ± 0.034 g), while rats lost 2.3288 ± 0.123 g blood (p < 0.05) under normal saline treatment. For starch and commercial chitosan, the blood loss was respectively 2.0862 ± 0.061 g and 1.2925 ± 0.0238 g. Histopathologic results confirmed that smectite 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, bioinert smectite 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 have declared no conflicts of interest.

P1164 PREDICTORS OF LIFE THREATENING MUCOSAL ULCERATION AFTER VARICEAL SCLEROTHERAPY

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Introduction: Life-threatening bleeding could occur early after variceal sclerotherapy in cirrhotic patients.

Aims & Methods: We aimed to determine simple predictive factors of this complication in cirrhotic patients. Among 750 patients treated with variceal sclerotherapy (esophageal varices: EV = 653, 87.3%) and (gastric varices: GV = 95, 12.7%) Zagazig University hospital-endoscopy unit- Internal medicine department, in the period from October 2014 till July 2016. 150 patients (20%), mean age 46.2 ± 9.4 years (EV = 129, GV = 21) developed bleeding due to 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

A572 United European Gastroenterology Journal 5(5S)
patients with 150 patients who underwent endoscopic variceal sclerotherapy without the development of bleeding due sclerostatic ulceration. Results: Bleeding occurred 64.2 ± 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 ≥ 2.5 g/dl [OR 1.3], total bilirubin ≥ 1.6 mg/dl and platelet ratio index (APRI) > 1 [OR 1.2], low prothrombin concentration < 50% [OR 1.5]. Intraprocedural factors as amount of ethanolamine > 15.5 ml [OR 2.6], amacarate > 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 sclerosant ulcers is not uncommon, but may be life threatening. The proposed predictive factors should be watched and minimized before and during variceal sclerotherapy.

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

References
1. Carbonell N, Pauwels A, Serfaty L, Fourdan O, Levy VG, Poupon R. Aims & Methods: This multicenter, cross-sectional study had been conducted from August 2014 to December 2016 at 6 hospitals in Korea. Inclusion criteria were FD patients (>18 years) 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 health controls (7.8 ± 4.3 vs 5.6 ± 3.1, p = 0.000). The prevalence of sleep disorder was significantly higher in FD patients than healthy control (41.2% vs 18.4%, p < 0.000). In univariate analysis, FD was significant risk factor for sleep disorder (OR 3.12, p < 0.0001). The independent risk factors for sleep disorder in multivariate analysis were FD (OR 1.80, p = 0.017), BMI (OR 1.17, p = 0.053), age (OR 1.03, p = 0.000), and depression (OR 2.91, p = 0.000). Conclusion: FD significantly impacted on sleep disorder. FD was independent risk factor in sleep disorder.

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

References
as a predictor among individuals with FGIDs (Table 1). Epigastric symptom severity was predicted by worry and psychological attribution of symptoms among FGID individuals but no psychological trait predicted symptom severity among non-FGID individuals (Table 1).

**Conclusion:** A range of psychosocial factors predict later gastrointestinal symptom burden. For bowel symptoms, associations between psychological traits and symptom burden appear to be more clearly driven by the non-FGID subgroup, among whom psychological attributes 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 commonly reported associations between psychological traits and gastrointestinal symptoms may be moderated by symptom level but are relatively similar across upper and lower gastrointestinal symptoms.

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

**References**

2. Koloski et al. 2016 Aliment Pharmacol Ther p1

### P1168 AN INCREASED PREVALENCE OF NEURODEGENERATIVE/D EMYELINATING 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 neurologic symptoms in their personal and family history. Those neurological diseases might have common features. For example, a number of genetic variations have been shown to increase the risk of both conditions (e.g. HLA-DQB1-insertion on chromosome 6 may be strongly associated with both achalasia and with neurodegenerative/demyelinating diseases). Several other findings (e.g. inflammatory infiltrates, occipital hyperintensities, periventricular lesions) have been noted in patients with achalasia (dysphagia, regurgitation, chest pain).

**Aims & Methods:** The aim of our prospective study is to examine a prevalence of neurodegenerative/demyelinating diseases in a cohort of consecutive patients with confirmed esophageal achalasia. Achalasia was diagnosed by high-resolution manometry, endoscopy and esophageal manometry. 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 neurological examination. MRI 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 neurologic symptoms—most often visual disturbances in 17 patients (33.3%) and limbs paresthesia in 12 patients (23.5%). Among patients with a presence of neurologic 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 (tetany n = 2, carpul tunnel syndrome n = 3, epilepsy n = 2). Fourteen patients (27.4%) among those with neurological symptoms (vs. 0 out of 89 patients without neurological symptoms) had a positive family history of a neurodegenerative or a demyelinating disease. Among 106 patients with a neurodegenerative/demyelinating disease, 30 of them (28%) described dysphagia as a part of their personal history. These patients will be examined by oesophageal 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.

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**Table 1:** Associations between individual psychological traits and symptom severity.

<table>
<thead>
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<th>Predictor</th>
<th>Bowel Symptom Severity</th>
<th>Epigastric Symptom Severity</th>
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<tr>
<td></td>
<td>Non-FGID</td>
<td>FGID</td>
</tr>
<tr>
<td></td>
<td>p &lt; 0.01 *</td>
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<td></td>
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<tr>
<td></td>
<td>&lt;0.05 **</td>
<td>***</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>
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<tr>
<td>Avoidant coping</td>
<td>0.41 (0.21)</td>
<td>0.89 (0.14)</td>
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<td>Doctor relationship</td>
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<td>1.09 (0.16)</td>
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<tr>
<td>Childhood non-sexual abuse</td>
<td>1.65 (0.68)</td>
<td>1.06 (0.15)</td>
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<tr>
<td>Social support</td>
<td>0.53 (0.22)</td>
<td>0.85 (0.12)</td>
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<tr>
<td>Somatic rather than neurophysiological attribution</td>
<td>0.27 (0.11)***</td>
<td>0.93 (0.15)</td>
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<td>1.16 (0.26)</td>
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<td>Somatisation</td>
<td>2.92 (1.23)*</td>
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<tr>
<td>Childhood sexual abuse</td>
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</tbody>
</table>

When considered jointly with other predictors, psychological attribution of symptoms was significantly positively related to both bowel symptom severity (non-FGID: OR = 0.31, SE = 0.13; Full: OR = 0.74, SE = 0.11) and epigastric symptom severity (FGID: OR = 0.63, SE = 0.09; Full: OR = 0.63, SE = 0.11). The same was the case for worry (Bowel: Full: OR = 1.40, SE = 0.21; Epigastric: FGID: OR = 1.58, SE = 0.27; Full: OR = 1.54, SE = 0.23). For bowel symptoms, problem-focused coping (OR = 2.30, SE = 0.98) was an additional independent positive (notably, not negative) predictor among participants without FGIDs.

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**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. 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.

**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. 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 commonly reported associations between psychological traits and gastrointestinal symptoms may be moderated by symptom level but are relatively similar across upper and lower gastrointestinal symptoms.

**Abstract No:** P1167

**Table 1:** Associations between individual psychological traits and symptom severity. *Numerical entries are odds ratios (ORs, odds ratios), **indicates p < 0.001, ***indicates p < 0.001, ** indicates p < 0.01, * indicates p < 0.05, and " indicates p < 0.005. p < 0.51.

**Predictor** | **Bowel Symptom Severity** | **Epigastric Symptom Severity** |
<table>
<thead>
<tr>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Non-FGID</td>
<td>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 neurophysiological attribution</td>
<td>0.27 (0.11)***</td>
<td>0.93 (0.15)</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>0.93 (0.14)</td>
</tr>
<tr>
<td>Childhood sexual abuse</td>
<td>1.44 (0.51)</td>
<td>1.35 (0.22)*</td>
</tr>
</tbody>
</table>

*P1169 HIGH RESTING PARASYMPATHETIC CARDIAC VAGAL TONE CONFERS A UNIQUE FUNCTIONAL BRAIN NETWORK DURING ACUTE OESOPHAGEAL PAIN*
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 difference between two catheters in terms of Integrated Relaxation Pressure (IRP), Distal Contractile Integrale (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: 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.

References

P1170 RAPID DRINK CHALLENGE (RDC) TEST DURING OESOPHAGEAL HIGH RESOLUTION MANOMETRY (HRM) IN PATIENTS WITH OESOPHAGO-GASTRIC JUNCTION OUTFLOW OBSTRUCTION
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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 3222 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 5-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 history, complementary work up and treatment. Quantitative data were expressed as median (range) and qualitative data as percentage. They were compared using non-parametric and Chi square tests.

Results: 75 patients (29%) (29 males, mean age 62 years (25–92)) were included. The dominant symptom was dysphagia (69%), regurgitation (9%), chest pain (5%), other (13%), no symptom (3%). The causes of EGJOO were previous oesophago-gastric surgery (43%), incomplete achalasia (7%), mediastinal neoplasia (7%), miscellaneous (19%) and unknown (25%). RDC test was successfully performed in 70 patients (93%) and associated with POP and OS in 41% and 13% respectively. Dysphagia as dominant symptom was more frequent (79% vs 59%, p = 0.057) and more severe (Eckardt score 5 (1–11) vs 3 (0–10), p = 0.01) in patients with POP during RDC compared to those without. The same 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 17%). OS was not observed in patients with unknown cause of EGJOO vs 20% of patients with an identified cause (p = 0.09).

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

References

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 difference between two catheters in terms of Integrated Relaxation Pressure (IRP), Distal Contractile Integrale (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.
Introduction: The Chicago Classification (CC V3.0) defined the presence of esophageal motor dysfunction in patients (EGJ-OO) when the value of integrated relaxing pressure (IRP) is higher than 15 mmHg during high-resolution manometry (HRM). Both low-volume (10 ml) multiple rapid swallow (MRS) and high-volume (200 ml) 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 swallow in patients with EGJ-OO and in 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. HRF performed according to the Italian guidelines. All patients underwent 3 MRS (10 ml of water in 5 swallow in less than 10s) and 1 RDT (200 ml 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: We evaluated 30 patients with EGJ-OO (18 females; mean age 49.5 ± 12.4 yrs) and 30 patients with FH (17 females; mean age 41.2 ± 13.6). Impedance and pH 24-h analysis was performed to select patients with FH (normal AET and number of reflux and lack of reflux-symptom correlation). During HRM the mean DCI resulted similar in patients with EGJ-OO compared to FH (p = 0.101). One-hundred and eighty MRS and 60 RDT were evaluated. The lack of body inhibition was found in 11% (20/180) during MRS and in 53% (16/30) during RDT in EGJ-OO. No patients in FH showed lack of body inhibition during both MRS and RDT. All results are reported in Table 1.

Conclusion: Patients with EGJ-OO showed less peristaltic reserve during MRS and RDT. The RDT evidenced more frequently lack of body inhibition in patients with EGJ-OO.

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

### Table 1: Results of SS, MRS and RDT in patients with EGJ-OO and FH

<table>
<thead>
<tr>
<th>EGJ-OO Group</th>
<th>FH Group</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean DCI MRS</td>
<td>1455.7 ± 436.1</td>
<td>1982.6 ± 974.4</td>
</tr>
<tr>
<td>Mean DCI RDT</td>
<td>817.3 ± 665.4</td>
<td>1269.2 ± 1027.6</td>
</tr>
<tr>
<td>MRS weak/failed (90)</td>
<td>24/30</td>
<td>2/4</td>
</tr>
<tr>
<td>MRS weak/failed (60)</td>
<td>6/20</td>
<td>3/12</td>
</tr>
<tr>
<td>MRS/SS ratio</td>
<td>0.9 ± 0.3</td>
<td>1 ± 0.7</td>
</tr>
<tr>
<td>RDT/SS ratio</td>
<td>0.5 ± 0.4</td>
<td>1 ± 0.5</td>
</tr>
</tbody>
</table>

Conclusion: MRS is a more reliable test to detect peristaltic esophageal reserve when compared to RDT both in patients with IEM or those with normal esophageal peristalsis. Disclosure of Interest: All authors have declared no conflicts of interest.

### Table 1: Results of SS, MRS and RDT in patients with IEM and FH

<table>
<thead>
<tr>
<th>IEM group</th>
<th>FH group</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean DCI MRS</td>
<td>508.7 ± 318.6</td>
<td>1493.7 ± 799.2</td>
</tr>
<tr>
<td>Mean DCI RDT</td>
<td>614.2 ± 437.1</td>
<td>1982.6 ± 974.4</td>
</tr>
<tr>
<td>MRS/SS ratio</td>
<td>1.2 ± 0.4</td>
<td>1.6 ± 0.7</td>
</tr>
<tr>
<td>RDT/SS ratio</td>
<td>0.9 ± 0.3</td>
<td>1 ± 0.5</td>
</tr>
<tr>
<td>MRS/RDT</td>
<td>1.3 ± 0.4</td>
<td>1.4 ± 0.7</td>
</tr>
</tbody>
</table>

Conclusion: 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/wk 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 CCV3, and FH were defined according to the Rome IV criteria and with normal peristalsis. HRF was performed according to the Italian guidelines. All patients underwent 3 MRS (10 ml of water in 5 swallow in less than 10s) and 1 RDT (200 ml 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 41.2 ± 13.6). The MII-pH showed higher acid exposure time (AET) and number of reflux events in IEM than in FH (p < 0.005). Mean DCI of SS resulted lower in patients with IEM compared to FH (p < 0.05). One-hundred and eighty MRS and 60 RDT were evaluated. DCI of MRS was lower than 450 mmHg-s-cm in 39% (35/90) of IEM patients, and in 7% (6/90) of FH (p < 0.005). DCI of RDT was lower than 450 mmHg-s-cm in 77% (23/30) of IEM patients, and in 50% (15/30) of FH (p < 0.05). The MRS/RDT ratio resulted >1 in both groups. All results are reported in Table 1.
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 control group and diverticulum were 50 years old while 70 years old for patients.

Results: The main reported symptom was dysphagia (76%). HRM found 11 (61%) patients with an oesophageal motor disorder, including 2 oesopha- gistric junction outflow obstruction (OGJOO), 4 achalasia (subtypes 2; n = 2; sub- type 3; n = 2), 4 distal esophageal 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 confirmed the diagnostic yield by 22% in overall patients and by 57% in patients with normal manometry using wet swallows only. Mean pressure slopes at mid-oesophagus and oesophageal diverticulum were greater in patients than healthy controls (p < 0.05 for wet swallows), as previously reported. Other metrics are summarized in the table.

Conclusion: While more than one-third of HRM using wet swallows were normal, provocative testing using solid swallows increased the diagnostic yield of the procedure by more than 50% in these patients. Analysis of pressure slopes confirmed the association of propagating peristalsis with the disease.

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

References

Introduction: The management of achalasia targets relieving the obstruction at the esophagogastric 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 intro- duced, such as EGJ contractile integral (EGJ-CI). Currently there are few data investigating how achalasia treatments impact EGJ function based on these metrics.

Aims & Methods: We aimed to assess the EGJ-CI metric in achalasia before and after different treatments, to verify if post-operative changes in this metric corre- lated 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

P1175 PROVOCATIVE TESTING INCREASES THE DIAGNOSTIC YIELD OF HIGH RESOLUTION OESOPHAGEAL MANOMETRY IN PATIENTS WITH OESOPHAGEAL DIVERTICULA

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P1176 EVALUATION OF ESOPHAGOGASTRIC JUNCTION CONTRACTILITY AFTER DIFFERENT TREATMENTS FOR ACHALASIA

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6Department Of Medical And Surgical Sciences, S. Orsola-Malpighi Hospital, Bologna/Italy
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Introduction: The management of achalasia targets relieving the obstruction at the esophagogastric 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 intro- duced, such as EGJ contractile integral (EGJ-CI). Currently there are few data investigating how achalasia treatments impact EGJ function based on these metrics.

Aims & Methods: We aimed to assess the EGJ-CI metric in achalasia before and after different treatments, to verify if post-operative changes in this metric corre- lated 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

<table>
<thead>
<tr>
<th>HRM metrics with comparisons between wet swallows in controls and patients, and between wet and solid swallows among patients.</th>
<th>Controls (liquids)</th>
<th>Patients (liquids)</th>
<th>Patients (solids)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of swallows</td>
<td>9.30</td>
<td>9.94</td>
<td>9.41</td>
</tr>
<tr>
<td>EGJ resting pressure (mmHg)</td>
<td>29.30</td>
<td>28.76</td>
<td>34.66</td>
</tr>
<tr>
<td>Mean IRP 4s (mmHg)</td>
<td>11.50</td>
<td>14.32</td>
<td>18.25**</td>
</tr>
<tr>
<td>Mean DCL (mmHg.s.cm)</td>
<td>1315.10</td>
<td>2877.99</td>
<td>7343.67***</td>
</tr>
<tr>
<td>Distal latency (s)</td>
<td>6.70**</td>
<td>6.05*</td>
<td>7.11**</td>
</tr>
<tr>
<td>Intrabolus pressure (mmHg)</td>
<td>8.10</td>
<td>11.88*</td>
<td>15.19</td>
</tr>
<tr>
<td>Mean pressure slope</td>
<td>–0.65</td>
<td>2.29**</td>
<td>2.59</td>
</tr>
<tr>
<td>mid-oesophagus (mmHg/s)</td>
<td>–0.36</td>
<td>1.41**</td>
<td>0.46</td>
</tr>
</tbody>
</table>

Conclusion: While more than one-third of HRM using wet swallows were normal, provocative testing using solid swallows increased the diagnostic yield of the procedure by more than 50% in these patients. Analysis of pressure slopes confirmed the association of propagating peristalsis with the disease.
P1178 MULTIPLE RAPID SWALLOWING IN JACKHAMMER ESOPHAGUS PATIENTS: EVIDENCE FOR ALTERED NEURAL CONTROL

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2Division of General and Bariatric Surgery, Department of Surgery, Second University of Naples, Naples-Italy, Naples/Italy
3Division of Gastroenterology, Department of Surgery, Oncology and Gastroenterology, University of Padua, Padua-Italy., Padua/Italy
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Contact E-mail Address: aURELIO.MAURO88@gmail.com

Introduction: Jackhammer esophagus is a rare esophageal motility disorder. Little is known about its physiopathology; however, an excess of cholinergic drive has been suggested as an important etiologic factor. Multiple rapid swallowing (MRS) is an adjunctive test in order to evaluate integrity of inhibitory and excitatory neural pathways. In healthy subjects body motility inhibition is appropriate; data are shown as median-IQR range.

Methods: The data of consecutive patients who underwent G-POEM by a single expert endoscopist from October 2015 to November 2016 was collected. Procedures were performed, similar to POEM for achalasia, including initial mucosal incision, creating a submucosal tunnel, full-thickness (pyloro)myotomy, and closure of the mucosal entry. Patient demographics, etiology, Gastroparesis Cardinal Symptoms Index (GCSI) and gastric emptying scintigraphy (GES) were recorded before and after the procedure. Treatment outcomes and procedure related adverse events were also evaluated.

Results: A total of fourteen patients with refractory functional delayed gastric emptying refractory to medical therapy. We herein report our initial experience of G-POEM in an Asian population with focus on technique in addition to safety and efficacy of this promising endoscopic therapy.

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

References
1. Roman S, Neugastroenterol Motil. 2012 mar;24 suppl 1: 32–9;
Disclosure of Interest: All authors have declared no conflicts of interest.

References:

Aims & Methods: We aimed to determine whether epigastric pain syndrome (EPS) accompanying with pancreatic enzyme abnormalities were associated with early chronic pancreatitis proposed by Japan Pancreas Society (JPS) using endosonography. We enrolled 99 consecutive patients presenting with typical symptoms of FD, including patients with postprandial distress syndrome (FPS; n=49), EPS with pancreatic enzyme abnormalities (n=41) and EPS without pancreatic enzyme abnormalities (n=42) based on Rome III criteria. Gastric motility was evaluated using the 13C-acetate breath test. Early chronic pancreatitis was diagnosed by endosonography and graded from 0 to 7.

Results: The ratio of female patients among EPS patients (34/41) with pancreatic enzyme abnormalities was significantly (p=0.0018) higher than the ratio of female EPS patients (20/40) without it. Postprandial abdominal distention and physical component summary (PCS) scores in EPS patients with pancreatic enzyme abnormalities were significantly (p=0.002 and p=0.001, respectively) increased compared to those (19.75±1.01 and 18.3±3.01, respectively) in EPS patients without it. Interestingly, AUCσ and AUCσ values (24.85±1.31 and 24.86±1.27, respectively) in EPS patients with pancreatic enzyme abnormalities were also significantly (p=0.002 and p=0.001, respectively) increased compared to those (19.75±1.01 and 18.3±3.01, respectively) in EPS patients without it.

Conclusion: Further studies are warranted to clarify how EPS patients with pancreatic enzyme abnormalities were associated with early chronic pancreatitis proposed by JPS.

Disclosure of Interest: All authors have declared no conflicts of interest.
Results: The endoscopic follow-up was planned every month. After 1 months, 18–23 cm esophageal region has healed to be normal. Within 6 months, the stricture process was 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 aimed to compare the prevalence of FD in patients with OSA and healthy volunteers. A total of 60 consecutive OSA patients (defined as Ephysworth sleepiness scale > = 10, and apnea-hypopnea index > = 10/hour during polysomnography; mean age: 47.6 years, male: 83.3%) and 60 healthy age-and-sex-matched volunteers were recruited in a prospective case-control study. Questionnaires were applied for the diagnosis of functional gastrointestinal disorders (FGIDs) according to Rome III criteria. Anxiety and depression were evaluated using the Hospital Anxiety and Depression Scale (HADS), sleep quality was evaluated by the Pittsburgh Sleep Quality Index, and fatigue was assessed by the Multidimensional Fatigue Inventory (MFI-20) Chinese version.

Results: The prevalence of FD was 28.3% and 8.5% (17 vs 5, P = 0.005), and the prevalence of symptomatic gastro-esophageal reflux disease was 18.3% and 5% (11 vs 3, P = 0.023) in the OSA group and healthy volunteer group, respectively. OSA patients had higher anxiety and depression symptom scores, worse sleep quality, and more fatigue compared with healthy volunteers. In the multivariate logistic regression analysis, the risk of having OSA (odds ratio 4.99, 95% CI 1.01–24.1, P = 0.049) and depression (odds ratio 4.91, 95% CI 1.44–16.71, P = 0.011) were independently associated with FD.

Conclusion: To our best knowledge, this is the first study showing that OSA is independently associated with functional dyspepsia. Sleep disturbances previously attributed to psychological comorbidities in FGID may in fact arise from undiagnosed OSA. We recommend screening for OSA as part of the management of FD.

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

PI1184 INDIVIDUAL ASSESSMENT OF GASTRIC ACID PRODUCTION BY MEANS OF A NON-INVASIVE TEST: RELATIONSHIP BETWEEN MAXIMAL ACID OUTPUT AND PEPSSINOGEN I LEVELS

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Introduction: Functional dyspepsia (FD) is commonly associated with sleep disturbance, which has been attributed to comorbid anxiety, depression and bothersome gastrointestinal symptoms. However, it is unclear whether obstructive sleep apnea (OSA) is specifically associated with FD.

Aims & Methods: We aimed to compare the prevalence of FD in patients with OSA and healthy volunteers. A total of 60 consecutive OSA patients (defined as Ephysworth sleepiness scale > = 10, and apnea-hypopnea index > = 10/hour during polysomnography; mean age: 47.6 years, male: 83.3%) and 60 healthy age-and-sex-matched volunteers were recruited in a prospective case-control study. Questionnaires were applied for the diagnosis of functional gastrointestinal disorders (FGIDs) according to Rome III criteria. Anxiety and depression were evaluated using the Hospital Anxiety and Depression Scale (HADS), sleep quality was evaluated by the Pittsburgh Sleep Quality Index, and fatigue was assessed by the Multidimensional Fatigue Inventory (MFI-20) Chinese version.

Results: The prevalence of FD was 28.3% and 8.5% (17 vs 5, P = 0.005), and the prevalence of symptomatic gastro-esophageal reflux disease was 18.3% and 5% (11 vs 3, P = 0.023) in the OSA group and healthy volunteer group, respectively. OSA patients had higher anxiety and depression symptom scores, worse sleep quality, and more fatigue compared with healthy volunteers. In the multivariate logistic regression analysis, the risk of having OSA (odds ratio 4.99, 95% CI 1.01–24.1, P = 0.049) and depression (odds ratio 4.91, 95% CI 1.44–16.71, P = 0.011) were independently associated with FD.

Conclusion: To our best knowledge, this is the first study showing that OSA is independently associated with functional dyspepsia. Sleep disturbances previously attributed to psychological comorbidities in FGID may in fact arise from undiagnosed OSA. We recommend screening for OSA as part of the management of FD.

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

Conclusion: We aimed to compare the prevalence of FD in patients with OSA and healthy volunteers. A total of 60 consecutive OSA patients (defined as Ephysworth sleepiness scale > = 10, and apnea-hypopnea index > = 10/hour during polysomnography; mean age: 47.6 years, male: 83.3%) and 60 healthy age-and-sex-matched volunteers were recruited in a prospective case-control study. Questionnaires were applied for the diagnosis of functional gastrointestinal disorders (FGIDs) according to Rome III criteria. Anxiety and depression were evaluated using the Hospital Anxiety and Depression Scale (HADS), sleep quality was evaluated by the Pittsburgh Sleep Quality Index, and fatigue was assessed by the Multidimensional Fatigue Inventory (MFI-20) Chinese version.

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Conclusion: To our best knowledge, this is the first study showing that OSA is independently associated with functional dyspepsia. Sleep disturbances previously attributed to psychological comorbidities in FGID may in fact arise from undiagnosed OSA. We recommend screening for OSA as part of the management of FD.

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

Reference

P1186 SARCOPENIA AS A LEADING RISK FACTOR FOR EROSIv EsOPHaGAL REFlUX DISEASE: A LARGE-SCALE CROSS-SECTIONAL STUDY

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Introduction: Obesity is an established risk factor for reflux esophagitis. Yet, the association of sarcopenia and obesity status with reflux esophagitis remains unclear. We aimed to study the association between obesity, sarcopenia, and reflux esophagitis and the risk of reflux esophagitis in a large number of asymptomatic 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 below the mean for healthy young adults. Participants were categorized into four groups according to obese and sarcopenic status: normal, obese, sarcopenic, and obese and sarcopenic obese.

Results: In a multivariate model adjusted for age, sex, smoking status, alcohol intake, regular exercise, and metabolic variables, risk of reflux esophagitis was higher in obese [adjusted odds ratio (aOR), 1.38; 95% confidence interval (CI), 1.26–1.52], sarcopenic (aOR, 2.02; 95% CI, 1.48–3.29), and obese and sarcopenic obese participants (aOR, 1.68; 95% CI, 1.39–2.03) than in normal participants. The ORs comparing sarcopenic and sarcopenic obese participants to obese participants were 1.59 (95% CI, 1.06–2.38) and 1.32 (95% CI, 1.02–1.47), respectively. In addition, the risk of reflux esophagitis according to sarcopenic and obese status was observed similarly in all subgroups that were evaluated.

Conclusion: This study suggests that sarcopenia, regardless of obesity, is more harmful context for reflux esophagitis than obesity without sarcopenia.

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

References

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 5.4 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 cancers (HR 1.31, 95% CI, 1.16–1.49; HR 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.

References

P1189 THE INFLUENCES OF VISCERAL FAT AREA ON THE SITES OF ESOPHAGEAL MUCOSAL BREAKS AND SYMPTOM SEVERITY 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 locations of erosions and symptoms of GERD have been controversial.

Aims & Methods: The study was designed to evaluate the influences of visceral fat 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 measured by evaluating 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: Lesser 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 (16 cases, 9.0%). Mucosal breaks on the 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, VAT, ratio of VAT to SAT, and SAT 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 7.60, 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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Introduction: In normal subjects, the oesophago-gastric junction (OGJ) sphincter complex maintains a tight barrier between the oesophagus and stomach mucosa. However, gastro-oesophageal reflux disease (GERD) caused by acidic reflux has a prevalence of up to 26% [1]. One major factor determining whether gastro-oesophageal reflux occurs and eventually generates symptoms is the competency of the OGJ, which can be studied using distensibility testing. This way, we have previously shown in patients with Barrett’s oesophagus and healthy controls that an incompetent sphincter function was associated with more frequent reflux symptoms [2]. In the same patient groups, we also found greater oesophageal acid exposure and lower mucosal baseline impedance to be associated with impaired sphincter function. The latter probably represents a proxy for mucosal damage [3]. Other factors known to increase the perception of gastro-oesophageal reflux episodes are greater acidity, larger volume, and more proximal extent of the reflux content along with impaired mucosal integrity and sensitisation (peripheral and central) [4]. All of this said no studies of our knowledge have specifically addressed the possible association between sphincter function of the OGJ and oesophageal sensitivity.

Aims & Methods: We aimed to characterize oesophageal sensitivity in relation to OGJ competence, hypothesizing that sensitivity increases with impaired sphincter function. Twenty-three patients with Barrett’s oesophagus (mean age: 64.2 ± 7.7 years) and 12 healthy controls (mean age: 54.9 ± 10.8 years) were examined. A standard upper endoscopy to locate the OGJ was followed by distensibility testing of the OGJ using the EndoFLIP probe. At a later visit, experimental oesophageal sensitivity was assessed using a multimodal stimulation probe. After placement in the oesophagus just above the OGJ, the probe allows the filling and emptying of an attached polyurethane bag with water, stimulation with electrical current, and infusion of acid. Using this probe, mechanical distension of the bag, thermal stimulation at increasing temperature, electrical stimulation, and acid perfusion with 0.1 M hydrochloric acid (a Bernstein test) were performed. All stimulations were stopped when the subject felt moderate pain, equal to seven on a 0–10 visual analogue scale validated for visceral pain. Data were analysed using multi-level, mixed-effects regression analysis in Stata 12.

Results: Oesophageal acid sensitivity increased with a more incompetent sphincter function. The association between lowered acid volume was associated with greater distensibility index (P = 0.03) and with lower pressure (P = 0.03) in the OGJ in all subjects analysed together and separately in healthy controls (P = 0.006 and 0.03 respectively). Performing separate analyses in patients with BO, these associations were not present (all P > 0.7). Sphincter function was associated with neither oesophageal sensitivity to mechanical, heat, nor electrical stimulation (all P > 0.13).

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 reflux protective mechanism towards acid reflux.

Disclosure of Interest: B.P. McMahon: Barry P McMahon holds a minor share in Crospon 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 ± 282.1</td>
</tr>
<tr>
<td>ERD-A/B</td>
<td>521.0 ± 284.9</td>
</tr>
<tr>
<td>ERD-C/D</td>
<td>485.5 ± 299.2</td>
</tr>
<tr>
<td>Total NERD</td>
<td>456.9 ± 322.1</td>
</tr>
<tr>
<td>True NERD</td>
<td>428.1 ± 293.0</td>
</tr>
<tr>
<td>EH</td>
<td>536.0 ± 432.1</td>
</tr>
<tr>
<td>GERD (total)</td>
<td>494.5 ± 294.1</td>
</tr>
<tr>
<td>FH</td>
<td>654.2 ± 300.4</td>
</tr>
<tr>
<td>HC</td>
<td>596.2 ± 302.8</td>
</tr>
</tbody>
</table>

Conclusion: Pepsin may be considered a damaging factor in pathophysiology of GERD, but we could not find any difference between GERD phenotypes and unaffected controls. NERD group had less gastric acid versus other groups but this finding needs more studies to confirm.

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

P1193 NON INVASIVE DIAGNOSIS OF UPPER GI DISEASES IN A PRIMARY CARE SETTING: A STUDY ON 1,900 PATIENTS

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Aims & Methods: In this study, we analyzed serum levels of gastrin-17 (G-17) and IgG against (Hp-IgG). The normal range is 5-30 U/L; the diagnosis of gastroesophageal reflux disease is made when G-17 > 30 pmol/L; the diagnosis of chronic atrophic gastritis (CAG) was made when PGI was > 50 pg/mL; the diagnosis of CAG before performing endoscopy could address to a better bioptic sampling and CAG before performing endoscopy could address to a better bioptic sampling and CAG before performing endoscopy could address to a better bioptic sampling.

Results: Four hundred and eighty eight patients were classified as affected by Hp-related non-atrophic gastritis (26%). 547 patients were classified as normal (29%). 83 patients were classified as CAG (4%). In 96% out of the 488 patients with Hp-related non-atrophic gastritis (26%); 547 patients were classified as normal (29%). 83 patients were classified as CAG (4%). In 96% out of the 488 patients with Hp-related non-atrophic gastritis the diagnosis was confirmed by esophagogastroduodenoscopy in 313 patients. Positive Demester score in 170 out of 221 patients at 24 hours pH-metry or presence of typical symptoms in 91% out of the 782 patients diagnosed as GERD subjects, the diagnosis was made by means of HP measurement in between the both groups have not been found statistically significant difference (p > 0.05) (Table 1). Considering the extra esophageal reflux symptoms a significant difference (p < 0.05) between the group suffering from sore throat, aphonia, teeth grinding and GORH and the healthy control group has been found. Within the patients group a positive correlation between acid reflux score and BMI (r = 0.298) (p < 0.001), LDL (r = 0.387) (p < 0.001), visceral fat (r = 0.180) (p < 0.049) has been determined. A negative correlation between acid reflux score and TBW (r = -0.273) (p < 0.003) has been determined.

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.

Table 1: Metabolic parameters and bioelectrical impedans findings

<table>
<thead>
<tr>
<th>Control Group Patient Group Total Number</th>
<th>Median (Min.-Max.)</th>
<th>Median (Min.-Max.)</th>
<th>Median (Min.-Max.)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glucose</td>
<td>95.00 (77-165)</td>
<td>92 (53-165)</td>
<td>91.50 (53-165)</td>
<td>0.388</td>
</tr>
<tr>
<td>Insulin</td>
<td>8.05 (1.90-93)</td>
<td>8.35 (3.28-108)</td>
<td>8.20 (3.28-108)</td>
<td>0.353</td>
</tr>
<tr>
<td>HDL</td>
<td>150 (42-129)</td>
<td>87 (11-243)</td>
<td>98 (11-243)</td>
<td>0.035</td>
</tr>
<tr>
<td>Triglyceride</td>
<td>83 (33-350)</td>
<td>97 (28-404)</td>
<td>95 (28-404)</td>
<td>0.184</td>
</tr>
<tr>
<td>Total Cholesterol</td>
<td>145.60 (73-222)</td>
<td>191 (16-310)</td>
<td>191 (16-310)</td>
<td>0.216</td>
</tr>
<tr>
<td>Uric Acid</td>
<td>4.05 (1.0-30)</td>
<td>4.03 (1.0-30)</td>
<td>4.03 (1.0-30)</td>
<td>0.471</td>
</tr>
<tr>
<td>TSH</td>
<td>1.06 (0.07-5.74)</td>
<td>1.06 (0.07-5.74)</td>
<td>1.06 (0.07-5.74)</td>
<td>0.476</td>
</tr>
<tr>
<td>ALT</td>
<td>12.05 (5.9)</td>
<td>13 (5.65)</td>
<td>13 (5.65)</td>
<td>0.213</td>
</tr>
<tr>
<td>Fat</td>
<td>19.30 (3.41-80)</td>
<td>24.75 (9.35-20)</td>
<td>22.55 (9.35-20)</td>
<td>0.016</td>
</tr>
<tr>
<td>Fat Mass</td>
<td>12.80 (10-36.20)</td>
<td>15.15 (10-43.40)</td>
<td>14.20 (10-43.40)</td>
<td>0.012</td>
</tr>
<tr>
<td>BMI</td>
<td>43.95 (35.50-50)</td>
<td>43.90 (34.90-516)</td>
<td>43.90 (34.90-516)</td>
<td>0.520</td>
</tr>
<tr>
<td>Muscle Mass</td>
<td>16 (12-66)</td>
<td>19 (12-66)</td>
<td>19 (12-66)</td>
<td>0.002</td>
</tr>
<tr>
<td>TFW</td>
<td>22.43 ± 3.43</td>
<td>23.19 ± 3.60</td>
<td>23.19 ± 3.60</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Waist circumference</td>
<td>74.63 ± 6.52</td>
<td>79.41 ± 10.60</td>
<td>78.36 ± 9.61</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

Table 1: Metabolic parameters and bioelectrical impedans findings

P194 CHANGES IN ANTHROPOMETRIC AND METABOLIC PARAMETERS RELATED TO GASTROESOPHAGEAL REFUX DISEASE IN NON-OBSE 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 (½).

Aims & Methods: In this study, we analyzed serum levels of gastrin-17 (G-17) and IgG against (Hp-IgG). The normal range is 5-30 U/L; the diagnosis of Hp-related non-atrophic gastritis was made by means of HP measurement in between the both groups have not been found statistically significant difference (p > 0.05) (Table 1). Considering the extra esophageal reflux symptoms a significant difference (p < 0.05) between the group suffering from sore throat, aphonia, teeth grinding and GORH and the healthy control group has been found. Within the patients group a positive correlation between acid reflux score and BMI (r = 0.298) (p < 0.001), LDL (r = 0.387) (p < 0.001), visceral fat (r = 0.180) (p < 0.049) has been determined. A negative correlation between acid reflux score and TBW (r = -0.273) (p < 0.003) has been determined.

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.
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 and PG I levels in order to select out GERD patients more prone to develop an early reflux relapse in a prospective open study.

Aims & Methods: We prospectively enrolled 221 consecutive GERD patients (F 113, mean age 52.5 years; range 28–74 years) with endoscopically proved diagnosis of esophagitis, according to the L.A. classification, all symptomatic (heartburn and/or regurgitation). All patients were treated with rabeprazole 20 mg once a day for 6–8 weeks, assessing at the end of the therapy the symptoms’ modifications by means of a questionnaire. In the group of asymptomatic patients, we performed a one-year follow-up, registering the GERD relapse episodes; only on-demand antacids were permitted. All patients underwent at baseline a blood sample and after the acute course of PPI therapy.

Results: One hundred eighty five patients were asymptomatic after the 6–8 weeks of PPI therapy and entered in the prospective evaluation for 12 months. 19 subjects were lost lasting the follow-up and finally 166 patients were available for the study analysis. 72 patients experienced at least one GERD relapse episode (first group) against 94 ones free of symptoms for one year (second group). The mean values of both PG I and G-17 after the 6 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 96±g/L, G-17 19±pmol/L; after therapy: PG I 164±g/L, G-17 19±pmol/L; p<0.001; second group: baseline PG I 98±g/L, G-17 16±pmol/L; after therapy: PG I 116±g/L, G-17 6.3±pmol/L; p<ns). The good response to full dose of PPI, assessed by an increase of both PG I and G-17, seems to be the pathophysiological background to explain the prognostic value of such markers.

Conclusion: Gastrin-17 and pepsinogen I increase after full-dose of PPI in GERD acute phase 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 connected to the distal and proximal parts of the esophagus approximately 20–20 cm using 4–0 silk ligatures. 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).

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

**P1198 ENDOSCOPIC-HISTOPATHOLOGIC ESOPHAGEAL FINDINGS IN ATROPHIC BODY GASTRITIS PATIENTS WITH GASTRO-ESOPHAGEAL REFUX SYMPTOMS**

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**Introduction:** Atrophic body gastritis (ABG) is characterized by loss of oxyntic glands with consequent reduced acid secretion, 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, gastro-esophageal reflux (GER) symptoms have been reported and in one third of them (mostly non-acidic reflux) has been documented at pH-monitoring. At present, data regarding endoscopic and histopathologic AG-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 (18.2–32.3); fasting gastrinemia 329 pg/ml (215–1476); pepsinogen I 10 ng/ml (0–44); positive Ab against parietal cells 716# (235–1476) were included. Histology, performed using a picture of esophagitis according to LA classification or a positive DeMeester score (> 14) was recorded in GERD group. Finally, patients showed a positive upper-GI endoscopy and were enrolled in the study, according with presence of upper-GI troubles like epigastric pain, fullness, nausea/vomiting, as well as related risks factors, such as smoking habits. All patients showed a positive upper-GI endoscopy and were enrolled in the study, according with presence of upper-GI troubles like epigastric pain, fullness, nausea/vomiting, as well as related risks factors, such as smoking habits.

**Results:** A thousand and six hundred consecutive dyspeptic patients (M = 766; mean age: 51.5 years; range: 27–79 yr) were enrolled in the study, according with presence of upper-GI troubles like epigastric pain, fullness, nausea/vomiting, as well as related risks factors, such as smoking habits.

**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 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.

**P1200 REAL-WORLD RESPONSE OF PATIENTS WITH GASTROESOPHAGEAL REFLUX DISEASE TO EMPIRICAL TREATMENT WITH PROTON PUMP INHIBITORS: A MULTICENTER, PROSPECTIVE, OBSERVATIONAL STUDY IN CHINA**


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**Introduction:** In China, 13.6% of gastrointestinal outpatients suffer from gastro-esophageal reflux disease (GERD), among which only 36.9% undergo endoscopy [1]. For patients with symptoms of GERD, empirical proton pump inhibitor (PPI) treatment is recommended as a diagnostic test of GERD and as a therapeutic trial to control symptoms by Chinese GERD consensus guidelines [2].
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 empirical treatment with PPIs. Responders were defined as having heartburn/regurgitation on ≤1 day during the prior 7 days, assessed by the Gerd-Q questionnaire. Outpatients aged between 18 and 65 years with a Gerd-Q score ≥8 were enrolled if they were prescribed standard-dose PPIs as empirical treatment and were not planned to have an endoscopy within 4 weeks of enrollment. The PPI regimen prescribed was decided completely at the physicians’ discretion. Patient demographics, diagnosis, prescribed PPI regimens, Gerd-Q score and symptom frequency were recorded. Data were collected at baseline, 2 weeks and 4 weeks after initiating PPI 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 19 days of PPI was 99.5%. Esomeprazole was the most frequently received PPI (57.1% of patients). Other PPIs (rabeprazole, lansoprazole, pantoprazole and omeprazole) were received by 50.1% of patients and 7.2% of the patients sequentially received ≥2 PPIs in the duration of the study. A total of 787 (79.7%) patients either completed the 4-week PPI treatment or withdrew after response, of which the responder rate was 74.0% [95% CI, 70.7%–77.0%] (Table 1). Among the 818 patients who completed 2 weeks’ treatment, the responder rate was 37.0% [95% CI, 33.5%–40.4%]. The overall median time to response was 1.12 days (95% CI, 1.12–1.15). Over the study duration, patients’ 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>Esomeprazole</th>
<th>Other PPIs</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>75.2 (342/455)</td>
<td>72.3 (240/332)</td>
<td>74.0 (582/787)</td>
</tr>
<tr>
<td>[70.9–79.1]</td>
<td>[67.1–77.0]</td>
<td>[70.7–77.0]</td>
</tr>
<tr>
<td>2-week responder</td>
<td>57.1 (288/499)</td>
<td>56.7 (198/349)</td>
</tr>
<tr>
<td>40.6%</td>
<td>53.9%</td>
<td>53.5%</td>
</tr>
</tbody>
</table>

Conclusion: In Chinese clinical practice, short-term PPI empirical treatment effectively improves symptom control in GERD patients and gains a satisfactory overall responder rate.

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

References


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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 test (24-H pHmetry). 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 performed 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 Digitrapper pH-Z, Synectics, Gyen, Medtronic) were performed according to standard technique.

Results: Pathological reflux was present in 91 patients (47.9%), 24 from group 1 and 67 from group 2. Pathological acid reflux was therefore ruled out as a cause of symptoms in 52.1% of all cases studied: 60 patients (47.2%) from group 2, and 36 patients (61.9%) from group 1. In addition, out of the 24 patients with pathological reflux in group 1 (true refractory patients), 9 had an incomplete response, with a percentage of time with pH < 4 less than 7.5% (mild reflux), which probably was not the cause of the symptomatology.

Conclusion: Proton pump inhibitors (PPIs) are the drugs of choice in the treatment of GERD. However, its efficacy may be compromised for a variety of reasons including: non-compliance, bioavailability, episodes of nocturnal acid break-through, poor gastric emptying, etc. In most of the patients referred for
studying with the diagnosis of refractory reflux to PPIs, this diagnosis had only been based on OHR, intractable 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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Introduction: Recently, low-FODMAP diet has been proposed as potential treatment in patients with irritable bowel syndrome (IBS) given its high efficacy in symptoms relief. Recent data showed that IBS frequently overlap with functional heartburn (FH) and functional dyspepsia.

Aims & Methods: The aim of this study was to evaluate the efficacy of low-FODMAP diet in reducing heartburn in patients with FH and no pathophysiological evidence of gastroesophageal reflux (GERD) compared to patients with non-erosive reflux disease (NERD). As secondary aim we investigated the reduction of lower gastrointestinal symptoms in both groups. We enrolled patients with heartburn and negative upper endoscopy who were scheduled for upper pathophysiological tests (oesophageal manometry and impedance and pH monitoring, MII-pH) at Gastroenterology Unit in University of Pisa. We excluded patients older than 75 and younger than 18, those with primary oesophageal 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 (normal esophageal acid exposure and number of reflux, no symptom-reflux correlation and no heartburn relief during PPI treatment). All enrolled patients were evaluated with validated questionnaires (Likert andVAS) 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 22.5). 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 ± 1.1; 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></th>
<th>NERD group</th>
<th>FH group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-diet</td>
<td>Post-diet</td>
</tr>
<tr>
<td>Abdominal pain</td>
<td>3.6 ± 1.8</td>
<td>2.7 ± 0.9</td>
</tr>
<tr>
<td>Bloating</td>
<td>4.3 ± 2.3</td>
<td>3.1 ± 1.7</td>
</tr>
<tr>
<td>Wind</td>
<td>4.9 ± 2.3</td>
<td>3.3 ± 1.7</td>
</tr>
<tr>
<td>BSC (type 3–5)</td>
<td>3/13</td>
<td>7/13</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 with PPI treatment. Larger prospective randomized controlled trial is mandatory to further explore these findings.

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

P1205 GENDER DIFFERENCES IN NEOPLASTIC PROGRESSION IN BARRETT’S ESOPHAGUS: A MULTICENTER PROSPECTIVE COHORT STUDY
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3Department Of Biostatistics, Erasmus University Medical Center, Rotterdam/Netherlands
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Introduction: Because of a higher prevalence of BE in males, recommendations in current guidelines are mainly based on male BE patients and make no difference in gender according to gender. Nevertheless, it is unknown whether female BE patients have the same neoplastic progression and acceleration rate as male patients.

Aims & Methods: The aims of this study were (1) to evaluate the difference between males and females in probability of and (2) time to neoplastic progression, as well as (3) gender differences in stage distribution of neoplastic progression in surveilled BE patients. In this multicenter prospective cohort study we included 729 patients with BE who met the inclusion criteria of a segment of ≥2cm and confirmed intestinal metaplasia. Endoscopic surveillance was performed according to the American College of Gastroenterology guidelines. Cox regression modelling as well as accelerated failure time modelling were used to estimate differences in probability of and time to neoplastic progression to HGD, EAC and both HGD and EAC between sexes, respectively. All models were adjusted for age, presence of esophagitis and length of BE. In case of a limited number of events, descriptive statistics were used.

Results: 532 males (73%; median age 58 years, IQR 51–67) and 197 females (median age 64 years, IQR 57–70) were included with a median follow-up of 8.2 years (IQR 5.3–10.3). High-grade dysplasia (HGD) was detected in 35 males versus 4 females, EAC in 12 males versus 5 females. The total number of patients with neoplastic progression was 56 (8%), which was twice as high among males compared to females (HR 1.90, 95% CI 1.02–3.92). Especially the risk of HGD was higher in males than in females (HR 3.34, 95% CI 1.17–9.50). The ratio HGD/EAC in males was 2.92, in females 0.80. Apparently in females propor-
tionally more EAC was identified compared to males. Though these data might suggest accelerated neoplastic progression rates in females, time to event was significantly shorter for males in HGD (HR 0.45, 95% CI 0.22–0.94). There was no difference for overall neoplastic progression (AR 0.59, 95% CI 0.16–1.90). Stage distribution as shown in Table 1, females tend to have a higher stage of neoplastic progression than males.

Conclusion: The risk of HGD and overall neoplastic progression and acceleration rate of HGD development is higher in male BE patients compared to females. On the other hand descriptive statistics show proportionally more EAC in females as well as an advanced stage of EAC at diagnosis. Further research into the differ-

Table 1: Stage distribution of neoplastic progression between males and females

<table>
<thead>
<tr>
<th></th>
<th>Stage 0</th>
<th>Stage 1</th>
<th>Stage 2</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>40</td>
<td>85%</td>
<td>4</td>
<td>8.5%</td>
</tr>
<tr>
<td>Female</td>
<td>5</td>
<td>56%</td>
<td>3</td>
<td>33%</td>
</tr>
<tr>
<td>Total</td>
<td>45</td>
<td>100%</td>
<td>7</td>
<td>13%</td>
</tr>
</tbody>
</table>

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

P1206 SINGLE SESSION FOCA CYRTOBALLOON ABLATION THERAPY IS SAFE AND EFFECTIVE IN THE TREATMENT OF DYSPLASIC BARRETT’S ESOPHAGUS
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Introduction: Given its proven safety and efficacy, RadioFrequency Ablation (RFA) is the preferred ablation modality for dysplastic Barrett’s Esophagus (BE). However, RFA is associated with significant drawbacks, such as the need for large controller units, multiple deployment steps and capital investment. The CryoCryoballoon Ablation system (FCBA; C2 Therapeutics Inc. Redwood City, CA, USA) is another ablation method -based on the application of extreme cold- that has been recently developed to overcome these RFA drawbacks. Additionally, FCBA might be better tolerated. FCBA comprises a handheld, through-the-scope system with a conformable balloon that is simultaneously inflated and cooled using nitrous oxide, resulting in ice patches of approximately 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
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 (HGĐ) or after endoscopic resection for visible lesions, were included. Exclusion criteria included previous focal ablation therapy and strictures. At baseline, all visible BE was treated with side by side ablations of 10 seconds, including the initial BE. Pain scores were assessed directly post-treatment and at days 2 and 7. Follow-up endoscopy with biopsy and photo documentation was scheduled after 3 months. Primary outcomes included dysplasia regression rate and incidence of esophageal stricture or other adverse events.

Results: We enrolled 20 patients with dysplastic BE (85% male, mean age 66 (±8) years), with a median BE length of 2.2 cm (IQR 0–6; 1–3) and with a baseline diagnosis of LGD (10; 50%), HGD (1; 5%), or mucosal adenocarcinoma (9; 45%). Ten (50%) had undergone endoscopic resection of a visible lesion before cryoballoon and 8 (40%) had undergone previous circumferential RFA. During a median ablation time of 16 minutes (IQR 11–19), all BE, including circumferential ablation of GEJ was successfully ablated in all patients. No adverse events occurred, and median pain directly post-treatment was 4 out of 10 (IQR 0–5), whereas this was 1 (IQR 0–2) and 0 (IQR 0–1) at days 2 and 7. At the 3-month follow-up endoscopy, median endoscopic regression of initial BE was found to be 95% (IQR 83–98), this included 3 patients (15%) with a complete 100% regression. All biopsies confirmed squamous regeneration with out evidence for subsquamous BE. No significant esophageal strictures or other complications were noted.

Conclusion: Our multicenter, prospective trial shows that a single treatment with Focul CryoBalloon ablation therapy is safe, well-tolerated and effective for eradication of dysplastic BE.

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

Table 1: Baseline characteristics and maximum pain scores

<table>
<thead>
<tr>
<th>FCBA</th>
<th>RFA</th>
</tr>
</thead>
<tbody>
<tr>
<td>N = 20</td>
<td>N = 35</td>
</tr>
</tbody>
</table>

A1. Baseline characteristics
- Male gender, n (%) 17 (85%) 29 (83%) 0.84
- Age, mean (SD) years 65 (±8) 66 (±8) 0.66
- Worst diagnosis prior to FCBA
  - LGD, n 10 (50%) 19 (54%) 0.54
  - HGD, n 1 (5%) 6 (17%) 0.05
  - EAC, n 9 (45%) 10 (29%) 0.05
- Prior treatment
  - ER, n 10 (50%) 17 (52%) 0.92
  - Circumferential 10 (50%) 23 (66%) 0.33
- BE length
  - Prior to FCBA
    - Circumferential, cm 2 (1–2) 1 (1–3) 0.72
  - Maximum pain scores on day 1 to 14 post treatment
    - Maximum VAS, median (IQR)
      - Day 1 2 (0–4) 3 (1–7) 0.06
      - Day 2 1 (0–4) 3 (1–6) 0.02
      - Day 3 1 (0–3) 3 (1–4) 0.03
      - Day 4 1 (0–2) 2 (1–4) 0.05
      - Day 5 0 (0–2) 2 (1–5) <0.01
      - Days 7 to 9 0 (0–1) 2 (0–4) <0.01
      - Days 10 to 14 0 (0–0) 1 (0–2;3) <0.01

Conclusion: In this multicenter, non-randomized, open prospective cohort study, patients reported less post-procedural pain and dysphagia after FCBA as compared with RFA and, moreover, FCBA patients used less analgesics. Although a randomized trial should provide definitive evidence for differences in post-procedural tolerability, our results strongly suggest a significantly different post-procedural course, thus favoring FCBA over RFA.

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

P1207 CRYOBALOON ABLATION OF DYSPLASTIC BARRETT’S ESOPHAGUS CAUSES SHORTER DURATION AND LESS SEVERE POST-PROCEDURAL PAIN AS COMPARED TO RADIOFREQUENCY ABLATION

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Introduction: Radiofrequency ablation (RFA) is safe and effective for eradication of dysplastic Barrett’s Esophagus (BE), but may be associated with significant post-procedural pain. As an alternative, cryobalisation using the Focal Cryo Balloon 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. This study compared cryoballoon endpoints like pain management with FCBA versus RFA, to determine post-ablation pain and its determining factors.

Methods: Fifty-five patients were included (35 with focal RFA; 20 with CBA) and were enrolled in a prospective multicenter, non-randomized, open-label study. Patients were seen between March and December 2016 at two tertiary referral centers in the Netherlands. 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 compared to 8 (IQR 0–11) days for RFA patients (p < 0.01).

Results: We enrolled 20 patients with dysplastic BE (85% male, mean age 66 (±8) years), with a median BE length of 2.2 cm (IQR 0–6; 1–3) and with a baseline diagnosis of LGD (10; 50%), HGD (1; 5%), or mucosal adenocarcinoma (9; 45%). Ten (50%) had undergone endoscopic resection of a visible lesion before cryoballoon and 8 (40%) had undergone previous circumferential RFA. During a median ablation time of 16 minutes (IQR 11–19), all BE, including circumferential ablation of GEJ was successfully ablated in all patients. No adverse events occurred, and median pain directly post-treatment was 4 out of 10 (IQR 0–5), whereas this was 1 (IQR 0–2) and 0 (IQR 0–1) at days 2 and 7. At the 3-month follow-up endoscopy, median endoscopic regression of initial BE was found to be 95% (IQR 83–98), this included 3 patients (15%) with a complete 100% regression. All biopsies confirmed squamous regeneration with out evidence for subsquamous BE. No significant esophageal strictures or other complications were noted.

Conclusion: Our multicenter, prospective trial shows that a single treatment with Focul CryoBalloon ablation therapy is safe, well-tolerated and effective for eradication of dysplastic BE.

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

P1208 COMPARATIVE OUTCOMES OF RADIOFREQUENCY ABLATION FOR BARRETT’S OESOPHAGUS WITH DIFFERENT BASELINE HISTOLOGY

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Introduction: Radiofrequency ablation (RFA) with endoscopic mucosal resection is recommended for Barrett’s Oesophagus (BO) related neoplasia. In this study, we evaluated RFA treatment outcomes for BO stratified according to baseline histology, i.e. low-grade dysplasia (LGD), high-grade dysplasia (HGD) and intramuscular carcinoma (IMC). We retrospectively reviewed the treatment outcomes of patients with dysplastic BO between January 2007–2017. Patients received 3-monthly RFA until endoscopic and histologic remissions were achieved. Outcomes measured were: 1) complete remission of dysplasia (CRD) and intestinal metaplasia (CRIM), 2) stricture rate, and 3) durability of CRD and CRIM. Patients on active treatment protocol were excluded.

Results: We identified 113 patients who completed RFA treatment (21 LGD, 46 HGD and 46 IMC). There were no significant difference between the groups in the age, gender, circumferential and maximum length of BO, and stricture rate. CRD and CRIM were achieved in 94.7% and 78.8% of patients, respectively. When stratified according to baseline histology, there was no significant difference in CRD rate among LGD (95.2%), HGD (95.7%) and IMC (93.5%) (p = 0.89). Similarly, there was no significant difference in CRIM rate among LGD (71.4%), HGD (76.1%) and IMC (84.8%) (p = 0.31). CRD durability at 12 and 36 months (n = 107) were 99.0% and 97.0%, respectively. CRD durability (n = 89) at 12 and 36 months were 98.5% and 92.7%, respectively. When stratified according to baseline histology, CRD durability at 12 and 36 months for LGD and IMC were 100% at both time points, and 97.7% and 93.6% for HGD, respectively (log rank p = 0.31). CRIM durability at 12 and 36 months for LGD, HGD and IMC were 100%, 96.4%, 100%, and 100%, 88.5%, 95.5%, respectively.

Conclusion: The treatment outcomes for BO were similar in patients with different baseline histology. Our results showed that once CRD and CRIM were achieved, these were durable over time.

Disclosure of Interest: All authors have declared no conflicts of interest.
P2109  IS IT REASONABLE TO PROPOSE AN ENDOSCOPIC MUCOSAL RESECTION FOR BARRET’S OESOPHAGUS WITH HIGH-GRADE DYSPLASIA ON THE BIOPSY?

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Introduction: Endoscopic mucosal resection (EMR) is currently the first-line treatment for high-grade dysplasia (HGD) in Barret’s esophagus (BE). Despite improvements in the characterization of dysplasia, the management depend on the pathological analysis of biopsies previously performed. However, the level of concordance between cytologists in such situation remains low. The aim of this study was to evaluate the discordance between biopsy sample (BS) and EMR specimen in case of HGD, as well as cytologists’ inter and intra-observatory variability.

Aims & Methods: This was a retrospective study including a prospect histological relecture (BS and specimen) in two expert centers. The inclusion criteria were BE with HGD on pre-operative biopsies resected by the endoscopist. The initial biopsies from other centers were collected and re-examined by our cytologists. The BS discordant with EMR specimens were recorded in a numeric file (Teleslide) and a second lecture was carried out by 2 experts and 2 fellows (1 of each per center). Five diagnoses were considered: no metastasis (no BE), metaplasia without dysplasia, LGD, HGD, Adenocarcinoma. Concordance statistics tests were performed to assess the variability between BS and EMR specimen and among the cytologists and the pathologists. Results: Between January 2005 and December 2015, 87 patients have undergone EMR for HGD on biopsies, in both centers. Among them, 41 (47%) had a discordant result between biopsy and resection specimen. The histological diagnosis was BS HGD and EMR no BE in 6 cases (16.4%), BS LGD and EMR HGD in 4 cases (4.6%) and one patient had no metastasis. Finally, 33 patients could be analyzed, 29 men and 4 women, with a mean age of 63 years old. The length of BE according to Prague classification was C3-M5, with relief achieved in 63.6% 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.

Conclusion: The discordance rate between initial diagnosis of HGD on BS and final diagnosis of EMR was 47%. BE extent 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 endoscopically performed biopsies is to be raised. The BS discordant with EMR specimen were recorded in a file and concordance statistics tests will be performed to assess the variability between BS and EMR specimen as well as cytologists’ inter and intra-observatory variability.

Disclosure of Interest: M. Barthet: Consultant for Boston Scientific All other authors have declared no conflicts of interest.

References


P2110 CD4+ AND CD8+ LYPHOCYTE RATE AND PDL-1 EXPRESSION IN THE THORACIC OESOPHAGUS

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Introduction: Non-neoadjuvant chemoradiotherapy (CT-RT) before esophagectomy is standard management for locally advanced squamous cell carcinoma (SCC) of the esophagus and in several cases, it can lead to complete response (CR).

Aims & Methods: The aims of this study were to identify possible immunological predictive factors for neoadjuvant CT-RT failure after neoadjuvant chemoradiotherapy (nCRT) and to identify distinct clusters associated with response to therapy. Based on these subgroups, we will develop a subtype classifier that might improve stratification of patients for (targeted) therapies and subsequently improve outcomes.

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

References


P2111 IDENTIFICATION OF THREE DISTINCT BIOLOGICAL SUBTYPES IN ESOPHAGEAL AND FUNCTIONAL ADENOCARCINOMA BY RNA SEQUENCING

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Introduction: Esophageal adenocarcinoma (EAC) is a highly aggressive malignancy with poor prognosis. Advances in therapy have led to incremental improvements in overall outcome in EAC, but over- and undertreatment of unidentified 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 functional adenocarcinoma (FAC). Most patients underwent neoadjuvant chemo-radiotherapy (nCRT) with carboplatin and paclitaxel. Pre-treatment tissue samples of the tumor and healthy adjacent mucosa were collected during upper gastrointestinal endoscopy. RNA was extracted from all tumor biopsies and a subset of matched healthy biopsies. Samples were sequenced 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 on the tumor RNA profiles to identify distinct subtypes. We performed K-means clustering with software package clusterProfiler (Yeung et al. 2007) for further analyses.

Results: We could identify three distinct subtypes with a metabolic, immune and cell cycle regulating signature respectively. The subtype with the immune signature was associated with tendency to poorer response to therapy. We will develop a subtype classifier to perform subtype prediction in an independent patient cohort from the TCGA database (The Cancer Genome Atlas Research 2017).

Conclusion: Our studies support the existence of three distinct EAC/junctional subtypes associated with different response to therapy. Based on these subgroups, we will develop an EAC subtype classifier that might improve stratification of patients for (targeted) therapies and subsequently improve outcomes.

Disclosure of Interest: All 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 risk factor for both overall survival time and disease-free survival. In addition, overexpression of TRPM2-AS could promote the proliferation and inhibit the apoptosis of ESCC cells, while knockdown of TRPM2-AS had a reverse function. Furthermore, downregulation of TRPM2-AS enhanced the expression of p53 in ESCC cells.

Conclusion: This study suggested that long non-coding RNA TRPM2-AS could be a potential oncogene of ESCC. TRPM2-AS expression might be served as another potential therapeutic target and prognostic biomarker. In addition, our study suggested that the overexpression of 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.

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Introduction: Esophageal adenocarcinoma (EAC) is an increasingly common cancer with a poor prognosis. EAC is the final step of a pathway starting with esophageal reflux disease, intestinal metaplasia, and dysplasia. The expression of cytotoxic protein p53 and the expression of p53 in the esophageal cancer tissue is significantly lower than in the normal mucosa of healthy patients. This may be one of the mechanisms of immune escape of cancer cells in the esophageal cancer. Aims & Methods: The aim of this study was to investigate the role of CD80 in the inflammatory environment of EAC. The expression of p53 in cancer and from healthy esophagus was obtained during esophagectomy from patients affected by EAC. Fresh biopsies were obtained from patients who underwent endoscopy for screening or follow-up. Immunohistochemistry for CD80 was performed. Fresh biopsies were analyzed by flow cytometry to quantify the expression of CD80, its receptor CD28 and the lymphocytes activation marker CD3. ESCC and esophageal epithelial cells and CD80 infiltrating lymphocytes, respectively. A model of reflux induced esophageal metaplasia was created with a esophagostoma/xenografting: C57BL/6 mice were randomized to receive or not intraperitoneal injections of anti-CD80 antibody. The esophago-gastric specimens were collected 32 weeks after randomization and analyzed in a blinded fashion. Non-parametric statistical analyses were used.

Results: Flow cytometric analysis of esophageal biopsies from healthy controls, Barrett esophagus, dysplastic esophageal and esophageal adenocarcinoma reveals that the expression of the cytotoxic molecule CD80 by epithelial cells peaks during metaplasia in the inflammatory esophageal carcinogenesis. In the mice that received antiCD80 antibodies the rate of dysplasia in the fore stomach was significantly higher (5.7) compared to that observed in vehicle-treated wild type mice (1.6). Conclusion: The human and the in vivo data that we obtained suggest that in inflammation-driven esophageal carcinogenesis there is evidence of an active immune surveillance process mediated by the overexpression of CD80 costimulatory molecules such as CD80 and CD86 in the esophageal cancer tissue. This may be one of the mechanisms of immune escape of cancer cells in the esophageal cancer. Aims & Methods: The aim of this study was to evaluate the effect of the interplay between dysregulation of oncogenes and oncosuppressor genes within the tumor and immune microenvironment on EAC prognosis. Mucosa samples from EAC tissue were obtained during esophagectomy from 169 consecutive patients operated. Immunohistochemistry for MLH1, MSH2, MSH6, PM2, CMCy, p16, HER2 and nuclear p53 expression was performed. CD8 infiltration, CD8 and NK cells cytolytic activity (CD107) of tumor infiltrating lymphocytes and migratory enhancing cells across the tumor microenvironment (TME) were assessed by immunohistochemistry. Mutational analysis for BRAF was performed. Cox proportional hazard models were created to investigate the role of each marker adjusted for cancer stage. The association between each marker and the presence of nodal metastasis was assessed by an exact test.

Results: In our EAC patients’ series, one patients had BRAF mutation (V600E) and 5 of them had microsatellite instability. CD107 overexpression within the cancer was associated with the presence of nodal metastasis (p = 0.029). In patients with nodal metastasis, nuclear p53 overexpression revealed to be an independent predictor of early recurrence with [HR = 2.995 (95% CI = 1.122 – 7.986) p = 0.029] as well as cancer stage [HR = 2.903 (95% CI = 1.669 to 5.186) p < 0.01]. On the other hand nuclear p53 overexpression also tended to be an independent predictor of overall survival [HR = 2.359 (95% CI = 0.961 to 6.963) p = 0.06] while cancer stage confirmed to be the main survival predictor [HR = 1.889 (95% CI = 1.081 to 3.214) p = 0.025].

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

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Introduction: Altered glucose metabolism has become a recognised feature of tumor cells, which is characterized by an increased glucose uptake and preferential dependence on glycolysis for energy production. As a consequence, cancer cells produce large amounts of lactate, which is pumped out the cytosol by monocarboxylate transporters (MCTs), mainly MCT 1 and 4. MCT inhibition has previously been related to increased apoptosis in cancer cells, but this aspect has not been investigated in esophageal adenocarcinoma (EAC) yet.

Aims & Methods: We aimed to: 1) characterize the expression of MCT 1 and 4 in human samples of EAC and to evaluate in vitro the effect of extracellular glucose concentration and pharmacological inhibition of MCT1 on lactate concentration, intracellular pH (pHi), and cell apoptosis, MCT1 and MCT4 expression was analyzed by immunohistochemistry in human samples of EAC. For the in vitro study, two different EAC cell lines were used: OE33 (ECACC), established from an EAC of the lower esophagus and OAC5M1C (ECACC), obtained from a lymph node metastasis derived from an EAC, MCT1 and MCT4 expression and localization were assessed by immunohistochemistry in both cell lines. The MCT1 selective inhibitor AZD9395 (0, 10 and 100 nM) was added to the culture medium under a normoxic and hypoxic atmosphere in standard (11 mM) or high (30 mM) glucose content in the media. Apoptosis was determined by flow cytometry (Annexin V-FITC and propidium iodide). Intracellular lactate concentration was evaluated in a colorimetric assay. pH was evaluated by flow cytometry with the probe SNARF-1 AM. Experiments were performed at least in triplicate. Statistical analysis was performed by student’s t-test. Results: MCT1 and MCT4 expression was found in all the EAC samples evaluated. MCT1 expression was confined to tumor cells, with 62% of the biopsies showing moderate or intense staining, whereas MCT4 was expressed in both tumor and stromal cells, with 40% of moderate/intense stained samples. Both MCT1 and MCT4 expression was significantly downregulated in OE33 cells and only in a small population of the metastatic cell line. High extracellular glucose concentration increased intracellular lactate levels in OE33 cells but not in the metastatic line, and did not have any effect either in pH and apoptosis under any of the conditions evaluated (normoxia and hypoxia) in both cell lines. Treatment with AZD9395 (10 and 100 nM) increased intracellular lactate concentration in OE33 and OAC5M1C cells, but this increase was higher (600–700%) in the metastatic cell line than in OE33 cells (50–70%). Under normoxic conditions AZD9395 significantly increased pH of both cell lines whereas hypoxic atmosphere had no effect on metastatic cells. The highest concentration (100 nM) of the MCT1 inhibitor significantly...
increased apoptosis of OACM5.1C cells whereas did not affect apoptosis of OE3.1 cells.

Conclusion: Metastatic and non-metastatic esophageal adenocarcinoma cells exhibit different glycolytic metabolism and response to pharmacological inhibition of MCT1, which increases apoptosis in metastatic cells. Further preclinical studies are required to be defined the potential of blocking lactate transporters on the treatment of metastatic EAC.

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

P1216 THE PREDICTIVE FACTOR FOR PERFORATION IN ESOPHAGEAL ESD

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Introduction: Although endoscopic submucosal dissection (ESD) is accepted as a standard treatment for early stage esophageal neoplasia, esophageal perforation is sometimes experienced as main adverse event. Esophageal perforation causes mediastinal emphysema, mediastinitis, and pneumothorax, sometimes requiring emergency surgery.

Aims & Methods: We evaluated the predictive factors for esophageal perforation in patients who received esophageal ESD. This was a retrospective observational study in a single institution. Between May 2004 and March 2016, 549 consecutive patients with 927 lesions were treated with ESD. Esophageal perforation was defined as cases with lack of data. 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 hold dissected wall exposing the mediastinal cavity. Logistic regression multivariate logistic analysis with generalized estimating equations were used to analyze repeated measures data.

Results: A total of 549 cases with 927 lesions were evaluated. Of those, perforation occurred in 15 cases (2.7%) with 15 lesions (1.6%). A lesion diameter (Odds ratio; OR = 1.05, 95% confidence interval: 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 size and the proximity of the tumor to a previous ESD scar increased the likelihood of perforation in patients who received esophageal ESD.

Disclosure of Interest: T. Tanigawa: Faculty member of a course sponsored by EA pharma Co., Ltd. T. Watanabe: Faculty member of a course sponsored by EA pharma Co., Ltd. Y. Fujikura: 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, EFFICACY AND OUTCOME OF ENDOSCOPIC SUBMUCOSAL DISSECTION FOR THE TREATMENT OF EARLY BARRETT’S NEOPLASIA

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Introduction: Endoscopic submucosal dissection (ESD) was developed in Japan for the treatment of large gastrointestinal neoplasias and has progressively been adopted in the West. Currently, early Barrett’s neoplasia is mainly treated with endoscopic mucosal resection (EMR) and/or radiofrequency ablation, being the ESD is not performed in this context not well-established yet. Our aim is to evaluate the safety, efficacy and outcome of ESD for the treatment of early Barrett’s neoplasia.

Aims & Methods: Fifty consecutive ESD cases of early Barrett neoplasia were performed in 42 patients in our center between 2011 and 2016. All ESDs were performed under full narcosis after multidisciplinary team conference discussion and patient’s consent. The primary endpoint was the rate of endoscopic resection. Secondary endpoints included rate of R0 and curative resection, a comparison of pre- and post- ESD histology, procedure time, procedure-related adverse events, and rate of remission at follow-up. This study was approved by the Stockholm Regional Ethical Committee.

Results: Mean age was 67 years (range 46–84), being 74% male and 72% long segment BE. The mean specimen size was 52 mm (range 16–150 mm). ESD resections included less than 25% of the 25–50%, 50–75% and 75–100% of the mean circumference in 4/3/12 of the cases, respectively. En bloc, R0 and curative resection were obtained in 96% (48/50), 80% (40/50) and 70% (35/50) of cases, respectively. The mean procedure time was 120 minutes. There were 2 perforations (4%) treated endoscopically and 2 (4.0%) postoperative bleeds treated conservatively. Six patients (12%) developed esophageal strictures that were managed endoscopically. The 30 days mortality was 0%. In 15 cases of LGD, there was submucosal invasion on the ESD specimen. In 14/50 of the resected specimens there was submucosal neoplasia. The mean procedure time was 120 minutes. There were 2 perforations (4%) treated endoscopically and 2 (4.0%) postoperative bleeds treated conservatively. Six patients (12%) developed esophageal strictures that were managed endoscopically. The 30 days mortality was 0%. The patients with 15 non-curative cases, 2 patients went through further ESD, 1 received chemoradiotherapy and 2 patients are under surveillance. In the 10 esophagectomy cases, 4 patients had AC in the remnant Barrett’s esophagus and 2 patients had lymph node metastasis. Complete resection was 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 plus 5-fluorouracil and radiation therapy. Additional CRT after endoscopic resection in patients with esophageal cancer was a 22 mm (6 to 55) in the CRT group and 25 (3 to 47) in the follow-up group (p = 0.63). The tumor invades the MM in 9 patients, the SM1 in 3, and the submucosa to a depth more than 200μm (SM2) in 29 in the CRT group and the LPM in 3 patients, the MM in 16, the SM1 in 18, and the SM2 in 15 in the follow-up group (p = 0.91). Lymphatic invasion was positive in 21 patients in the CRT group and 12 in the follow-up group (p < 0.01). Vascular invasion was positive in 27 patients in the CRT group and 29 in the follow-up group (p = 0.32). Involved margin of the submucosal or lymphovascular invasion was found in 7 in the CRT group and 9 in the follow-up group (p = 0.07). CRT-related grade 3 or 4 early adverse events were leukopenia 24.3% (10 patients), neutropenia 29.3% (12), febrile neutropenia 4.9% (2), diarrhea 2.4% (1), anorexia 17.9% (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 in 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 selected radio-positive (93.8%) in the follow-up group (p = 0.02). Disease-free survival (DFS) 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 esophageal cancer 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 2.5 years (range 4–64 months).

Conclusion: In the proper setting, ESD is safe and effective for the treatment of early Barrett’s neoplasia with high en bloc and complete resection rates and good curative rate. ESD enables full pathological assessment in lesions not suitable for en bloc resection with EMR. There were no recurrences in the curette 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.

P2129 ENDOSCOPIC EVALUATION AT THE PRIMARY SITE OF CTI ESOPHAGEAL CANCER AFTER PROTON BEAM THERAPY AND CLINICAL RESULTS OF SALVAGE ENDOSCOPIC THERAPY FOR LOCAL RECURRENCE

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Introduction: Recently, it has been reported that proton beam therapy (PBT) is the effective treatment for patients with esophageal squamous cell carcinoma (ESCC). However, there are few reports regarding the endoscopic evaluation of efficacy after PBT at the primary site.

Aims & Methods: The aim of this study is to clarify the adequate endoscopic evaluation of 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 60 Gray- Equivalent (GyE). The efficacy of PBT at the primary site was evaluated with endoscopy, and the definition of complete response (CR) was used according to the same criteria as that of conventional chemoradiotherapy (CRT) as follows: disappearance of tumor lesion and ulcer, and absence of cancer cells in 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 T1a, esophagectomy or photodynamic therapy (PDT) for T1b 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. All patients underwent concurrent systemic chemotherapy. 43 patients (98%) had a depressed component in endoscopic evaluation. Recurrence occurred in 100% of the patients with clinical stage II, III, and IV. The median follow-up of the patients with local recurrence was 257 days (range, 111–722 days). The endoscopic finding from CR was 257 days (range, 111–722 days). The endoscopic finding from CR was 257 days (range, 111–722 days).

Aims & Methods: The aim of this study was to investigate the clinical outcomes of electron beam therapy (EBT) and conventional esophageal squamous cell carcinoma (HNSCC) patients in an oncology tertiary center. From 2010 to 2016, 3280 endoscopies were performed in patients with HNSCC and in 1887 chromoscopy with Lugol and NBI were performed. A total of 26 SENS, submitted to ESD, in 25 patients were retrospectively analysed.

Results: The median tumor size was 4.37 cm (±1.83). The en bloc resection were 100% and free margin (R0) were 92.3%. The two patients with positive margins had a depressed component in endoscopic evaluation. Recurrence occurred in 11.5% (3/26) and one of these cases was successfully treated by endoscopic submucosal dissection (ESD).

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

References

P2121 ENDOSCOPIC CRYOBALLOON ABLATION IS SAFE, WELL-TOLERATED AND HIGHLY EFFECTIVE IN THE ERADICATION OF ESOPHAGEAL SQUAMOUS CELL NEOPLASIA

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Introduction: Globally, 80% of all esophageal cancer cases are esophageal squamous cell cancer (ESCC), arising from esophageal squamous cell neoplasia (ESCN). Patients with ESCC have poor prognosis, but when diagnosed at the stage of ESCC, curative endoscopic treatment can be performed. ESCC 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 therapeutic cryoballoon 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 for 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 O-Hb) unstained lesion (USL) on Lugol’s chromoscopy, <6cm in length and <50% of circumference, with a confirmed diagnosis of Moderate or High Grade Intraepithelial Neoplasia (MGIN/HGIN) were
Aims & Methods:
Phenotypic diagnosis of endoscopic (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 some patients (feeling of swallowing difficulty, vomiting, aspiration caused by 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 evaluating 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 current 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. We enrolled 80 patients with early esophageal cancer (EAC) treated by endoscopic submucosal dissection (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 following 2 items. 1. Clinical outcomes and complications. 2. Usefulness of oral steroids administration, the local steroids injection combination therapy for the prevention of post-ESD stenosis. Results: 1. Clinical outcomes: In EUS-J, the stenosis rate was 29.8%, and the ulcer healing period was 97.5 days. In oral steroid group, the stenosis rate was 14.9%, 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.

Aims & Methods: A total of 2850 patients who were diagnosed with EGC underwent endoscopic resection either by esophagectomy or endoscopic submucosal dissection (ESD). We analyzed the surgical and oncological safety of these procedures.

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Introduction: The patients with early gastric cancer (EGC) who have undergone non-curative endoscopic resection (ER) need additional surgery. Our previous study reported short-term data about 29 days were optimal time when considering surgical outcome. (Ann Surg Oncol. 2014 Jan;21(1):1232-9.) This study is a 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. Results: 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-curative 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 operation before 29 days and 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/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 loco-regional 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**


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**P1225 THE POINT TO DISTINGUISH EARLY GASTRIC CANCER FROM DEPRESSION TYPE OF GASTRIC INTESTINAL METAPLASIA**

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**Introduction:** This study discusses two endoscopic findings which improve the accuracy of the diagnosis of early gastric cancers (EGC). After successful Helicobacter pylori eradication, we often observe multiple reddish depressed lesions 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, now, additional two endoscopic findings that should improve the accuracy of diagnosis of EGC. They are 1) “intraperithelial microinvasion (IEMI)”, and 2) “Over flow”, Over flow is that the endoscopic finding that the structure of the lesion called “patchy redness” or “map-like redness” in the gastric mucosa.

**Aims & Methods:** The aim of this study is to clarify the usefulness of two endoscopic findings in order to detect the EGC in the group thought to be an IM. This is a retrospective control study. There were 234 cases of EGC performed endoscopically in Japan.

**Characteristics**

<table>
<thead>
<tr>
<th>Group</th>
<th>Duration (months, mean ±SD)</th>
<th>Loco-regional recurrence (n, %)</th>
<th>Distant recurrence (n, %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0.13</td>
<td>0.8</td>
<td>2 (2.3)</td>
</tr>
<tr>
<td>B</td>
<td>169</td>
<td>1.6</td>
<td>2 (1.2)</td>
</tr>
</tbody>
</table>

**Conclusion:** IEMI and Over flow leads to the diagnosis of EGC in addition to other endoscopic findings.

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

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**P1226 IRON DEFICIENCY ANEMIA—ARE THERE ANY PREDICTORS OF GASTROINTESTINAL MALIGNANCY?**

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**Introduction:** Iron deficiency anemia (IDA) may be the only sign of gastrointestinal (GI) malignancy. The identification of predictive factors of GI malignancy in patients with IDA could help the physician to establish patients’ priority to endoscopic assessment, contributing to an earlier diagnosis.

**Aims & Methods:** Retrospective study of 344 patients submitted to endoscopic assessment for IDA. Included adult patients with IDA and excluded patients with GI or extra-GI bleeding, total gastrectomy, exclusively vegetarian diet or intake of synthetic iron records.

**Results:** Included 121 patients with mean age of 68.5 ± 17.0 years and 54.5% females. GI malignancy was identified in 14.9% of patients (gastric in 12, colonic in 6 patients). A statistically significant association was found between the presence of GI mucosal findings and IM (p < 0.001), gender (72.2% vs 40.8%, p = 0.01), IM symptoms (61.1% vs 11.7%, p < 0.01), weight loss (61.1% vs 5.8%, p < 0.01), need for hospitalization (88.9% vs 49.5%, p < 0.01), iron serum levels and transferrin saturation (97.0 ± 10.1 mg/L vs 30.4 ± 18.9 mg/L, p < 0.01), transferrin saturation showed a weak discriminative capacity (AUC = 0.67, p = 0.01) however, values of transferrin saturation ≤11% had a sensitivity of 94.4% and a negative predictive value of 97.1% for GI malignancy (CI 95% 95.7–98.8). The association remained significant after adjusting for IDA symptoms. The prevalence of GI malignancy was highest in females (89.7% vs 57.6%, p = 0.01) and 6.1% in patients with values over 11% have a very low probability to have GI malignancy.

**Conclusion:** All patients with IDA the diagnosis of GI malignancy is established in a significant percentage of patients and patients with symptoms, weight loss or with need for hospitalization should be given priority in the performance of endoscopic examinations. Transferrin saturation may help the physician establishing the urgency of endoscopic assessment, since patients with values over 11% have a very low probability to have GI malignancy.

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

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**P1227 IMPROVEMENT OF DETECTION RATE OF EARLY GASTRIC CANCER BY A TRAIN-THE-TRAINER (TTT) COURSE IN CHINA: A PROSPECTIVE CONTROLLED STUDY**

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**Introduction:** Detection of gastric cancer in its early stage is pertinent in reducing specific mortality. However, early detection of gastric cancer has not been achieved in many countries where the incidence of gastric cancer is high. In order to overcome this problem, we developed an e-learning system for international endoscopists to improve endoscopic diagnosis of early gastric cancer. However, it has not been investigated whether such learning system is useful in clinical practice.

**Aims & Methods:** The objective of this trial is to investigate whether the intensive on-site TTT course is useful for increasing early detection rate of gastric cancer in Chinese high-volume endoscopy center. Five Chinese doctors (the TTT group) who were invited to the TTT course and the other five age and experience-matched Chinese doctors (the non-TTT group) in the same facility who did not attend any learning program during the same period. Lectures of the TTT course included the detection of early gastric cancer by screening endoscopy using white-light endoscopy alone and the feature of the detected subtle gastric mucosal lesion using white-light endoscopy or magnifying endoscopy with narrow-band imaging. Contents used in the lecture had been reported to be useful by an e-learning trial [1, 2]. All the instructions were given by an experienced Japanese endoscopist (K. Yao) who constructed the e-learning system [1, 2]. Endoscopists also received on-site hands-on training in addition to the theoretical training. 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.

**Results:** The data obtained from the 275 consecutive cases of screening gastroscopy procedures by the TTT group endoscopists and from the 323 consecutive cases of screening endoscopy procedures by the non-TTT group endoscopists were analyzed. In the TTT group, four cases with early gastric cancers were detected and no early gastric cancer was detected. The early detection rates of
the TTT and the non-TTT group were 1.5% and 0%, respectively. There was a significant difference in early detection rate between the TTT and the non-TTT group (Fisher’s exact test, P = 0.046).

Conclusion: This clinical trial clearly showed that the systematic intensive TTT course is useful for improving early detection rate of gastric cancer in clinical practice compared to the usual examination for patients of endo-highvolume endoscopy center. (NCT02358578)

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 of the ESD and surgery after 10 years.

Aims & Methods: We performed a retrospective analysis of 1243 patients with stage I early gastric cancer without lymph node involvement, 551 patients were treated with ESD, and 692 patients were treated with subtotal or total gastrectomy. Long-term overall and disease-specific survival rates, development of new lesions, and complications were analyzed.

Results: The mean age was higher in the ESD group (64.9 ± 9.5 vs. 58.5 ± 11.7, P = 0.001) and female distribution was higher in surgery group (30.5% vs. 38.9%, P = 0.001). In the ESD group, diabetes was more frequent (12.9% vs. 7.1%, P = 0.001). 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 years’ follow-up period, new lesions were observed in 3.6% of the ESD group and in 13% of the surgery group (P < 0.001). ESD group showed less complications (4.5% vs. 16.3%, P = 0.001) and shorter hospital day than surgery group (5.27 days vs. 12.09 days, P < 0.001).

Conclusion: Although the development of new lesions were more frequent than surgery, ESD was similar overall survival rate and even higher disease-specific survival rate than surgery. Also, ESD has less complications and shorter hospital day than surgery. Therefore, ESD is an effective therapeutic method in early gastric cancer as well as surgery.

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

P1229 HEMATOLOGISTS SHOULD ORDER ENDOSCOPIC EXAMINATIONS TO EXPERTS OF ENDOSCOPY IN CASE OF ENDOSCOPIC CHECK-UP OF GASTROINTESTINAL MALIGNANT LYMPHOMA
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Introduction: Gastric malignant lymphoma (ML) is most popular lymphoma of the gastrointestinal tract. Especially we often see gastric ML lymphoma in cases of H. pylori (HP) infection positive, and we also sometimes find out HP negative gastric MALT lymphoma. Since gastric carcinoma (GC) is more common rather than gastric MALT lymphoma, typical endoscopic diagnostic characteristics of GC are established on usual endoscopic examination for most of gastroenterologists. On the other hand, endoscopic characteristics of gastric MALT lymphoma on usual endoscopy have not been established for most of gastroenterologists.

Aims & Mete: Objective of this study is to estimate the difficulty on endoscopic diagnosis of gastric MALT lymphoma for 24 gastroenterologists (12 experts and 12 trainees of endoscopy) on usual endoscopic examination. 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 (248 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 endoscopic examination of trainees was 5.4 times. There was a significant difference between experts and trainees of endoscopy on average total number of endoscopic examinations (p = 0.022). Major reason of misdiagnosis was insufficient recognition of endoscopic appearances of ML on endoscopic trainees. Typical representative appearances of gastric 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. That is, even if typical appearance of non-expert could not diagnose gastric MALT lymphoma, but expert could diagnose minimal lesions of ML at first endoscopy. Especially HP positive gastric MALT lymphoma was similar to gastritis and GC on endoscopic findings, most of non-expert could not diagnose exactly.

Conclusion: There was significant difference between specialists and trainees. Therefore, hematologists should order endoscopic examination to experts of endoscopy knowledgeable of ML in case of endoscopic check-up of gastrointestinal malignant lymphoma.

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

References
PATIENTS UNDERGOING ENDOSCOPIC TREATMENT

P1231 THE EFFECT OF OBESITY ON EARLY GASTRIC CANCER IN

Disclosure of Interest: poor prognostic factors.

lymphoma

main form of diagnosis. Alcohol and tobacco consumption, lymphadenopathy, alcohol.

5

4

Aims & Methods:

Previous studies have shown that non-cardiac gastric cancer had no

Republic of

INSULATED SCISSORS-TYPE KNIFE (SB KNIFE)

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, feasibility and safety of both EUS-FNA and MIAB were compared.

Results: The location of the SET was esophagus (n = 6), stomach (n = 29), and duodenum (n = 2). The diagnostic histology were gastrointestinal stromal tumors (n = 10), leiomyoma (n = 17), aberrant pancreas (n = 3), poorly-differentiated carcinoma (n = 2), metastatic carcinoma (renal cell carcinoma, n = 1), and no-diagnosis (n = 4). There were no significant differences in the clinical characteristics including sex and age of the patients in the EUS-FNA and MIAB group. In EUS-FNA group, the histological diagnostic rate was 72.2% in EUS-FNA and 78.9% in MIAB (p = 0.429). Diagnostic yield was 72.2% of the EUS-FNA and 94.7% of the MIAB (p = 0.0897).

Conclusion: No complications were found in either method.

Aims & Methods: The aim of this study was significantly different in MIAB than in EUS-FNA. However, the mean diameter of the tumor was significantly smaller in MIAB than in EUS-FNA the higher diagnostic yield in MIAB than in EUS-FNA.

DISCLOSURE OF INTEREST: All authors have declared no conflicts of interest.

P1235 CLINICAL TRENDS AND BURDEN OF DEATH IN GASTRIC CANCER: A SIX-YEARS SURVEY

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Introduction: The gastrointestinal tract (GIT) is the most commonly extranodal site affected in lymphomatous pathology. Infection with Helicobacter pylori, human immunodeficiency virus and Epstein Barr and immunosuppression have been studied as possible risk factors. The diagnosis is often late, presenting at an advanced stage, with limited therapeutic options.

Aims & Methods: The objective of this study was to characterize the anatomical distribution, clinical manifestations, risk factors and prognosis of GI lymphomas. Retrospective study of patients diagnosed with GI lymphomas between 1997 and 2016.

Results: During the 20 years, 127 GI lymphomas were identified. The mean age at diagnosis was 58.2 years, and 60% of the patients were male. The most commonly affected organ was the stomach (65.3%) and the most common subtypes were diffuse large B-cell (48.8%) and MALT (27.6%). Most symptoms at the time of diagnosis, with fatigue (54.3%) being the most common. For coagulation of blood vessels or bleeding, it is not required to replace SB which is used cutting and coagulation.

Conclusion: This short insulated scissors-type knife (SBf) 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.

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 vs 23, P < 0.001). The OR of gastric cancer was increased according to the BMI increase; 1.57 (95% CI, 0.89–2.79, P = 0.12) in normal BMI, 1.88 (95% CI, 1.06–3.35, P = 0.03) in overweight, and 2.28 (95% CI, 1.29–4.06, P = 0.005) in obese persons comparing to underweight. The BMI trend < P < 0.03 when comparing BMI > 25 vs BMI ≤ 25.

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.

Aims & Methods: During the 20 years, 127 GI lymphomas were identified. The mean age at diagnosis was 58.2 years, and 60% of the patients were male. The most commonly affected organ was the stomach (65.3%) and the most common subtypes were diffuse large B-cell (48.8%) and MALT (27.6%). Most symptoms at the time of diagnosis, with fatigue (54.3%) being the most common. For coagulation of blood vessels or bleeding, it is not required to replace SB which is used cutting and coagulation.

Conclusion: This short insulated scissors-type knife (SBf) 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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Conclusion: This short insulated scissors-type knife (SBf) 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.
P1236 GASTRIC ADENOCARCINOMA OF FUNDIC GLAND TYPE: CANCER GENOMIC DATA
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Introduction: Gastric adenocarcinoma of fundic gland type (GAFG) is an uncommon variant of gastric adenocarcinoma which has a distinct clinicopathological, immunohistochemical, and endoscopic features (1-3). However, the molecular biological features of GAFG have not been well elucidated.

Aims & Methods: We evaluated clinical and molecular characteristics of GAFG in comparison with conventional gastric adenocarcinoma. Among 831 patients with gastric adenocarcinoma who underwent surgery or endoscopic resection in Division of Gastroenterology, Juntendo University School of Medicine between January 2010 and December 2016, we enrolled 13 cases of GAFG, defined as an extremely well differentiated adenocarcinoma with expression of pepsinogen-I and/or H+/K+-ATPase 1). To clarify current mutations of GAFG, next generation sequencing (NGS) was performed for all cases of the tumor and normal tissue formalin-fixed paraffin-embedded samples, using Ion PGM™ system with the Hotspot Cancer Panel v2 targeting 50 genes (Thermo Fisher Scientific). We also carried out immunohistochemical staining including MUC2, MUC5AC, MUC6, and CD10, and analyzed association among genetic alterations and mucin phenotype.

Results: Clinicopathologically, all patients (62.9% (range 43–80), 8 male, 5 female) had submucosal invasive adenocarcinoma with no H. pylori infection; the mean depth of the submucosal invasion was 288.4 (50–700) µm. Neither local recurrence nor metastasis was detected at a median of 6.7 months (1–47) follow-up after treatment. NGS analysis revealed that nine of 13 patients (69.2%) had submucosal invasive adenocarcinomas with no H. pylori infection; the mean depth of the submucosal invasion was 288.4 (50–700) µm. Neither local recurrence nor metastasis was detected at a median of 6.7 months (1–47) follow-up after treatment. NGS analysis revealed that nine of 13 patients (69.2%) had submucosal invasive adenocarcinomas with no H. pylori infection; the mean depth of the submucosal invasion was 288.4 (50–700) µm. Neither local recurrence nor metastasis was detected at a median of 6.7 months (1–47) follow-up after treatment. NGS analysis revealed that nine of 13 patients (69.2%) had submucosal invasive adenocarcinomas with no H. pylori infection; the mean depth of the submucosal invasion was 288.4 (50–700) µm. Neither local recurrence nor metastasis was detected at a median of 6.7 months (1–47) follow-up after treatment. NGS analysis revealed that nine of 13 patients (69.2%) had submucosal invasive adenocarcinomas with no H. pylori infection; the mean depth of the submucosal invasion was 288.4 (50–700) µm. Neither local recurrence nor metastasis was detected at a median of 6.7 months (1–47) follow-up after treatment. NGS analysis revealed that nine of 13 patients (69.2%) had submucosal invasive adenocarcinomas with no H. pylori infection; the mean depth of the submucosal invasion was 288.4 (50–700) µm. Neither local recurrence nor metastasis was detected at a median of 6.7 months (1–47) follow-up after treatment. NGS analysis revealed that nine of 13 patients (69.2%) had submucosal invasive adenocarcinomas with no H. pylori infection; the mean depth of the submucosal invasion was 288.4 (50–700) µm.}

Conclusion: The present clinical and comprehensive genetic analysis identified that GAFG had significantly higher expression of MUC5AC (55 µM, p < 0.001) in GAFG. Furthermore, the frequency of TP53 mutation was significantly lower (7.7% vs. 47.8%, p < 0.05) in GAFG. However, there were no significant differences in the frequencies of KRAS and STK11 mutations. In addition, all lesions showed negative staining for E-cadherin (i.e., immunohistochemical staining for MUC5AC and/or MUC6) and there were no significant differences between genetic alterations and mucin phenotype.

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

References

P1237 LNCRNA-HOTAIR INDUCES THE UBQUITINATION OF RUNX3 IN GASTRIC CANCER
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Introduction: Runx-related transcription factor 3 (Runx3) is a transcription factor playing an inhibitory role in the malignant behavior of gastric cancer. Long non-coding RNAs (LncRNAs) exert their functions mainly by binding with corresponding transcription factors. Among Runx3 transcription factors are the most common ones. However, the LncRNAs that could bind with and affect the expression or activity of Runx3 are still unclear.

Aims & Methods: Potential Runx3-binding LncRNAs were screened by an online program software RNAiPath v4.0 and validated by Runx3 immunoprecipitation assay. Specific HOTIAR binding site with Runx3 was confirmed further by RNA Pull down. The E3 ubiquitin ligase isoforms in the ubiquitin-proteasome degradation of Runx3 were recognized through co-immunoprecipitation assay.

Results: The expressions of HOTIAR and Runx3 were measured in human gastric cancer tissues and correlated with each other.

Aims: The potential role of HOTIAR and Runx3 in gastric cancer through LKB1-mediated AMPK activation was validated by bisulfite genomic sequencing (BGS), western blot and siRNAs targeting either HOTIAR or Mex3b could enhance the stability of Runx3 by impairing its ubiquitination. In addition, HOTIAR was negatively associated with the protein level of Runx3 in gastric cancer tissue.

Conclusion: HOTIAR induction leads to suppression of the ubiquitin-proteasome degradation of Runx3 by enhancing its interaction with a E3 ubiquitin ligase Mex3b in gastric cancer.

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

References

P1238 CARB3L FUNCTIONS AS A TUMOUR SUPPRESSOR IN GASTRIC CANCER THROUGH LKB1-MEDIATED AMPK ACTIVATION
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Introduction: Promoter hypermethylation plays a vital role in cancer development through transcriptional silencing of tumour suppressor genes. Using Infinium Human Methylation 450 BeadChip (450K) array, we first identified calcium binding protein 39-like (CARB3L) to be preferentially methylated in gastric cancer (GC) and it may function as a potential tumour suppressor gene.

Aims & Methods: In this study, we aim to investigate the biological function, molecular mechanism and clinical implications of CARB3L in GC. Clinical relevance was validated by bisulfite genomic sequencing (BGS), western blot and immunohistochemistry (IHC). In vitro functional assays were carried out by cell viability, colony formation, apoptosis, cell cycle, cell invasion and migration assays in GC cell lines. In vivo tumorigenesis was evaluated in an orthotopic nude mouse model. Pathway analysis was performed using RNAseq and Phospho-kinase Antibody Array. The interaction of CARB3L with its protein partners was determined by co-immunoprecipitation assay.

Results: CARB3L mRNA was down-regulated in 13 out of 14 GC cell lines. Silencing of CARB3L was associated with promoter hypermethylation, and demethylation 5'-treatment using Azadecoxycytidine (5-Aza) restored the expression of CARB3L. In human GC, CARB3L mRNA and protein level (p < 0.0001)
were significantly decreased in GC tissues comparing to adjacent normal tissues both in Chinese cohort (n = 48 pairs) and TCGA cohort (n = 450). CAB39L hypermethylation was correlated with poor overall survival in Chinese cohort (n = 87, p < 0.005) and validated in TCGA cohort (n = 354, p < 0.005), which suggesting that CAB39L might function as a tumour suppressor. The functional importance of CAB39L in GC was therefore confirmed. Ectopic expression of CAB39L in three GC cell lines (AGS, BGC823, MKN45) suppressed cell proliferation in MTT (p < 0.01) and colony formation assays (p < 0.0001). CAB39L induced apoptosis and G1 cell cycle arrest in GC cells, concomitant with the enhanced expression of cleaved caspase-3, caspase-9, p21 and decreased cyclin D3 expression. Cell migration and invasion abilities were inhibited by CAB39L in wound healing and gel invasion assays, respectively. Conversely, CAB39L knockdown in MKN28 demonstrated opposite effects. Orthotopic mouse model also showed inhibited tumorigenicity with CAB39L-overexpressing BGC823 cells. Mechanistically, RNAseq and gene set enrichment analysis (GSEA) revealed that AMPK and ERBB2/ERBB4 signaling were involved in the tumour suppressive role of CAB39L in GC. Consistent with our RNAseq data, a monoclonal anti-AMPK Antibody Array indicated AMPK is the key active kinase; whilst ERK1/2 was the most strongly down-regulated in CAB39L over-expressing GC cells, suggesting that CAB39L up-regulates AMPK concomitant with down-regulation of ERBB2/ERBB4 signalling. Moreover, co-immunoprecipitation experiments revealed a direct interaction between CAB39L and LKB1, a bona-fide tumour suppressor that functions to activate AMPK to suppress tumorigenesis. Western blot confirmed activation of LKB1-AMPK/β cascade in GC cells expressing CAB39L, whose opposite effect was observed in CAB39L silenced MKN28 cells. Administration of an AMPK activator, AICAR, inhibited growth of control cells but not CAB39L-expressing (thus AMPK activated) cells, suggesting that AMPK activation by CAB39L contributes to tumour suppression. Combination of novel tumour suppressor silenced by promoter methylation in GC, CAB39L inhibits gastric tumorigenesis via LKB1-mediated activation of AMPK/β. CAB39L methylation may serve as an independent prognostic biomarker for GC patients.

Disclosure of Interest: W. Li: No conflicts of interest. C.C. Wong: No conflicts of interest. Y. Dong: No conflicts of interest. J. Xu: No conflicts of interest. Y. Quan: No conflicts of interest. W. Kang: No conflicts of interest. P.W.Y. Chiu: No conflicts of interest. E. Ng: No conflicts of interest. J. Yu: No conflicts of interest. PKNOX2 via activating p53 signaling pathway, as determined by western blot analysis. Moreover, p53 transcriptionally and coordinately up-regulated in PKNOX2-overexpressing cells, leading to tumour suppression.

Conclusion: PKNOX2 functions as a novel tumour suppressor silenced in GC by promoter methylation. Its tumour suppressive effect is mediated via IGFBP5 and the activation of p53 signaling pathway. Promoter methylation of PKNOX2 may be a useful biomarker for predicting patient prognosis.

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

References
P1241 RECOVERY OF GASTRIC FUNCTION IN CHRONIC ATROPHIC GASTRITIS USING L-CYSTEINE: A 3 YEARS STUDY
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Introduction: The relationship between Helicobacter pylori (H.p.) eradication and atrophic changes is debated. Although some studies report a partial restauration of gastric mucosa by l-cysteine, it is not clear if cysteine has a protective role or if finding reflects gastric mucosal healing. L-cysteine, reducing acetaldehyde production after food intake, has been proposed for prevention of gastric carcinogenesis in patients with chronic atrophic gastritis (CAG). To assess modifications in gastric function after L-cysteine administration in CAG by means of PGI and gastrin 17 (G17) serum levels

Aims: To test gastric function in patients with chronic atrophic gastritis (CAG) in response to l-cysteine therapy.

Methods: We recruited 62 patients with chronic atrophic gastritis (H.p.) for whom symptoms regressed after H.p. eradication. PGI and G-17 serum levels were measured before and after 3, 6, 12, 24, 36 months of therapy. The subgroup of patients allocated in the pilot to 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 way detected 55 (12.8%). OG cancers were 4 in 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 OGD, with 4.3% of those in the pilot having acancer 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: OG as a sole investigation for symptoms has its utility in excluding or detecting OG cancer. A high proportion of cancers detected via 2WW criteria were not OG and would not be detected in the pathway. The standard pathway is the gold standard option, although many cancers other than OG cancers may still be missed.

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 progression of gender-related tumors, such as hepatocellular carcinoma, prostate cancer. Gastric cancer (GC) is the third cause of cancer related death all over the world, and its incidence in male is also much higher than female. However, the molecular mechanisms of AR in gastric cancer are still poorly characterized.

Aims: 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 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 immunortalized gastric cell line GESI. CCRK was upregulated in all (7/7) tested GC cell lines. The correlation of AR and CCRK expression was statistically significant. Higher mRNA level of both AR and CCRK were detected in GC tissues compared with the adjacent normal tissues (P < 0.01). Ectopic re-expression of AR or CCRK by stable transfection promoted colony formation and invasiveness (P < 0.05). Consistently, the numbers of colony formation, migrated cells and invasive cell were reduced by knockdown of AR or CCRK in GC cell lines.

Conclusion: Our results demonstrate that AR directly regulates CCRK expression in GC. AR and CCRK gene may act as a potential oncogene 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 diagnostic 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 with OG cancer. Comparison was made with the standard 2WW pathway, where allocation to OGD or OPD first is performed by OG consultant.

Methods: Pilot and UGI 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. GP were more likely to allocate patients to 2WW (52%) compared to the 32% having DTT 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 10.5,11.2] versus 12.4 days [95% CI 11.0,13.9]). The same was found for OPD. The time on pathway was not different in 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 in the pilot to 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 way detected 55 (12.8%). OG cancers were 4 in 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 OGD, with 4.3% of those in the pilot having acancer detected this way, but none OG cancer, and 10.3% found to have cancers in the standard 2WW group following inves tigation directed after clinic visit. Of these 65% were cancers other than OG cancers and would not be detected on OGD alone.

Conclusion: OG as a sole investigation for symptoms has its utility in excluding or detecting OG cancer. A high proportion of cancers detected via 2WW criteria were not OG and would not be detected in the pathway. The standard pathway is the gold standard option, although many cancers other than OG cancers may still be missed.

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

Reference

P1244 WHAT IS THE YIELD OF ROUTINE D2 BIOPSIES IN THOSE PRESENTING WITH WEIGHT LOSS AT GASTROSCOPY?
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Introduction: Coeliac disease is a common cause of malabsorption in Western countries. The gold standard method of diagnosing coeliac disease is by way of duodenal biopsy. Weight loss is a symptom of malabsorption. Patients referred for upper gastrointestinal endoscopy with symptoms of weight loss commonly undergo duodenal biopsy to assess for presence of coeliac disease. We hypothesise that those patients with weight loss and who routinely have duodenal biopsies very rarely have coeliac disease unless there are other pointers towards malabsorption.

Aims: A single-centre, retrospective analysis of consecutive patients with weight loss undergoing upper gastrointestinal endoscopy for the primary indication 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,
The ratio of the proportion of all cancer death to the proportion of all cancer digestive cancers accounted for 23–24% of all cancer deaths from 2010–2015, but in 2015, the five most common digestive cancers (colorectal, pancreatic, liver, gastric, and esophageal) accounted for 16% of incident cancer cases and 24% 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. Cancers and deaths estimated by the American Cancer Society were used to calculate funding per death or case for each cancer. For comparison, we also extracted data for the three most common cancers (breast, lung, prostate) and all cancers combined. As funding for research in the United States was boosted by the American Recovery & Reinvestment Act in 2009–2010 and declined thereafter, we analyzed trends in funding and disease burden from 2010–2015 using the Spearman correlation.

Results: In 2015, 8 billion USD in federal funding was issued to all cancer research and 658 million USD to the five common digestive cancers. The five digestive cancers accounted for 23–24% of all cancer deaths from 2010–2015, but only 16% of all cancer funding in 2015. The ratio of the proportion of all cancer death to the proportion of all cancer funding, a marker of funding disparity, was 2.9. In comparison, breast cancer accounted for 7% of cancer deaths in all years, 11% of funding in both 2010 and 2015, and had lower proportional death than proportional funding (ratio = 0.8). Prostate cancer likewise had lower proportional death than funding (ratio = 0.9). Funding disparity, measured by proportional death and funding, was highest for esophageal and gastric cancer among digestive cancers and for lung cancer overall. The relative distribution of deaths and cancer funding more or less remained unchanged between 2010–2015, 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 5-fold the funding per all cancers. For colorectal cancer, 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 not available. Prostate cancer was not available for liver and colorectal cancer (p < 0.05 for both). Over the same period, funding per incident case decreased by 15% for esophageal cancer, 21% for colorectal cancer, 34% for gastric cancer, and 37% for liver cancer; funding increased for pancreatic cancer by 6%. Statistically significantly high trends were observed for liver (p < 0.01), colorectal, and gastric (p < 0.05) cancer. Despite the larger relative funding decrease for liver cancer, it remained the best-funded digestive cancer relative to both incident case and death. Liver cancer received more than 2.5-fold funding per incident case than colorectal and gastric cancer in 2015. Gastric cancer was the only digestive cancer to measure in the bottom two for both funding per death and per incident case.

Conclusion: From 2010 to 2015 in the US, federal research funding relative to the burden of cancer decreased for all digestive cancers except pancreatic cancer. Although a similar trend was observed for all cancer research, there appears to be a funding disparity for digestive cancers—especially gastric cancer—compared to breast cancer and all cancers combined. Greater investment and more equitable funding allocation may improve digestive cancer outcomes.

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

TUESDAY, OCTOBER 31, 2017 9:00-17:00
H. PYLORI II - HALL 7

P1246 HELICOBACTER PYLORI ERADICATION MODULATES ABBRENT CPG ISLAND HYPERMETHYLATION IN GASTRIC CANCERGENESIS

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Introduction: Helicobacter pylori infection induces aberrant DNA methylation in the 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 80.6% of CDH1 in 80.6% of RUNX-3 in 48.4%. This was statistically 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.

P1247 CURCUMIN DOWNREGULATES INTERLEUKIN (IL)-17 BY INCREASING THE EXPRESSION OF INDOLEAMINE 2,3- DIOXYGENASE (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 via the T-helper response of the anti-inflammatory T2 type, and anti-inflammatory properties of the nutraceutical compound curcumin suggest 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 gastrointestinal dyspeptic symptoms: 1 for urease quick test (Eurospital, Trieste, Italy), 2 for histology (Giemsa staining for H. pylori), and 2 for organ culture. A C4-urea breath test was also performed (at least two tests positive and all the three tests negative to be considered as H. pylori-negative for colonized or uninfected). Biopsy samples were immediately placed in an organ culture chamber, treated with and without curcumin 200 μM (Sigma, St. Louis, MO, USA) for 20 hours and evaluated for the expression of IDO and IL-17 by Western blotting. Levels of IL-17 were also measured in culture supernatant by ELISA. Further antral biopsies from a subgroup of 14 patients were treated with curcumin in addition with the IDO inhibitor 1-methyl-L-Trp (1-MT, Sigma, St. Louis, MO, USA) and the expression of IL-17 was assessed in total RNA extracts by Western blotting. The ratio of IDO expression by Western blotting in the presence compared to the absence of 1-MT was evaluated by densitometry, while data from ELISA were normalized on protein content. Values were given as means ± SD arbitrary units (a.u.) and pg/mL, respectively. Data were analysed using the Mann–Whitney U test.

Results: In gastric biopsies cultures from H. pylori-infected patients (n = 13), IDO significantly increased in curcumin-treated compared with untreated samples (1.26 ± 0.64 a.u. vs. 0.87 ± 0.61, p = 0.02). Levels of IL-17 were significantly lower in curcumin-treated compared with untreated samples, both in gastric biopsies (0.53 ± 0.26 a.u. vs. 0.85 ± 0.31 a.u., p = 0.02) and culture supernatant (22.91 ± 13.72 pg/mL vs. 40.46 ± 21.69 pg/mL, p = 0.04)). In the subgroup of H. pylori-infected patients (n = 9), samples treated with curcumin in addition to IDO inhibitor 1-MT, IL-17 expression was significantly higher compared with untreated samples with as well those treated with curcumin alone (1.44 ± 0.52 a.u. vs. 0.91 ± 0.34 a.u. and vs 0.78 ± 0.21 a.u., p = 0.04 and p = 0.01, respectively). Both IDO and IL-17 expression were very low in untreated H. pylori-infected samples and did not significantly change when treated with curcumin alone or in addition to IDO inhibitor 1-MT.

Conclusion: Curcumin is capable of down-regulating IL-17 production in H. pylori-infected human gastric mucosa. This effect is, at least in part, mediated by increasing IDO expression. This endorses the potential role of curcumin in dampening H. pylori-induced immune-mediated inflammatory cytokine production.

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

Reference
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 gastrointestinal disease has not be determined.

Aims & Methods: In this study, we characterized the salivary microbiota in patients with H. pylori-associated gastritis and the potential changes of salivary microbiota after receiving HP eradication. We enrolled subjects who were scheduled for diagnostic upper GI endoscopy. We excluded patients with peptic ulcer or cancer found on endoscopy, who have received prior HP eradication therapy, and who have recent exposure to antibiotics or acid suppressive therapies. Unstimulated saliva samples were obtained from subjects during fasting state prior to endoscopy. Using qPCR, salivary microbiota 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 rRNA sequencing by using the MiSeq Platform (Illumina). OTU clustering was performed and taxonomy assigned to the Greengene and HOMD database. Alpha and beta diversity were determined using Linear Discriminant Analysis Effect Size (LEfSE) was used to identify differentially expressed bacterial DNA in different groups.

Results: We enrolled 16 subjects with confirmed HP gastritis and 14 HP-negative subjects. Baseline salivary samples of all subjects were found to have significantly higher salivary microbial diversity than corresponding gastric samples. The predominant microbial family identified in the stomach is Helicobacteraceae (55.2%) whereas Helicobacteraceae constitutes only 0.1% of salivary microbiota. In contrast, the predominant families in saliva microbiota are Prevotellaceae (23.9%) and Neisseriaceae (20.3%). When compared to HP-negative subjects, salivary microbiota in HP-positive patients showed a significant increase in the Bacteroidetes and Spirochaetaceae, and a decrease in Flavobacteriaceae families. HP eradication therapy resulted in a significant reduction in the relative abundance of family Flavobacteriaceae in Flavobacteriales. Family Helicobacteraceae also decreased in number.

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 investigation.

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

References

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Introduction: Seroconversion of Helicobacter pylori occurs more often in seronegative adults living with a H. pylori-infected family member or in those with a history of upper gastrointestinal endoscopy. Nonetheless, there are controversies on alcohol drinking and development of a positive seroconversion was found in Korea, but an inverse correlation was found in Japan.

Aims & Methods: In this study, we tried to elucidate the risk factors for seroconversion including alcohol drinking. Korean adults who showed negative finding for the serum anti-H. pylori IgG assay were analyzed. Subjects were included if they underwent serum anti-H. pylori IgG assay, serum pepsinogen assay, and upper gastrointestinal endoscopy annually at our center. Subjects were excluded if they had a history of H. pylori eradication or gastrectomy.

Results: Of the 211 seronegative subjects, 26 (12.3%) subjects showed seroconversion-positive responses at the mean follow-up of 39.0±19.1 months. Subjects with seroconversion showed a higher body mass index (p = 0.033), heavier alcohol drinking (p = 0.001), more intake of nonsteroidal anti-inflammatory drug (p = 0.015), and longer follow-up period (p = 0.038). On multivariate analysis, heavy alcohol drinking [odds ratio (OR) = 6.867, 95% confidence interval (CI) = 2.089–22.577, p = 0.002] and social drinking (OR = 5.306, 95% CI = 1.410–17.913, p = 0.013) were independent risk factors for seroconversion.

Discussion: In Korean adults, the amount of alcohol drinking positively correlates with seroconversion in H. pylori-seronegative subjects. Although seroconversion does not indicate an active H. pylori infection, our study findings suggest that drinking is a significant risk factor for new H. pylori infection in Korean adults.

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

References
Helicobacter pylori gastritis is distinct from autoimmune gastritis.

Aims & Methods: The aim was to define features of change of level of interleukin-10 (IL-10) and interleukin-18 (IL-18) in patients with chronic gastritis associated with Helicobacter pylori infection depending on existence or lack of a gene of a cagA in a microorganism genome. 40 patients with the chronic gastritis associated with Helicobacter pylori have been examined. Expression was made for specification of a condition of stomach mucosa and taking biopsy from stomach antrum (2 biopates) for the purpose of verification of Helicobacter 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, ureA). Besides, the PSR method presence of a cagA gene in a genome of Helicobacter 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 immunofluorescent analysis (the Vektor-Best sets, 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-1-β was 395.6 pg/ml, but in cagA(−) patients—311.2 pg/ml (p < 0.05). Level of interleukin-4 in cagA(+) patients was 2.4 pg/ml but in cagA(−) patients—0.32 pg/ml (p < 0.05). Level of interleukin-18 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 Helicobacter pylori cagA gene is accompanied by reliable increase in level of pro-inflammatory cytokines (IL-1β, IL-8) and decrease in level anti-inflammatory interleukin-4 that can be an additional factor of development of an inflammation during Helicobacter pylori infection.

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

References

eradication therapy of H. pylori increased remarkably from 48.4% in 2012 to 76.5% in 2016. The success rate was 76.5%. 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% (35/224), 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.

References


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Introduction: Clarithromycin (CLA)-containing quadruple therapy, i.e. concomitant therapy (CT), and bismuth-containing quadruple therapy (BQT) have been sequentially proposed for eradication of H. pylori infection. Both treatments are reported to have an eradication rate higher than 90%. International guidelines recommend that choosing one regimen vs the other should be based on knowledge of patient's previous antimicrobial exposure or allergy to amoxicillin, and patient's wish.

Results: The eradication rate was 85.1% (74/87). The success rate of vonoprazan regimen was 87.5% (21/24). The success rate of conventional PPI regimen was 84.4% (35/224), and that in patients who received the vonoprazan regimen was 87.5% (21/24). 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% (35/224), and that in patients who received the vonoprazan regimen was 87.5% (21/24).
such as erosion and diarrhea were reported in 6.6% (9/136) of patients in VPZ, in 7.7% (5/65) 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: Eradication of H. pylori infection cures peptic ulcer disease (PUD); however, first-line treatment strategies are not ideal and many patients require repeated courses of treatment. We, and others, have recently documented that currently, within the UK, less than 30% of patients with proven PUD, are subsequently documented to have been cured by H. pylori eradication.

Methods of analysis and inclusion criteria were based on PRISMA recommendations. Relevant publications were identified by a research in PubMed, MEDLINE, Science Direct and EMBASE. The end-point was to estimate the mean eradication rate and variations of delta value at urea breath test across all studies and, overall, with a pooled data analysis. The data have been analyzed ad proportions-percentages, and 95% confidence intervals (CI) were calculated. For continuous variables, we calculated the weighted mean difference. Odds ratios (OR) were calculated, where available, based on the Mantel-Haenszel method. Data were entered into the RevMan 5.3 software.

Results: Two week standard bismuth based quadruple therapy achieved a remarkable eradication rate in real life, irrespective as first treatment or as a salvage therapy, in both naïve and previously treated patients. We targeted a real-life effectiveness and safety of this therapeutic regimen in a large population of patients who were infected by 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 as salvage/treatment regimen in patients infected by resistant H. pylori. Aims of this study 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. Eradication was confirmed using a urea-breath test (at least 30 days after the end of treatment). Efficacy and safety were assessed.

Results: Three hundred and twenty patients were included in the study: 131 (40.9%) patients were naïve, and 189 (59.1%) patients with previous failure treatment. Of H. pylori eradication was achieved in 99 (93.4%), 95% confidence interval (CI) was 92-96%. No difference in eradication rate was found either between naïve and previously treated patients (95.4% vs 92.1%, P = 0.336).

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, MEDLINE, Science Direct and EMBASE. The end-point was to estimate the mean eradication rate and variations of delta value at urea breath test across all studies and, overall, with a pooled data analysis. The data have been analyzed ad proportions-percentages, and 95% confidence intervals (CI) were calculated. For continuous variables, we calculated the weighted mean difference. Odds ratios (OR) were calculated, where available, based on the Mantel-Haenszel method. Data were entered into the RevMan 5.3 software.

Results: Two week standard bismuth based quadruple therapy achieved a remarkable eradication rate in real life, irrespective as first treatment or as a salvage therapy, for the majority of clinical trials and open label pilot studies were selected. In one study patients with peptic ulcers were selected, while in the remaining 9 only dyspeptic patients were recruited. Probiotics eradicated H. pylori in 50 out of 391 cases. The mean eradication rate was 14%, with a 95% CI of 2-23% (p=0.02). Most of studies investigated a probiotic formulation based on a single lactobacilli strain. Lactobacilli eradicated the bacteria in 30 out of 235 patients, with a mean weighted rate of 16% (95% CI 1-31%). Multiflavum 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% CI = 8.01 -11.34, p < 0.0001).

Disclosure of Interest: All authors have declared no conflicts of interest.
Aims & Methods: One hundred and forty five patients with peptic ulcer disease and naïve to Clarithromycin were randomly divided into two groups to receive either 10-day standard triple therapy (Pantoprazole 40 mg, Amoxicillin 1 g and Clarithromycin 500mg, all given twice daily) or 10-day Levofloxacin-containing triple therapy (Pantoprazole 40 mg BD, Amoxicillin 1000 mg BD and Levofloxacin 250 mg tid). 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 do not seem to be suitable options for first-line H. pylori eradication in Iran. We suggest using Clarithromycin in quadruple regimens such as hybrid or concomitant therapies and reserve Levofloxacin to be used in second-line eradication regimens, as it is recommended by Maastricht V Consensus Report.

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

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 Helicobacter 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 infection in our clinics. Patients with a history of eradication therapy, gastrectomy, or allergy to medications in triple eradication were excluded. Written informed consent was obtained for each patient. This trial was performed as a randomised open-label study, where the permission of institutional review board was granted ethical approval (approval: 1610-013), and was registered in the University Hospital Medical Network Clinical Trials Registry (UMIN-CTR) as number UMIN 000025390.

Results: For RBD therapy group and STD therapy group, the eradication rates were 94.0% (95% confidence interval, 85%-100%) and 82% (95% confidence interval, 74%-95%) respectively, and the rates of side effects were 8.5% (95% confidence interval, 7.0%-26.5%) and 29% (95% confidence interval, 17.5%-41.0%) respectively. Each group showed statistically significant difference in eradication rates. The RBD group revealed trends of high eradication rates and low rates of side effects.

Conclusion: The findings suggest that rebamipide is effective in eradication of H. pylori infection, significantly improve eradication rate in triple therapy. The advantage of rebamipide has efficacy and good tolerability.

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

References

TUESDAY, OCTOBER 31, 201709:00-17:00
SMALL INTESTINAL II - HALL 7_
P1263 EPICALLOCATECHIN-3-GALLATE FROM GREEN TEA AMELIORATE 5-FLOUOROURACIL-INDUCED INTESTINAL MUCOSITIS

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Introduction: Chemotherapy-induced mucositis is a common complication during anticancer treatment. Epicallocatechin-3-gallate (EGCC), derived from green tea, has been shown to have antioxidant effects and immunomodulatory activities. However, studies on EGCC for chemotherapy-induced mucositis have been scarce.

Aims & Methods: In this study, we aimed to prove the protective effect of EGCC in murine chemotherapy-induced mucositis model. Twenty-four 8-wk-old male C57BL/6 mice were randomized to 4 groups: control, EGCC, 5-Fluorouracil (5-FU), EGCC plus 5-FU. Mucositis was induced by intraperitoneal injection of 5-FU (400 mg/kg). EGCC (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. Histopathological examination was performed with whole blood from Inferior vena cava of mice. The end points were villus height, villus/crypt ratio, histologic characteristics, and mRNA expression of tumor necrosis factor (TNF-α), and interleukin (IL)-6.

Results: In 5-FU group, neutropenia was confirmed by laboratory test (5-FU, 0.650 K/µL, Control, 5.317 K/µL), indicating sufficient 5-FU effect. Histologic findings showed that crypt dilatation, villus stunting, and villus atrophy were reduced in EGCC plus 5-FU group than in 5-FU group (Figure 1). Quantitative analysis (Figure 1) revealed that EGCC group (352 µm, 5-FU, 319 µm, and villus/crypt ratio (EGCC plus 5-FU, 3.26; 5-FU, 2.31) in EGCC plus 5-FU group, compared with 5-FU treated group, were significantly higher. mRNA expression of TNF-α was significantly lower in EGCC plus 5-FU group compared with 5-FU group (P < 0.05)(Figure 2). Figure 1. Effects of EGCC administration on chemotherapy-induced mucositis in mice jejunum (A) Control (B) 5-Fluorouracil (5-FU) group with significant villus atrophy and crypt dilatation (c) EGCC group (d) EGCC plus 5-FU group with mild villus destruction and less crypt dilatation. Figure 2. mRNA expression of TNF-α. EGCC plus 5-FU group showed significantly lower 2’dctd than 5-FU only group. (** P < 0.05)

Conclusion: EGCC derived from green tea reduced 5-FU induced intestinal mucositis, suggesting a possibility for novel treatment of chemotherapy-induced mucositis.

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

P1264 INCREASED SUSCEPTIBILITY TO ENTEROPATHIC BACTERIA BY PROTON PUMP INHIBITORS IN THE MURINE MODEL OF FOOD POISONING

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Introduction: Proton pump inhibitors (PPIs) have become one of the most commonly prescribed medicine due to their strong effects of suppressing gastric acid and high curative effects for acid related diseases. On the other hand, their side effects have been attracting more attention. One of them is the increased incidence of infectious intestinal diseases. Those are mostly reported by clinical publications, and the exact mechanism has not been clarified. To investigate whether PPIs can increase the susceptibility to peroral enteropathogenic bacterial infection, we used Citrobacter rodentium (C. rodentium), a well-known mouse typhoidal associated pathogen, which is used for the model of human enterohe-morrhagic Escherichia coli (EHEC) and enteropathogenic Escherichia coli (EPEC) infection: the major causes of food poisoning.

Aims & Methods: To investigate whether LAZ can influence the steady-state intestinal environment, C57BL/6J mice were divided into two groups, and 8 mg/kg/day of lansoprazole (LAZ group) or saline (control group) were administered intraperitoneally for two weeks. The ileal contents and feces were collected before and after LAZ administration. Genomic DNA of the gut microbiota was isolated by 16s ribosomal RNA (16sRNA) gene sequencing, and the metabolites were analyzed by a CE-TOFMS platform. To examine the changes of immune cell distribution by LAZ, hematopoietic cells in the lamina propria were analyzed by flow cytometry. The changes of gene expressions of the ileum tissues were measured by QRT-PCR. Two anti-inflammatory metabolites were analyzed by a CE-TOFMS platform. To examine the changes of immune cell distribution by LAZ, hematopoietic cells in the lamina propria of intestinal villi were isolated and their gene expressions were measured by RT-qPCR.

Results: At steady-state, no prominent change of metabolites and gut microbiota were observed in the feces of LAZ group. On the other hand, the changes of short chain fatty acids, such as butyrate and propionate, were decreased in the ileum of LAZ group. The result of 16sRNA analysis also showed that the composition of ileal microbiota were different between LAZ and control group. However, it did not show the change of the immune cell distribution in the intestine.

The gene expression levels in the ileum were not altered either. Interestingly, the ileal microbiota of LAZ group became similar to that of the feces. As mice have a habit of coprophagia, it was assumed that perorally invaded bacteria could survive and pass through the stomach due to suppression of gastric acid by LAZ. Accordingly, in the LAZ group, infectious inflammation was established by less numbers of C. rodentium inoculation, indicating that PPIs could raise the susceptibility to peroral enteropathogenic bacterial infection.

Conclusion: Our data showed that administration of PPIs could alter the intestinal environment such as microbiota and luminal metabolites. However, neither the gene expressions nor distribution of immune cells in the intestinal tissue were affected. It was assumed that the increased risk of peroral enteropathogenic bacterial infection was not because of the immunological modification by PPIs, but it was mainly because of the increased number of pathogenic bacteria passing through the stomach.

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


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 injury have been reported. However, the effective prophylaxis and treatment is not clear yet. Previously, we reported direct detrimental effect of ASA on small intestinal epithelial cells using an in vitro model. However, there are the thick mucus layer between intestinal lumen and epithelial cells. The mucus has been reported to prevent foreign objects such as bacteria, medicine and food from epithelial cells.

Aims & Methods: This study was conducted to clarify the role of mucus on ASA-induced small intestinal mucosal injury using a rat model. Male Sprague-Dawley rats, 9 weeks old was used. These rats were divided into four groups: group 1: sham (carboxy methyl cellulose: CMC alone), group 2: polysorbate-80 (P80) alone, group 3: ASA alone, and group 4: P80 plus ASA. CMC and/or 20 mg/kg ASA was injected into the proximal duodenum of rats. P80, an emulsifier, which has been reported to reduce mucous thickness [2], was administered via drinking water for 2 weeks before ASA treatment. Indeed, P80 also reduced the thickness of mucous layer in our analyses. One hour after ASA treatment, Evans blue was injected into a vein of rats to visualize small intestinal lesions. Ninety minutes after ASA treatment, the entire small intestine was removed for histological assessment. To further investigate the importance of mucus, redbanipide (Reb, 300 mg/kg) or saline were orally administered for one week prior to P80 or ASA treatment. Reb is a gastric mucous-protective drug widely used for the treatment of gastric ulcer, and increases mucous secretion by small intestinal goblet cell.

Results: Evans blue method suggested that high-dose ASA (200 mg/kg) induced severe intestinal 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 enhanced Evans blue exudate and severe mucosal lesions in jejunal sections at these concentrations, suggesting the pivotal role of mucus in these lesions. Moreover, pre-administered Reb significantly suppressed reducing small intestinal mucus and the exacerbation of ASA-induced mucosal lesions by P80, indicating that mucus is inevitable in the protection of ASA-induced small intestinal mucosal injury.

Conclusion: Prevention increasing therapy might be a useful strategy for the prevention of ASA-induced small intestinal mucosal injury.

Y. Itoh: Encouragement and research support from Otsuka Pharmaceutical Co.
All other authors have declared no conflicts of interest.

References

P1268 PREBIOTIC EFFECTS ON HEALTHY AND CHEMOTHERAPY-INDUCED SMALL BOWEL INJURY IN RATS

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Introduction: Intestinal mucosal injury is a severe side-effect of chemotherapy with current deficiency in effective treatments.

Aims & Methods: This study investigated three prebiotics, galacto-oligosaccaride (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 & cosin stained sections. Sucrase and myeloperoxidase [MPO] activity were quantified by biochemical assay. White and red blood cell types were quantified by whole blood analysis. Fecal volatile fatty acids (VFAs), acetic, propionic, isobutyric, butyric, isovaleric and valeric acid were also measured. Statistical analysis was by one-way ANOVA or Kruskal Wallis and Mann Whitney U test, where p < 0.05 was considered statistically significant.

Data are expressed as mean ± standard error of the mean.

Results: %Bodyweight loss was significantly decreased in all treatment groups following 5-FU injection. This was only seen in rats treated with MOS or FOS, and pre and post 5-FU compared to saline treated controls (p < 0.05).

Ileal villus height was significantly higher in GOS treated rats pre 5-FU (284.16 ± 11.95 μm) compared to respective water controls (240.40 ± 8.83 μm; p < 0.05). Ileal villus height and crypt depth was significantly decreased in all treatment groups after 5-FU injection (p < 0.05) and prebiotic treatment did not significantly modify this parameter. Similarly, jejunal and ileal sucrase activity was decreased in all groups after 5-FU injection (p < 0.05), correlating with histological measurements. Tissue MPO activity was significantly increased post 5-FU injection, reflecting increased neutrophil activation, and was unchanged by prebiotic treatment. Interestingly, MOS and GOS both lowered %circulating neutrophils pre-5-FU compared to water controls (p < 0.05). Pre 5-FU treatment with GOS significantly increased the fecal VFAs acetic acid (16.76 ± 1.22 mM/L) and propionic acid (4.60 ± 0.99 mM/L) compared to saline treated controls (7.73 ± 0.92 mM/L and 3.05 ± 0.28 mM/L respectively; p < 0.05). MOS and GOS treatment also significantly increased fecal acetic and propionic acid post 5-FU compared to water control (p < 0.05).

Conclusion: Our study has found that prebiotics, MOS, GOS and FOS modified 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.

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Introduction: Food allergy is characterised by a T helper type-2 immune response against a food antigen, manifesting as symptoms including nausea, diarrhoea, vomiting and 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 or peanut gavage on days 11 and 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.
P1269 THE RELATION OF CHEMOKINE RECEPTOR CXCR3 AND CD8+ T-HOMING MARKER CXCR2 EXPRESSION ON SMALL INTESTINAL LAMINA PROPRIA T-LYMPHOCYTES IN CROHN'S DISEASE PATIENTS


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Introduction: Crohn’s disease has been thought to be caused by abnormal immune responses affecting many parts of digestive tract in which Th1 cells and their cytokines and chemokines play an important role. The recruitment of Th1 cells is regulated by interaction of their expression of chemokine receptor CXCR3 and its ligands. There have been many IBD murine models showing the increase of CXCR3 expression and its roles on the disease promotion. However, there are limited evidences in the roles of CXCR3 in human IBD. In fact, a small study in large bowel in a cohort of 10 Crohn’s disease patients showed lower expression of CXCR3 on T lymphocytes, compared to colon cancer patients. In terms of inhibition of T lymphocyte migration into intestine in IBD patients, anti a4b7 (Vedolizumab) therapy is currently shown to be effective.

Aims & Methods: Our study aimed to assess expression of CXCR3 on different subsets of small intestinal lamina propria T-cells and its association with a4 and b7 expressing integrins. 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 gentle but complete cell dissociation. 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 (p ≤ 0.05) compared to 61.6% in control group (FD/IBS deficiency). Although the expression of CXCR3 on CD8 lymphocytes was higher than CD4 lymphocytes, it was not different between CD and other group (75.8% in CD patients vs 82.2% in controls). Similar observation was obtained on the double positive CD4 and CD8 lymphocytes. Interestingly, only expression of CXCR3 on CD4 lymphocytes positively correlated with expression of the gut-homing integrins, a4 and b7.

Conclusion: These observations showed significant expression of CXCR3 across different subsets of T-cells, whereas the related disease CXCR3 was seen in CD8+ lymphocytes compared to CD4 lymphocytes. An unexpected reduction of CXCR3 expression was seen in small intestinal of CD patients, which associated with gut-homing integrins. This result showed CXCR3 expression may play a role in migration of CD4 lymphocytes but not CD8 lymphocytes into duodenum in relation with integrins, a4 and b7. However, CXCR3 expression on CD4 lymphocytes in CD patients’ small intestine may have protective role. This propose further study to clarify.

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

References

P1270 METHODOLOGICAL QUALITY OF CLINICAL PRACTICE GUIDELINES ON PROBIOTICS IN ACUTE GASTROENTERITIS IN CHILDREN USING THE APPRAISAL OF GUIDELINES FORRetry GUIDELINES ON PROBIOTICS IN ACUTE GASTROENTERITIS IN CHILDREN USING THE APPRAISAL OF GUIDELINES FOR RETRIEVAL, SYSTEMATIC REVIEW AND EVIDENCE BASED MEDICINE (AGREE II)

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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 mainly 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 in children. 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 diarrhea. The search was conducted in December 2016, of CPG based on the evidence, the last 10 years and as contaminants in drinking water, has become a public health problem. Most of these substances are considered as endocrine disruptors and their daily occurrence is likely to be severe and irreversible consequences. Indeed, preliminary studies have shown that chronic exposure to low doses of chlorpyrifos (CPF) causes intestinal imbalance (dysbiosis) in vitro.

Aims & Methods: The objective of this study is to evaluate the preventive potential of a probiotic (mulin) in co-exposure with the CPF on the intestinal dysbiosis, the bacterial translocation and the integrity of the intestinal mucosa. For this we used an in vitro system: the SHIME® (Simulator of the Human Microbial
P1273 SYSTEMATIC REVIEW AND META-ANALYSIS: PREVALENCE OF SMALL INTESTINAL BACTERIAL OVERGROWTH IN CHRONIC LIVER DISEASE

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Introduction: Alterations to the gut microbiota and bacterial translocation have been implicated as relevant factors for the progression of chronic liver disease (CLD). While the sequence of events leading to translocation remains unclear, deficiencies in local host immune defences, increased permeability of the intestinal mucosal barrier and dysbiosis of the gut microbiota are suggested to play a role. Small intestinal bacterial overgrowth (SIBO), in which an excessive and/or abnormal type of bacteria is present in the small bowel has been implicated as a potential factor in translocation. However, systematic assessments of the extent of SIBO in CLD remain limited. We therefore aimed to compare the prevalence of small intestinal bacterial overgrowth (SIBO) in patients with chronic liver disease (CLD) and controls.

Aims & Methods: Using the search terms ‘small intestinal bacterial overgrowth (SIBO)’ and ‘chronic liver disease (CLD)’ or ‘small intestinal bacterial overgrowth (SIBO)’ and ‘cirrhosis’, 19 case-control studies that met inclusion criteria were identified. Data were extracted to calculate prevalence rates and 95% confidence intervals (CI).

Results: The final dataset included 1,000 adult patients with CLD and 488 controls. Nine studies employed glucose breath tests (GBT), four lactulose breath tests, four xylose breath tests, 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. Four studies reported 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. Eight studies researchers used a combination of methods to detect SIBO. 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 that culture tests for small intestinal bacterial overgrowth (SIBO) detected in patients with CLD are more sensitive than other methods. Given the levels of SIBO detected, further studies need to explore the role of intestinal dysbiosis for the progression of CLD.

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

References

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### 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 Breathscreen microlyser (Quinton, USA). Gastrointestinal symptoms were assessed utilising the Structured Assessment of Gastrointestinal Symptoms Instrument (SAGIS). The association between methane exhalation and symptoms during the 2 weeks prior the test were evaluated using non parametric test.

### Results
100 consecutive patients (55%), aged 52.2 ± 15.7 yrs (mean ± SD) were included. Of these, 14 with positive GBT and 19 without SAGIS data were excluded, resulting in 67 data-sets available for analysis. Methane peak and methane baseline values were highly correlated (r = 0.96, p < 0.001). Methane peaks (and baseline) were inversely correlated with the SAGIS diarrhoea score (r = −0.35, p < 0.01, Figure 1). Contrary to current opinion, CH₄ exhalation was not associated with constipation (r = −0.1, P > 0.4). In addition, excessive belching and acid eructation were significantly associated with the baseline and peak CH₄ exhalation (r all >0.3, p all <0.04).

### Conclusion
There is an inverse association between CH₄ exhalation and diarrhoea symptoms. At the same time, CH₄ is associated with bloating and acid eructation. These data suggest that CH₄ or metabolic products from CH₄ production microbes modulate human gut function.

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

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

### References

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### Table 1: Celiac Disease and Positive Iga Tissue Transglutaminase in Patients with Distal Radius and Ankle Fracture: A Case-Control Study

<table>
<thead>
<tr>
<th></th>
<th>Ankle Fracture</th>
<th>Distal Radius Fracture</th>
<th>All Fractures</th>
<th>Controls</th>
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<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></td>
<td></td>
</tr>
<tr>
<td>Female gender %</td>
<td>69.1</td>
<td>80.2</td>
<td>77.3</td>
<td>82.7</td>
</tr>
<tr>
<td>T-score &lt;-2.5</td>
<td>23.4</td>
<td>44.7</td>
<td>39.0</td>
<td>22.3</td>
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<tr>
<td>T-score -1.0-2.5</td>
<td>36.4</td>
<td>33.8</td>
<td>34.5</td>
<td>34.0</td>
</tr>
<tr>
<td>Mean age</td>
<td>62.9</td>
<td>57.1</td>
<td>61.4</td>
<td>60.3</td>
</tr>
<tr>
<td>Mean BMI</td>
<td>26.5</td>
<td>28.6</td>
<td>27.1</td>
<td>27.2</td>
</tr>
<tr>
<td>Known CD</td>
<td>26.5</td>
<td>26.5</td>
<td>26.5</td>
<td>26.5</td>
</tr>
<tr>
<td>Known CD or positive TTG %</td>
<td>2.8 (N=3)</td>
<td>2.8 (N=3)</td>
<td>2.8 (N=3)</td>
<td>2.8 (N=3)</td>
</tr>
<tr>
<td>Vitamin D deficiency %</td>
<td>6.6</td>
<td>6.6</td>
<td>6.6</td>
<td>6.6</td>
</tr>
</tbody>
</table>

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### Table 2: Wide Heterogeneity and High Mortality in Undefined and Non-Coeliac Refractory Sprue: A Retrospective Evaluation of 7 Cases

<p>| | | | |</p>
<table>
<thead>
<tr>
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</thead>
</table>
| A. Schiepatti, F. Biagi, M. Zuffada, G. Maiorano, G.R. Corazza University of Pavia, Pavia/Italy Contact E-mail Address: salamina@hotmail.it Introduction: Small bowel villous atrophy (VA) is mainly related to coeliac disease (CD) that develops in HLA-DQ2 and 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]. There are also forms of VA which 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 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 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
P1279 SYSTEMATIC REVIEW OF THE ECONOMIC BURDEN OF CELIAC DISEASE

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 analyses, and indirect utility measures (HUIs) for CD in North America and Europe. 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 ranged from $3,068 to $7,879 (US$2007) to $6,821 to $11,231 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 HRI, 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 or school but pay high 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. Aziz I et al. Aliment Pharmacol Ther 2016;44,000
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4. FACTORS TREATED CELIAC DISEASE: PREVALENCE AND ASSOCIATED
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7. Introduction: Strict gluten-free diet (GFD) in celiac disease is burdensome and difficult to maintain, which might predispose to poor dietary adherence and impaired quality of life. We aimed to evaluate adult patients’ experience of living with celiac disease diagnosed in childhood, and identify factors associated with possible life restrictions caused by the disease. Aims & Methods: 232 adults (women 69%, median age 27.0 yr) with a childhood diagnosis of celiac disease fulfilled a questionnaire evaluating their experiences about dental 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.
8. Results: Altogether 108 (47%) out of the 232 responders felt that celiac disease restricts their daily life. This was experienced especially when eating in a restaurant (52%) and visiting a friend (30%). Patients reporting restrictions had more often anemia (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 (OR 1.5; p = 0.015) and time from initial diagnosis (18.6 vs 17.9 yr, p = 0.468) were also comparable, as well as were self-experienced general health and concern about health, presence of co-morbidities and complications, smoking, physical exercise, socioeconomic status, membership of celiac society and presence of celiac disease in relatives. There was also no difference in specific gastrointestinal symptoms as 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, diagnosis was more common (93% vs 82%, p = 0.770) than 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).
9. Conclusion: Almost half of the patients diagnosed in childhood experienced celiac disease to cause marked restrictions in adulthood. This was associated with current symptoms, lower vitality scores and difficulties to maintain GFD. Patients with severe symptoms and anemia at diagnosis might require special attention and tailored follow-up in these circumstances.
10. Disclosure of Interest: All authors have declared no conflicts of interest.

P1280 PNPLA3 RS738409 POLYMORPHISM PREDICTS THE DEVELOPMENT AND THE SEVERITY OF HEPATIC STEATOSIS, BUT NOT METABOLIC SYNDROME, IN PATIENTS WITH CELIAC DISEASE

Aims & Methods: We aimed to evaluate the role of PNPLA3 rs738409 in the development of MS and HS in CD patients after starting GFD. From June 2014 to September 2016 we consecutively enrolled all patients referred to academic gastroenterological centre, suffering from CD, with our without HS. All patients underwent anthropometrics and serological investigations, ultrasonography (US) evaluation to assess the degree and severity of HS and genotyping of PNPLA3 rs738409 polymorphism. Results: Finally, 370 subjects were enrolled (136 with HS and 234 without HS). Among the 194 subjects with HS (52.4%), G genotype was found 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 (74% vs 11.3%, p < 0.001, OR 21.8).

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
P1285 PATIENTS WITH SHORT BOWEL SYNDROME STRATIFIED BY BASELINE PARENTERAL SUPPORT VOLUME: POST HOX ANALYSIS OF THE CLINICAL EFFECT OF TEGUGLUTIDE

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Introduction: Parenteral support (PS) volume needs vary depending on disease severity in patients with intestinal failure associated with short bowel syndrome (SBS-HF). Patient classification has focused on the diagnosis that led to resection and the remnant bowel anatomy.

Aims: To identify the stage that grading severity of SBS-HF is based on magnitude of PS volume needs led to this clinical trial data post hoc analysis of patients with SBS-HF based on their baseline PS volume. STEPS (NCT00798967; EudraCT2008-006193-15) was a 24-week, placebo-controlled study of teguglutide (TED) 0.05 mg/kg/day in patients with intestinal failure associated with short bowel syndrome (SBS-HF). Three baseline PS volume groups were evaluated: Group I, <9 L/week; Group II, >9 L to <18 L/week; and Group III, >18 L/week.

Results: The predominant diagnosis leading to SBS-HF in Group I (12:28:43%) and Group II (15:41:37%) was vascular gut complications; in Group III (18:41:36%), Crohn’s disease. Baseline PS volume and TED-induced volume reduction (% change) at Week 24 was highest in Group III (Table). Evaluation of individual patient response showed a close, linear, and significant correlation between absolute PS volume reduction at Week 24 in relation to TED treatment and daily volume at baseline (y = 0.387x + 90.03, R² = 0.61; P < 0.0001). Statistical correlation was observed in the placebo group (y = 0.06x+220.15, R² = 0.02; P = 0.36). Adverse events were reported by 93% (Group I), 80% (Group II), and 71% (Group III) of TED patients.

<table>
<thead>
<tr>
<th>Table: Baseline PS Volume and Percent Change at Week 24</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline PS Volume</td>
</tr>
<tr>
<td>≤9 L/week</td>
</tr>
<tr>
<td>&gt;9 –≤18 L/week</td>
</tr>
<tr>
<td>&gt;18 L/week</td>
</tr>
<tr>
<td>Mean (SD)</td>
</tr>
<tr>
<td>PS Volume, TED, PBO, TED, TED, TED, PBO, PBO</td>
</tr>
<tr>
<td>Actual Based (n = 15) (n = 13) (n = 20) (n = 21) (n = 7) (n = 9)</td>
</tr>
<tr>
<td>Baseline, mL/day</td>
</tr>
<tr>
<td>806.9</td>
</tr>
<tr>
<td>856.1</td>
</tr>
<tr>
<td>1791.8</td>
</tr>
<tr>
<td>1870.2</td>
</tr>
<tr>
<td>3826.1</td>
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<tr>
<td>3572.7</td>
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<tr>
<td>Change at Week 24</td>
</tr>
<tr>
<td>28.5</td>
</tr>
<tr>
<td>-29.2</td>
</tr>
<tr>
<td>-33.5</td>
</tr>
<tr>
<td>-19.1</td>
</tr>
<tr>
<td>-36.7</td>
</tr>
<tr>
<td>-14.9</td>
</tr>
<tr>
<td>Week 24, % (18.45)* (35.49)* (20.97)* (20.40)* (13.97)* (17.07)*</td>
</tr>
<tr>
<td>PBO = placebo. *n = 13; n = 12; n = 19; n = 8.</td>
</tr>
</tbody>
</table>

Conclusion: Higher baseline PS volume in patients with SBS-HF correlates with greater absolute reduction in PS volume with TED treatment. This research was funded by Shire International GmbH, Zug, Switzerland.

Disclosure of Interest: P.B. Jeppesen: I have served as a consultant and an employee at 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.

References
volume reductions with TED. Plasma citrulline changes with TED may reflect increased enterocyte mass. 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.

P1287 LACTULOSE, LACTOSE AND FRUCTOSE INGESTION INDUCES SPECIFIC PATTERNS OF GASTROINTESTINAL SYMPTOMS IN CHINESE SUBJECTS WITH FUNCTIONAL DYSPEPSIA 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 in Chinese subjects 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 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. Breath tests were performed after an overnight fast, with the patient sedentary. Breath samples taken every 15 minutes for 3 h. GI symptoms were recorded during these 3 h visits and a telephone follow-up 24 h 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. All study subjects were ethnic Chinese, the mean age was 53 (Range: 18-76) y and 27% [95% CI; 23–32%] were male. 85% [95% CI, 82-89%] of subjects were hydrogen-producers and 100% methane-producers. Symptoms were induced in a relatively low proportion of healthy controls. Both FD and IBS subjects experienced similar proportions of epigastric pain on consumption of lactulose, lactose and fructose. See Table 1. Subjects with FD experience more belching than subjects with IBS when lactulose [58 vs. 42%, p = 0.011] and lactose [62 vs. 46%, p = 0.014] were ingested, respectively. Subjects with IBS experience significantly more “lower GI” symptoms of abdominal pain and development of loose stools when lactulose was ingested when compared with subjects with FD. In general subjects with IBS experienced both epigastric pain and abdominal pain when any of the three carbohydrate solutions were ingested. Healthy controls experienced minimal symptoms.

Conclusion: Chinese subjects commonly co-produced hydrogen and methane. Ingestion of poorly absorbed sugars induces symptom patterns in patients with FD in similar proportions. Chinese IBS subjects commonly experienced epigastric and abdominal pain. Reducing poorly absorbed short-chain carbohydrates (FODMAPs) might be efficacious in FD as it is in IBS.

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

Table 1: Induction of Gastrointestinal Symptoms with Lactulose, Lactose and Fructose Hydrogen Breath Testing in Functional Dyspepsia and Irritable Bowel Syndrome Subjects

<table>
<thead>
<tr>
<th>Functional</th>
<th>Irritable Bowel Syndrome</th>
<th>P-value</th>
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<tbody>
<tr>
<td>Dyspepsia</td>
<td>Syndrome</td>
<td></td>
</tr>
<tr>
<td>Lactulose</td>
<td>% [95% Confidence Interval]</td>
<td></td>
</tr>
<tr>
<td>Epigastric Pain</td>
<td>40% [33–47%]</td>
<td>29% [20–38%]</td>
</tr>
<tr>
<td>Belching</td>
<td>58% [51–65%]</td>
<td>42% [32–52%]</td>
</tr>
<tr>
<td>Abdominal Pain</td>
<td>4% [1–7%]</td>
<td>37% [28–47%]</td>
</tr>
<tr>
<td>Flatulence</td>
<td>34% [27–40%]</td>
<td>27% [18–36%]</td>
</tr>
<tr>
<td>Loose Stools</td>
<td>19% [14–25%]</td>
<td>30% [21–39%]</td>
</tr>
<tr>
<td>Lactose</td>
<td>% [95% Confidence Interval]</td>
<td></td>
</tr>
<tr>
<td>Epigastric Pain</td>
<td>44% [36–52%]</td>
<td>41% [31–52%]</td>
</tr>
<tr>
<td>Belching</td>
<td>62% [55–69%]</td>
<td>46% [36–56%]</td>
</tr>
<tr>
<td>Abdominal Pain</td>
<td>5% [2–8%]</td>
<td>35% [23–44%]</td>
</tr>
<tr>
<td>Flatulence</td>
<td>50% [42–58%]</td>
<td>50% [40–60%]</td>
</tr>
<tr>
<td>Loose stools</td>
<td>28% [21–35%]</td>
<td>38% [27–48%]</td>
</tr>
<tr>
<td>Fructose</td>
<td>% [95% Confidence Interval]</td>
<td></td>
</tr>
<tr>
<td>Epigastric Pain</td>
<td>37% [30–45%]</td>
<td>26% [16–35%]</td>
</tr>
<tr>
<td>Belching</td>
<td>52% [44–59%]</td>
<td>31% [35–56%]</td>
</tr>
<tr>
<td>Abdominal Pain</td>
<td>23% [1–7%]</td>
<td>77% [18–37%]</td>
</tr>
<tr>
<td>Flatulence</td>
<td>27% [20–34%]</td>
<td>23% [14–32%]</td>
</tr>
<tr>
<td>Loose Stools</td>
<td>19% [13–25%]</td>
<td>29% [20–39%]</td>
</tr>
</tbody>
</table>

References:

1. Charite´ University Medicine, Berlin/Germany
2. Vanderbilt University Medical Center, Nashville/United States of America/TN
4. Shire International GmbH, Zug/Switzerland

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Introduction: Inflammatory bowel disease (IBD) and mesenteric vascular (Vasc) disease are underlying conditions for intestinal failure associated with short bowel syndrome (SBS-IF). Fluid balance, urine production, and parental support (PS) are variable among patients with SBS-IF.

Aims & Methods: This is a post hoc analysis of the impact of teduglutide (TED) on fluid composite effect (FCE = sum of urine volume output increase, oral fluid intake reduction, and PS volume reduction) in patients stratified by diagnosis. STEPS (NCT00798967; EudraCT2008-006193-15) was a 24-week, placebo-controlled study of TED 0.05 mg/kg/day in patients with SBS–IF. Three groups were evaluated: SBS-IBD, SBS-Vasc, and Other.

Results: The SBS-IBD group included more patients with stoma (95%: SBS-Vasc, 9%; Other, 41%) and fewer with colon-in-continuity (11%: SBS-Vasc, 78%; Other, 62%). At Week 24 (Table), PS volume reductions were significantly higher in SBS-IBD patients treated with TED vs placebo (P = 0.02) and vs TED patients in the SBS-Vasc (P = 0.04) and Other (P = 0.02) groups. Change in FCE was greater in SBS-IBD patients treated with TED vs placebo (P < 0.02) and vs TED patients in the SBS-Vasc (P < 0.01) and Other (P < 0.05) groups.

Table: Components of Fluid Composite Effect at Baseline and Week 24 and Fluid Composite Effect at Week 24 by Diagnosis

<table>
<thead>
<tr>
<th></th>
<th>SBS-IBD</th>
<th>SBS-Vasc</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Or if fluids</td>
<td>2688 (1148)</td>
<td>3088 (1156)</td>
<td>1827 (982)</td>
</tr>
<tr>
<td>Oral fluid intake</td>
<td>1385 (338)</td>
<td>1382 (338)</td>
<td>1383 (338)</td>
</tr>
<tr>
<td>Urine output</td>
<td>1199 (913)</td>
<td>1298 (855)</td>
<td>1389 (913)</td>
</tr>
<tr>
<td>Change at Week 24</td>
<td>242 (222)</td>
<td>40 (20)</td>
<td>94 (222)</td>
</tr>
<tr>
<td>Oral fluid intake</td>
<td>220 (220)</td>
<td>240 (240)</td>
<td>188 (313)</td>
</tr>
<tr>
<td>Urine output</td>
<td>191 (191)</td>
<td>99 (191)</td>
<td>88 (291)</td>
</tr>
<tr>
<td>FCE</td>
<td>1497 (907)</td>
<td>1487 (907)</td>
<td>1487 (907)</td>
</tr>
</tbody>
</table>

PDBO = placebo. *n = 9; n = 8; n = 7; n = 16; i = 15.

Conclusion: TED had the largest absolute effect on FCE in the SBS-IBD group; TED effect on FCE was not as major in SBS-Vasc or Other patients at Week 24. This research was funded by Shire International GmbH, Zug, Switzerland.

Disclosure of Interest: P.B. Jeppesen: I have served as a consultant and on the speaker bureau for Shire. S.M. Gabe: I have served as a consultant for Shire. K. Iyer: I have served as a consultant for Shire. U. Pape: I have received grant/research support from and served as a consultant for and on the speaker bureau for Shire. D.L. Seidner: I have served as a consultant for Shire. H. Lee: I am an employee for Shire. C. Olivier: I am an employee for Shire.
were evaluated: Group 1 (no colon/stoma present/no colon-in-continuity), Group 2 (≤50% colon/stoma to colon-in-continuity), and Group 3 (other bowel anatomies). Clinical response was defined as ≥50% reduction from baseline in weekly parenteral support (PS) volume at Weeks 20–24. Data presented as mean (SD).

**Results:** The predominant diagnosis in Group 1 was Crohn’s disease, whereas the predominant diagnosis in Group 2 was vascular complications (Table). Group 1 patients required the highest baseline PS volumes compared with Group 2 or Group 3. TED-induced PS volume reduction (change in L/week) took longer to be realised in Group 2 (Week 12, 9.9 [2.1]; Week 24, 2.5 [2.1] compared with Group 1 (Week 12, –5.5 [3.8]; Week 24, –6.4 [4.5] or Group 3 (Week 12, –2.7 [12]; 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</th>
<th>Group 2</th>
<th>Group 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean (SD)</td>
<td>n</td>
<td>n</td>
<td>n</td>
</tr>
<tr>
<td>Age, year</td>
<td>32.1 (10.3)</td>
<td>23.6 (3.2)</td>
<td>21.0 (3.1)</td>
</tr>
<tr>
<td>Sex, n (%)</td>
<td>32.1 (10.3)</td>
<td>23.6 (3.2)</td>
<td>20.8 (3.1)</td>
</tr>
<tr>
<td>BMI, kg/m²</td>
<td>51.3 (14.9)</td>
<td>22.1 (2.9)</td>
<td>21.3 (2.1)</td>
</tr>
<tr>
<td>Cause of SBS – IF, n (%)</td>
<td>32.1 (10.3)</td>
<td>23.6 (3.2)</td>
<td>21.0 (3.1)</td>
</tr>
<tr>
<td>Crohn’s disease</td>
<td>8 (37)</td>
<td>9 (50)</td>
<td>6 (35)</td>
</tr>
<tr>
<td>Vascular complications</td>
<td>50.3</td>
<td>46.0</td>
<td></td>
</tr>
<tr>
<td>Injury</td>
<td>3 (19)</td>
<td>2 (13)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>2 (12)</td>
<td>1 (14)</td>
<td></td>
</tr>
<tr>
<td>Colon-in-continuity, n (%)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Jejunostomy</td>
<td>11.4</td>
<td>10.2</td>
<td></td>
</tr>
<tr>
<td>Ileostomy</td>
<td>6 (35)</td>
<td>9 (56)</td>
<td></td>
</tr>
<tr>
<td>Colostomy</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td></td>
</tr>
<tr>
<td>Biocoronal present, n (%)</td>
<td>11.3</td>
<td>10.2</td>
<td></td>
</tr>
<tr>
<td>Mean (SD) estimated remaining small bowel length, cm</td>
<td>52.2 (27.4)</td>
<td>4 (30.7)</td>
<td></td>
</tr>
<tr>
<td>Mean (SD) PS volume, L/week</td>
<td>7.1 (6.7)</td>
<td>14.5 (9.6)</td>
<td></td>
</tr>
</tbody>
</table>

**Conclusion:** Patients with SBS – IF in Group 1 had the highest baseline PS volumes, and responders most frequently 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.

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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 analysis.

**Aims & Methods:** This was a prospective pilot study on patients with a diagnosis of superficial SNADETs who were treated at the Department of Gastroenterology, Graduate School of Medicine, The University of Tokyo Hospital, Tokyo, Japan. Adenoma and adenocarcinoma, all patients were subjected to endoscopic evaluation to preclude ampullary lesions, and had a preoperative histologic diagnosis of either adenoma or adenocarcinoma. Patients with familial polyposis were excluded. Immediately before resection of the target lesions, a single biopsy sample from the duodenal tumor and a paired sample from the surrounding normal duodenal mucosa 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 tissue superficial SNADETs pairs. Genes and pathways that demonstrate 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 SNADETs pairs.

**Results:** From Nov 2014 to Jan 2016, a total of 12 consecutive patients were enrolled in this study. One patient was excluded due to a post-treatment diagnosis of familial polyposis. In a training set of 4 tumor-mucosa pairs, 626 probes (168 up-regulated, 458 down-regulated) which consistently demonstrated over a 2-fold expression difference between tumor and normal mucosa in all matched pairs were identified. RT-PCR of genes most highly differentially expressed between the tumors and normal mucosa was performed in the 4 pairs in the training set as well as 7 independent patients. 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 familial colorectal adenomas. Gene expression characterization of these lesions has also demonstrated the significant role of APC down-regulation in the pathogenesis of SNADETs, suggesting that an adenoma-carcinoma sequence similar to colorectal neoplasms 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.
A616
the size and locate the position of the lesions, and present objective information
for surgery and follow-up of small intestinal neoplasias. Therefore, 3D CT enteroclysis is a powerful new tool for diagnosis, pre-surgical evaluation, and followup for small intestinal neoplasias.
Disclosure of Interest: All authors have declared no conflicts of interest.
Reference
enteroclysis with air and virtual enteroscopy: protocol and feasibility for

P1293 INK TATTOOING FOR BALLOON-ASSISTED
ENTEROSCOPY–TIME WELL SPENT?
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1
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Introduction: Balloon-assisted enteroscopy is a well-established tool in the diagnosis and therapy of small bowel diseases. Ink tattooing of the small bowel is
used in some centers to mark pathologic lesions or the depth of small bowel
insertion.
Aims & Methods: The purpose of this study was to determine the safety, the
detection rate within a surgical operation or video capsule endoscopy and the
clinical relevance of ink tattooing during balloon-assisted enteroscopy (BAE).
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
previous antegrade BAE could be detected via retrograde BAE only in 2 of 11
(18 %) patients. Nine patients received a second ink-tattooing of the small intestine within these examinations without any complications. Ink tattooing had no
clinical relevance or therapeutic consequence in 62 of the 81 (72%) patients
within the observation period. 5 of these 62 Patients received no further diagnostic or therapeutic steps due to their clinical situation. In 9 patients ink tattooing influenced the choice of approach (antegrade versus retrograde) for reenteroscopy 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 of the small intestine via BAE from retrograde and antegrade is achieved rarely in our setting.
Disclosure of Interest: All authors have declared no conflicts of interest.

P1294 THE ROLE OF CAPSULE ENDOSCOPY IN THE DETECTION
OF SMALL BOWEL TUMOURS IN A LOW-RISK POPULATION;
A SINGLE-CENTRE EXPERIENCE
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Contact E-mail Address: husseyma@tcd.ie
Introduction: Small bowel tumours (SBT) are very rare and generally grow insidiously, with alarm symptoms such as obstruction and overt GIB often occurring
at a later stage of disease. The introduction of small bowel capsule endoscopy
(SBCE) has enabled earlier detection of SBT and has been shown to affect the
therapeutic course. However, the reported frequency of small bowel malignancies
diagnosed by SBCE is highly variable.
Aims & Methods: We aimed to review the frequency of small bowel tumours
diagnosed by SBCE in a high-volume tertiary centre, and to assess the clinical
presentation and outcome of patients. A retrospective review of the database in
our institution was undertaken. All patients who had undergone SBCE from
2011–2016 were identified. All patients had undergone SBCE using the standard
protocol. The Given SB3 Pillcam was used for the majority of procedures from
2014 onwards and the SB2 was used prior to 2014. All videos were analysed by
experienced gastroenterologists and reported using the Rapid reader software
system (Given Imaging, Covidien, Medtronic, Yoqneam, Israel). SBCE reports
for all indications were reviewed and all patients with reports suggestive of a
small bowel tumour were included initially. A chart review was then performed

United European Gastroenterology Journal 5(5S)
and information was obtained on patient demographics, clinical presentation/
indication for SBCE, laboratory markers, previous endoscopic or radiological
procedures, further endoscopic or surgical interventions carried out, and final
histological diagnosis. Only patients who went on to have a histological diagnosis
of a small bowel malignancy were included in the final analysis.
Results: A total of 1670 SBCEs were carried out.The overall indications for
SBCE were as follows: suspected small bowel Crohn’s disease 34% (n ¼ 568),
iron deficiency anaemia/obscure occult GIB 41% (n ¼ 685), obscure overt GI
bleeding 16% (n ¼ 267), non-specific abdominal pain 6% (n ¼ 100), known or
suspected polyposis syndrome 2% (n ¼ 33) or Coeliac disease 1% (n ¼ 17).
In total 1% (n ¼ 19) of SBCE reports identified a possible small bowel tumour.
Of these, a final histological diagnosis of a small bowel malignancy was made in
14 patients. Of the 5 patients with a benign diagnosis, one patient was diagnosed
with myoepithelial hamartoma, two patients an adenomatous polyp, one a lymphangioma, and one ganglion cells only. Of the 14 patients diagnosed with a
small bowel malignancy, the majority, 71% (n ¼ 10) were female and the mean
age was 58 years (18–90). The indication for referral in 12 (86%) patients was
obscure gastrointestinal bleeding, with occult bleeding in 57% (n ¼ 8) and overt
bleeding in 29% (n ¼ 4). Only one patient was referred for SBCE due to abnormal imaging and the other patient had persistent diarrhoea. The mean length of
time from presentation to diagnosis of their small bowel tumour by SBCE was
18.8 months (16–24). Patient’s mean Haemoglobin at diagnosis was 10.6 g/dL
(7.4–12.4). Only 3 patients had a recognised risk factor,2 with coeliac disease and
1 patient had previous colorectal cance. In 79% (n ¼ 11) of all patients, SBCE
was the first investigation suggestive of a small bowel tumour. In all, 7 (50%)
patients underwent cross sectional imaging prior to SBCE, of which 3 (42%) had
a reported no small bowel abnormalities. All patients had undergone at least one
negative upper and lower endoscopy prior to referral, and SBCE was the third
investigation in 50% (n ¼ 7) of patients. After SBCE, 60% (n ¼ 8) of patients
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 ¼ 6), Neurendocrine tumours in 29% (n ¼ 4),
Gastrointestinal stromal tumours (GISTs) in 14% (n ¼ 2), and lymphoma in
14% (n ¼ 2). All patients eventually underwent surgical resection of their small
bowel tumours and 80% (n ¼ 11) patients remain well at present, after a mean
follow up time of 15.2 months (2–36).
Conclusion: SBT are rare but accounted for 1% of significant SBCE findings in
our cohort. The lack of concordance between SBCE and cross sectional imaging
suggests this modality should remain an early diagnostic test in OGIB.
Disclosure of Interest: All authors have declared no conflicts of interest.

TUESDAY, OCTOBER 31, 201709:00-17:00
NUTRITION II - HALL 7_
P1295 VITAMIN D PREVENTS HEPATIC STEATOSIS AND
CARDIOVASCULAR DAMAGE IN A RAT MODEL OF FATTY
WESTERN DIET
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A. Rossi1, C. Del Giudice2, N. Caporaso1, F. Morisco3
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Introduction: The western diet (WD) high in fat and fructose is considered one of
the most relevant cause of metabolic disorders and cardiovascular diseases
(CVD). The aim of this study was to evaluate whether daily vitamin D3 supplementation is able to modulate hepatic steatosis, or restore insulin resistance and
the metabolic alterations contributing to CVD and hearth failure (HF) caused by
a westernized diet, in a rat model without specific vitamin D deficiency.
Aims & Methods: Eighteen adult male Wistar rats were divided into 3 groups,
each of 6 rats, fed with: Group 1: Standard Diet, 3.3 kcal/g (SD); Group 2:
Western Diet, 5.6 kcal/g, (WD) containing 13 IU/day/rat of vitamin D3; Group
3: Western Diet þ Vit D (WD Vit D) containing 23 IU/day/rat of vitamin D3.
The experiment was conducted for 6 months. Standardized tail-cuff blood pressure (BP) measurements of conscious rats and transthoracic echocardiography
were performed in basal condition (Time 0), and after 3 and 6 months of diet.
Hepatic steatosis and collagen myocardial fibrosis were assessed using standard
methods. Serum insulin and 25(OH)D3 concentrations were determined using
rat-specific ELISA kits. Insulin resistance was determined according to the
Homeostasis Model of Assessment (HOMA-IR) method.
Results: In WD rats the percentage of hepatocytes with steatotic vacuoles was
61%, while in WDVitD group was only 27%. In WD group HOMA-IR
was significantly higher than in SD (41.9  8.9 vs 6.17  1.3, p 5 0.01) and it
was reduced by vitamin D supplementation in WDVitD group (41.9  8.9 vs
19.4  5.2, p 5 0.05). At baseline, no differences in systolic blood pressure
(SBP) were detected among the three groups showing normal systolic blood
pressure. SD did not increase SBP, significantly, during the study period. On
the contrary, WD, enhanced SBP by 27  12% p 5 0.001 at 3 months, and by
47  11%, p 5 0.001 at 6 months. At the end of the study, SBP resulted to be
higher in WD group (117  3 mmHg) compared with both SD (84  3 mmHg,
p 5 0.001) and with WDVit.D (101  4 mmHg, p 5 0.01). During the study
period, WD group showed a significant increase of left ventricular mass
(LVM) (52  25% at 3 months p 5 0.05, and 123  43% at 6 months
p 5 0.001, vs basal conditions,). Supplementation of VitD abolished the WDinduced increase of LVM (25  19% at 3 months, and 34  20% at 6 months,
p 5 0.05 vs baseline respectively). At the end of the study LVM resulted to be
higher in the WD group in comparison to both SD and WDVitD groups, while


Introduction:

Gastro balloons (IGB) are an emerging option for overweight and obese patients with a body mass index (BMI) greater than 31 kg/m2 and they provide greater efficacy with lower risks than do conventional surgical procedures. The balloon treatment is based on gastric space-occupying effects that increase the feeling of satiety and may also effect gut neuroendocrine signaling. However, widespread use of current generation IGBs has been limited by several factors: placement and removal endoscopies require sedation, special training and equipment; patients lost to follow-up are susceptible to IGB deflation and unplanned passage into the gastrointestinal tract. The ElipseTM is the world’s first IGB that does not require endoscopy or anesthesia.

Aims & Methods:

We conducted a study to prospectively analyze the safety and effectiveness of IGB ELIPSE in overweight adults. Six patients, 1 male and 5 female (average age 40, mean BMI 40 kg/m2), were included in this study. Each patient swallowed Elipsetm balloon intended to remain in the stomach for 16 weeks. Each balloon was filled with 560 ml of filling fluid. Patients returned every 2 weeks for abdominal ultrasound which documented the correct positioning of the device. All patients were followed up by a nutritionist with a specific semiliquid diet.

Results:

All 6 patients successfully swallowed the device. There were no major adverse effects. All 6 patients had a significant weight loss (about 16 kg). In all of the patients, the balloon remained full throughout 16 weeks, self-emptied, and were passed spontaneously without needing endoscopic removal.

Conclusion:

This study demonstrates the efficiency, security and simplicity of the Elipse™ system. Moreover, we highlighted the non necessity of deep sedation for IGB placement and removal. All patients were followed up by a nutritionist with a specific semiliquid diet. All patients had a significant weight loss (about 16 kg). In all of the patients, the balloon remained full throughout 16 weeks, self-emptied, and were passed spontaneously without needing endoscopic removal.

Disclosure of Interest:

All authors have declared no conflicts of interest.

References


Disclosure of Interest:

All authors have declared no conflicts of interest.

P1298 CHANGE OF VITAMIN D AND BONE MINERAL DENSITY AFTER BARIATRIC SURGERY IN CHINESE POPULATION

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Introduction: Bariatric surgery is an effective treatment for morbid obesity. In Taiwan, the number of patients who received bariatric surgery increased gradually. However, for long-term follow-up, nutritional deficiency may develop in patients who received bariatric surgery. 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 (aged 20 to 65 years old) who received bariatric surgery at one teaching hospital in Taoyuan, Taiwan. Patients with osteoporosis before surgery were excluded in this study. Baseline (2012-2014) and one year after bariatric surgery (2013-2015), venous blood was collected from each patient for assessment of the Calcium, Vitamin D and parathyroid hormone (PTH) levels. BMD (g/cm2) was also measured at lumbar spine (L2-L4) by dual energy x-ray absorptiometry (DEXA).

Results: Among 50 patients, 15 patients received laparoscopic sleeve gastrectomy, 24 patients received laparoscopic mini-gastric bypass (MGB), 5 patients received laparoscopic Roux-en-Y gastric bypass (RYGB) and 6 patients received laparoscopic duodenal-jejunal bypass with sleeve gastrectomy (DBJ-SG).

The characteristics of the study population was shown in Table 1. The differences of mean for calcium, vitamin D, PTH and BMD after bariatric surgery were 0.16 mg/dl (P < 0.05), 8.6 pg/ml (P < 0.05) and -0.04 g/cm2 (P = 0.14) respectively.

Table 1: Characteristics of study population one year after bariatric surgery

<table>
<thead>
<tr>
<th>LSG</th>
<th>MGB</th>
<th>RYGB</th>
<th>DJBSG</th>
<th>OVER ALL</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>15</td>
<td>24</td>
<td>5</td>
<td>60</td>
</tr>
<tr>
<td>Age, years</td>
<td>34.7 (7.4)</td>
<td>37.4(11.7)</td>
<td>41.4(14.1)</td>
<td>44(10)</td>
</tr>
<tr>
<td>Sex(M:F)</td>
<td>7:8</td>
<td>5:19</td>
<td>2:3</td>
<td>3:4</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>
</tr>
<tr>
<td>CA(mg/dl)</td>
<td>9.6(0.3)</td>
<td>9.1(0.3)</td>
<td>9.2(0.4)</td>
<td>9.3(0.4)</td>
</tr>
<tr>
<td>PTH(ng/mL)</td>
<td>63.8(21.3)</td>
<td>70.4(25.9)</td>
<td>73(14.2)</td>
<td>50(14)</td>
</tr>
<tr>
<td>VIT.D (ng/ml)</td>
<td>19.4(7.7)</td>
<td>14(6.9)</td>
<td>12.9(8.6)</td>
<td>16.9(5.3)</td>
</tr>
<tr>
<td>VIT.D insufficiency</td>
<td>16.7%</td>
<td>83.3%</td>
<td>3%</td>
<td>0</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.
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 device for assisting weight loss, and some intercurrences were observed during more than 10,000 procedures performed. With the assistance of a multidisciplinary team the results have been satisfactory.

Aims & Methods: To assess the efficacy and complications of the weight loss with IGB in patients seen at the 07 private centers. A total of 10,255 patients with IGB implanted from 1997 to 2017 were analyzed from a prospective fed database. A liquid filled IGB with a volume in-between 620 to 700 ml was used. Initial BMI started at 27 kg/m² (as approved by Brazilian health authorities) and were followed up by a multidisciplinary team during implant. IGB maximum period 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 assessed using Student t-test, and Tukey post-test. The level of significance was set at p < 0.05.

Results: 492 patients (4.8%) were excluded from the final analysis associated with weight loss: 226 (2.2%) due to early removal–These were analyzed in relation to the previous consultation with psychologist and 88% did not undergo nutritional monitoring during the use of IGB, 108 (1.04%) due to patient refusal–These were analyzed in relation to the psychological and degree of excess weight (overweight and grade I, II and III). Data were assessed using Student t-test, and Tukey post-test. The level of significance was set at p < 0.05.

Results: Of the 554 patients, 79.06% were women and 20.94% were men. Average time between bariatric surgery and the first IGB was 96.35 months (± 75.82) and average weight at the first IGB was 135.9 kg (± 37.28). The mean age was 31.13 years. The patients showed a significant weight loss, with a success rates according to the following criteria:

- 14.4% of the weight loss. Of the 554 patients APC, 51 (9.2%) required dilatation balloon due to significant stenosis at least one. 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 gastric 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 and this weight regained is multifaceted and originated from dilation of Gastrojejunostomy (GJ). For the patients with significant weight regain some revisional procedures had been attempted and more recently endoscopic revisional procedures had been described.

Aims & Methods: To evaluate the safety and effectiveness of argon plasma coagulation (APC) decreasing the diameter of the gastroenteric anastomosis in patients who have undergone RYGB for morbid obesity and regained weight associated to dilation of the GJ. From Jan-2014 to April-2017 554 RYGB subjects were analyzed. We divided the patients that regain a dilated anastomosis (>18 mm) and at least 2 procedures were submitted APC application. In relation to the anastomotic diameter, the majority of studies use a diameter of more than 20 mm to define anastomosis dilation, although some studies use smaller diameters such as 12mm similar to that created mainly in the gastrojejunal anastomosis using a 36 Fr Fouchet bougie. In the patients in the present study, the minimum cross-section diameter was 18 mm and the maximum measured in the first session 40 mm. This anastomotic diameter was measured using a 33 mm long Fouchet bougie and an additional dilator with a maximum of 03 applications. APC set was at 2-3 mL with 65-85W. GJ diameter target was 8-12 mm estimated with pre-measured grasper. At first APC session, pre-op weight and BMI, post-op weight nadir, actual weight and BMI and estimated diameter of GJ were the variables collected. Complications during treatment were also collected. In the present study, psychological and nutritional evaluations were performed before APC and during treatment and physical activity was strongly recommended. Data were analyzed with descriptive statistics, student’s t test and Spearman correlation.

Results: Of the 554 patients, 79.06% were women and 20.94% were men. Average time between bariatric surgery and the first APC was 96.35 months (± 75.82) and average weight at the first APC was 135.9 kg (± 37.28). The mean age was 31.13 years. The patients showed a significant weight loss, with a significant stenosis at least one. 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 gastroenteric 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
Table 1

<table>
<thead>
<tr>
<th>Body weight (kg)</th>
<th>n = 77</th>
</tr>
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<tbody>
<tr>
<td>Baseline</td>
<td>103.37 ± 17.14</td>
</tr>
<tr>
<td>Final</td>
<td>81.66 ± 15.71</td>
</tr>
<tr>
<td>Reduction</td>
<td>21.71 ± 7.78</td>
</tr>
<tr>
<td>%TBWL</td>
<td>21.07 ± 6.07</td>
</tr>
<tr>
<td>BMI (kg/m²)</td>
<td>37.89 ± 5.41</td>
</tr>
<tr>
<td>Baseline</td>
<td>29.86 ± 4.76</td>
</tr>
<tr>
<td>Final</td>
<td>8.03 ± 2.88</td>
</tr>
<tr>
<td>Excess weight (kg)</td>
<td>35.53 ± 16.98</td>
</tr>
<tr>
<td>Baseline</td>
<td>13.82 ± 15.49</td>
</tr>
<tr>
<td>Final</td>
<td>69.27 ± 30.01</td>
</tr>
</tbody>
</table>

*p < 0.0001 for all comparisons between values at baseline and at the end of the study. IGB (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.

P1303 THE EFFECT OF A CONTROLLED GLUTEN CHALLENGE IN PATIENTS WITH SUSPECTED NON-COELIAC GLUTEN SENSITIVITY: A RANDOMIZED, DOUBLE-BLIND PLACEBO-CONTROLLED CHALLENGE

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Introduction: Non-coeliac gluten sensitivity (NCGS) is a new entity with unknown prevalence and mechanisms, and there is a need for a standardized procedure to confirm the diagnosis. The objective of this study was to characterize the response to a gluten challenge, when performed according to the updated Salerno criteria.

Aims & Methods: Twenty patients (14F/6M, age range: 21–62 y) with suspected NCGS, without coeliac disease and wheat allergy, were included while on a gluten-free diet. All patients went through four periods of double-blinded provocation with gluten and placebo containing muffins. They were instructed to eat two muffins a day (11 g gluten) for four days, followed by a three 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 = 0.0001).

Conclusion: This randomized, double-blind placebo-controlled challenge with gluten diagnosed four patients with NCGS according to the Salerno criteria. However, according to the symptom registrations there are no clear difference between the diagnosed and the not-diagnosed group, or between symptoms after gluten provocation and placebo, indicating no specific effect of gluten in a group of patients with suspected NCGS.

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

P1304 THE ROLE OF BILE ACIDS AND GUT MICROBIOTA IN CORONARY ARTERY DISEASE: RESULTS OF THE MABAC STUDY IN HUMAN (MICROBIA ATEROMA ET 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 glau-copeptide metabolism. In animal models of atheroma development (ApoE-/- and Ldl-/- 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 or in the gut microbiota composition can be described in the human Coronary Artery Disease pathophysiology.

Aims & Methods: Consecutive patients undergoing coronary angiography between February and May 2015 were enrolled. To avoid physiological or induced variations in circulating BA or in the gut microbiota, highly restrictive exclusion criteria were applied. Circulating and 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 bacterial DNA.

Results: 80 patients were prospectively included of 406 screened, and divided in two groups: with (n = 45) and a group without (n = 35) CAD. The mean serum concentration of total BA was 1.02 ± 0.16 μmol/l in patients with, versus 2.16 ± 0.38 μmol/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 = 0.0) The BA concentrations in feces were similar in both groups. There was no group-specific pattern in the fecal microbiota. In a subgroup of 17 patients, one month of statin therapy increased the serum BA concentration from 0.68 ± 0.08 to 1.37 ± 0.21 μmol/l (P = 0.01).

Conclusion: There was no specific microbiota signature associated with CAD. However, the decreased serum BA concentration was a strong predictor of CAD in humans. With respect to the powerful anti-atherosclerotic effect of BA in animal models, and their role in human lipid metabolism and diabetes, this study unraveled the existence of a new metabolic disturbance associated with CAD.

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

P1305 LOW FODMAP DIET: REINTRODUCTION PHASE DOES NOT MODIFY EFFICACY, BUT BEWARE OF REAL TRIGGER FOODS!

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Introduction: The low-FODMAP diet (LFD) is used to treat patients with irritable bowel syndrome (IBS) even if some nutritional concerns have been raised. It starts with an elimination phase and is followed by a reintroduction phase to verify the “trigger” foods in foods in order to suggest a definitive and less restrictive diet tailored to the patient.

Aims & Methods: The aims of this study were to evaluate: 1) the effects of FODMAP reintroduction on a) body composition and nutritional status, using Bioelectrical Impedance Vector Analyses (BIVA), b) abdominal symptoms, c) quality of life, d) anxiety/depression, e) sleep quality. 2) if the patients’ perception of the “trigger” foods was accurate.

Results: Neither change of blood tests at T1 nor variations of anthropometric data and BIVA were reported at T1 and 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). Depressive improvement 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.
both at T1 (8.4±1.6) and T2 (8.2±1.7). When starting, LFD patients considered all foods containing simple sugars (67%), fructans (27%), fructose (17%), galacto-oligosaccharides (GOS) (17%) and polyols (5%); 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 (k: 0.50), fair for fructans (k: 0.39) and fructose (k:0.32) and poor for polyols (k: 0.16) and GOS (k: 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 remaining manifestations. This enabled us to suggest a personalized diet for the patients. The real role played by FODMAPs in generating symptoms was abundantly underestimated and misunderstood by our patients. This underlines the fact that LFD has to be administered and carried out under the guide of an expert nutritionist.

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

P1306 EXPRESSION OF THE FRUCTOSE TRANSPORTER GLUT5 IN PATIENTS WITH FRUCTOSE MALABSORPTION

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Introduction: Fructose malabsorption (FM) is a frequent finding in patients with abdominal 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 main fructose transporter GLUT5 in the duodenum.

Aims & Methods: The study included 257 patients with FM diagnosed by hydrogen breath test and grouped according to the response to a fructose-free diet. 42 healthy individuals and 31 patients with coeliac disease (CD) served as controls. The fructose breath test was done with 50 g fructose. Fructose malabsorption was defined as an increase of 20 ppm of endogenous hydrogen. Formalin-fixed and paraffin-embedded duodenal biopsy specimens were obtained in all cases. Histology was assessed using hematoxylin and eosin stained tissue sections. Expression of GLUT5 was studied by immunohistochemistry. Expression patterns of GLUT5 were correlated with clinico-pathological patient characteristics.

Results: The expression of GLUT5 did not differ significantly between patients with FM complete diet responders (n = 183) and healthy controls (n = 42). Also patients with FM responding to a fructose free diet did not differ in GLUT5 expression or in max. H2 increase and AUC measured in fructose breath testing from patients not responding to the diet (n = 40). However, in patients with CD (n = 29) significant differences in GLUT5 expression were found compared to patients with FM and healthy controls (p = 0.009). The severity of CD assessed by the Marsh score significantly correlated with the GLUT5 expression (rs = 0.563, p = 0.001).

Conclusion: Changes in GLUT5 expression may not cause symptoms in adult patients with FM. The symptoms induced by FM could be associated with mechanisms known to the pathology 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 FGIDs.

Aims & Methods: Data of patients presenting with FGID at the tertiary ambulatory functional bowel clinic between January 2015 and July 2016 were analyzed. FGIDs were diagnosed according to Rome III criteria. JH was assessed by physicians using Brighton score and rated positive for scores ≥ 4.9 points. Patient received professional nutritional counseling on a diet low in FODMAPs. A global symptom response was assessed by a professional nutritionist after 4 to 6 weeks following a low FODMAP diet.

Results: Of all 84 patients screened for JH, 62 (73.8%) were female and 22 (26.2%) were male. Median age was 35 [range 18–81]. Females were more likely to exhibit JH compared to males (38.62 [61.3%] vs. 6.22 [27.3%]; p = 0.006). Global symptom response rate to a diet low in FODMAPs was 64/84 (76.2%). Our data showed significantly better response to a low FODMAP diet in JH negative patients than in JH positive patients (36/40 [90.0%] vs. 28/44 [63.6%], p = 0.005, ITT). Response of 7 patients was unknown because of early therapy discontinuation before nutritional re-counseling. When excluding 7 patients with therapy discontinuation from our calculations, the difference in diet response between JH negative and JH positive patients remained significant (36.39 [92.3%] vs. 28/38 [73.7%]; p = 0.036).

Conclusion: Our data indicate an association between global symptom response to a diet low in FODMAPs and joint hypermobility status in FGID patients. An understanding of structural pathophysiologies of JH positive patients with 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.


All other authors have declared no conflicts of interest.

P1308 CHANGES IN GASTROINTESTINAL SYMPTOMS, SMALL INTESTINAL BACTERIA, AND DUODENAL PHYSIOLOGY FOLLOWING A LOW-FIBER, HIGH-SUGAR DIET

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Introduction: Gastrointestinal symptoms are often associated with dietary intolerances and are common in the developed world consuming a western diet low in fiber.

Aims & Methods: To determine the effect of a high-sugar, low-fiber diet on GI symptoms and duodenal physiology, we conducted a single-blind, randomized, 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 ≤13% daily calories from saturated fat were recruited. Exclusion criteria included known GI disease or symptoms, antibiotic/probiotic use within 4 weeks of the study, pregnancy, and vulnerable adults. At baseline visit, participants completed a symptom and demographic questionnaire and underwent esophagogastroduodenoscopy (EGD) with duodenal biopsies and aspirates. Symptoms associated with constipation, straining, incomplete evacuation, hard stools, abdominal pain associated with bowel movements, diarrhea, bloating, nausea/vomiting, heartburn, fatigue, and appetite. All participants consumed a 7-day standardized diet with typical United States dietary habits, consisting of 50% 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 and duodenal biopsies and aspirates. Before and after the diet, quantitative aerobic and anaerobic cultures were performed on duodenal aspirates. Duodenal biopsies were mounted in an using chamber. Intestinal permeability was evaluated using 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) to response in increasing concentrations (0.003–300 μM) of serotonin (5-HT) on the submucosal side. These measurements were repeated after the dietary intervention. Data were presented as mean ±SEM. Data were analyzed using paired-t test unless specified and p < 0.05 was considered significant.

Results: A total of 10 participants (5 female; median age 26; 70% Caucasian) were recruited. Average BMI was 23.1 ± 2.9 kg/m2. At baseline, 83% of participants were asymptomatic. After dietary intervention, all participants 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, I developed bacterial overgrowth following intervention. There was no significant difference in TEER (26.45 ± 1.98 vs 26.18 ± 2.45 Ohms/cm²); FITC flux (217 ± 34.72 vs 217.6 ± 42.57 ng/ml) or baseline Isc (48.27 ± 0.63 vs 51.58 ± 2.82 μA/cm²) before and after dietary intervention. Interestingly there was a significantly lower ΔIsc response to increasing concentrations of 5-HT after dietary intervention (P < 0.05, two-way ANOVA).

Conclusion: A low-fiber, high simple sugar diet led to gastrointestinal symptoms in healthy adults with high-sugar, low-fiber diets. A significant decrease in 5-HT evoked secretory response in the duodenum, suggesting a potential role for dietary modulation of host secretory pathways. 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 ACTIONS 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 revells of CCK inbrad was shown to be high in FD patients. In FD patients, stress have important roles of pathogenesis of the disease.

Aims & Methods: We undertook to clarify whether stress influences the actions of cholecystokinin (CCK) on appetite and gastric emptying. As stress, we gave restraint stress, corticosterone-releasing factor (CRF) or urocortin (UCN1) injection intraperitoneal (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 at 2 hours after the perorally injection of mixed food, and gastric emptying rate was calculated. In the study on appetite, CCK was IP injected and the amounts of food was measured at 1 and 2 hours after the injection. In some experiments, CRF or UCN1 was IP injected and the interaction with CCK on food intake was examined. In another study, restraint stress was given to rats and the interaction with CCK was evaluated. To study the involvement of brain in the interaction between CCK and stress, c-Fos expression in the neurons was examined and evaluated.

Results: CCK dose-dependently inhibited gastric emptying. CCK dose-dependently inhibited food intake during 1 hr and 2 hr. CRF (100ug/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 anorectic 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 (PYY) ENHANCES EFFECTS OF CHOLECYSTOKININ (CCK) ON GASTRIC MOTILITY AND FOOD INTAKE IN RATS

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Introduction: Cholecystokinin (CCK) and peptide tyrosine-tyrosine (PYY) have been investigated to 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 PYY have the interaction to decrease food intake. Study on gastric emptying. Male SD rats were fasted overnight, and 1 mL of mixture of food and glass beads was given into the stomach and then PYY or CCK followed by PYY was IP injected into the rats left in the stomach after the injection was measured and gastric emptying rate was calculated. Study on appetite. PYY or CCK was IP injected to the rats just before setting food to eat. The amounts of food were measured at 1 and 2 hours after the injection. To clarify the involvement of the brain in the interaction between CCK and PYY, c-Fos expression was examined.

Results: CCK (0.5–10 nmol/kg) dose-dependently inhibited gastric emptying (p < 0.001). CCK 10 nmol/kg maximally inhibited food intake (p < 0.01). PYY 25–2500 pmol/kg significantly inhibited gastric emptying for 1 or 2hrs after the injection (p < 0.001). PYY 250 pmol/kg significantly inhibited food intake for 1 hour after the injection (p < 0.01). The combination of CCK 10 nmol/kg and PYY 250 pmol/kg inhibited gastric emptying more than CCK alone (p < 0.001) or PYY alone (not significant). PYY and CCK additively inhibited food intake when PYY was injected 20 minutes later from CCK injection. PYY significantly amplified c-Fos expression induced by CCK in the nucleus of soritary tract (NTS) and paraventricular nucleus of hypothalamus (PVN) in the brain.

Conclusion: The combination of PYY with CCK amplified the suppression of gastric emptying and food intake for 1 hr after the injection (p < 0.05). After the injection, CCK and PYY might strengthen the inhibition of food intake through the activation of satiety center in the brain, that is important for terminating food intake and adjusting energy intake.

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

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LIVER AND BILIARY III - HALL 7...

P1311 REGULATION OF MICRONRNAS BY P53 FAMILY MEMBERS IN HEPATOCELLULAR CARCINOMA

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Introduction: Transcriptions factors belonging to the p53 family (p53, p63, p73) respond to cellular stress signals by inducing an accurately defined set of genes. In a number of tumors, also in hepatocellular carcinoma (HCC), p53 proteins can exert carcinogenic or tumor-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. We undertook to elucidate whether 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 (100ug/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 anorectic 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.

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 carcinogenic or tumor-suppressive effects. Depending on their spacial and temporal expression microRNAs can exert cancerogenic or tumorsuppressive functions. MicroRNAs are small, non-coding RNA molecules which play an important role in gene regulation. The observed synergistic effect of p53 and HCC-relevant target genes on microRNA expression might provide new options for the development of therapeutic and prognostic markers in HCC.

Conclusion: All authors have declared no conflicts of interest.
potential p73 BS reduced luciferase activity by 85%. CHIP analyses verified binding of p73 to the putative p53-binding sites of IGFBP4. Conclusion: These results clearly identify IGFBP4 as novel target gene for pAp73 and p53 in HCC. We demonstrate for the first time an interaction of pAp73 with IGFBP4 and therefore an important, so far unknown link between the p53 family member and the IGF pathway. 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 of signaling pathways, but also indicate that fine-tuning of these signaling pathways provides new therapeutic options in clinical management of HCC.

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

P1315 IDENTIFICATION OF P73 AS A NOVEL TRANSCOCRATOR OF IGFBP4 GENE EXPRESSION IN HEPATOCELLULAR CARCINOMA

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Introduction: Members of the p53-family, including p53, p63 and p73, are known for their involvement in the regulation of cell cycle, cell senescence and apoptosis. In their role as transcription factors and depending on their splice variants with transactivation domain (TA) or dominant negative (DN) - p53 and its siblings are capable of activating or inhibiting the transcription of specific target genes. We previously identified the gene for Insulin-like Growth Factor Protein 4 (IGFBP4) as p53-family family network and IGF signaling. Since in an independent study we identified and IGFBP4 we enhance our knowledge in a so far unknown association of p53-family members and IGFBP4.

Aims & Methods: The aim of the study was to characterize the regulatory influence of p53 family members on the IGFBP4 gene. Hep3B cells were transfected with pAp53, -pAp63, -pAp73, -pDNp63, and -pDNp73. Transcriptional regulation of IGFBP4 was determined by real time qPCR. Intracellular and extracellular IGFBP4 protein levels were examined by Western Blotting and ELISA. TransSAC database analysis was performed to identify potential p53-family binding sites in the IGFBP4 locus. Identified sequences were cloned, deleted, and analyzed by luciferase reporter assays to evaluate binding of p53-family members.

Results: IGFBP4 expression was increased by more than 30-fold in TA-pAp73-transfected Hep3B cells, by more than 15-fold in DNp63- and by 3-fold in pAp53-transfected cells. Induction of intracellular IGFBP4 protein was detected in all transfected Hep3B cells, whereas extracellular IGFBP4 levels were only measurable after TA-pAp73 and DNp63 transfection. Database analysis identified 2 putative p73 binding sites within intron 1 of the IGFBP4 gene. Intron 1-dependent luciferase activity was increased by up to 20-fold in TA-pAp73-transfected cells. This induction was reduced by up to 70% when one of the putative binding sites was deleted.

Conclusion: These results identify the IGFBP4 inhibitor hypothesis as novel target gene for pAp73 and IGFBP4 and enhance our knowledge in a so far unknown association of p53-family network and IGF signaling. Since in an independent study we identified IGFBP2 as a novel p53-family target gene, these results highlight the link between p53-family-mediated transcriptional mechanisms and IGF-dependent cell proliferation. 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.

P1314 MONITORING OF LIVER FUNCTION IN PATIENTS WITH NONALCOHOLIC FATTY LIVER DISEASE IN COMBINATION WITH METABOLIC SYNDROME

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Disclosure of Interest: U3C-methacillin breath test (13C-MBT) is used to specify the detoxification function of the liver by determination its metabolic capacity and degree of hepatocytes recovery.

Aims & Methods: The study involved 113 patients with MS aged from 37 to 82 years. The average age was 55.8±5.3. There were 75 men and 38 women. The criteria, which has been examined for the functional state of the liver was 13C-MBT. The control group included 25 patients with a BMI of 25-30 kg/m2 without severe concomitant diseases. Indicators of 13C-MBT were metabolic rate, cumulative dose of 13C-methacelin on 40 and 120 minutes. Also evaluation was carried by mathematical deduction which measured the liver dysfunction stage.

Results: The data showed normal detoxification liver function in patients without MS (20.11% ±0.55). The results were below normal in patients with BMI higher than 25.25 kg/m2, which indicated that there were initial changes in the functional state of liver. In patients with steatosis - cumulative dose on 120 minute was 15.12%±0.49, which corresponded to a moderate reduction of detoxification function with the mass of function hepatocytes 50-100%. The data of 13C-MBT in patients with steatohepatitis showed pronounced changes of the liver detoxification function (8.88±0.64%). All indicators at steatosis group have indicated the moderate decline detoxification function with the level of function hepatocytes 50-100%.

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.

References
2. Boursier J, Zarski JP, de Ledinghen V, et al; Multicentric Group from Zentiva S.A. Popescu: I hereby confirm that I have received financial support (congress Electric, Abbvie, Zentiva, Bristol Meyers Squibb). Disclosure of Interest:

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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.

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Results: The data showed normal detoxification liver function in patients without MS (20.11% ±0.55). The results were below normal in patients with BMI higher than 25.25 kg/m2, which indicated that there were initial changes in the functional state of liver. In patients with steatosis - cumulative dose on 120 minute was 15.12%±0.49, which corresponded to a moderate reduction of detoxification function with the mass of function hepatocytes 50-100%. The data of 13C-MBT in patients with steatohepatitis showed pronounced changes of the liver detoxification function (8.88±0.64%). All indicators at steatosis group have indicated the moderate decline detoxification function with the level of function hepatocytes 50-100%.
P1316 NONALCOHOLIC FATTY LIVER DISEASE IN PATIENTS WITH 2 TYPE DIABETES MELLITUS AND CORONARY HEART DISEASE AGAINST THE BACKGROUND OF METABOLIC SYNDROME. HOW TO DIAGNOSE?
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Introduction: It is known that 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-methacetin test. However, these research methods do not allow to clearly differentiate steatosis from the steatohepatitis, that reduces their credibility.

Aims & Methods: 163 patients (75 men, 88 women) with 2 type diabetes mellitus and coronary heart disease with metabolic syndrome, were examined. The average age of patients was 55.8 + 9.2 years. The presence of steatosis was 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, diameter of vena portae and data 13C-methacetin breath test were evaluated.

Results: The rate of liver metabolism based on 13C-methacetine test results in patients without NAFLD was 22.0 ± 0.66%, in patients with steatosis - 17.1 ± 0.84%, steatohepatitis - 14.3 ± 0.62%. Cumulative dose of methacetin on 120 minute was 20.2 ± 0.46% in patients without pathology of liver, 16.1 ± 0.49% in patients with steatosis, 11.4 ± 0.36 in patients with steatohepatitis. ALT level in control group was 0.4 ± 0.05 mmol/l, with steatosis 0.84 ± 0.06 mmol/l, with steatohepatitis 6.9 ± 0.08 mmol/l. The diameter of vena portae in control group was 11.2 ± 0.26 mmn, 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 group in comparison of the control group, with simultaneous significant increasing of ALT level and diameter of the portal vein. However, a significant reduction of the metabolism rate of methacetin and the cumulative dose 13CO2 in the background of the increase of a diameter of vena portae correlated with a great severity of steatohepatitis group.

Findings: We 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 minutes of MBT 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.

P1317 BMP1-3 IN LIVER FIBROSIS
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Introduction: Liver fibrosis (LF) is a progressive pathological process resulting in accumulation of excess extracellular matrix proteins. A metalloprotease BMP1-3 is produced in the liver. Administration of BMP1-3 isoform circulates in the plasma and its neutralization resulted in an effective inhibition of the fibrosis progression. Administration of BMP1-3Ab was accompanied by antifibrotic therapy.

Aims & Methods: In our experiments the presence of BMP1-3 was immunohistochemically demonstrated in both healthy and cirrhotic liver suggesting that at least a part of circulating BMP1-3 is produced in the liver. Administration of BMP1-3 Ab reduced the amount of fibrosis which may progress from simple steatosis to NAS, cirrhosis and hepatocellular carcinoma (HCC). Our results suggest that neutralization of BMP1-3 is a promising therapeutic approach in preventing the liver fibrosis progression.

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

P1318 LIVER TRANSIENT ELASTOGRAPHY IN NON-ALCOHOLIC FATTY LIVER DISEASE: IS THERE ANY PREDICTIVE ROLE IN THE DEVELOPMENT OF COLORECTAL POLYPS?
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Introduction: Recent studies have demonstrated an association between decreased glucose tolerance, dyslipidemia and metabolic syndrome; and increased risk of colorectal polyps. Patients with non-alcoholic fatty liver disease (NAFLD) often have these risk factors. The association between NAFLD and colorectal polyps has been poorly studied.

Aims & Methods: We aimed to evaluate the prevalence and risk factors of colorectal polyps in patients with NAFLD. This was a retrospective observational study. NAFLD was defined according to transient elastography by Fibroscan®, between 01/2015-02/2017. Exclusion criteria: age <18 years, absence of total colonoscopy with good preparation <3 years, inflammatory bowel disease, hereditary polyposis syndromes and personal/family history of colorectal polyps/neoplasia. Compared patients with colorectal polyps(cases) and without colorectal polyps(controls).

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 = 0.059), with men predominant (51.7% vs63.5%; p = 0.272), mostly located in the left colon (55.2% vs44.8%; p = 0.314) and number and mean size of 1.64 ± 0.88 and 6.90 ± 0.46 mm, respectively. After multivariate analysis, the presence of colorectal polyps was associated with F4 liver fibrosis (34.5% vs14.9%; p = 0.026; OR = 3.01) and obesity (BMI > 30 kg/m²; 55.2% vs29.7%; p = 0.016; OR = 2.91); hyperplastic polyps were associated with liver fibrosis for a cut-off value of 6.96 kPa (AUROC 0.689 ± 0.008; S = 85.7%; Sp = 51.2%); mainly F4 (42.8% vs14.6%; p = 0.004; OR = 4.38), hyperuricemia/gout (23.8% vs8.5%; p = 0.040; OR = 3.35) and peptic ulcer disease (9.5% vs1.2%; p = 0.043; OR = 8.53); adenoma was associated with liver steatosis (88.2% vs83.7%; p = 0.024; OR = 3.50), F4 liver fibrosis (41.2% vs16.2%; p = 0.006; OR = 3.24) and obesity (85.8% vs33.6%; p = 0.040; OR = 2.39); advanced adenoma/adenocarcinoma was associated with F4 fibrosis (20.0% vs1.2%; p = 0.02; OR = 12.24), hyperuricemia/gout (40.0% vs10.3%; p = 0.044; OR = 0.040; OR = 1.50) 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-OBSE INDIVIDUALS
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Introduction: Non-alcoholic fatty liver disease (NAFLD) is a common clinicopathological entity from which may progress from simple steatosis to NAS, cirrhosis and hepatocellular carcinoma (HCC). Obesity is accepted as the main risk factor for NAFLD, non-obese individuals are often diagnosed with NAFLD suggesting that high BMI may not be a sine qua non for the presence of NAFLD. Recent studies suggested that there might be a correlation between weight gain and metabolic diseases.

Aims & Methods: In our research; the relationship between NAFLD in non-obese individuals and the amount of weight gain during adulthood was investigated and a new index that is different from BMI was proposed. 362 individuals were included in the survey. The subjects were selected among patients who had abdominal ultrasonography(USG) in our clinic, during the last 6 months. A 5% increase in echogenicity detected in the USG was defined as the diagnostic between the HP level in liver, morphometric analysis and elastography of the liver.

Conclusion: Our results suggest that neutralization of BMP1-3 is a promising therapeutic approach in preventing the liver fibrosis progression.

Disclosure of Interest: All authors have declared no conflicts of interest.
limit for hepatosteatosis. The beginning of adulthood was taken as 20 years old. Exclusion criteria were: HbA1c or anti-HCV positivity, alcohol use, liver disease, pregnancy, cancer treatment, renal insufficiency, being younger than 25 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 overweight, the average age of the group being 46.78 ± 9.12. Out of 78 obese individuals 73 (93.5%) were NAFLD(+). The average age of the 284 (78.4%) non-obese subjects was 44 ± 11.05. Among non-obese people 169(59.5%) were NAFLD(+) and average age was 48.07 ± 10.13 with a SAMI > C6 people was 38.729. 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 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%, and 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 3.5 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.

References

P1320 CHARACTERIZATION OF CISPLATIN RESISTANCE IN HEPATOMA CELL LINES

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Introduction: Cisplatin-treated cancer patients often face therapy failure caused by acquired cisplatin resistance. Development of resistance was previously associated with modulation of transporters mediating cellular copper metabolism. Overexpression of the Wilson disease protein ATP7B, a TGN copper transporter, was proposed to increase cellular cp efflux.

Aims & Methods: The human hepatoma cell line HepG2 was compared with a HepG2-variant lacking functional ATP7B expression (KO) in regard to cp sensitivity. Hepatoma cell lines were generated that displayed cp resistance by step-wise increasing cp concentrations. Cells were examined via growth, cell viability assay (MTT) and analysed for apoptosis (Annexin V staining). Inducively coupled plasma mass spectrometry was used to determine intracellular cp level. Gene expression analysis (RT-qPCR) was carried out to determine the expression of various transporters. Overexpression of individual transporter genes in siRNA treatment was used for confirmation of the data.

Results: Treatment of HepG2 and KO cells with various cp concentrations revealed no significant differences in cell viability and intracellular cp accumulation when examining KO cells that lack ATP7B can adapt to high cp levels, a cp resistant subtype (CpR) was generated. Cp resistance was confirmed by viability assays and increased intracellular cp load. Gene expression analysis of more than 16 transporters demonstrated an upregulation of metallothionein 1 (MTT: 8.91 ± 4.4) and a downregulation of organic cation transporter 3 (OCT3: -5.17 ± 2) compared to control cell lines. Weaning and regrowth of the CpR cell line in the absence of cp revealed a stable phenotype of resistance in the cells.

Conclusion: We suggest that ATP7B does not seem to be involved in cp resistance, at least in hepatic cells. OCT3 represents a novel marker of cp resistance. OCT3 expression could be a valuable tool for improved prognosis of cisplatin therapy.

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

References

P1321 AUTOMATED RAPID DETECTION SYSTEM USING THE QUENCHING PROBE METHOD FOR DETECTING RS738409 POLYMORPHISM IN PNPLA3 IN NONALCOHOLIC FATTY LIVER DISEASE

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Introduction: Recent studies have shown that the single nucleotide polymorphism (SNP) rs738409 in the PNPLA3 gene is strongly associated with severity of nonalcoholic fatty liver disease (NAFLD).1,1 However, the traditional direct sequencing (DS) method is time-consuming and labor-intensive. The i-densyTM, which is based on the quenching probe (QP) method, automatically detects target genes in blood samples by fluorescence quenching within 90min.

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’-cctctctctgctttgacag-3’ and 5’-ggggctgcctggaaagga-3’ respectively. PCR consisted of initial denaturation for 1 min at 95°C, and 60 cycles of denaturation at 95°C for 1s and annealing at 61°C for 30s. 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), 32 (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
Copper metabolism and suggests a new role of MDR1 in the pathogenesis of WD. Our analysis of long-term Cu exposure presents new insights in from a WD patient and from the rat animal model confirmed our observations. The intracellular Cu load was significantly affected by siRNA and verapamil indicating by siRNA and drug activation (verapamil). Notably, cell viability and gained resistance (CuR). Characterization of CuR cells revealed increased survival gain resistance (CuR). Characterization of CuR cells revealed increased survival.

Aims & Methods: We aimed to examine the efficacy of orlistat versus placebo in reducing liver fat content by the magnetic resonance imaging (MRI) based on chemical shift imaging. A total of 51 NAFLD patients diagnosed by MRI were randomly assigned to receive trice-daily 120mg oral Orlistat or placebo for 6 months, among them 30 (14 in the Orlistat group and 16 in the placebo group) were included in the interim analysis. Both groups received.

Results: Parameters, laboratory tests and liver fat content were measured at baseline and 6 months including body mass index (BMI), waist hip ratio (WHR), liver enzymes, haemoglobin A1c, total cholesterol (CHOL), serum triglycerides (TG), fasting plasma insulin (FPI), homeostasis model assessment IR (HOMA-IR). The primary outcome was a change in liver fat quantified by MRI which is based on Dixon technique in two-point chemical shift-faceted fat-water separation method. The chi-squared and paired t test were used to compare mean differences between fat fractions between two groups.

Conclusion: Orlistat was higher in Orlistat group (31.38 ± 3.19) than that of the placebo group (26.78 ± 3.02; p < 0.001), while the baseline characteristics including liver fat fraction and the proportion of hypertension, hyperlipidemia, diabetes mellitus type 2, and obesity were similar. Compared to baseline, end-of-treatment liver fat content was significantly lower in the Orlistat arm (19.38% ± 9.52% to 11.56% ± 7.49%, change was 7.72 ± 6.39%; P = 0.001) but not in the placebo (16.05% ± 8.7% to 14.17% ± 9.58%, change was 1.43 ± 9.54%; P = 0.640) arm. Change of BMI was the only independent factors correlated with reduction of liver fat content (β = 0.522, p = 0.006).

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

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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 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 Cu elevation in hepatic cells lacking functional ATP7B has not been explored.

Aims & Methods: HepG2 cells lacking functional ATP7B (KO) were used for generation of a copper resistant subline (CuR). Cell growth, cell viability (MTT) and intracellular Cu load (atomic absorption spectroscopy) was assessed. RT-qPCR was performed to quantify the expression of genes related to Cu homeostasis genes. Functional analysis of candidate genes was assessed via siRNA transfection. Additiona...
Conclusion: We conclude that Fibroscan® represents an eligible tool to diagnose liver diseases in Austrian bank employees. Compared to the previous work of Bedogni et al. FLI predicts fatty liver at a lower cut-off level, at least for the examined population. This difference might be due to the fact that FibroScan®CAP is more sensitive than ultrasound.

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

Reference
Bedogni et al. (2006): The Fatty Liver Index: a simple and accurate predictor of hepatic steatosis in the general population. BMC Gastroenterology, 6:33

P1326 METABOLIMICS IDENTIFIES PROGRESSIVE NAFLD
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Introduction: Nonalcoholic fatty liver disease (NAFLD) is an affection with increasingly prevalence worldwide, having an important impact on morbidity and mortality, especially when it associated severe fibrosis.

Aims & Methods: We aimed to assess the metabolites that are associated with fibrosis stages in NAFLD, using metabolic method. A total of 40 patients were included in the study, 30 diagnosed with nonalcoholic fatty liver disease (NAFLD) and 10 controls. Steatosis and fibrosis were assessed using Fibromax elaborated by Biopredictive (R) (Paris, France). New metabolomic techniques (high performance liquid chromatography coupled with mass spectrometry (HPLC-MS) and principal component analysis (PCA)) were used to identify final products of various metabolic pathways correlated with liver fibrosis.

Results: Of the 30 patients with NAFLD included in the study, 6 patients (20%) had severe fibrosis. The metabolomic profile identified four metabolites that are associated with severe fibrosis: 1,25(OH)2vitamin D, (p = 0.003), isosoprophatidyl-letanolamine LPE 0:22:6 (p = 0.05), Lysocephatidylcholine 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 others 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: In 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: Chronic renal failure (CRF) is frequently associated bone metastasis particular in case of hemodialysis. Younger studies suggest an association of low vitamin D levels with non-alcoholic fatty liver disease (NAFLD) and non-alcoholic steatohepatitis (NASH), as well as metabolic syndrome, and diabetes mellitus. Unfortunately, a causality could not yet be proven.

Aims & Methods: Our aim was to identify patients on higher risk to develop NAFLD/NASH in a selected patient cohort being admitted for renal disorders.

176 patients, admitted to the department of nephrology of the University Hospital Marburg for renal disorders whose plasma vitamin D concentration, phosphate and parathormone levels and liver enzyme levels had been quantified beforehand, were enrolled and a retrospective investigation of laboratory parameters (including electrolytes, hormones, and vitamins) and pre-existing medical conditions (including high blood pressure, diabetes, hyperlipoproteinaemia, and more) followed. Appropriate statistical test were used to characterise the cohort (ANOVA; MANN-Whitney-U; FISHER-EXACT) using SPSS™. Other hepato-pathies were excluded. Steatosis was assessed by ultrasonography.

Results: Patients were divided into 4 groups according to plasma vitamin D levels (normal > 25 ng/ml; low < 25 ng/ml) and transaminase levels (AST/ALT > GT > 30 U/l; normal; AST/ALT > GT < 30 U/l). Low 1,25-hydroxyvitamin D levels correlated significantly with high creatinine, urea, and LDL levels, while low 25-hydroxyvitamin D levels correlated with high cholesterol and triglyceride levels, suggesting a relationship between low vitamin D levels and fat metabolism disorders. Interestingly end stage renal failure (chronic hemodialysis) was significantly related with the development of NAFLD/NASH with significantly higher levels of AST/ALT and gGT, hyperparathyreodism and hyperphosphate-mia. Transaminases were significantly lower if Vitamin D was supplemented.

Conclusion: Vitamin D deficiency is often present in patients with kidney diseases such as chronic renal failure. Vitamin D levels are correlated to age and sex of the patient. Patients suffering from renal failure are on high risk developing NAFLD/NASH if diminished vitamin D levels are present. Supplement of Vitamin D saves from NAFLD/NASH. The correlation of hyperparathyreodism and NAFLD/NASH has to be further investigated in larger patient groups.

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

P1328 NONINVASIVE DIAGNOSTICS OF NONALCOHOLIC FATTY LIVER IN PATIENTS WITH TYPE 2 DIABETES MELLITUS
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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 amino transferases, steatotest, 13C-methacetin breath test (13C-MBT). These methods in the diagnosis of NAFLD clinical forms is not specific and do not allow make difference between steatosis and steatohepatitis. The determination of NAFLD clinical forms is a priority in the prediction of further disease and choice of treatment. Steatohepatitis is the active form of NAFLD and progresses to fibrosis oftenly with subsequent liver parenchyma degeneration into cirrhosis. Simultaneously, steatosis could be possibly treated in the early stages of disease.

Aims & Methods: The study involved 65 patients with type 2 diabetes and coronary heart disease with metabolic syndrome, aged 37 to 82 years (mean age 53.82 ± 3.46), 29 men, 36 women. According to the ultrasound, the stage of fatty infiltration were differentiated by such criteria for steatosis as diffuse liver parenchyma 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 steatohapatitis, and below 0.68 mmol/l - to steatosis. Portal vein diameter size above 13 mm subscribed in infiltration were differentiated by such criteria for steatosis as diffuse liver parenchyma and expansion of portal vein (13 mm or more in diameter).

Conclusion: Differentiation between steatosis and steatohepatitis should be performed in the early stages of disease.

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) is 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 liver fibrosis, and hepatic neoplasms including carcinoma [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 should be managed and 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 ultrasoundography (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 ≥ 18 years, presence of T2D in association with fatty liver disease. The diagnosis of fatty liver was based on the results of abdominal ultrasoundography, which was done by trained technicians with Ultima PA (Radmir Co., Kharkiv, Ukraine). Of 4 known criteria (hepatic echo contrast, liver brightness, deep echo enhancement, and vascular blurring), the participants were required to have hepatic parenchymal hypoechoic 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 trans- 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 validated 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, IL-8, INF-γ) levels were evaluated.

Results: Non-obese NAFLD patient had higher LS (7.52 ± 0.2 vs 6.87 ± 0.09, p = 0.001) 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 (68.59 ± 1.09 vs 68.06 ± 1.98, p < 0.001). Markers of chronic systemic inflammatory state were also significantly higher in NAFLD obese as compared to non-obese patient: IL-1β 44.64 ± 2.0 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 ± 5.74 (p = 0.016) respectively. Changes of IL-6 between groups were non-significant.

Conclusion: At 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. Our other 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 subgroup 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 2015 among adult subjects (age >18 years) who underwent voluntary hepatobiliary ultrasound. NAFLD was diagnosed using abnormal sound and absence of chronic liver diseases such as autoimmune hepatitis, hepatitis B or C viruses induced hepatitis, hepatobiliary 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 optimum cutoff values for BMI and waist circumference in association with lean NAFLD.

Results: 1343 individuals were included. 165 individuals (12.3%) was diagnosed to have NAFLD. 129 individuals (9.6%) had mild NAFLD and 36 individuals (2.7%) had moderate NAFLD. None of the participants had severe NAFLD. In univariate analysis, history of diabetes mellitus (DM) (OR = 2.25; 95% CI: 1.15-4.40, P = 0.015) and metabolic syndrome (OR = 2.80; 95% CI: 1.74-4.48, P < 0.001) were associated with NAFLD. Higher BMI and waist circumference, higher systolic and diastolic blood pressure, higher serum triglyceride, cholesterol, fasting plasma glucose (FPG) and alanine aminotransferase (ALT) were associated with NAFLD (P < 0.03). In multivariate regression analysis, higher BMI and waist circumference, higher serum ALT, FPG and cholesterol were independent predictors of NAFLD in our study population (Table). A cutoff value of 22.3 kg/m² for BMI was predictor of NAFLD (sensitivity = 72%; specificity = 60%; AUC = 0.728, P < 0.001). A cutoff value of 79.5 cm for waist circumference was predictor of NAFLD in our study population (sensitivity = 80%; specificity = 68%; AUC = 0.753, P < 0.01). Table: Multivariate regression analysis showing independent risk factors for lean NAFLD.

Conclusion: Lean NAFLD was prevalent in our study population and was associated with metabolic risk factors. BMI and waist circumference can be used for prediction of 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 BAVELASTPQ 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 (ARTI) in predicting the presence of high-risk gastroesophageal varices, no study has explored the potential role of another point-shear wave technique, ElastPQ, 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 ElastPQ and/or laboratory parameters that could help identify patients who can undergo endoscopic screening endoscopy. We 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 ElastPQ 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 partially advanced fibrosis and cirrhosis, based on the limited literature available on this specific elastographic technique. Exclusion criteria were history of decompensated liver disease, evidence of porto-spleno-mesenteric vein thrombosis and non-cirrhotic portal hypertension. Varices were graded as low risk (grade <2) or high risk (grade ≥2).

Results: The study included 184 patients (114 [62%] hepatitis C, and 160 [87%] Child-Pugh A). Varices were present in 36% cases, with 10% prevalence of high-risk varices. According to ROC curve analysis liver stiffness measurement and...
platelet count were evaluated as predictors of high-risk varices. Overall 74/184 (40%) met the new “BAVElastPQ” criteria (that is, liver stiffness <12 kPa and platelet count >150,000/µl). Within this group 11/63 (17%) had any grade of varices and only 1/73 (1%) had high-risk varices. The BAVElastPQ criteria gave sensitivity of 0.95, specificity of 0.44, a positive predictive value of 0.51 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 ElasIPQ in the non-invasive assessment of clinically significant portal hypertension, similarly proposed Baveno VI criteria though using ElasIPQ as an alternative to transient elastography.

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

P1332 PROTON PUMP INHIBITORS INTAKE NOT ASSOCIATED WITH HEPATIC ENCEPHALOPATHY IN CIRRHOTIC PATIENTS

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Introduction: Inhibitors of PPIs are commonly prescribed and predispose 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 analysis was performed using chi-square and PPS 21, considering statistical significance p < 0.05.

Results: 386 patients, 321 males (83.2%), mean age 60.3 ± 12.1 years. Main etiologies of cirrhosis were alcohol (67.4%), alcohol plus hepatitis C (16.3%) and hepatitis B virus (5.2%). Hepatic encephalopathy was present in 222 (57.5%) of the patients and 26.9% had PPI intake. In univariate analysis hepatic encephalopathy 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, hepatic encephalopathy maintained association with infection (p < 0.001), gastrointestinal bleeding (p < 0.001) and MELD score (p = 0.001).

Conclusion: In our series, PPI intake was not associated with hepatic encephalopathy development in cirrhotic patients.

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

Reference

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 significantly higher than that observed in general population, being one of the most important causes of decompensation. In theory, the final result of an infectious disease depends of three major factors: the antibiotic resistance of the bacteria and the degree of virulence or pathogenicity 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 decompensated cirrhosis at admission (less than 24 hours after hospitalization), 2) to study its impact on 30 and 90-day mortality, and 3) to identify independent risk factors for 30 and 90-day mortality. We conducted a retrospective cohort study which evaluated all admissions due to decompensated cirrhosis in one center between 2010 and 2015. MDR bacterial infections, its acquisition site and the antibiotic resistance patterns were defined 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) infections. Of patients in whom MDR by a MDI was documented, no infections, no difference was noticed between non-MDI, non-MDR bacteria or MDR bacteria matching 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 independently associated with 90-day mortality.

Conclusion: The presence of bacterial infection, independently of the antibiotic profile, was associated with a worse prognosis in cirrhosis. In patients with documented infections, no differences was noticed between non-MDI, non-MDR bacteria or MDR bacteria matching 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 independently associated with 90-day mortality.

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

P1334 STATIN THERAPY 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 improve portal blood flow, reducing portal hypertension. The objective of this research was to perform a meta-analysis of randomized controlled trials (RCTs) 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 adult patients with liver cirrhosis.

Results: Three trials comprising of 98 patients met the inclusion criteria. In the random-effect model, the weighted mean difference was 0.76 mmHg, favoring statin therapy over placebo. There was no evidence of significant heterogeneity (I2 = 0%, Q = 0%).

Conclusion: Statin therapy reduces portal hypertension as measured by the HVPG among adult patients with liver cirrhosis. The findings of this study reinforce the promising role of statins in decreasing portal hypertension. Further RCTs with larger population and with longer duration of follow-up as well as the use of different statin drugs to explore further on the class effect are recommended.

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

References

United European Gastroenterology Journal 5(5S)
P1335 IN HOW MANY PATIENTS WE WILL 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 topics.

Aims & Methods: The aim of this study was to evaluate the applicability of the Baveno VI criteria in a cohort of known compensated HCV liver cirrhosis patients, to see how often we misclassify the presence of esophageal varices (EV). Material and method We did a prospective multicentre study, from September 2016 to December 2016, which included all patients with perfectly compensated HCV liver cirrhosis, diagnosed by means of elastography, ultrasound, endoscopic and biological criteria prior to interferon-free treatment. All patients were evaluated by upper gastrointestinal endoscopy, transient elastography and CRBPs tests. By using these criteria we classified the patients in: probably without EV (lower stiffness: LS < 20 kPa and thrombocytes > 150,000/mm³), probably with EV (LS ≥ 25 kPa and the “gray zone” in between these criteria.

Results: Out of 403 patients, 127 (30.7%) had LS < 20 kPa, 89 (22%) had LS between 20–25 kPa, 190 (47.3%) had LS ≥ 25 kPa, 120 (29.7%) had thrombocytes > 150,000/mm³, while 283 (70.3%) had thrombocytes < 150,000/mm³. For the subgroup probably with EV, the Baveno VI criteria had PPV = 84.6% (Se = 90.7%, Sp = 74.6%), NPV = 26.8% for predicting the presence of esophageal varices, while for the subgroup probably without EV had NPV = 80.3% (Se = 50.2%, Sp = 58.6%, PPV = 75.6%). The subgroup that had LS < 20 kPa and thrombocytes > 150,000/mm³, was composed of 60 patients. Using these criteria, only classified 80% patients, with a Se = 80%, Sp = 28.3%, PPV = 59%, NPV = 61.2%, AUROC = 0.70, CI (= 0.68-0.71). The best cut-off value for TE for predicting the presence of EV of any grade in our group was >23 kPa, AUROC 0.79 (Se = 68.8%, Sp = 56.9%, PPV = 44.7%, NPV = 78.4%).

Conclusion: By using the Baveno VI criteria in patients with liver cirrhosis for the prediction of presence of esophageal varices, we can misclassify only 20% of patients.

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. Sirl: 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.

P1336 COMBINED RADIOLOGIC-BLOOD PARAMETERS AND BLOOD DERIVED NIFs AS PREDICTIVE FOR DECOMPENSATION AND EV: A MULTICENTER STUDY OF 1,089 PATIENTS
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Introduction: Non-invasive fibrosis scores (NIFs) are increasingly replacing liver biopsy 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 ANOVA and Pearson’s correlation coefficient. Results: 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. 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. Within the CLD cohort, sensitivity 97.7% and specificity 72.7% for detecting the presence of MHE were reported. 78 patients had a positive PHES test and the Stroop test was performed on all patients. Both tests were compared and correlation coefficients calculated. Results were compared amongst patient groups using a student t-test, where p < 0.05 was considered significant. ROC analysis was used to establish a standard local cut-off for a positive Stroop test.

Results: A total of 96 patients (51 men) were recruited. Overall, the mean age was 51.7 ± 16.6 years; mean years spent in education 13.8 ± 4.2. In all there were 35 CLD and 61 healthy controls. While there was no difference in age or years spent in education, there were more men in the CLD group compared to the controls, 23/35 (66%) vs. 28/61 (46%), p = 0.06. Within the CLD cohort, 30 (86%) patients were Child-Pugh class A, 4 (11%) were class B and 1 (3%) was class C. As expected, more CLD patients had a positive PHES, 4/35 (11%) vs. 3/61 (5%) (p = 0.009). In total, 39 patients had an on time of >187 seconds as a positive cut-off for our PHES test, sensitivity 97.7%, specificity 72.7%, positive likelihood ratio 18.9, negative likelihood ratio 0.02. However, mean Stroop on-off times were similar, 190 ± 130 s as a positive cut-off for the Stroop test, sensitivity 59%, specificity 88%, positive likelihood ratio 2.4, negative likelihood ratio 0.12. However, neither age nor years of education correlated with performance on the PHES test (r = 0.087, r = 0.12, respectively).

P1337 A SMART APPROACH TO THE DIAGNOSIS OF MINIMAL HEPATIC ENCEPHALOPATHY
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Introduction: Minimal Hepatic Encephalopathy (MHE) is present in more than 30% of patients with chronic liver disease (CLD), and is associated with a 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 ANOVA and Pearson’s correlation coefficient. Results: 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 ANOVA and Pearson’s correlation coefficient. Results: A smartphone application (EncephalApp Stroop Test) has been suggested as a viable alternative.
**Aims & Methods:** We hypothesized that probiotic bacteria repress intestinal pathogen growth and that can translocate through a weakened gut barrier and cause severe infections. Therefore, we conducted a randomized, double-blind, placebo-controlled trial to test the effects of the multispecies probiotic Ecologic Barrier (Winclove, Amsterdam, The Netherlands)/Omnibiotic Hetox (Allergosan, Graz, Austria) on microbiome composition, predicted metagenome functions, and tight gut barrier.

**Conclusion:** This is the first study investigating 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 Stroop tests suggesting it may be a convenient filter test for MHE.

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

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**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)/Omnibiotic Hetox (Allergosan, Graz, Austria) on microbiome composition, predicted metagenome functions, and tight junction function in cirrhosis patients. A once daily dose of the probiotic mixture (1.5x10^10 CFU) or placebo was administered to 58 patients with Child's A cirrhosis. We analysed the stool microbiome prior, immediately after the intervention and six months following end of treatment. Hypervariable region 1–2 of the bacterial 16S rDNA was sequenced and predictive communities were identified using Ada Boost Classifier. Functional predictions were analysed by Phylogenetic Investigations of Communities by Reconstruction of unobserved States (PICRUSt). Zonulin and calprotectin were assessed in stool as markers for gut permeability and intestinal inflammation, respectively.

**Results:** A community of 37 operational taxonomic units (OTUs) was sufficient to pinpoint characteristic features of the microbiome before and after the intervention. Within this predictive community, three OTUs were found to be differentially abundant: Lactobacillus brevis and Lactococcus lactis increased significantly and Enterococcus durans decreased significantly in the probiotic group. Zonulin normalized in 20% of patients in the probiotic group. Predicted metagenome functions (assessed by PICRUSt) and calprotectin did not show any differences during intervention.

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

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**P1339 THE IMPACT OF DIABETES MELLITUS ON SHORT-TERM AND LONG-TERM OUTCOMES AFTER LIVER TRANSPLANTATION**

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**Introduction:** Diabetes mellitus (DM) is a growing disease worldwide. Some previous studies have reported negative impact of DM in patients with chronic liver disease.

**Aims & Methods:** This study aimed to investigate the prevalence of DM in patients with liver cirrhosis and its impact on post-liver transplant short-term and long-term outcomes. In a cross-sectional study patients with liver cirrhosis on liver transplant waiting list who had undergone liver transplantation between March 2012 and March 2015 at Shiraz Transplant Center, Shiraz, Iran were included. Clinical and laboratory data of patients were recorded and patients were followed during post-liver transplant period. DM was diagnosed if the patient had fasting plasma glucose (FPG) ≥126 mg/dL or random plasma glucose ≥200 mg/dL in 2 different checkings or receiving anti-diabetic medications. The impact of DM on post-transplant outcomes was investigated using student t-test and chi-square test. Multivariate logistic regression was used for analysis of independent risk factors of mortality after liver transplantation. Kaplan-Meier method was used for analysis of survival.

**Results:** 1014 patients were included in the study. 259 patients (25.5%) found to have DM. Prevalence of DM was significantly higher among patients with cirrhosis due to non-alcoholic steatohepatitis (NASH) (P < 0.001). Portal vein thrombosis (PVT) was significantly higher among cirrhotic patients with DM (OR = 1.79; 95% CI: 1.18–2.70; P = 0.005). Mean model for end stage liver disease (MELD) score, body mass index (BMI) and duration of liver disease were not different in patients with and without DM (P > 0.05). Mean model for end stage liver disease (MELD) score, body mass index (BMI) and duration of liver disease were not different in patients with and without DM (P > 0.05). Mean model for end stage liver disease (MELD) score, body mass index (BMI) and duration of liver disease were not different in patients with and without DM (P > 0.05).

**Disclosure of Interest:** All authors have declared no conflicts of interest.
Rejection episodes (OR = 1.38; 95% CI: 0.47–4.11, p = 0.129) and acute kidney injury (OR = 0.96–1.84, p = 0.07) after liver transplantation were not statistically different in patients with and without DM. Using Kaplan-Meier method, mean post-liver transplant survival was 50.04 ± 0.67 months in cirrhotic patients without DM and 45.26 ± 0.14.6 months in cirrhotic patients with DM (p < 0.001). Post-liver transplant survivals at 6 months, 1 year and 4 years were outlined in Table. In patients with DM, presence of hepatocellular carcinoma (HCC) (OR = 4.61; 95% CI: 1.64–7.98, p = 0.002), acute kidney injury within 30 days after transplant (OR = 2.65; 95% CI: 1.02–4.10, p = 0.042) and pre-transplant PV (OR = 2.51; 95% CI: 1.16–5.14, p = 0.019) were independent predictors of mortality after liver transplantation.

Table: Post-liver transplant survival at 6 months, 1 year and 4 years in patients with and without DM

<table>
<thead>
<tr>
<th>Conditions</th>
<th>6 month survival</th>
<th>1 year survival</th>
<th>4 year survival</th>
</tr>
</thead>
<tbody>
<tr>
<td>With diabetes</td>
<td>81% ± 2.5%</td>
<td>79.1% ± 2.6%</td>
<td>75.9% ± 2.8%</td>
</tr>
<tr>
<td>Without diabetes</td>
<td>90.6% ± 1.1%</td>
<td>87.8% ± 1.2%</td>
<td>85.4% ± 1.3%</td>
</tr>
</tbody>
</table>

Conclusion: Diabetes mellitus is prevalent in patients with liver cirrhosis especially among those with NASH. Patients with DM may have lower post-transplant survival and need more intense follow-up.

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

References

P3140 VALIDATION OF THE BAVENO VI CRITERIA ON A COHORT OF CIRRHOTIC PATIENTS

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Introduction: The Baveno VI guidelines propose that cirrhotic patients with a liver stiffness measurement (LS) <20 kPa and a platelet count >150 000/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 was a LS >12 kPa and an upper gastrointestinal endoscopy within 12 months, with a diagnosis of chronic liver disease. Varies 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% etanovics, 11.8% etiology, and 47.5% were Child Pugh N 7% were cardiae, 13.85% were premalignant cirrhosis and in 5% of cases the etiology was unknown. In univariate analysis, hypernatremia (p < 0.0001), hyperpotassemia (p < 0.0001), hypoalbuminemia (p < 0.0001), high values of creatinine (p < 0.0001), high values of creatinine (p < 0.0001) were strongly associated with in hospital mortality. In multivariate analysis, the model including albumin, sodium, potassium, creatinine and bilirubin (all p-values <0.05) had an AUROC = 0.78, CI (0.75–0.81), p < 0.0001. Using this factors as predictors, by multiple regression analysis we obtained in the initial group the following score: ABCPS score = 0.04 + 0.03*Albumin + 0.05 + 0.02*Creatinine + 0.04 + 0.04*Bilirubin + 0.05 + 0.28*Potassium + 0.04*0.07*Sodium.

Conclusion: Prevention and prompt treatment of kidney injury, hypernatremia, hyperpotassemia, can improve survival. ABCPS score can be an uselfull 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, LUPUS SRL, BAYER, JANSSEN, AUCHE, S. A. Popescu: 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.

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Introduction: Bariatric surgery provides a durable method of weight loss but is associated with serious adverse events. Some studies report an increase in drug-induced acute liver injury following bariatric surgery.

Aims & Methods: We aimed to assess if bariatric procedures increase the risk of acute liver failure in a large inpatient cohort. We retrospectively analyzed discharge data on patients who developed acute liver injury (ALI) using the Nationwide Inpatient Sample (NIS) database from 2010-2013. Discharges with an IC-9 code indicating ALI were included. The primary outcome was ALI in patients with a history of bariatric surgery compared to all other patients with an ICD-9 code indicating ALI. Secondary outcomes were mortality in the two cohorts, and independent socio-demographic and medical risk factors for mortality in each cohort. Variables tested include age, gender, race, income, Charlson criteria, hospital factors and medical comorbidities including Malnutrition, HTN, Anemia, CKD, Diabetes, CHF, Coagulopathy, Alcoholism, HBV and HCV. Univariate and multivariate logistic regression analyses were performed to identify independent predictors.

Results: During the study period, a total of 437,390 patients were diagnosed with acute liver injury and were included in the study, of which 3,799 had previously undergone bariatric surgery. In the post-bariatric cohort, mean age was 58.7 years and 77% were women. The prevalence of acute liver injury in all inpatient admissions for that time period was higher in patients with history of bariatric surgery (0.85%) than in non-bariatric patients (0.75%), p < 0.001. Patients with history of bariatric surgery displayed odds ratio of 1.52 of developing ALI when compared to patients with no history of bariatric surgery (0.85%) than in non-bariatric patients (0.75%), p < 0.001. Admissions for that time period was higher in patients with history of bariatric surgery. In the post-bariatric cohort, mean age was 58.7 years and 77% were women. The prevalence of acute liver injury in all inpatient admissions for that time period was higher in patients with history of bariatric surgery (0.85%) than in non-bariatric patients (0.75%), p < 0.001. Admissions for that time period was higher in patients with history of bariatric surgery. In the post-bariatric cohort, mean age was 58.7 years and 77% were women. The prevalence of acute liver injury in all inpatient admissions for that time period was higher in patients with history of bariatric surgery (0.85%) than in non-bariatric patients (0.75%), p < 0.001. Admissions for that time period was higher in patients with history of bariatric surgery.
P1344 LONGITUDINAL MONITORING OF LIVER STIFFNESS BY ACOUSTIC RADIATION FORCE IMPULSE IMAGING IN PATIENTS WITH CHRONIC HEPATITIS B RECEIVING ENTECAVIR

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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 validated during antiviral therapy in CHB patients.

Aims & Methods: We aimed to prospectively assess the clinical usefulness of ARFI during long-term antiviral therapy in CHB patients. Seventy-one CHB patients were consecutively recruited and received antiviral therapy with entecavir. Paired liver biopsies were performed in 27 patients at baseline and week 78 of entecavir therapy. LS was assessed by ARFI at multiple follow-up sessions.

Results: LS significantly decreased with treatment and continued to decrease after normalization of alanine aminotransaminase. Overall, 97.2% patients achieved improvement of LS, whereas 19.7% patients had more than 30% reduction in LS values between baseline and week 104. Multivariate linear regression analysis showed that the degree of LS reduction significantly correlated with the baseline levels of LS value, platelet and cholinesterase. In the 27 patients who received paired liver biopsies, LS significantly correlated with stage of fibrosis and inflammatory grade at baseline. LS values decreased more significantly in patients with fibrosis regression than those with static histological fibrosis. Changes in LS value (change threshold ¼ 15%) was significantly correlated with the changes in histological fibrosis staging (r ¼ 0.63, P < 0.001).

Conclusion: In CHB patients, LS assessed by ARFI was significantly reduced during antiviral therapy. Longitudinal monitoring of LS might be a promising noninvasive assessment of fibrosis regression during long-term antiviral therapy in CHB. Further studies on large populations are warranted.

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

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

P1346 ANTIVIRAL EFFICACY OF UNANI HERBS (SAUSSUREA LAPPAPA AND ARTEMISIA ABSINTHIUM) IN CHRONIC HEPATITIS B

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Introduction: Chronic hepatitis B (CHB) is a serious health concern in terms of its high prevalence, as well as restricted and costly health care resources in India.1 Unani herbal drugs such as root of Saussurea lappa and whole plant of Artemisia absinthium have been used successfully in the treatment of hepatitis in Unani Medicine for centuries. These drugs have exhibited potential anti-hepatitis B, hepatoprotective, immunomodulatory, anti-inflammatory and anti-oxidant activities in various animal models.2 With this background, prospective clinical trial was tried to be designed according to the guidelines of American association for the study of liver diseases (AASLD) and implemented after Institutional ethical clearance.

Aims & Methods: Objective was to evaluate the antiviral effect of herbal drugs, Saussurea lappa and Artemisia absinthium against hepatitis B virus (HBV) in the management of CHB and to collect data to warrant further clinical trials. In an open prospective single-arm study, we assigned 30 patients with HBsAg-negative or HBsAg-positive CHB to receive decodination of root of Saussurea lappa, 15 mL (corresponding to 4.9 g of S. lappa) or Artemisia absinthium against hepatitis B virus (HBV) in the evening once daily empty stomach for 12 weeks. Physicochemical standardization and TLC and HPTLC fingerprinting of decoctions were also done. Test drug was provided for its efficacy testing (15 mL/Saussurea lappa (CLIA tech.), a plasma HBV DNA level (RT PCR) of less than 200 IU/mL at week 12 after treatment). Normalization of alanine aminotransferase levels [ALT (enzymatic assay) without any significant adverse effects (clinical parameters, hemogram, kidney and liver function tests, and blood also lasting and post prandial) at week 6 (mid-treatment) and 12 (after treatment) would be suggestive of resolution of inflammation of liver.

Results: 1. HBsAg loss was observed in 5 (35.71%) patients in HBsAg-positive group (n = 14) (p < 0.05) and 4 (25%) patients in HBsAg-negative group (n = 16) at week 12 after treatment (p = 0.10). These 9 HBsAg negative patients were further assessed on 26th week of treatment, all 9 maintained their negative HBsAg status. 2. HBsAg loss was observed in 74.27% patients at week 12
Aims & Methods: Serum HBsAg loss is the recommended stopping rule in nucleo(t)" University, Napoli, Napoli/Italy therapy from 3471 UI/ml at the baseline to 1758 IU/ml at the last determination months. There was a significant decrease of the HBsAg levels during NUC Lamivudine. The median treatment duration was 111 months, range 25–183 enrolled. Precisely 56 patients underwent to Tenofovir, 22 Entecavir and 17 median age 50 yrs, 34% cirrhotic) with stable viral suppression by NUCs, were Results: Diagnostics, Indianapolis, USA). HBsAg levels were determined before starting ''Federico II''. Sequential serum samples from these patients were tested for hepatitis the kinetics of HBsAg levels during the NUC therapy to evaluate the before the seroconversion, and NUC therapy was successfully stopped, without patients, in which undetectable HBsAg value was evidenced at least two years multivariate analysis showed that the only predic- treatment would be a useful parameter to optimize antiviral treatment schedule. 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 ANTIVIRAL NUC THERAPY IN CHRONIC HBeAg-NEGATIVE HEPATITIS B M. Guarino1, M. Masarone2, G. Portella1, A. Sessa1, R. Bonavolta3, N. Caporaso1, F. Morisco3, 1Gastroenterology Unit, Department of Clinical Medicine and Surgery, ''Federico II’’ University, Napoli, Napoli,Italy 2Internal Medicine and Hepatology Unit, San Giovanni e RuggiAragona, University of Salerno, Salerno,Italy 3Department of Translational Medical Science, University of Naples ''Federico II'', Napoli,Italy

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 HBcAg+ hepatitis the kinetics of HBsAg levels during the NUC therapy to evaluate the predictive parameters of HBsAg seroclearance. Patients with CHB, receiving NUC antiviral therapy with stable viral suppression (HBV DNA < 2010/ml), were recruited at the Gastroenterology Unit of the University of Naples ‘‘Federico II’’. Serum samples from these patients were tested for HBsAg quantification with the Elecsys HBsAg II Quant immunoassay (Roche Diagnostics, Indianapolis, USA). HBsAg levels were determined before starting NUC treatment and at treatment every 12 months. Results: A total of 95 HBsAg-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 went to Tenofovir, 22 Entecavir and 17 Lamivudine. The median treatment duration was 111 months, range 25–183 months. There was a significant decrease of the HBsAg levels during NUC therapy from 3471 UI/ml at the baseline to 1758 UI/ml at the last determination (p < 0.001). The statistically significant HBsAg decrease was also maintained when the patients were clustered according to antiviral therapy, severity of liver disease and previous interferon treatment. HBsAg seroclearance occurred in 18/95 patients (19%). The multivariate analysis showed that the only predictive parameter statistically significant of HBsAg seroclearance is the HBsAg level at baseline. Moreover, HBsAg serocconversion to HBsAb occurred in 4/18 patients, in which undetectable HBsAg value was evidenced at least two years before the seroconversion, and NUC therapy was successfully stopped, without relapse after a mean follow-up period of 24 months. Conclusion: 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 C. Xiao, B. Zhang, J. Ren Zhongshan Hospital Affiliated To Xiamen University, Department of Gastroenterology, Xiamen/China

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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 (HBcAg), the end point of treatment, even after multiple years of antiviral therapy. Therefore, it is urgent to develop new and effective strategy for treatment of CHB and examine the mechanisms.

Aims & Methods: In this study, we performed 60 times of fecal microbiota transplantation (FMT) by nasointestinal tube for 20 CHB patients who continued previous antiviral treatment, and accordingly measured the HBsAg level four weeks after each FMT. Fecal samples of CHB patients before (Baseline) and after FMT as well as donors were collected for analyses of gut microbiota by sequencing 16S V3-V4 regions on Illumina MiSeq using PE 250 reagents.

Results: Results showed that HBcAg of 13 patients (65%) was cleared or reduced after one to seven times of FMT. Based on OTUs at cutoff of 0.35% dissimilarity, there were significant (PERMANOVA, P = 0.001) differences in overall gut bac-}
P1355 HEPATITIS C IN LEBANON: BURDEN OF THE DISEASE AND VALUE OF COMPREHENSIVE SCREENING AND TREATMENT

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Introduction: As few reliable data on the burden of hepatitis C virus (HCV) are available from the Middle East, we analyzed HCV burden in the Lebanese population and the value of comprehensive screening and treatment at different age groups and fibrosis stages.

Aims & Methods: A multi-cohort, health-state-transition model was developed to project the number of HCV patients achieving a sustained virologic response 12 years (LYs) following SVR12 compared to no treatment and screening, adopting the high to F4 reduction in SVR12. Compared to no treatment and screening, adopting the high screening variant and DAAs access to F0-F4 would cost an additional 1,957 LY gained in SVR12.

Results: Low, medium and high HCV screening scenarios showed that 3838, 5566 and 7669 individuals would be diagnosed with HCV infection from 2016 to 2036, 40% aged 18–39 and 60% aged 40–80. In the absence of treatment, the projected number of patients developing cirrhosis (CC), hepatocellular carcinoma (HCC) and liver-related death (LrD) from 2016 to 2036. Epidemiology and mortality data were extracted from the Ministry of Health bulletin while costs were collected from insurance claims. The proportion of patients screened for HCV was projected to increase to 60%/85%/99% (low/medium/high screening scenarios) in 2036, with a new cohort of patients being diagnosed each year. SVR12 rates were extracted from clinical trials. Separate models were used for 18–39 and 40–80 age groups to account for different prevalence and screening rates.

Conclusion: In our sample of ESRD under HD patients, 3D therapy allowed the eradication of HCV 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.

Reference

P1352 HEPATITIS C TREATMENT IN RELAPSED PATIENTS: THE EFFICACY AND SAFETY OF DIRECT-ACTING ANTI-VIRALS IN THE REAL LIFE

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Introduction: Hepatitis C virus (HCV) infection in renal transplant patients pre-disposes to graft failure and progression of renal disease, increasing mortality. Due to immunosuppression and oscillating glomerular filtration rate (eGFR) in transplant recipients, treatment efficacy comes into question. Direct-acting antivirals (DAAs) are well-established, effective and safe treatment regimen of the HCV infection, however evidences on renal transplantation are scarce. Additional studies are still necessary in order to evaluate the real impact of these agents in the daily clinical practice.

Aims & Methods: Our objective was to assess the efficacy and safety of DAA treatment for HCV-infected patients with renal transplantation, in the daily practice of a tertiary care centre, describing the HCV infection, treatment type, the evolution of virological response and clinical outcomes (kidney function, anemia and other adverse effects). HCV-infected and renal transplant patients treated with DAA between April 2015 and February 2017 were analyzed.

Results: Including 19 patients, 10 males (53%) and 9 females (47%) with a mean age of 57 years (40–70 years). The majority of these patients (89%) were treatment-naive. Genotype distribution was the following: genotype 1–74% (14/19), genotype 3–16% (3/19) and genotype 4–10% (2/19). Distribution according to liver stiffness (LS) measured by Transient Elastography (TE) was as follows: F0–14% (3/19), F1–31% (6/19), F2–63% (12/19), F3–21% (4/19) and F4–16% (3/19). The majority of these patients (89%) were treatment-naive. Genotype distribution was the following: genotype 1–74% (14/19), genotype 3–16% (3/19) and genotype 4–10% (2/19). Distribution according to liver stiffness (LS) measurements by Transient Elastography (TE) was as follows: F0–14% (3/19), F1–31% (6/19), F2–63% (12/19), F3–21% (4/19) and F4–16% (3/19). The majority of these patients (89%) were treatment-naive. The global sustained virologic response (SVR) rate was 100% (19/19) of patients had End of Treatment Response (ETR). The overall economic burden of these liver complications would reach 150 000 USD per patient for the entire life span of the individual. The overall economic burden of these liver complications would reach 150 000 USD per patient for the entire life span of the individual. The overall economic burden of these liver complications would reach 150 000 USD per patient for the entire life span of the individual.

Conclusion: In our sample of HCV-infected with kidney transplant, DAA are effective and well tolerated, even in the more advanced stages of fibrosis, maintaining the integrity and viability of the graft, without interfering with the efficacy of immunosuppressant.

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

References

P1353 WHAT HAPPENED WITH LIVER STIFFNESS VALUES ASSESSED BY MEANS OF TRANSIENT ELASTOGRAPHY IN PATIENTS WITH HCV LIVER CIRRHOSIS AFTER DAA TREATMENT

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Introduction: Liver stiffness (LS) measurements by Transient Elastography (TE) has been widely accepted as a tool for fibrosis assessment.

Aims & Methods: The aim of this study was to assess LS dynamics in a group of patients with HCV liver cirrhosis after DAA treatment. This bicentric clinical
Results: were evaluated at baseline and when assessing SVR 12.

Aims & Methods: including variceal bleeding. hepatitis and cirrhosis, and therefore, might decrease the risk of decompensation, sustained virologic response (SVR) among patients with HCV induced chronic screening. The direct-acting antiviral agents (DAA) determine a very high rate of

Disclosure of Interest: M. Rotaru: This work was partly funded by the Iuliu Hârtăganu University of Medicine and Pharmacy, Cluj-Napoca under Grant No. 4943/3.08.03.2016 awarded to dr. Corina Radu.
A. Suciu: This work was partly funded by the Iuliu Hârtăganu University of Medicine and Pharmacy, Cluj-Napoca under Grant No. 4943/3.08.03.2016 awarded to dr. Corina Radu.
R. Sav: This work was partly funded by the Iuliu Hârtăganu University of Medicine and Pharmacy, Cluj-Napoca under Grant No. 4943/3.08.03.2016 awarded to dr. Corina Radu.
Z. Sparchez: This work was partly funded by the Iuliu Hârtăganu University of Medicine and Pharmacy, Cluj-Napoca under Grant No. 4943/3.08.03.2016 awarded to dr. Corina Radu.

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5. M. Tantau: This work was partly funded by the Iuliu Hârtăganu University of Medicine and Pharmacy, Cluj-Napoca under Grant No. 4943/3.08.03.2016 awarded to dr. Corina Radu.
6. Z. Sparchez: This work was partly funded by the Iuliu Hârtăganu University of Medicine and Pharmacy, Cluj-Napoca under Grant No. 4943/3.08.03.2016 awarded to dr. Corina Radu.
7. C. Radu: This work was partly funded by the Iuliu Hârtăganu University of Medicine and Pharmacy, Cluj-Napoca under Grant No. 4943/3.08.03.2016 awarded to dr. Corina Radu.
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9. Introduction: Monocyte chemotractant protein-1 (MCP-1) is a chemokine mediating inflammation in chronic liver disease. It promotes monocyte recruitment to the liver, 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: Therefore, the aim of the study was to investigate 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 ultrasound. In 3 cases, active fibrosis was scored as bridging fibrosis (F3) in 9, significant (F2) in 7 and advanced bridging fibrosis (F3) in 2 cases (METAIVIR). Compensated liver cirrhosis (F4) was diagnosed in 3 cases by liver biopsy or endoscopic screening for varices. Weight was normal in 10, overweight in 5 and obese in 6 patients. MCP-1 concentration 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 inversely with overweight in CHC patients (r = 0.522, p = 0.015). Patients with BMI ≥45 had higher BMI (p = 0.010) and HOMA-IR (p = 0.042). An increase in serum MCP-1 was found in patients after treatment (r = 0.030, p = 0.001), while no significant variation from baseline values was found in HOMA-IR. The result remained significant in subgroup analysis of SVR patients with F1-F2 (p = 0.002) 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 anti-inflamatory activation of M1 and a gradient dependent dynamic replacement of the profibrotic cell subsets in the liver with resolution ones after SVR. Fatty liver plays a role for inflammatory responses in CHC patients after SVR.

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

Reference

P1356 HLA–A02, HLA–A03 AND HLA-B15: A NEW RISK FOR HEPATIC STEATOSIS IN EGYPTIAN CHRONIC HEPATITIS C PATIENTS
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Introduction: HCV interferes with the host lipid metabolism leading to insulin resistance and hepatic steatosis. Although it is usually mild in genotype 4, mild to severe simple steatosis in genotype 4 is associated with the potential to progress to fibrosis, cirrhosis and subsequent hepatocellular carcinoma. Many heritable host factors with observed inter-ethnic variation in the prevalence of steatosis are documented, and in many cases hepatic steatosis may be detected in absence of all these risk factors; so a role for host genetic factors in development of hepatic steatosis in chronic HCV patients may be suggested.

Aims & Methods: In this study, we aim to evaluate the association of HLA class A-B alleles and presence of steatosis in chronic HCV genotype 4 infected patients. This study included two hundred unrelated non diabetic non obese chronic HCV patients with normal lipid profile, 98% of them had biopsy proven steatosis. Serological testing of HLA class I antigens (HLA-A, and HLA-B alleles) were performed with a standard complement-dependent microlymphocytotoxicity assay.

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 were 0.30–1.05, 0.20–0.83 and P = 0.015 and 0.005. On logistic regression analysis, patients who carry HLA-A02, A03 and HLA-B15 alleles may have 2.2, 3.9 and 11.18 fold risk to have hepatic steatosis (B coefficient: 0.78; 1.37; 2.41) 95% CI = 1.09–4.42, 1.04–11.50, 2.15–58.13; P = 0.027, 0.009, 0.004 while carrying HLA-A01 alleles may be protected from having HCV associated hepatic steatosis (OR = 0.34, 95% CI = 0.16–0.72; P = 0.005) with constant 94.7 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 = 9.52, 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 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 Electrics (2D-SWE.GE), for the evaluation of liver fibrosis in patients with HCV compensated chronic hepatopathies, using Transient Elastography (TE) as the reference method. The study included 145 consecutive subjects with HCV compensated chronic hepatopathies, in whom liver stiffness was evaluated in the same session by means of 2 elastographic measurements: TE (FibroScan, EchoSens) and 2D-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 homogenous area and an interquartile range (IQR) <30%. To discriminate between various stages of fibrosis by TE we used the following cut-offs: F0: F ≤ 7 kPa, F0-F2: 9.5 kPa, F2: 12.5 kPa [1].

Results: Reliable LS measurements were obtained in 138/145 (95.1%) subjects by 2D-SWE.GE in 139/145 (95.3%) patients. When we divided our cohort into 4 groups: F0-F1: 36/134 (26.6%), F2: 23/134 (17.2%), F3: 23/134 (17.2%) and F4: 52/134 (38.8%). The areas under the receiver operating characteristic curve (AUROC) were 0.909 for significant fibrosis (F ≥ 2), 0.954 for severe fibrosis (F ≥ 3) and 0.942 for cirrhosis (F = 4). The best cut-off values for F ≥ 2 was 7 kPa (Sensitivity 85.7, Specificity 80.5), for F ≥ 3 it was 9.2 kPa (Sensitivity 85.3, Specificity 91.5) and for F = 4 it was 10.7 kPa (Sensitivity 84.6, Specificity 91.4).

Conclusion: 2D-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, 9.2 and 10.7 kPa.

Disclosure of Interest: 1 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.

Reference

P1358 DE NOVO HEPATOCELLULAR CARCINOMA IN PATIENTS WITH CIRRHOSIS AFTER TREATMENT WITH DIRECT ANTIVIRAL AGENTS
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Introduction: The risk of developing novo hepatocellular carcinoma (HCC) persists after achieving sustained virological response (SVR) in patients infected with hepatitis virus C. It has been suggested that risk is increased in patients treated with the new direct antiviral agents (DAA). In this prospective study we present our results of incidence and prevalence of novo HCC in cirrhotic patients treated with DAA and SVR, and also, the risk factors involved in its development.

Aims & Methods: We included all cirrhotic patients due to HCV infection without previous HCC who reached SVR after DAA treatment in our hospital from February 2014 until December 2016 (n = 197, median of follow-up of 17 months). We evaluated with chi square test the following qualitative variables: age, Child-Pugh stage, alcohol consumption pre-treatment, tobacco consumption pre-treatment, diabetes mellitus (DM) pre-treatment, genotype, radiological and endoscopic portal hypertension features pre-treatment. The quantitative variables were evaluated with student t test: age, no. of platelets pre-treatment, fibrosis or cirrhosis 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
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were significantly different from those patients with ALF. Significant differences between ALF and AOCLF were found in the literature. Discrimination of AOCLF from ALF might be trivial for pre-existing alcoholic or viral hepatitis. However, non-alcoholic steatohepatitis (NASH) in obese or diabetic patients might lead to a critical situation. Patients admitted to liver transplantation centers with the diagnosis of ALF might be suffering from AOCLF instead. It is also unclear if the ALF and AOCLF have different impact on disease course, clinical management and transplant organ allocation. Thus, patients suffering from AOCLF instead of an acute liver failure might go unnoticed in the critical situation of an ALF/AOCLF. Therefore, patients admitted to liver transplantation centers with the initial diagnosis of ALF should be aware of the possibility of AOCLF.

Aims & Methods: The present study was conducted to compare differences among patients with ALF and AOCLF with regard to age and severity of the disease and to identify the etiology of liver failure in AOCLF patients. A total of 31 patients (Male: 29/Female: 2) were included in this study. All patients were admitted to the University Hospital of Essen with the initial diagnosis of ALF between 2008 and 2015. Patients included in this study were fulfilling the criteria of the acute liver failure study group Germany. The diagnosis of AOCLF was established prospectively by a liver biopsy. Clinical records, in particular demographic data, serum parameters and outcome were analyzed for differences between ALF and AOCLF.

Results: Patients with AOCLF significantly older (50.3 ± 15.1 vs. 39.8 ± 16.2), had a higher BMI (27.5 ± 5.1 vs. 24.5 ± 6.2, p = 0.0014) and were more often male (65% in AOCLF vs. 34% in ALF p = 0.0008). In addition, the results that caused the liver failure in AOCLF were significantly different from those patients with ALF. Significant differences were also found for liver enzymes, which were significantly lower in AOCLF patients (AST p = 0.01; ALT p = 0.001). Cell death markers and the MELD did not differ between ALF and AOCLF. Moreover, the outcome was not different between AOCLF and ALF and there was no significant difference in the length of hospital stay. There is no remarkable difference in the liver function recovery level between two groups (P = 0.495; P = 0.141). 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 IIIa were in the observation group, there was no statistical significant difference in the periparative mortality between the 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 transplantation, but recovered gradually over time. There’s no remarkable difference in the liver failure recovery level between two groups (P = 0.495; P = 0.141; P = 0.101).

Conclusion: Preoperative TACE won’t affect liver function recovery and periparative safety after liver transplantation. For some patients, it could also reduce complications caused by immune reaction.

Disclosure of Interest: All authors have declared no conflicts of interest.
P1362 A NATIONAL STUDY OF CANCER DIAGNOSES IN IRISH LIVER TRANSPLANT RECIPIENTS WITH PRIMARY SCLEROSING CHOLANGITIS
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Introduction: Primary sclerosing cholangitis (PSC) is associated with an increased risk of cholangiocarcinoma, colorectal cancer (CRC) and gallbladder cancer. Orthotopic liver transplantation (OLT) patients are at increased risk of developing de novo malignancies, however limited and conflicting data exists regarding cancer risk post OLT for PSC.
Aims & Methods: To examine all recorded malignancies over 2 decades in OLT PSC pts and compare to our non-transplanted PSC cohort. To analyse factors associated with development of malignancies post OLT. We retrospectively studied PSC patients attending the Irish National Liver Unit (INLU) and the Centre for Colorectal Disease (CCD) at St. Vincent’s University Hospital from 1/1/1994 to 31/12/2014. We integrated this database with the National Cancer Registry in Ireland. This enabled accurate determination of the no. of malignancies recorded in the PSC cohort. Analyzed data included age of recipient at OLT, gender, primary OLT indication, immunosuppressive regime, de novo malignancy post OLT, time from 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. 27/107 pts were transplanted for cholangiocarcinoma. 12 post-transplant de novo cancers and 12 BCC/SCC carcinomas were found in 107 patients during 737.8 person years of follow-up. Median time to cancer diagnosis post OLT was 5 years (IQR 2.8–5.9). Recurrence of PSC was observed in 21 patients (19.6%). Post-transplant lymphoproliferative disease (PTLD) remains a major complication after OLT. Previous studies have reported rates of 1–3% in adult OLT pts. 5 pts were diagnosed with PTLD 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 were diagnosed with colonic dysplasia: 3/4 underwent colectomy. All those who developed colonic dysplasia/CRC post OLT had co-existing IBD. All 5 coloectomy specimens for dysplasia/CRC showed significant co-existing inflammation. One patient post OLT underwent a completion proctectomy for rectal cancer. As expected, cholangiocarcinoma as indication for OLT (p = 0.005, RR 2.573, 95%CI 1.3–4.95) and an older age at transplant (p = 0.05, RR 1.027, 95% CI 1.0–1.054) were associated with higher mortality.
Table 1

<table>
<thead>
<tr>
<th>Cancer</th>
<th>SIR</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any cancer</td>
<td>3.239</td>
<td>1.885–5.186</td>
</tr>
<tr>
<td>Excluding skin cancer</td>
<td>1.97</td>
<td>0.848–3.882</td>
</tr>
<tr>
<td>Lymphoma</td>
<td>36.574</td>
<td>14.65–75.36</td>
</tr>
<tr>
<td>Colorectal cancer</td>
<td>1.779</td>
<td>0.023–9.898</td>
</tr>
</tbody>
</table>

Conclusion: These findings represent national cancer figures in our PSC OLT cohort. The rate of cancer is more than three times higher in this population than the general population. The rates of PTLD are >30 times higher than those reported in the normal population, and slightly higher than previously reported in unselected liver transplant groups. We could not find any association between the development of PTLD and aggressive immunosuppressive regimes for co-existing IBD post OLT. The study highlights that IBD/PSC patients remain at significant risk of colonic neoplasia after OLT and require intensive surveillance.
Disclosure of Interest: All authors have declared no conflicts of interest.

P1363 OUTCOME OF LIVER TRANSPLANTATION FOR PRIMARY SCLEROSING CHOLANGITIS IN CONTEXT OF HLA-DR MISMATCH: SINGLE CENTRE EXPERIENCE
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Introduction: Primary sclerosing cholangitis (PSC) is a chronic liver disorder of unknown etiology, characterized by inflammation, fibrosis and stenoses of both extra- and intrahepatic bile ducts. For those who develop end-stage liver disease, orthotopic liver transplantation (OLT) remains the only effective treatment currently available. PSC is accompanied with concomitant ulcerative colitis (UC) in a significant proportion of patients. Benefits of routine HLA typing in donor and recipient prior to OLT were proved in the past.
Aims & Methods: The aim of this study was to assess the impact of HLA-DR mismatch on acute cellular rejection (ACR), PSC recurrence (rPSC) and course of UC after OLT. After applying inclusion/exclusion criteria we retrospectively evaluated electronic records of 57 PSC patients transplanted at Institute for Clinical and Experimental Medicine (Prague, Czech Republic) between July 1994 and November 2011. Only patients with proper records ±5years from OLT were included. We evaluated likelihood for each variable (ACR, rPSC, course of UC) in patients with either single, double or double mismatch in HLA-DR. Recipient data were analysed with χ2 and Fisher’s exact test using MedCalc statistical software. A p < 0.05 was considered as statistically significant.
Results: Out of 57 patients, 27 (47.4%) had single mismatch (‘M1’ group) and 30 (52.6%) had double mismatches (‘M2’ group) in HLA-DR. No patient had full 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 corticoresistant 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 slightly 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.
Disclosure of Interest: All authors have declared no conflicts of interest.

P1364 GRAFT DYSFUNCTION IN POST-LIVER TRANSPLANTATION: UTILITY OF TRANSIENT ELASTOGRAPHY BY FIBROSCAN®
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Introduction: Liver biopsy remains the gold standard in the diagnosis of graft dysfunction in post-liver transplantation (GDPLT). Liver transient elastography is a valid non-invasive method for liver fibrosis evaluation, with a good correlation in chronic liver diseases. The progression of fibrosis represents a major problem in the post-liver transplantation.
Aims & Methods: We aimed to evaluate the predictive role of liver transient elastography in the evaluation of GDPLT and to determine the predictive factors of 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 ≥2. Demographic, analytical and associated liver transplantation variables were evaluated.
Results: A total of 32 patients underwent Fibroscan® and liver biopsy. Mean age of 48.53 ± 11.20years and male gender in 68.8% (n = 22). The mean time between Fibroscan® and liver biopsy was 29.77 ± 36.90months. The mean elastography score was 13.45 ± 8.31KPa with IQR: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. The mean elastography score of patients with double mismatch was 11.6KPa and low values of serum albumin are predictors of post-liver transplantation fibrosis.
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 hepatocellular cancer. Better immunosuppressive paved way for improved survival rates post-transplant. But with this longevity comes a higher prevalence of chronic diseases such as New Onset Diabetes After Transplant (NODAT), Hypertension, metabolic syndrome etc. which have a negative impact on function and patient survival.

Aims & Methods: Primary: To determine the incidence of New Onset Diabetes After Transplant (NODAT), Impaired Fasting Glycaemia (IFG) and post-transplant hyperglycemia in living-donor liver transplant recipients. Secondary: To determine the risk factors associated with NODAT and IFG. To determine impact of NODAT on survival and mortality. It was a retrospective cohort study of 283 living donor liver transplant recipients from 29/4/2011 till 26/4/2016. Data was collected from records. Simple means and standard deviation 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
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Aims: To evaluate the impact of vB12 as a risk factor for NODAT.
Methods: Retrospective assessment of 58 patients admitted to an intensive care unit with ACLF in the context of infection (group 1) and 53 patients with compensated hepatitis 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 prevalent 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 = 0.53; P = 0.05 and MELD: R = 0.56; P = 0.03). In group 1, survival was lower in patients with high vB12 (≥ 8 ± 3 vs. 37 ± 11 months), and 1 month' mortality was associated with vB12, CPT, MELD, number of organ failure, urea, lactates and fibrinogen, in univariate analysis (p < 0.001). In multivariate analysis only fibrinogen maintained statistical significance (p < 0.001).

Conclusion: There was a strong association between high levels of vB12 and clinical decompensation of liver cirrhosis. VB12 correlated with scores of liver failure and multiorgan failure, as well as early mortality in patients with ACLD.

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.

References
P1368 THE ASSESSMENT OF THE ADC PREDICTIVE VALUE IN SURVIVAL OUTCOMES OF PATIENTS UNDERGOING RADIOFREQUENCY ABLATION FOR METASTATIC COLORECTAL CANCER LIVER TUMORS

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Introduction: Liver is one of the most common metastatic sites of colorectal cancer, nearly 50% patients develop hepatic metastases during the course of their disease. Metastatic spread influences survival rate of those patients. The diffusion weighted imaging (DWI) is MRI sequence designed to detect random movement of water protons in extracellular compartment. Biophysical parameter expressed as a second in the equation for their system is diffusion coefficient (ADC). ADC values for b parameter lower than 300 s/mm² are influenced by perfusion whereas ADC values for b greater than 300 s/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 influencing 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 measuring 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 = 0.0067). 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

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Introduction: Nowadays liver fibrosis can be assessed using non-invasive elastographic techniques. ElastPQ is a quite novel point share wave elastography integrated in an ultrasound system.

Aims & Methods: The aim of our study was to evaluate the learning curve of obtaining reliable liver stiffness measurements (LSM), using ElastPQ. LSM of a trainee were compared to LSM of an elastography expert (with an experience of more than 500 examinations). Our study group included 50 subjects (mean age: 52.7 years, 66.6% men, mean BMI = 25.6 kg/m²). Both the trainee and the expert obtained LSM for each subject, using ElastPQ (EPQ 7, Philips Healthcare, Bothell, WA, USA). Reliable LSM were defined as the median difference between measurements obtained by the trainee and the expert in a homogenous area avoiding vessels and with an IQR/median <30%. The learning curve was evaluated using the Receiver Operating Curve analysis using the expert’s results as reference.

Results: The trainee’s performance in obtaining reliable LSM was good (AUC: 0.735, 95% CI (0.557–0.913), p = 0.01). The trainee started to have similar results with the elastography expert after the 30th subject. When looking at the IQRs, they became significantly lower after the 30th subject (2.6 to 2.1 kPa vs 6.5 to 4.2 kPa, p = 0.03).

Conclusion: Obtaining reliable LSM using ElastPQ can be easily achieved after 30 LS examinations.

Disclosure of Interest: R. Mare: I hereby confirm that I have received financial support (congress travel grant) from Philips. I. Sporea: I hereby confirm that I have received financial support (congress travel grant or speaker fee) from Philips, 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
R. Sirli: I hereby confirm that I have received financial support (congress travel grant or speaker fee) from Philips, Abbvie, Zentiva

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References

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P1369 HOW OFTEN DO WE FIND STEATOSIS AND SEVERE FIBROSIS IN TYPE 2 DIABETES MELLITUS PATIENTS

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Aims & Methods: This study aimed to test the latest approved version of a contrast-enhanced ultrasound algorithm (ACR CEUS LI-RADSv 2016) for detecting hepatocellular carcinoma (HCC), in a real-life cohort of high-risk patients. This study included 60 patients with chronic liver disease 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. This study aimed to develop a simple and effective diagnostic tool for HCC. This study included 60 patients with chronic liver disease.

Results: According to reference method, the 298 lesions were classified as follows: 268 (90.4%) benign, 10 (3.3%) with small tumor size, early tumor stage, and less vascular invasion. The Flt-1 rs1219648 CC genotype was significantly associated with increased survival rates (P = 0.001) were independent prognostic factors for monitoring of treatment response. Serum DKK1 level significantly decreased after HCC treatment with either radiofrequency ablation or ethanol injection. Multivariate Cox proportional analysis revealed that the FGFR2/C genotypes were associated with small tumor size, early tumor stage, and less vascular invasion. The FGFR2/C genotypes were significantly associated with increased survival rates (P = 0.047).

Conclusion: In our study, the CEUS algorithm exhibited high sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) for HCC detection.
Conclusion: These observations suggest that the SNPs of the FGFR2 and FGFR3 genes can be potential prognostic indicators in patients with HBV-associated HCC.

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

References

P1375 EXTRAHEPATIC HEPATOCELLULAR CARCINOMA METASTASIS: IMPORTANCE OF AN EARLY DIAGNOSIS AND TARGETED THERAPY
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Introduction: Extrahepatic HCC metastasis are associated with a poor prognosis. Nevertheless there are some effective therapies available.

Aims & Methods: The aim of this study was to assess the main sites of 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 = 0.009). Metastasis detection implied changes in HCC therapy in all patients, 41% stopped sorafenib and 55% were referred for supportive therapy. Seven patients performed metastasis targeted treatment, namely 3 patients under went radiotherapy. The median overall survival (OS) after metastasis was 4.0 months (95%CI 2.1–5.8 months) and the mortality rate was 81% at 12 months. Patients who underwent metastasis targeted treatment presented a longer OS than those who did not (median 18.5 vs 3.1 months; p = 0.002). In multivariate analysis, MELD score at the time of metastasis (p = 0.004) and metastasis treatment (p = 0.005) were independently associated with OS estimation.

Conclusion: A systematic HCC staging, with thoracic CT and bone 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

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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 DEB-TACE is also effective in the patients with less than 7 tumors in B2 + B3 group.

Aims & Methods: The aim of this study was to assess the main sites of extrahepatic metastasis in hepatocellular carcinoma (HCC) patients and to evaluate the clinical evolution and treatment. This was a retrospective single-center study in which patients with HCC confirmed extrahepatic metastasis between January 2010 and December 2016 were evaluated.

Results: We evaluated 51 consecutive patients, 80% male, with a mean age of 64 ± 11 years at the time of metastasis. In 41% of the patients the 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 = 0.009). Metastasis detection implied changes in HCC therapy in all patients, 41% stopped sorafenib and 55% were referred for supportive therapy. Seven patients performed metastasis targeted treatment, namely 3 patients underwent radiotherapy. The median overall survival (OS) after metastasis was 4.0 months (95%CI 2.1–5.8 months) and the mortality rate was 81% at 12 months. Patients who underwent metastasis targeted treatment presented a longer OS than those who did not (median 18.5 vs 3.1 months; p = 0.002). In multivariate analysis, MELD score at the time of metastasis (p = 0.004) and metastasis treatment (p = 0.005) were independently associated with OS estimation.

Conclusion: A systematic HCC staging, with thoracic CT and bone scintigraphy, may provide an earlier metastasis detection and enable a targeted treatment with a consequent improvement in survival in this difficult-to-treat population.

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

References

P1377 HEPATOCELLULAR CARCINOMA RECURRENCE RATE IN INFECTED PATIENTS TREATED WITH DIRECT ANTIVIRAL AGENTS. A SINGLE-CENTER EXPERIENCE
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Introduction: In the last few years many HCV patients with previous diagnosis of hepatocellular carcinoma (HCC) have been treated with direct antiviral agents (DAAs) for HCV infection. However there are conflicting data on HCC recurrence rate after DAAs therapy.

Aims & Methods: Aim of this study was to prospectively evaluate the rate of HCC recurrence following sustained virological response (SVR) by DAAs. From April 2015 to September 2016 we consecutively enrolled HCV infected patients previously treated for HCC at Liver Unit of Cardarelli Hospital. All patients had a free-disease survival from HCC of at least 6 months before starting antiviral therapy. The efficacy of HCC therapy was evaluated according to mRaiCest criteria on CT or MRI. Radiological evaluation was carried out within 30 days from the start of therapy. All patients underwent DAAs therapy, selected on an 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: 34–88). 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

P1378 PATTERN OF DISTANT EXTRAHEPATIC METASTASES IN PRIMARY LIVER CANCER: A SEER-BASED STUDY
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Introduction: Primary liver cancer is the sixth most common cancer in the world, after cancers of the lung, breast, colorectal, prostate and gastric[1]. However, the extremely poor prognosis for primary liver cancer makes it the second leading cause of cancer-related death globally (745,000 deaths, 9.1% of the total death)[2]. Histologically, the majority of primary liver cancer is either
hepaticocellular carcinoma (HCC) or intrahepatic cholangiocarcinoma (ICC), while cirrhosis and hepaticocellular carcinoma and cholangiocarcinoma is less common[3]. Though these treatments have shown modest improvement in overall survival in early stage disease, the 5-year relative survival for distant metastasis patients is still low (3.1%). As we all know, primary liver cancer preferentially metastasize to the portal vein and extrahepatic metastasis with or without extrahepatic spread, and AFP > 200 as post-treatment factors and DC as post-treatment variable were associated with survival.

Aims & Methods: The objective of this study was to further evaluate extrahepatic metastatic patterns of different histological subtypes and assessed effects of extrahepatic metastasis on survival of advanced disease. Methods: Based on the Surveillance, Epidemiology and End Results (SEER) database, we identified eligible population diagnosed with primary liver cancer. We adopted Chi-squared test to compared metastasis distribution among different histological types. Overall survival (OS) and cancer-specific survival (CSS) were compared between subgroups with different extrahepatic metastasises.

Results: We finally identified 8677 patients who were diagnosed with primary liver cancer from 2010 to 2012 and 1836 patients were in distant metastasis stages. Intrahepatic cholangiocarcinoma was more invasive and had a higher percentage of metastasis compared with hepatocellular carcinoma. Lung was the most common metastatic site and brain was least common site for both hepatocellular carcinoma and intrahepatic cholangiocarcinoma. Extrahepatic metastasis was an independent prognostic factor for liver cancer patients. Patients with brain metastasis had the worst prognosis, compared with other metastasis in OS and CSS analysis.

Conclusion: Different histological subtypes of liver cancer had different metastasis patterns. There were profound differences in risk of mortality among distant extrahepatic metastatic sites. Results from our studies would provide some information for follow-up strategies and future studies.

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

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P1379 TIME-DEPENDENT EFFECT OF ALEA-FETOPROTEIN AND DISEASE CONTROL ON PATIENTS’ SURVIVAL IN BCLC C STAGE HEPATOCELULAR CARCINOMA

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Conclusion: Different histological subtypes of liver cancer had different metastasis patterns. There were profound differences in risk of mortality among distant extrahepatic metastatic sites. Results from our studies would provide some information for follow-up strategies and future studies.

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

References
3. Tang D, Nagano H, Nakamura M, Wada H, Marubushi S, Miyamoto A, Takeda Y, Umeshiba K, Dono K and Monden M. Clinical and pathological features of liver cancer in the early and intermediate period, while DC as post-treatment variable was associated with survival.

P1382 CONSERVATIVE MANAGEMENT OF EXTERNAL BILIARY FISTULAS COMPLICATING SURGERY OF HYDATID CYST OF THE LIVER

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Introduction: Surgical treatment is nowadays the only curative treatment of hydatid cyst of the liver. Surgical approach exposes to many complications especially biliary fistulas. Many modalities are described for the treatment of these complications.

Aims & Methods: A retrospective study including 250 patients who underwent a surgical treatment for a hydatid cyst of the liver between 2007 and 2015. The aim of this study is to evaluate the place of conservative management and his benefits in the management of biliary fistulas.

Results: Conservative surgical treatment of hydatid cyst was done in 180 cases and radical surgery in 70 cases. A complication occurs in 66 cases. An external biliary fistula occurred in 29 cases (87.9%). Various etiologies were identified: in 21.2% (7 cases), intrahepatic PH was due to liver tumors and in 11.7% (n = 4), the etiology was hepatic tuberculosis. Etiological investigations retained: 3 cases (9%) of primary biliary cirrhosis in cirrhotic stage, 6 cases (18.18%) of hepatic portal sclerosis, 4 cases (12.12%) of hepatic sarcoidosis, 2 cases (6%) with hematological malignancies, 2 cases (6%) of polycystic liver, one case (2.9%) hepatic angiomatisous liver, a case chronic hepatitis B, a case of Gaucher disease and one case secondary to hamartoma of the liver. Treatment was indicated according the etiology of the PH and its severity (beta blockers, ligament). Conclusion: Non-cirrhotic intractable portal hypertension is mostly asymptomatic, related to a heterogeneity of diseases with a good prognosis, excepted solid and hematological malignancies.

Disclosure of Interest: All authors have declared no conflicts of interest.
Conclusion: External biliary fistulas are a common complication after surgical treatment of the liver. Complete management of this complication is safe and very useful when we respect the indications.

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

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 infraportal 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 June 1st 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 ± 15 years with extremes ranging from 11 years to 70 years. The sex ratio M/F was 0.64. Five percent of patients had a splenectomy for undetermined reasons before the diagnosis of PHT. Concerning the clinical examination, 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 anemia in 11.9% (n=12), and signs of PHT such as splenomegaly and collateral abdominal circulation in 95.1% (n=91). Complete blood count showed that 16.8% (n=17) had thrombocytopenia, 12.9% (n=13) had ictericia, and 42.6% (n=43) had pancyclopenia. In all patients, upper GI endoscopy was performed. Hypertensive gastropathy was found in 30.7% (n=31), grade I esophageal varices in 3.9% (n=4), 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 ultrasoundography showing a PVT in 60.3% (n=61), was partial in 33.6% (n=34), complete in 11.9% (n=12). Associated to the splenomegaly, the hyperechoic spleen 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), 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 oesophageal varices was noted in 69.3% (n=70). All patients received anticoagulant therapy except those having portal cavernoma with no obvious cause and 11.9% of patients (n=43) received beta-blockers for secondary prophylaxis. During follow up, 5.9% (n=6) of patients have not been seen at consultation and no rebleeding was noted in 89.1% (n=90). Concerning portal thrombosis, it dissolved in 49.5% (n=50) and stabilized in 10.8% (n=11).

Conclusion: The evolution of esophageal varices in non-cirrhotic portal hyperten-

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 GALLBLADDER STONES WITH PERCUTANEOUS TRANSEPHATIC CHOLANGIOSCOPY: A DECADE EXPERIENCE AT A SINGLE TERTIARY CENTER
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Introduction: Percutaneous cholecystostomy (PTCS) has been an alternative treat-

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, resource use, 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 BILIARY STONES BY DIRECT PERORAL CHOLANGIOSCOPY: PRELIMINARY RESULTS OF A PILOT STUDY
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Introduction: Incomplete stones clearance after endoscopic management of dif-

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 Diluted 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 530NW or EG 530FP) or standard gastroscope (9.9 mm diameter) (Olympus GIF-HQ190), under CO2 insufflation, were used by the peroral route for intubating all accessible bile ducts. Technical success rate, procedural time, outcome and side effects of POC were assessed. All endoscopic events were recorded.

Results: POC was performed in 26 patients (17F/9M mean age 74.6 years ± 11.9) under propofol sedation (25 patients) or deep sedation (5 patients). Mean CBD size was 15 mm ± 3.65; mean stone diameter (13.5 mm ± 1.70); mean balloon dilation (13.5 mm ± 2.12). Intubation of the papilla and distal biliary duct was successful in 26 (100%) cases (guide-wire assistance in 17 cases, 65.4%). Hepatic hilum was reached in 13/26 (50%) patients with a complete CBD evaluation. Mean investigation time was 6.3 ± 1.5 min (range of 5–9 minutes). POC showed persistent large amount of sludge in 27.7% cases, completely suctioned through the endoscope, and stones in 4 (15.4%) cases with subsequent endoscopic stones removal. In the remaining patients, POC confirmed complete duct clearance. No adverse events occurred.

Conclusion: POC complete clearance confirmation using POC is a feasible, quick and safe procedure that can help on clinical decision making (for example obviating the need for possible plastic stent or naso-biliary drainage placement) without substantial increase of time or costs. Our experience, however, is preliminary and therefore aimed to assess the feasibility of the procedure, which could represent the first step for the development of a possible new indication in the setting of difficult biliary stone management.

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

P1386 SINGLE DEVICE TECHNIQUE FOR ENDOCOSCOPIC TREATMENT OF BILE DUCT STONES
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Introduction: Endoscopic retrograde cholangiopancreatography (ERCP) with sphincterotomy is a well-established standard method for treating bile duct stones (BDS). After cannulation of the common bile duct (CBD), a guidewire is placed into the CBD and a sphincterotomy is performed. Subsequently, stone extraction using a balloon or basket catheter is performed. Because of this multi-step process, endoscopic treatment for BDS always comes with a risk of losing CBD cannulation. A combination catheter that combines a sphincterotomy and a retrieval balloon in a single instrument can eliminate one step in the previous procedure. Endoscopic treatment using a single device may be able to accomplish CBD clearance by using only single device. Additionally, a newly developed 0.025 inch guidewire that is, at once, rigid and flexible enables us to inject contrast agent through the Y-connector, and to use a combination catheter with a Y-connector and a 0.025inch guidewire may become a single device that can facilitate complete BDS clearance. Despite its utility, the success rate of bile duct cannulation and cost benefit requires further analysis.

Aims & Methods: We aimed to evaluate the therapeutic efficacy of a combined catheter as a single device required for BDS clearance. From January 2016 to July 2016, 11 consecutive patients with BDS ≤ 10 mm in size were enrolled in this study (Stonome group). In all cases, the combined catheter (Stonome) was
used for initial bile duct cannulation. Subsequently, sphincterotomy and stone extraction were performed using the combined catheter. The success rate of performing the combined procedure, procedure-related time, adverse events, and the cost of devices were compared with those in 10 patients with BDSs ≤ 10 mm in size who had undergone endoscopic stone clearance from April 2015 to December 2015 as 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 s versus 982.5 s, 464.5 s versus 1300 s, respectively). In the Stonetome group, delayed bleeding occurred in 1 patient. In the control group, bile duct injury caused by the guidewire occurred in 1 patient. The costs of the used devices did not differ significantly (Stonetome group: $678 versus control group: $669).

Conclusion: The combined catheter has the same selective cannulation ability as a conventional catheter and a similar capacity to remove BDSs as common retrieval forceps. 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 cholecodolithiasis (CL), suggesting the direct referral to endoscopic retrograde cholangiography (ERC) in certain groups. However, the ERC is an invasive exam and some studies demonstrated that a significant amount of patients classified with very strong risk of CL did not have alterations in ERC. Aims & Methods: The aim of this work was to assess the accuracy of the ASGE guidelines in Portuguese population. This is a retrospective study that included 212 patients (52.8% female, 47.2% male sex; mean age 73.9 ± 14.6 years) admitted to the hospital from 2014 to 2016. Results: Of the 212 patients, 28 (13.2%) had intermediate risk of CL and 184 (86.8%) had high risk, according to the ASGE criteria. These patients were submitted to the following exams/interventions: ERC (154 patients); magnetic resonance cholangiography (50 patients) and endoscopic ultrasound (8 patients). In patients classified with high risk of CL, this was confirmed in 119 (64.7%). The same was seen in 10 (35.7%) of the patients with intermediate risk. The ASGE criteria, when applied to this population, demonstrated an accuracy of 64.3% (21.7% sensitivity; 92.3% specificity) in the high-risk group, and an accuracy of 35.5% (78.3% sensitivity; 7.8% specificity) in the intermediate-risk group. Of the patients with intermediate probability, 12 (42.8%) underwent ERC, and CL was found only in 4 of these patients. The presence of cholangitis, a common bile duct >6 mm, a common bile duct stone visualized on transabdominal US and a total bilirubin >4 mg/dL were strong predictors of CL. The overall ERC complication rate was 13% (20 patients) of whom 8 had no CL. Conclusion: The 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 them. Thus, 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 cholecodolithiasis by the American Society for Gastrointestinal Endoscopy, volume 71, No1: 2010 Gastrointestinal Endoscopy

P1388 DOES FIBRIN GLUE APPLIED ON THE CHOLANGIOTOMY AROUND THE T-tube. REDUCE THE RISK OF BILE LEAKAGE? A RANDOMIZED STUDY

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Introduction: Laparoscopic choledochotony 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 cholangi-otomy around the T-tube. Postoperative cholangiography was performed after 7–10 days after surgery. The amount of flow in the abdominal drain and the level of bilirubin was measured daily. In case the flow ceased, the abdominal drain was extracted three days after surgery.

Results: No significant difference between the groups was seen regarding the flow of the abdominal drain or the T-drain for the first three days or operation time

Conclusion: Discussion: Fibrin glue may be an option to seal cholangi-otomy 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 4,240 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): 1.37, 95% CI: 0.51–3.65, p = 0.52). 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 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.

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 GALLBLADDER 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 nonneoplastic 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: nonneoplastic polyps are confirmed, identification of these characteristics on this cohort. Although pathological characteristics of neoplastic and identified in this study. The following clinical and radiological predictors were considered: age, gender, ethnicity, BMI, medical history (PS: Hepatitis, metabolic syndrome, gallbladder disease, Salmonella typhi or Helicobacter pylori infection), family history of gallbladder disease, presentation (size, number, shape, and echogenicity of the polyp). Associations between possible predictors and gallbladder polyps were assessed using univariate and multivariate logistic regression analysis.

Results: Patients with neoplastic polyps were found to be significantly older than patients with nonneoplastic polyps (mean age 65.0 vs 54.2 years, p < 0.01). Neoplastic polyps were significantly larger (mean size 18.1 mm (SD 7.5 mm) vs 7.5 mm (SD 5.9), p < 0.001), more frequently presented as wall thickening (29.2% vs 15.6%, p < 0.001), and as a single polyp (88.3% vs 68.0%, p < 0.001). Gallstones were more frequently found in gallbladders with neoplastic polyps (40.1% vs 40.4%, p > 0.01). 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.

Conclusion: Except for age, no clinical characteristics for neoplastic polyps were identified in this cohort. Although pathological characteristics of neoplastic and nonneoplastic polyps are confirmed, identification of these characteristics on preoperative radiological investigations is poor.

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

P1392 METFORMIN INDUCES APOPTOSIS AND MODULATES PROLIFERATION IN THE BILE DUCT CANCER CELLS

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Introduction: Metformin has evidence of antineoplastic activity in some cancer cells.

Aims & Methods: This study was performed to demonstrate in the bile duct cancer cells whether metformin inhibits the proliferation of cancer cells by inducing apoptosis and affects the expression of gene-related proteins involved in cancer growth, and to identify how metformin affect molecular mechanisms involved in the inhibition of cancer cell growth. Human extrahepatic bile duct cancer cells were cultured. 3-(4,5-Dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide (MTT) assays were performed to determine the effect of metformin on cell proliferation. Apoptosis was measured by a cell death detection enzyme-linked immunosorbent assay and caspase-3 activity assay. Various protein expressions with or without specific SiRNA transfection were measured by Western blot. The migratory activity of the cancer cells was evaluated by wound healing assay.

Results: 1) Metformin suppressed cell proliferation in bile duct cancer cells by inducing apoptosis. 2) Metformin inhibited mammalian target of rapamycin (mTOR) by activation of AMPKThr172 - tuberous sclerosis complex 2 (TSC2) pathway, and hyperglycemia impaired metformin-induced AMPKThr172 activation and enhanced phosphorylation of AMPKser485. 3) Metformin decreased effect of IGF-1R by inhibiting serine/threonine protein kinase 1 receptor (IGF-1R). 4) Metformin increased expression of hOGG1 and XRCC1. 5) Metformin modulated invasiveness of bile duct cancer cells, and the effect was impaired by hyperglycemia.

Conclusion: This study shows that metformin has antineoplastic effect in bile duct cancer, and the effect of metformin is attenuated in the hyperglycemic environment. In addition, AMPK and IGF-1R play a key role in the proliferation of bile duct cancer cells, and they are expected to be important targets for future development of chemotherapeutic agents.

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

References


P1393 DEREGULATIONS IN BASE EXCISION REPAIR (BER) PATHWAY AND RESULTING OXIDATIVE STRESS AS KEY MODULATOR OF GALL BLADDER ANOMALIES AND PROGRESSION TO CARCINOGENESIS: A NORTHEAST INDIA BASED STUDY

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Introduction: Molecular pathology of gall bladder anomalies and progression to carcinoma is still obscure and understudied; but is critically relevant to India which harbors the highest number of cases globally, and to ethnically distinct NEI population, and was therefore studied by this study. The following pathological characteristics of gall bladder polyps were collected from clinically and histopathologically confirmed cases of GBC (adenocarcinomas, N = 49) along with non-neoplastic control sections, chronic cholecystitis (CL, N = 78) and cholecystosis (CS, N = 56), along with blood from voluntary controls (N = 122) with informed consent. The pathway included two of the key stages, the conversion of primary bile acids to secondary bile acids and the conversion of secondary bile acids to primary bile acids. This study shows that metformin has antineoplastic effect in bile duct cancer cells, thus they are expected to be important targets for future development of chemotherapeutic agents.

Aims & Methods: The 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 affects molecular mechanisms involved in the inhibition of cancer cell growth. Human extrahepatic bile duct cancer cells were cultured. 3-(4,5-Dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide (MTT) assays were performed to determine the effect of metformin on cell proliferation. Apoptosis was measured by a cell death detection enzyme-linked immunosorbent assay and caspase-3 activity assay. Various protein expressions with or without specific SiRNA transfection were measured by Western blot. The migratory activity of the cancer cells was evaluated by wound healing assay.

Results: 1) Metformin suppressed cell proliferation in bile duct cancer cells by inducing apoptosis. 2) Metformin inhibited mammalian target of rapamycin (mTOR) by activation of AMPKThr172 - tuberous sclerosis complex 2 (TSC2) pathway, and hyperglycemia impaired metformin-induced AMPKThr172 activation and enhanced phosphorylation of AMPKser485. 3) Metformin decreased effect of IGF-1R by inhibiting serine/threonine protein kinase 1 receptor (IGF-1R). 4) Metformin increased expression of hOGG1 and XRCC1. 5) Metformin modulated invasiveness of bile duct cancer cells, and the effect was impaired by hyperglycemia.

Conclusion: This study shows that metformin has antineoplastic effect in bile duct cancer, and the effect of metformin is attenuated in the hyperglycemic environment. In addition, AMPK and IGF-1R play a key role in the proliferation of bile duct cancer cells, and they are expected to be important targets for future development of chemotherapeutic agents.

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

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Results: 1) Metformin suppressed cell proliferation in bile duct cancer cells by inducing apoptosis. 2) Metformin inhibited mammalian target of rapamycin (mTOR) by activation of AMPKThr172 - tuberous sclerosis complex 2 (TSC2) pathway, and hyperglycemia impaired metformin-induced AMPKThr172 activation and enhanced phosphorylation of AMPKser485. 3) Metformin decreased effect of IGF-1R by inhibiting serine/threonine protein kinase 1 receptor (IGF-1R). 4) Metformin increased expression of hOGG1 and XRCC1. 5) Metformin modulated invasiveness of bile duct cancer cells, and the effect was impaired by hyperglycemia.

Conclusion: This study shows that metformin has antineoplastic effect in bile duct cancer, and the effect of metformin is attenuated in the hyperglycemic environment. In addition, AMPK and IGF-1R play a key role in the proliferation of bile duct cancer cells, and they are expected to be important targets for future development of chemotherapeutic agents.

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

References


treatment. As negative controls, 19 non-GBCa bile juice and 33 non-GBCa tissue samples were used for mutations of oncogenes in the same way.

Results: The median (range) age was 77 (44–90) years and the male/female ratio was 0.43 (9:21). Six, six, and twelve patients were diagnosed as stage I, II, III, and stage IV, respectively. We set cut-off value at 5% for rare mutation rate based on our results of healthy samples to avoid false positive. Eleven of 20 (55%) tumor tissue samples were positive for mutation. TP53, MET, SMAD4, CTNNB1 and AR were detected in 7/20 (35.0%), 1/20 (5.0%), 1/20 (5.0%), 1/20 (5.0%) and 1/20 (5.0%) respectively. In this study, 14 of 30 (46.7%) patients had both tumor tissue samples and bile juice samples. Eight of 14 (57.1%) tumor tissue samples were positive for mutation. In these eight patients, 7 (87.5%) bile juice samples had the same mutation (TP53, ERBB2/3 were detected in 6/8 (75%). 1/8 (12.5%), respectively). On the other hand, bile juice samples of only 1/6 patients with tumor tissue mutation had no mutation. With regard to only bile juice, 14 of 24 (58.3%) bile juice samples with GBCa were positive for mutations. TP53 mutation, ERBB2/3 Kras were detected in 11/24 (45.8%), 2/24 (8.3%), 1/24 (4.2%), respectively. Bile juice analysis for mutations indicated that sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) were 58.3%, 100%, 100% and 65.5%, respectively. None of negative control samples had any mutations.

Conclusion: 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.

P1395 EFFICACY OF INTRADUCTAL RADIOFREQUENCY ABLATION USING A NOVEL ENDOLUMINAL RADIOFREQUENCY ABLATION CATHETER IN A SWINE MODEL

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Introduction: Intraductal radiofrequency ablation (RFA) is a new endoscopic ablative technique with direct effect to local tumor have been developed to improve the eradication of self-expanding metal stents (SEMS) in the unresectable malignant biliary obstruction. However, there is the concern for the complication such as bile duct perforation or bleeding because the ideal power setting of intraductal RFA has not been clearly revealed still.

Aims & Methods: We aimed to investigate the effects of ablative injury after in vivo intraductal RFA according to the time variation using a novel RFA catheter (ELRA®, STARmed, Goyang, Korea). This novel catheter is a bipolar device and has a temperature sensor within the distal tip, therefore it has a characteristic of target temperature controlled mode. Nine female pigs were divided into three groups according to RFA time variation (60, 90 and 120 seconds) with the same power setting (10 watts) and RFA target temperature (80°C). All pigs underwent endoscopic retrograde cholangiography (ERC) and intraductal RFA. Additional cholangiogram was taken immediately after RFA and then a plastic stent was inserted. All the pigs were humanely sacrificed 24 hours after the intraductal RFA. Necropsy was performed and the common bile duct was washed for histologic analysis.

Results: The ERC and application of the intraductal RFA was successful in 100%, and post-RFA cholangiogram did not show the contrast leakage. Median depth of microscopic ablation was significantly different between three groups with ablation time (60 vs. 90 vs. 120 seconds) (1.17 ± 2.23 vs. 2.44 ± 2.31 ± 0.60) 2.52 ± 2.74 – 2.64 mm, p = 0.018). There was also a linear relationship between ablation time and microscopic ablation depth (r² = 0.552, p = 0.002). However, there were no statistical differences in macroscopic ablation length and microscopic ablation length. In addition, focal ablation injuries of adjacent liver were found in five out of nine pigs (2 of 3 pigs in 60 seconds, 1 of 3 in 90 seconds, 2 of 3 in 120 seconds).

Conclusion: Intraductal RFA using a novel RFA catheter successfully ablated the normal bile duct wall without serious complications in vivo swine model. The optimal time of intraductal RFA was presumed between 90 and 120 seconds at the power setting 10 watts and target temperature of 80°C. However, focal ablation injury was found in even short ablation time in which microscopic ablation depth was superficial. Further studies are needed to validate the optimal power setting of RFA in a swine model and then human clinical studies are also warranted.

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

References:

P1396 PREDICTIVE MODEL FOR THE NEOPLASTIC POTENTIAL OF GBILIAL BLADDER POLYPYS

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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. 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 model5 of neoplastic potential of GBP was constructed utilizing the statistical outcome of the modeling group. Statistical validation was performed with the validation group to determine the optimal clinical sensitivity and specificity of the predictive model. Optimal cut-off value for neoplastic potential was 7.49. * Probability of Neoplastic GB polyp = e(^0.6667 x [Age] + 0.5784 x [Sex] + 0.2189 x [Size]).

Conclusion: The predictive model for neoplastic potential of GBP may support clinical decision before cholecystectomy.

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

References:

P1397 COMPARISONS OUTCOMES FOR CONTROLLED PHOTODYNAMIC THERAPY IN HIGH GRADE UNRESECTABLE HILAR CHOLANGIOCARCINOMA

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Introduction: Photodynamic therapy (PDT) provide clinical benefit for patients with unresectable biliary malignancy. In this study, we evaluate the efficacies 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 (biliary invasion to hilar portion (Group A), we performed controlled PDT. Controlled PDT means malignant stricture dilatation by using straight angled cylindrical diffuser. Finally, gemcitabine-based chemotherapy was done for 6 cycles. We compared to transpapillary approach with non-straight cylindrical diffuser using with gemcitabine-based chemotheraphy in similar patients (Group B) in terms of clinical parameters and developing complications.

Results: Between July 2010 and June 2015, 26 cases(31) of high grade unresectable hilar CC (Bismuth type III or IV), 5 cases of GB cancer with hilar invasion were enrolled for Group A, 23 cases(26) of high-grade unresectable hiliar 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 7.3 ± 3.7 mg/dL in group A, 6.9 ± 5.5 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:
Aim & Methods: The aim of this retrospective analysis of prospective case series from the Czech Republic and Slovak (n = 166) was to describe the (1) diagnostic yield of d-SOC visual diagnosis and biopsy in patients with undetermined bile duct stenosis; (2) the efficacy of d-SOC directed treatment of difficult lithiasis and (3) to analyze relevant procedure-related adverse events (AEs). The diagnoses of malignancies were (1) sensitivity and specificity for malignancy, (2) achievement of a complete duct clearance in patients with difficult lithiasis (3) procedure-related AEs.

Results: A total of 150 patients underwent 166 d-SOC procedures (165 cholangioscopes and 1 pancreatoscope); 81 (48.8%) for diagnostic intents (with biopsy in 66/61 patients (81.5%), and 85 (51.2%) for therapeutic intents (1 patient had pancreaticolithiasis). The most frequent indication for diagnostic d-SOC was undetermined stenosis (n = 59). Reliable views of a target lesion were obtained in all patients. The sensitivity, specificity and diagnostic accuracy of d-SOC for visual diagnosis of malignant lesion was 88.9% (95%CI, 70.8–97.7), 81.2% (65.6–92.3) and 84.6% (73.5–92.4). The mean number of biopsies obtained per patient was 4 (range 1–13) and the specimen was adequate for histopathological analysis in 95.5% of patients. The sensitivity, specificity and diagnostic accuracy of d-SOC guided biopsies for malignancy were 78.3% (95%CI, 56.3–92.5), 96.4% (81.6–99.9) and 83.3% (70.7–92.1). The diagnostic accuracy of visual inspection was not statistically influenced by the presence of biliary stent (Yates’ p = 0.9). Of 63 patients attended for d-SOC-guided stone therapy, a complete intraductal clearance was achieved in one session in 37 and in two sessions in further 10 patients, respectively and the overall success rate was 77%. A total of 11 patients (n = 16; 6.6%) experienced an adverse event (choangiitis n = 6, pancreatitis n = 3, perforation n = 2), one patient with severe cholangitis died. The incidence of cholangitis was higher among patients who had received prophylactic antibiotics (n = 5) compared to those who had not received it (n = 1). d-SOC directed biopsies were performed in 48.8% of patients and 46% of adverse events may occur and prophylactic antibiotics may not be effective in preventing post-d-SOC cholangitis. Disclosure of Interest: All authors have declared no conflicts of interest.

References

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/MRI (94%). After a collective evaluation between the surgeon and the endoscopist, patients were candidate for endoscopic ampullotomy. Outcome parameters included ampulla morphology characteristics, biotechnical accuracy as well as safety, efficacy, recurrence rate, and survival.

Results: Endoscopic resection was successful in 15 patients (79%). Histological review of resected specimens revealed non specific changes (10.5%), low or medium-grade dysplasia (52.6%), high-grade dysplasia (15.8%) and carcinoma (21%). Biopic 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 positioning of pancreatic stents was not possible due to anatomical difficulties: 2 developed mild pancreatitis after papillotomy; 1 patient developed, as late complication, a stenosis of the pancreatic orifice: the patient died of severe necrotic pancreatitis two years later. Hemorrage was observed in 2 patients, all with pancreatic stents. Recurrence occurred in 2 patients (10.5%), both were re-treated by endoscopic pancreatic duct drainage aiming to improve the success rate of pancreatic stent placement after papillotomy.

Conclusion: The results from this study suggest that cholangiocarcinoma in the Nile Delta region is significantly associated with high serum levels of heavy metals especially Cadmium and lead.

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

References
Primary outcome was the rate of endoscopic reintervention before surgery. Secondary outcome was rate of complications; overall surgical time, 30 days 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: ThreeRCTs and five non-RCTs were selected including 909 patients. Of these, 300 patients (33%) were treated with SEMS and 609 (67%) with plastic stents. The rate of endoscopic reinterventions after PBD was significantly lower in the metal stent group as well (5.1% vs 11.8%, p = 0.04) (OR 0.23 95%CI 0.06–0.96). 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 patients with resectable periampullary or pancreatic head tumors 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.

References:

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 necrosis (AP) [1] and patients 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, alcohol etiology and Charlson score (it includes age and comorbidity) ≥ 3.

Results: We analyzed 1655 patients, 854 (52%) from group M (12 centers) and 801 (48%) from group C (11 centers), with biliary etiology, 891 (54%) males. The incidence of necrotizing AP was 281 (17%) patients, persistent organ failure: 113 (7%), mortality 70 (4%). The proportions 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: 49 (6%) vs 21 (3%), 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 (1.6–4.4), 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:
P1407 ROLE OF THROMBOPHILIA IN SPLANCHNIC VENOUS THROMBOSIS IN ACUTE PANCREATITIS
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Introduction: Splanchnic venous thrombosis (SVT) is a common vascular complication of acute pancreatitis (AP). There is paucity of data on its frequency, risk factors, outcome and natural history. Coagulation abnormality has been implicated but not proven as a cause of SVT in AP.
Aims & Methods: We aimed to prospectively study the frequency, risk factors and extent of SVT in patients with AP as well as role of 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 interventional therapy 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 (17 males, mean age 31.85 ±13.34 years) were evaluated of which 26 (27.1%) had SVT. Single vessel, two vessels and three vessels were involved in 19 (73.1%), 3 (11.5%) and 4 (15.4%) patients respectively. Splenic vein, portal vein and superior mesenteric vein involvement were seen in 22 (88.5%), 14 (53.8%) and 4 (15.3%) patients respectively. Necrotizing pancreatitis, CTSI ≥6 and Modified CTSI ≥6 were found in significantly higher number of patients with SVT than those without SVT (96.2% vs 78.6%, 76.9% vs 47.8%, and 67.1% vs 67.1%, respectively). Coagulation analysis was performed in 42 patients (18 with and 24 without SVT). Protein C, protein S and AT III deficiency were found in 10 (23.8%), 14 (33.3%) and 13 (31.0%) patients respectively. β2GPI and lupus anticoagulant were positive in 2 (4.8%) and 2 (4.8%) cases respectively. Anticardiolipin antibody was negative in all the patients. Factor V Leiden mutation analysis was done in 33 patients (18 with and 15 without SVT). In 5 (15.2%) patients, mutation was present. Resolution of SVT occurred in 5 patients (71.4%) within 1 year. None of the patients had varices on follow-up.
Conclusion: SVT in AP is more common in patient with necrotizing pancreatitis and higher CTSI and MCTSI indices suggesting that local inflammation plays a major role in its causation. Thrombophilia in some form is seen in one third of the patients with AP but does not increase the risk of AP.
Disclosure of Interest: All authors have declared no conflicts of interest.
Reference

P1409 EUS-GUIDED PANCREATIC FLUID COLLECTION DRAINAGE WITH LUMEN-APPOSING METAL STENTS OR PLASTIC DOUBLE PIGTAIL STENTS: A MULTI-FACTORIAL ANALYSIS
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Introduction: We aimed to compare the efficiency of plastic and metal stents for symptomatic pancreatic fluid collection drainage and analyze other main associated factors that affect the outcome of drainage therapy.
Aims & Methods: Rates of technical and clinical success, procedure-related side effects (hemorrhage, stent migration, and cyst rupture), re-interventions, and duration of hospital stay.
Results: There were 52 patients, 40 who underwent plastic stent placement and 12 who underwent lumen-apposing metal stent placement. The total rate of technical success was 100%. The total rate of clinical success was 100%. The total rate of adverse events was 7.7% (4/52). On multiple logistic regression analysis, the use of plastic stents (P < 0.05, Exp B = 12.168) and presence of a large cyst (P < 0.05, Exp B = 1.036) were shown to significantly increase the risk of re-intervention. On multivariate linear regression analysis, etiology of pseudocyst (P < 0.05, B = 8.427; −9.785; −5.514) was associated with prolonged hospital stay, while stent type was not shown to be a factor (P > 0.05).
Conclusion: Both plastic and lumen-apposing metal stents are proven to be highly efficient in pancreatic fluid collection drainage. The lumen-apposing metal stent is superior in preventing complications such as migration and cyst leakage and reducing the rate of re-intervention. Large cyst size is associated with an increased risk of re-intervention and prolonged hospital stay.
Disclosure of Interest: All authors have declared no conflicts of interest.

P1410 EARLY ACHIEVABLE SEVERITY (EASY) INDEX FOR SIMPLE AND ACCURATE EXPEDITED RISK STRATIFICATION IN ACUTE PANCREATITIS
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Introduction: Infected pancreatic necrosis (IPN) is associated to significant morbidity and mortality. Current management of IPN is based on a step-up approach, based on minimally invasive procedures. Our group has recently published a protocol of local infuson of antibiotics for the treatment of IPN (Pancreatology, 2016;6:719–25).
Aims & Methods: We aim at analysing the efficacy of this step-up approach for the treatment of IPN in clinical practice. This was a retrospective single-centre study of patients admitted with acute pancreatitis (AP) between January 2015 and December 2016. The cases were the diagnosis of pancreatic necrosis (IPN) and IPN (defined by positive culture of necrosis and clinical, analytical, and/or radiological data of infection) were identified and evaluated. IPN was treated following a step-up approach defined by 1. intravenous antibiotic therapy, 2. Endoscopic ultrasound guided transmural drainage plus local antibiotic therapy, 3. endoscopic necrosectomy. Number of patients responding to each therapeutic step was assessed.
Results: 694 cases of AP were included (mean age 79.5 ± 18.3, 555 male). CT scan was performed only if clinically indicated. 67 patients (9.0%) had acute necrotizing pancreatitis (ANP), and 21 of them IPN (31% of ANP). IPN patients were treated with intravenous antibiotics (imipenem [n = 15] and meropenem [n = 6]), with good response in 8 (38% of IPN). The remaining 13 cases underwent a EUS guided transmural drainage plus local antibiotic therapy, 3. endoscopic necrosectomy. Number of patients responding to each therapeutic step was assessed.
References

P1408 EVALUATION OF A PROTOCOL OF AN ENDOSCOPIC ULTRASOUND TRANSMURAL DRAINAGE OF INFECTED PANCREATIC NECROSIS (IPN) WITH LOCAL ANTIBIOTHERAPY THROUGH NASOCYSTIC CATHERET
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Introduction: Infected pancreatic necrosis (IPN) is associated to significant morbidity and mortality. Current management of IPN is based on a step-up approach, based on minimally invasive procedures. Our group has recently published a protocol of local infection of antibiotics for the treatment of IPN (Pancreatology, 2016;6:719–25).
Aims & Methods: We aim at analysing the efficacy of this step-up approach for the treatment of IPN in clinical practice. This was a retrospective single-centre study of patients admitted with acute pancreatitis (AP) between January 2015 and December 2016. The cases were the diagnosis of pancreatic necrosis (IPN) and IPN (defined by positive culture of necrosis and clinical, analytical, and/or radiological data of infection) were identified and evaluated. IPN was treated following a step-up approach defined by 1. intravenous antibiotic therapy, 2. Endoscopic ultrasound guided transmural drainage plus local antibiotic therapy, 3. endoscopic necrosectomy. Number of patients responding to each therapeutic step was assessed.
Results: 694 cases of AP were included (mean age 79.5 ± 18.3, 555 male). CT scan was performed only if clinically indicated. 67 patients (9.0%) had acute necrotizing pancreatitis (ANP), and 21 of them IPN (31% of ANP). IPN patients were treated with intravenous antibiotics (imipenem [n = 15] and meropenem [n = 6]), with good response in 8 (38% of IPN). The remaining 13 cases underwent a EUS guided transmural drainage plus local antibiotic therapy, 3. endoscopic necrosectomy. Number of patients responding to each therapeutic step was assessed.
References

United European Gastroenterology Journal 5(5S) A651
P1411 EVALUATION OF LOCAL INSTILLATION OF ANTIBIOTICS IN WALLED-OFF PANCREATIC NECROSIS

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Introduction: Acute pancreatitis (AP) is one of the most common diseases of the gastrointestinal tract associated with significant morbidity and mortality. The management of AP is crucial in the management of the disease. The pathomechanism of AP is not well understood, it has no specific therapy. Current methods of risk stratification in AP have a limited value, as they provide little additional information thus may delay appropriate management. Early recognition of severe disease may prevent serious adverse events and improve patient management as well as overall clinical outcome. The EASY trial is an observational, multicenter, prospective cohort study for establishing a simple, easy and accurate clinical scoring system for early prognostication of acute pancreatitis.

Aims & Methods: We aimed to create a new scoring system, which can predict the severity of AP in early phase of disease. Evaluation of simple attainable potential prognostic parameters obtained at admission (or not later than 6–12 hours after admission) 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 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 TÜKEB). 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 frequent 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 was to evaluate the efficacy of local instillation of antibiotics into walled-off pancreatic necrosis. Between 2012 and 2016 we evaluated all patients treated with endoscopic transmural drainage and necrosectomy (EDTN) and concomitant local instillation of antibiotics. We added antibiotics (either gentamycin, vancomycin, or amphotericin B) to the irrigation fluid according to the microbiological findings. The antimicrobial efficacies of local and systemic antibiotics were evaluated using uni- and multivariate logistic regression analyses and Kruskal-Wallis test by stratification of the isolates in sensitive versus not sensitive/antibiotics not given.

Results: Ninety-one patients were included. At the first drainage 81 (86%) patients had infected and 10 sterile WON. A total of 139 isolates were found at the first drainage. Most patients were infected with enterococci (44%) or other gram-positive. More than a quarter of the infected patients had fungal species cultured. The infected patients often had polymicrobial infections (56%). At the second culture 152 isolates were found. Neither local nor systemic antibiotics were associated with the eradication of microbes between first and second culture. Between second and third culture, the use of local antibiotics was associated with the eradication of microbes (OR = 2.54, P = 0.01), but not systemic antibiotics (P = 0.33) (Table). Between first and second culture 12 patients with fungal infections were treated with local amphotericin B. In all 12 patients the fungus was eradicated. After second culture 20 patients were treated local amphotericin B and in 17 (85%) patients the fungus was eliminated at the third culture.

Conclusion: Our data suggest a better efficacy of local antibiotics in the treatment of infected WON compared to systemic antibiotics. The local instillation of antibiotics may be a promising alternative or supplement to systemic administration. Particularly the use of local instillation of amphotericin B appears to be effective in the treatment of fungal infections.

Disclosure of Interest: All authors have declared no conflicts of interest.
P1413 OUTCOMES IN ACUTE PANCREATITIS IN PATIENTS WITH TYPE-2 DIABETES MELLITUS

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Introduction: Predicting severe pancreatitis is important for early aggressive management of patients with acute pancreatitis (AP). Despite the established role of type-2 diabetes mellitus (DM) in the risk of AP, the impact on the clinical outcome in AP has not been fully elucidated.

Aims & Methods: Retrospective study including hospital admissions between January 2003 and December 2016 in a single tertiary referral center. Clinical outcomes included organ failure (OF), persistent (≥48h) admission to intensive care unit (ICU) and mortality. Variables were analysed by logistical regression (SPSS v23.0). The objective of this study was to assess the risk of mortality and severity in AP among patients with type-2 DM.

Results: A total of 553 patients (58.4% male) with AP were included, median age 80 (16-98) years. Most common etiologies included gallstones (38.9%) and alcohol (27.5%). Twenty three percent developed OF (in 43% persistent) and 5.6% (n = 57) died. There were 127 AP patients (23.0%) with type-2 DM. Type-2 DM were not associated with higher Ranson's score. There was an association between DM and development of OF (OR 3.17, CI95% 1.88-5.37, p < 0.001), persistent OF (OR 4.51, CI95% 18.7-108.9, p < 0.001), ICU admission (HR 12.3, CI95% 1.9-104.9, p = 0.001), mortality (HR 1.7, CI95% 6.58-42.84, p < 0.001). At multivariate analysis DM was an independent predictor of OF development and ICU admission.

Conclusion: In our population, Type-2 DM was associated with severity and increased mortality in patients with AP. Our findings provide evidence of the potential role of DM in the management of severe AP.

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

References

P1414 ACUTE PANCREATITIS IN LIVER TRANSPLANT RECIPIENTS: INCIDENCE AND OUTCOME

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Introduction: Acute pancreatitis (AP) is an uncommon but potentially devastating condition that may occur in patients with organ transplantation. Reported incidence ranges from 1.5 to 8% in patients undergoing liver transplantation with significant mortality.

Aims & Methods: The aim of our study was to assess the incidence, potential risk factors and outcome of AP following liver transplantation in our center. We performed a retrospective analysis of medical records of all adult patients who underwent liver transplantation in our center between September 1996 and November 2014. The diagnosis of AP was defined by combination of clinical manifestation, finding on imaging methods (CT, USG) and elevation of serum amylase and lipase.

Results: Nine hundred and sixty-seven orthotopic liver transplantations were performed in 578 males and 389 females (mean age 51 years, range 18-74). AP occurred in 18 patients (1.9%, 16 males, 2 females) and resulted in death in 5 patients (28%). According to timing of AP we recognized two clinical presentation—early AP (≤ 1 month after liver transplantation) and late (>1 month). Four patients (22%) developed early AP, which was severe necrotizing with MODS in all cases and resulted in death in 3 of them (75%). Two of them were transplanted for fulminant hepatic failure, one for end-stage liver disease due to alcoholic hepatitis B infection and one for polycystic liver disease. Two patients were treated by surgical necrosectomy and died, the third deceased patient was treated conservatively. In the only surviving patient, a successful EUS-guided drainage of walled of pancreatic necrosis and repeated endoscopic procedures were performed. The surgery was unable to identify the culprit cause responsible for development of AP. Late AP occurred in 14 patients (78%) 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: post-ERCP, 2; alcohol, 1 biliary stones, 1 juvenile polyposis, 1, 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 greater than stage 4 with chronic rejection, late 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 liver cirrhosis resulting from chronic hepatitis B were at a significantly higher risk of AP development (p = 0.03).

Conclusion: The incidence of AP after liver transplant in our center is low. In it necrotizing form which is more frequent early after liver transplant, it carries a significant risk of mortality exceeding 60%. Male patients and those transplanted for end stage liver disease resulting from chronic hepatitis B are more likely to develop post-liver transplantation pancreatitis.

Disclosure 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, paradoenal, genetic, idiopathic). It has been observed that there has been a recovery of exocrine pancreatic function in autoimmune pancreatitis. In the literature there are no studies analysing the exocrine pancreatic function over time. The fecal elastase test is a good test procedure to evaluate the exocrine pancreatic function

Aims & Methods: The objective of the retrospective study was to re-evaluate a series of patients with chronic pancreatitis with the aim to evaluate the pancreatic exocrine function over time, in particular, by comparing the exocrine pancreatic function in subgroups of patients with different types chronic pancreatitis. Pancreatic exocrine function was estimated through fecal elastase in 143 patients with at least 2 values each (classified into normal, mild and important exocrine pancreatic insufficiency), the first one taken at the diagnosis of chronic pancreatitis. Patients undergoing surgical pancreatic resection before the second value of fecal elastase were excluded. Etiology was classified in: biliary pancreatitis/sequelae of necrotizing pancreatitis (15), autoimmune (69), paradoenal (15), genetic (17) and idiopathic (27).

Results: The results show a high frequency of severe exocrine pancreatic insufficiency in the moment of diagnosis of chronic pancreatitis (38%) and it appears stable over the years. Autoimmune and paradoenal pancreatic patients are correlated with severe exocrine pancreatic insufficiency at diagnosis in a high percentage of cases (51% and 40%), biliary/outcomes of necroizing pancreatitis and idiopathic pancreaticins in an intermediate (33% and 26%) while genetic in a low percentage (12%).

Conclusion: The exocrine pancreatic function in patients with autoimmune pancreateitis 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: "Painless" chronic pancreatitis (CP) represents a specific subset of CP characterized by the lack of pancreatic pain. So far, scarcity of data has been reported in the literature about this matter and what differentiates this group of patients from those with chronic pancreatitis associated with pancreatic pain.

Aims & Methods: The aim of the present study is to characterize "painless" CP from the epidemiological, clinical, radiological, functional, and follow-up standpoint, through a comparison with other forms of chronic pancreatitis presenting with pancreatic pain. The Institutional Database of the Gastroenterology Unit of the Verona University was queried, and all chronic pancreatitis cases were retrieved. Patients were clustered based on the presence of "pancreatic-specific pain" into "painless" and "pain-associated" CP. A retrospective case-control analysis was carried out.

Results: Of 678 patients included from March 2006 to March 2016, 436 were considered eligible for the present study. Of these, 368 (84%) were affected by pain-associated CP, while 68 (16%) had "painless" CP. "Painless" patients were older (median age of 58.5 ± 10.8 vs. 42.5 ± 15.3 y/o; p < 0.001), less frequently presenting with a history of alcohol consumption (35% vs. 55%; p < 0.001), more frequently diabetics (18% vs. 1%; p < 0.001), presenting with steatorrhea (16% vs. 2%; p < 0.001), and asymptomatic (63% vs. 2%; p < 0.001) compared to pain-associated controls. From the radiological standpoint, cases cases were more frequently presenting with calcifications than controls (90%; vs. 68%; p < 0.001). Moreover, in most of painless cases, the CP cause remained unknown (56%). After a median follow-up of 2.6 ± 2.3 years, the incidence of diabetes was higher in the painless 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 the absence of 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 stenting (EUS-PD) has been used for patients with painful obstructive pancreatitis in whom endoscopic retrograde pancreaticography (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. 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 structure.

Results: 15 patients had malignant MPD strictures or complete MPD obstruction in benign pancreatic structure. 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 structure.

Disclosure of Interest: All authors have declared no conflicts of interest.
Overall mean stent parity duration was 412 days (range 14–1081) during mean follow-up of 1081 days). Median stent patency was 525 days (range 14–1081). No patients with malignant strictures required FCSEMS revision or exchange during follow-up periods. FCSEMS removal and exchange was successful in benign strictures with stent dysfunction. At the end of the follow-up, two patients (5.6%) showed resolution of stricture after definite stent removal.

Conclusion: EUS-PD with an FCSEMS showed excellent long-term outcomes for patients who failed conventional ERP in both malignant and benign painful obstruction. EUS-guided FCSEMS removal and exchange could be 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.

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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, 54 patients had pancreatic cancer (CP) and 16 patients had chronic pancreatitis with pancreatic cancer. 58 patients were re-monitored 6 months after adjusting suboptimal therapy. Alcohol abuse was most common aetiology. Nutritional status was evaluated by prealbumin and retinol binding protein (RBP) via immunonephelometry, fat-soluble vitamins A, D, E via HPLC and LC-MS/MS; magnesium (Mg) and hemoglobin (Hb). We evaluated in addition albumin; cRP; BMI.

Results: Protein malnutrition with prealbumin (mean: 0.208 (Mg) and hemoglobin (Hb). We evaluated in addition albumin; cRP; BMI. Monitoring the symptoms of maldigestion as well as the nutritional markers is essential.

Conclusion: The aims of our study was to assess the reliability and correlation of the IAP regulation by mRNA stabilizing protein HuR and HO-1 and/or COX-2 signaling pathway, and to determine the association with clinicopathological parameters and prognosis of PDAC. Data of 32 patients after pancreateodudendectomy (2011–2016) were analyzed. Patient's mRNA expression levels of HuR, COX-2, HO-1, IAP1, Survivin and XIAP in PDAC were compared with normal pancreatic tissue obtained from organ donors. Additionally, the correlations among HuR, COX-2, HO-1, IAP1, Survivin and XIAP, as well as their respective correlations with clinicopathological parameters were analyzed. The Kaplan-Meier method and log-rank tests were used for univariate analysis. Cox proportional hazard model was applied to identify prognostic factors that were independently associated with survival.

Results: HO-1, COX-2, HuR, IAP1, IAP2 mRNA expression were accordingly 3-fold, 8.8-fold, 1.5-fold, 4.8-fold and 5-fold higher, while XIAP and Survivin mRNA expression were 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, and IAP2, Survivin and XIAP, as well as their respective correlations with clinicopathological parameters were analyzed. The Kaplan-Meier method and log-rank tests were used for univariate analysis. Cox proportional hazard model was applied to identify prognostic factors that were independently associated with survival.

Conclusion: Our results suggested that upregulation of HuR in PDAC patients were significantly related with poor outcome. Even though, significant correlation with IAP proteins in PDAC was noticed, more data is needed to analyze the mechanism underlying HuR and IAP interaction.

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

References

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Introduction: 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 (IAPs, 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 reliability and correlation of the IAP regulation by mRNA stabilizing protein HuR and HO-1 and/or COX-2 signaling pathway, and to determine the association with clinicopathological parameters and prognosis of PDAC. Data of 32 patients after pancreateodudendectomy (2011–2016) were analyzed. Patient's mRNA expression levels of HuR, COX-2, HO-1, IAP1, Survivin and XIAP in PDAC were compared with normal pancreatic tissue obtained from organ donors. Additionally, the correlations among HuR, COX-2, HO-1, IAP1, Survivin and XIAP, as well as their respective correlations with clinicopathological parameters were analyzed. The Kaplan-Meier method and log-rank tests were used for univariate analysis. Cox proportional hazard model was applied to identify prognostic factors that were independently associated with survival.

Results: HO-1, COX-2, HuR, IAP1, IAP2 mRNA expression were accordingly 3-fold, 8.8-fold, 1.5-fold, 4.8-fold and 5-fold higher, while XIAP and Survivin mRNA expression were 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, and IAP2, Survivin and XIAP, as well as their respective correlations with clinicopathological parameters were analyzed. The Kaplan-Meier method and log-rank tests were used for univariate analysis. Cox proportional hazard model was applied to identify prognostic factors that were independently associated with survival.

Conclusion: Our results suggested that upregulation of HuR in PDAC patients were significantly related with poor outcome. Even though, significant correlation with IAP proteins in PDAC was noticed, more data is needed to analyze the mechanism underlying HuR and IAP interaction.

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

References
Introduction: Pancreatic cancer (PDAC) is one of the most lethal diseases worldwide and is the fourth leading cause of cancer-related death in the world. The median survival after PDAC diagnosis is reversed using 5-FU (1) indicating the role of hypoxia in 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 analyzed using MTT-viability and cell cycle protein-expression studies were performed using Real-Time-PCR and immunohistochemistry using patient-derived PDAC samples.

Results: SILAC-based identification of the Tryptophan degrading enzyme KYNU (KYN-3-monooxygenase and aminolevulinic acid synthase) 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 extracellular stimuli (Gemcitabine, IFNγ, Hypoxia) as major inducers of KYNU expression/secretion. The use of KYNU as a novel secreted biomarker of chemoresistant PDAC cells resulted from amino-acid metabolism.

Aims & Methods: The aim of the 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 analyzed using MTT-viability and cell cycle protein-expression studies were performed using Real-Time-PCR and immunohistochemistry using patient-derived PDAC samples.

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

References
1. Schnittert, J., Ramsal, R., Storm, G., Ostman, A., Prakash, J., R. Activation of hPSCs with TGF-targets (such as ITGA11) resulted in the significant upregulation of CD45, Cyclin E1 and PDH1 proteins which were used as a control. We performed study of miR-195 in transfecting Panc-1 cells with miR-195 mimic. We used miRNA qRT-PCR to study the transfection efficiency of miR-195 mimic. The biology behaviors of Panc-1 cells transfected with miR-195 and negative control were analyzed by CCK-8 proliferation assay, cell cycle, cell migration and invasion assay. We performed Real-Time PCR and western blot to detect the expression of CD45, 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) by qRT-PCR, and PDH1 proteins were used as a control. We performed study of miR-195 in transfecting Panc-1 cells with miR-195 mimic. We used miRNA qRT-PCR to study the transfection efficiency of miR-195 mimic. The biology behaviors of Panc-1 cells transfected with miR-195 and negative control were analyzed by CCK-8 proliferation assay, cell cycle, cell migration and invasion assay. We performed Real-Time PCR and western blot to detect the expression of CD45, 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 CD45, 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 CD45 and Cyclin E1. 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.
Results:


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
Reference

P1428  HIGH-INTENSITY FOCUSED ULTRASOUND (HIFU) THERAPY FOR UNRESECTABLE PANCREATIC CANCER
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Introduction: High-intensity focused ultrasound (HIFU) is expected as new advanced therapy for unresectable pancreatic cancer (PC). HIFU therapy with chemoradiotherapy is being promoted as new method to control local advance by ablation tumor, and mainly achieve relief of pain caused by PC.

Aims & Methods: We have evaluated the therapeutic effect of HIFU therapy in locally advanced and metastatic PC. We treated PC patients by HIFU as optional local therapy as well as systemic chemo/chemo-radiotherapy, with whom an agreement was obtained in adequate IC, from the end of 2008 in our hospital. This study took approval of member of ethic society of our hospital. HIFU device used is FEP-BYO2 (Yuande Bio-Medical Engineering Co., Ltd., China). The subjects were 140 PC patients, i.e. 69 cases in stage III, 71 cases in stage IV. Performance status (PS) was PS0:79, PS1:38, and PS2:3 cases. Mean age was 74.9 yrs. The details of PC was: head in 38, uncus in 19, body in 59, body + tail in 6, tail in 2, and others (recurrence) in 16 cases. Treatment data was followed; mean tumor size before and after therapy was 33.5±10.7 and 33.7±11.5 mm, mean treatment sessions: 2.3±0.7 times, mean total treatment time: 103±66.6 min, mean total number of HIFU shots: 1069.7±1106 shots. The effects of HIFU therapy were as follows; the rate of complete tumor ablation was 89.7%, the rate of symptom relief effect was 69.4%, the effectiveness of primary lesion was CR, in 0.45%, PR, in 21.2%, SD, in 73.3%, and PD, in 5 cases, primary disease control rate (DCR) more than SD was 75.7%. The therapy and HIFU treatment was operation in 14, chemotherapy in 116, immunotherapies in 4, and best supportive care (BSC) in 14 cases. MST after diagnosis in HIFU with chemotherapy and chemotherapy alone (38 patients in our hospital) was 1028.3 vs 366.6 days, respectively (p=0.001). MST after HIFU therapy was 666 days. The therapy of HIFU with chemotherapy was better result than common chemotherapy alone.

Conclusion: This study suggested that HIFU therapy has the potential of new method of combination therapy for PC.

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

P1429  EUS AND CT SCAN ACCURACY IN ESTABLISHING THE T STAGE IN PANCREATIC CANCER BASED ON THE UPCOMING TNM 8TH EDITION
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Introduction: Pancreatic ductal adenocarcinoma (PDAC) has a dismal prognosis with an overall 5-year survival rate <6%. Surgically resected patients, although undergoing negative resection, 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 preliminary data of combination therapy for PC, the correct evaluation of the T stage is of high importance as it might shift the therapeutic decision mostly for the evaluation of the T, giving high importance to the diameter of the tumor.

Pancreatic Adenocarcinoma TNM (8th edition), in fact, differs from the 7th edition mostly for the evaluation of the T, giving high importance to the diameter of the tumor. The treatment of PDAC as defined by the new upcoming TNM 8th edition and to establish the sensitivity and specificity of the two imaging modalities in discriminating T1 stage from more advanced T stages. We conducted a retrospective study on a cohort of surgically-resected histologically-confirmed high pathological grade pancreatic adenocarcinoma referred 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 both 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-stage was used for comparison of categorical variables.

Results: Among the 184 PDAC patients surgically resected between 2015 and 2017 at our center, 30 met inclusion criteria. Of these, 19 (63.3%) were males, with mean age at resection being 67.8±9.5 yrs. The tumor was located in the head in 23 (30.7%) 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 46 (31.3%) cases CT scan was the first modality that detected the T2 lesion before EUS. EUS resulted having 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 was respectively 64.7% and 76.9% for EUS and 76.5% and 72.7% for CT.

Conclusion: This is the first study evaluating the accuracy of CT and EUS imaging modalities in establishing the T stage 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 30% of the T2 lesions and EUS performed alone in approximately 13% of cases. The combination of the two imaging modalities showed 80% accuracy in determining the T stage, and that the pancreas parenchyma in combination to EUS could be used to better assess the proper therapeutic management as neoadjuvant chemo or upfront surgical resection.

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

P1430  RISK FACTORS AND SURVIVAL IN PANCREATIC ADENOCARCINOMA
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Introduction: Pancreatic adenocarcinoma is associated with a 5–6% survival at 5 years and a poor quality of life. In Romania there are few information about the prognostic influence of known risk factors for pancreatic adenocarcinoma.

Aims & Methods: The aim of this study is to evaluate the association between risk factors and the occurrence of pancreatic adenocarcinoma and patients' survival, which may constitute a theoretical basis for screening. We performed a prospective multicentric study of patients with suspected pancreatic tumors detected in abdominal ultrasound or CT examination, during January 2015-December 2016, in which were analyzed risk factors and possible association with survival adjusted statistically according to tumor stage (Chi square test, ANOVA, log-rank test).

Results: There were 279 patients with pancreatic adenocarcinoma included in the study. Male patients were 58% from all patients, and the mean age was 63.5 years. Smoking, new-onset diabetes and history of chronic pancreatitis are risk factors for pancreatic adenocarcinoma (p <0.05). Among patients, almost one-third of patients with pancreatic adenocarcinoma died (median survival = 5 months). It was demonstrated a statistically significant association adjusted for tumor stage between the presence of new-onset diabetes and survival: 5 months vs 3 months with a HR = 3. Other risk factors (alcohol, obesity, sex, genetics, coffee intake, some infections and abdominal surgery, history of chronic pancreatitis) had no prognostic role.

Conclusion: In our study, the risk factors for pancreatic cancer were smoking, having history of chronic pancreatitis and new-onset diabetes, but the only prognostic factor was smoking.

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

References
Received: 6/10/2021

P1431 PREVALENCE STRATIFICATION OF MALIGNANCY IN RESECTED INTRADUCTAL PAPILLARY MUCINOUS NEOPLASMS INVOLVING MAIN DUCT: IS THE 10 MM WURSING 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-duct IPMN diameter of ≥10 mm should have surgical resection, whereas surgery is not always mandatory in those with MDP 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 MDP 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 MDP 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%). No statistical differences between study groups. The most common location of the MD-IPMN was the head of pancreas (60.6%), and it was multifocal in 34.8% of the patients. The prevalence of no dysplasia, low-grade dysplasia, high-grade dysplasia and invasive carcinoma was 18.2%, 42.6%, 8.5% and 38.3% in group A and 10.5%, 10.5%, 21.1% and 57.9% in Group B. No significant difference was found between the two groups.

Conclusion: Almost half of resected IPMN with MDP 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 the overall survival periods and adverse events between patients who received chemotherapy and aged patients.

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/ nabPTX/ nabPTX in group B, respectively. On the other hand, we treated 12/14/11/5/13 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 (SharK Core FNB needle, Medtronic, Dublin, Ireland) was introduced in order to improve the tissue acquisition.

Aims & Methods: The aim of the present study was to evaluate the presence of a histological sample using SharK Core Needles. This study was an observational multicenter prospective non-randomized clinical trial (NCT02946840). All consecutive patients referred for EUS examination and sampling of solid pancreatic masses underwent EUS-guided biopsy with 25 G SharK Core needles. This needle has an innovative tip geometry with a cutting surface designed to acquire cohesive tissue fragments without excessive trauma. Three needle passes were performed in every mass. At each pass, a macroscopic on-site quality evaluation (MOSE) was done by endoscopist. If a “worm-like” material was observed at gross visual assessment, it was placed into formalin. If only liquid material was observed, the sample 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, immunohistochemical and molecular studies. The primary outcome was the procurement rates of histologic core. Pathologists defined core all histologic samples with architecturally intact histology, measuring at least 5 mm in greatest axis. All the other specimens (< 5mm) were defined as micro-fragments. The final diagnosis was based on surgical resection, and clinical/radiological follow up. The secondary outcomes were diagnostic accuracy and procedure-related adverse events.

Results: Study population included 82 patients, enrolled in three centres, between August 2016 and April 2017, with a mean age of 64.0 (SD 13.7, range 21–84) and 57.3% female gender. The mean size of the lesions was 27.6 mm (SD 12.2) and the location was the body and tail in 27 patients (32.9%), neck in 11 (13.4%), head and uncinated process in 44 (53.7%). Three needle passes were performed in all but 3 patients who experienced mild bleeding precluding more than one needle pass at MOSE. At MOSE, endoscopists described presence of “worm-like” material in 192 biopsy samples over 242 (79.3%). In 8 patients only cytological specimens were obtained after 5 needle passes (9.8%). Six cases of mild self-limited bleeding were observed (7.3%). The pathologists described the presence of a core in 80 samples (41.7%), in the other cases, after the specimen preparation, a micro-fragmentation was observed, that didn’t affect the histological evaluation. A final histological diagnosis was reached in 73 patients (90%): 50 pancreatic adenocarcinoma, 16 NET, 5 chronic pancreatitis, 2 pancreatic metastasis from other organs.

Conclusion: The new biopsy needle showed a good overall adequacy and a good rate of histological specimens (both core and micro-fragments) during EUS-guided tissue acquisition of pancreatic masses, with a minimum number of passes and no major complications. This ability could allow to avoid the use of rapid on-site evaluation and to perform immunohistochemical, molecular and genetic studies on histological samples.

Disclosure of Interest: All authors have declared no conflicts of interest.
Aims & Methods: We retrospectively assessed 700 consecutive EUS-FNA procedures from January 2011 to January 2016. 459 (65.5%) solid pancreatic lesions were included in the final analysis after excluding 230 for biliary strictures, hepatic lesions, lymph nodes, gastric, oesophageal lesions, pancreatic cysts and 11 for insufficient information.

Results: In 399 (86.9%) cases on-site cytopathology support was available, while the remaining was unsupported. There were 228 males (57.1%) in the supported and 29 (48.3%) in the unsupported group. Mean age was 64.6 (SD: 11.4) and 67.4 (SD: 11.9) respectively. The mean number of passes in the two groups were 2.8 (SD: 1.12) and 1.9 (SD: 1.0) (P < 0.0001). A conclusive diagnosis (malignant, benign, NET, GIST) was made in 84% (67%, 12%, 10%, 5%, 0%) of the supported group and in 38% (23%, 10%, 3%, 2%) of the unsupported (P < 0.0001). The mean follow up for the entire cohort was 14.2 months (SD:14.1) and mean survival of in patients diagnosed with malignancy was 10.9 months (SD: 8.7). Overall performance characteristics of EUS FNA were Sensitivity: 90.8% Specificity: 66.9% PPV: 91.8% NPV: 85.4%

Conclusion: This review confirms high performance characteristics of EUS FNA. The presence of on-site cytopathologist significantly increases the diagnostic yield.

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

P1435 CLINICAL IMPACT OF GNAS AND KRAS MOLECULAR ALTERATIONS ADDED TO CEA AND CYTOLOGY IN PANCREATIC CYSTIC FLUID OBTAINED BY EUS-FNA

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Introduction: Pancreatic cystic lesions are a common finding in clinical practice. Classification of cysts as mucinous or non-mucinous cysts, using EUS-FNA with cystic fluid analysis for cytology and CEA became widely used in clinical workup of patients with suspicious pancreatic cysts. Molecular analysis (KRAS and GNAS mutation) is not yet recommended in clinical practice.

Aims & Methods: We aimed to determine if mutation in GNAS and KRAS in cystic fluid analysis for cytology and CEA level and 29 (48.3%) in the unsupported ret. Mean age was 64.6 (SD: 11.4) and 67.4 (SD: 11.9) respectively. The mean number of passes in the two groups were 2.8 (SD: 1.12) and 1.9 (SD: 1.0) (P < 0.0001). A conclusive diagnosis (malignant, benign, NET, GIST) was made in 84% (67%, 12%, 10%, 5%, 0%) of the supported group and in 38% (23%, 10%, 3%, 2%) of the unsupported (P < 0.0001). The mean follow up for the entire cohort was 14.2 months (SD:14.1) and mean survival of in patients diagnosed with malignancy was 10.9 months (SD: 8.7). Overall performance characteristics of EUS FNA were Sensitivity: 90.8% Specificity: 66.9% PPV: 91.8% NPV: 85.4%

Conclusion: This review confirms high performance characteristics of EUS FNA. The presence of on-site cytopathologist significantly increases the diagnostic yield.

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

References
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There have been 2 studies that assessed the impact of stenting on EUS-FNA diagnostic performance of FNA/FNB by reducing the visible mass to puncture.

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PI1437 DO BILIARY STENTS REDUCE THE DIAGNOSTIC PERFORMANCE OF EUS-BIOPSY IN PATIENTS WITH A MASS IN THE HEAD OF THE PANCREAS?
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Introduction: Self-expanding metal stents (SEMS) are increasingly preferred to plastic stents (PS) for pre-operative drainage and palliation of biliary obstruction secondary to a sticture in the head of pancreas (HOP). Their use has increased over the last 5-6 years. Endoscopic ultrasound (EUS) with fine needle aspiration or biopsy (FNA or FNB) is commonly utilised to make a tissue diagnosis and to aid in staging in those with borderline resectable tumours. Stents may reduce diagnostic performance of FNA-FNB by reducing the visible mass to puncture. There have been 2 studies that assessed the impact of stenting on EUS-FNA performance, one2 found no difference in yield and sensitivity among patients with or without stents and between SEMS and plastic. Whilst a more recent study3 found accuracy was significantly reduced by the presence of a stent.

Aims & Methods: The aim was to assess whether stents (SEMS or PS) impair diagnostic performance of EUS tissue acquisition, in a retrospective study of all patients with HOP mass undergoing EUS biopsy between January 2010 and June 2016. Stenting information was obtained from the EUS report and images. Biopsies reported as malignant were considered as such, all other reports were considered benign. A definitive diagnosis of cancer was based on positive pathology, stable imaging and symptoms for a year or more. Patients with cystic lesions were excluded.

Results: A total of 1861 patients had EUS-FNA/FNB of which 731 were for HOP lesions, mean age 65 yrs (410 F), with tissue sensitivity of 72% for all types of needles used. Tissue accuracy was significantly different between the 3 groups (p = 0.0001); SEMS 67%, PS 71% and 83% in the unstented group. The difference in accuracy was significant between the unstented group versus SEMS (p = 0.0082) and PS (p = 0.03) and not between PS and SEMS. Stepwise multi-variable analysis revealed significant difference for accurate tissue diagnosis favouring size needle 25G (OR 1.7 [95%CI 1.1-2.7] and tumour size (OR 1.9 [95%CI 1.2-3.0]) and reduced by presence of a stent SEMS (OR 0.3 [0.2-0.6]) or PS (OR 0.5 [0.3-0.9]). Other needle sizes (19G or 22G), number of passes or types of needle did not significantly affect tissue accuracy.

Conclusion: Our results show a significant adverse impact of both SEMS and PS on tissue accuracy via EUS FNA-FNB. The effect is greatest with SEMS. These results suggest that where possible EUS and biopsy if required should be performed before stent placement.

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

References
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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-NETs) which have round to oval nuclei, finely stippled chromatin and finely granular cytoplasm and 2) poorly-differentiated (PD- NETs) which have a diffuse architecture with an irregular nucleus and less cytoplasmic granularity. WD-NETs tend to have an indolent course (survival ~67% at 5 years) but ~50% have metastasised at the time of diagnosis. PD-NETs 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 ultrasonography guided fine-needle aspiration biopsy (EUS-FNA) can provide a non-operative cytological diagnosis of PNETs when the pathologist is provided with a good specimen such as the pellet of cells obtained through SurePath (SP).

Aims & Methods: EUS-FNA samples of pancreatic tumours were collected into a SurePath vial and slides prepared from the cellular pellet. The slides were stained forsynaptophysin and Ki67 by immunohistochemistry (IHC) and examined by 2 independent senior cytopathologists.

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.
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 PANCREATIC TUMOR CELL LINES
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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 (IGF2BP-1–3) 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 were investigated by Western blot analyses, flow cytometry, clonogenic survival, cell viability and migration assays.

Results: In the pancreatic neuroendocrine tumor cell line BON1, knock-down of IGF2BP1 resulted in a significant reduction of cell viability. Cell cycle analysis by FACS showed a decreased S phase progression paralleled by a reduction in the proliferation marker PCNA and a markedly reduced MEK/ERK activation. In contrast, Akt signaling was unaffected. Moreover, knock-down of 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 and caspase-3 cleavage as well as annexin-V FACS. Rather, si-IGF2BP1 increased the expression of both the anti-apoptotic and pro-survival factor BCL-2 and the cell cycle inhibitor CDKN1B. In contrast to IGF2BP1, knock-down of IGF2BP3 rather induced cell viability, whereas IGF2BP2 modulation had no impact on cell viability and cell cycle progression indicating opposing effects of the three IGF2BPs on PNEN progression. These in vitro findings were paralleled 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 IGF2BP2 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
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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 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 Misericordiae University Hospital, Dublin, Ireland), from January 2005 and September 2016, were retrospectively enrolled. The possible association between ASA and disease grading, staging, primary site, overall OS and PFS were evaluated. At the time of enrolment, clinical data and biochemical parameters were collected for every patient. Chromogranin A (CgA) and specific circulating peptides were evaluated. Morphological and functional imaging (computed tomodiagrapy, 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 (18%), 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 Ki67 values and less node involvement. Further studies are needed to confirm this observation.

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

P1441 CONCOMITANT NEUROENDOCRINE TUMOR OF THE PANCREAS AND INTRADUCTAL PAPILLARY MUCINOUS NEOPLASM: IS THERE SOMETHING BEYOND?
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Introduction: Intraductal papillary mucinous neoplasms (IPMNs) and neuroendocrine tumors (NETs) of the pancreas are rare tumors. Up to now 15 patients with association of endocrine and exocrine neoplasms of the pancreas have been reported in the literature, but this association is not expected to be frequent. The aim of this study is to describe a series of nine patients with IPMN and concomitant NET of the pancreas followed in our center and to look for any common findings between them that could help early recognition and further comprehension of this association.

Aims & Methods: Among all the patients who were followed in our clinic for IPMN or NET, we identified 9 with both diseases, diagnosed on imaging or after biopsies requested for uncertain results of previous investigations. We collected data about the patients (age, sex, symptoms, past and current medical history, blood chemistry, type of imaging) and about the lesions (classification, dimension, localization, imaging features, fine-needle aspiration (FNA) biopsies results and histology).

Results: All patients (4 men and 5 women), except one were asymptomatic. Average age at diagnosis was 61 years. All IPMN were branch duct, localized in the head (n = 4) and in body-tail (n = 5), with a medium diameter of the cysts of 12 mm (range 8 mm-16mm). All NETs underwent endoscopic ultrasound examination with FNA; 8 were non functional G1 with a Ki67 of 1%, positive for Chromogranin A and Neuron-specific Enolase staining. One NET was a symptomatic insulinoma located at the tail (Ki67 of 2%, 20 mm diameter) and underwent distal spleno-pancreatectomy. Among NETs, 6 were in the head and 3 at body-tail, with a medium diameter of 11 mm (range 6-15 mm). In 4 patients, the first diagnosis was IPMN followed by identifications of NET with second level imaging. In 5 patients, who underwent magnetic resonance imaging for NET, a concomitant IPMN was found.

Conclusion: Our study describes 9 cases of endocrine-exocrine pancreatic neoplasms association. In the 15 cases reported by literature one out of the two lesions, had a malignant behavior. In our records, except in one patient, both IPMN and NET in all patients behave in an indolent fashion. All the IPMN were branch type and all the NET, except one, were G1; mainly patients are asymptomatic and the symptom of the disease was observed in only one case. We did not find neither sex or age predisposition, nor predominant localization or common pathologic background in the patients. No other concomitant neoplastic diseases were found. Although the frequency of association between NET and IPMN is not too large and no diagnostic hallmark were found, it is still to be proven that this association is fortuitous. Further studies in the future are required.

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

References:

United European Gastroenterology Journal 5(5S)
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 and whose health data were in the study were; among 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: Out of 24 patients, 18 of which (75%) had a pancreatic involvement. Multiple simple pancreatic cysts were found in 13 patients, SCAs were found in 2 patients and NETs in 7 patients. The mean age of the patients with pancreatic lesions was 42 (min 25 - max 75), 11 were males and 7 females (1.6:1 M:F). Simultaneously, 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. The mean age of incidence of VHL-related pancreatic lesions was lower than in previous studies, thus confirming our dataset. Although all lesions in our patients were benign or stable, constant monitoring is needed.

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

References
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. Based on the presented here is the result of genetic 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.

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

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**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 prediction of prognosis in cancer patients. The neutrophil lymphocyte ratio (NLR), platelet lymphocyte ratio (PLR), thrombocytosis (the platelets number >400*10^3/mm^3) have been introduced for prognostic scoring system in various cancers.

**Aims & Methods:** The objective of this study was to determine whether the NLR, the PLR or thrombocytosis could predict the clinical outcomes in G1-G2 neuroendocrine tumors. We performed a retrospective review of 31 patients with neuroendocrine tumours with ki 67 below 20% diagnosed in Fandeni Clinical Institute between 2011-2017. Data about site of the primary tumor, presence of metastasis, NLR, PLR, thrombocytosis (platelet count > 400) and survival were collected and analysed.

**Results:** The patients characteristics were: primary tumor location was: 61.29% pancreas, 22.58% gastro-intestinal 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, only univariate analysis and on multivariate analysis (P < 0.05). Other factors like ki 67 index, metastatic disease, thrombocytosis and NLR have an impact on survival statistical significant on multivariate analysis.

**Conclusion:** This study demonstrates the prognostic role of different variables like Ki 67 index, PLR and PLT value, thrombocytosis and metastasis. This factors may be integrated in different scoring systems for prognosis that could guide clinicians for a better management in patients with neuroendocrine tumors.

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

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**P1447 FUNCTIONAL RELEVANCE OF THE OVEREXPRESSION OF PLC8 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 chemo- and radiotherapeutic approaches an inhibition of tumor growth but no regression of the tumor can be achieved. Therefore for about 80% of pNET patients no curative therapy can be offered. To obtain the identification of novel potential target genes for the development of new therapeutic strategies, primary tissues from pNET patients were analyzed. Amongst others PLC8 (Placent-specific 8) was identified, which is a small protein of unknown function, showing different forms of cellular localization depending on the cell type analyzed, indicating at its ability to fulfill a variety of physiological functions.

**Aims & Methods:** In the course of this study, the function of Plac8 in neuroendocrine pancreatic tumors is to be unveiled to evaluate its value as a potential target for pNET therapy. Therefore primary tumor tissue of about 100 pNET patients were analyzed for Plac8 expression by quantitative real-time PCR and immuno-histochemistry. Furthermore established pNET cell lines from human origin where transfected with siRNAs against Plac8 and there proliferative activity and metastatic behavior where analyzed by wound-healing and MT assay. Changes in these important characteristics of tumor cells were further examined by westernblot analyzes of key regulators of apoptosis and cell growth.

**Results:** Plac8 is highly expressed in primary human pNET tissues on RNA- as well on protein level. Functional in vitro analyses show that the siRNA-mediated knockdown of Plac8 not only in human but also in rat cell lines leads to significantly reduced proliferative activity and reduced cell growth. These effects came along with indicative changes in the expression of central regulators of cell cycle while apoptotic pathways seem to be only moderately affected.

**Conclusion:** Overexpression of Plac8 in neuroendocrine tumors of the pancreas promote 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 pNET.

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

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**P1448 CLINICAL OUTCOMES OF SUPERFICIAL LARYNGOPHARYNGEAL CARCINOMA WITH LYMPHO-VASCULAR INVASION AFTER ENDOSCOPIC LARYNGOPHARYNGEAL RESECTION**

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**Introduction:** Since the majority of laryngopharyngeal carcinomas are detected at an advanced stage, most cases are treated with concurrent chemoradiotherapy and radiation therapy. The key to improving the prognosis and quality of life is early detection of the primary cancer and treatment using minimally invasive surgery. We previously reported the good oncologic outcomes with ELPS (Endoscopic laryngopharyngeal surgery) for superficial laryngopharyngeal carcinomas. However there is no clinical evidence for an additional treatment nor prognosis about the cases conducted endoscopic resection which were diagnosed to be surgically carcinoma with lympho-vascular invasion histopathologically.

**Aims & Methods:** This study aimed to investigate the optimial additional treatment and clinical course for the surgialy laryngopharyngeal carcinoma with lympho-vascular invasion. We analyzed clinicopathologic data in 9 patients showed Lympho-vascular invasion receiving ELPS between 2007 and 2014.

**Results:** Positive lympho-vascular invasion was found in 9 cases. Detected the tumor depth was SEP in 7 lesions and MP in 2 lesions. Mean alcohol consumption is 9.9 abv units. Average smoking history is 38.9 pack years. 5 cases are low activity ALDH2 heterozygotes and have alcohol flushing reaction. In clinicopathologic findings the lympho-vascular invasion cases with the siRNA 2 cases with vascular invasion(y0, v1), and 2cases with lympho-vascular invasion,(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 other two surgeries 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 cases had no adjuvant therapy and remained recurrence-free. And the other 2 cases had recurrence but did not die of other cause. Finally 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, chemoradiotherapy or additional surgical resection are also considerable if the general conditions are satisfactory.

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

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**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 submucosal dissection(ESD) are recommended. However, the additional surgery often difficult 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...
PI450 EFFICACY OF THE FORCED COAGULATION MODE WITH LOW-HIGH-FREQUENCY POWER SETTING DURING ENDOSCOPIC SUBMUCOSAL DISSECTION

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Introduction: Bleeding control is one of the most important factors to success endoscopic submucosal dissection (ESD) in safety. We have reported the endoscopic precoagulation technique using soft coagulation mode (S method) is effective for the prevention of bleeding when relatively large vessels penetrates 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 treated vessel was able to give larger electrical energy in soft coagulation mode with low-high frequency power setting (F1-10 method) can exhibit precoagulation function without bursting vessels. It is suggested that F1-10 method is useful for large vessel precoagulation.

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 about consecutive six gastric ESD cases in each groups excluded some cases, which have the risk of affecting data. We compared the diameter of treated vessels, frequency and duration of the compressed vessel, and bleeding frequency after cutting vessels were noted by the recorded videos. In ex vivo study, to investigate the coagulation mechanism of those two different power settings was evaluated the peak voltage, current elapsed time, and electric energy by using the data recording program (VIO DOKU) and the width and depth of coagulation was measured on macro- and microscopic levels using porcine tissues.

Results: The total number of vessels processed by endoknife precoagulation were 49 and 61 vessels in the S and F1-10 methods. The median vessel diameter was 2 mm in the S method and 1.5 mm in the F1-10 method. The median frequency of the compressed vessel was twice in both methods, and the median coagulation time was 9s and 10s in the S and F1-10 methods, respectively. No significant difference was found between the S and F1-10 methods. The bleeding rate after vessel processing was 18.4% (8/49) and 4.8% (3/61) in the S and F1-10 methods, respectively. No significant difference was found between the S and F1-10 methods.

Conclusion: F1-10 method strongly showed a trend in preventing bleeding after precoagulation compared with the S method (P = 0.058). We further investigated the bleeding rates of the large vessels, defined as ≥2 mm in diameter. There were 26 and 29 large vessels in the S and F1-10 methods, respectively. The bleeding rates of the large vessels were 26.9% (7/26) and 3.4% (1/29) in the S and F1-10 methods, respectively, which were significantly different (P = 0.021, OR: 10.32, 95% CI: 1.17–90.78). In ex vivo study, the median peak voltage was 172 Vp and 540 Vp in the S and F1-10 methods. The median current elapsed time was 0.22s and 1.54s in the S and F1-10 methods. F1-10 method could keep the electric current longer than the S method. The mean total electrical energy was 6.34 W and 12.5 W in the S and F1-10 methods. F1-10 method was able to give larger electrical energy in the poutine block. And the width and depth of coagulation in F1-10 method spread wider and deeper in macro- and microscopic sections.

Conclusion: F1-10 method is suggested to achieve a stronger hemostatic effect than S method. Further clinical procedures are required to investigate the safety and efficacy of these models.

Disclosure of Interest: T. Toyonaga: Dr. Takashi Toyonaga invented theFlushKnife-BT in conjunction with Fujifilm and received royalties from its sale. All other authors have declared no conflicts of interest.

Reference

PI451 EXPOSURE TO ENDOTHERAPY FOR UPPER GASTROINTESTINAL BLEEDING AT THE POINT OF GASTROSCOPY CERTIFICATION-IS IT SUFFICIENT?

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Introduction: Although certification in diagnostic gastroscopy has been established in the UK, there is no formal process for quality assurance (QA) in endotherapy for upper gastrointestinal bleeding (UGIB). Training opportunities are variable, with 11% of final year UK gastroenterology trainees citing inadequate exposure, despite an expectation to independently manage UGIB upon achieving specialist status. Data on endotherapy exposure during endoscopy training is limited. We aim to assess whether trainees are receiving adequate exposure to endotherapy at the time of gastroscopy certification.

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 procedural number 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 endotherpay (67.5% of NME and 18.6% of medical endoscopists, p < 0.0001). Of medical endoscopists awarded certification, 37.1% had not performed band ligation. 50.7% had not placed a clip, and 54% had not used heater probe. NME had significantly less exposure to each modality of endotherapy considered (overall odds ratio 0.10, p < 0.0001).

Table 1: Mean procedural counts at the point of UGI certification.

<table>
<thead>
<tr>
<th>Therapy</th>
<th>Medical</th>
<th>Non-medical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clips</td>
<td>3.6</td>
<td>1.1</td>
</tr>
<tr>
<td>Probes</td>
<td>2.1</td>
<td>0.2</td>
</tr>
<tr>
<td>Total</td>
<td>5.7</td>
<td>1.3</td>
</tr>
</tbody>
</table>

Conclusion: Training on endotherapy prior to certification is limited. The current endotherapy certification process requires more emphasis on trainee training and competency in endotherapy for UGIB. In response, the JAG QA team have recently released new DOPS forms specific to endotherapy and are consulting on introducing formal certification in endotherapy for UGIB.

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

Reference
1. GMC National Training Survey Results 2016. Gastroenterology.
March and September of 2016. All patients underwent EC with iScan. The esophagus was inspected with a ECM capable endoscope (EG- 2990-Zi) and deliberate biopsies were taken from tissue identified by ECM that suggested BE. All biopsies were confirmed by a GI pathologist. Primary endpoint was the correlation between visual inspection diagnosis of dysplastic BE by ECM versus pathologic diagnosis of BE as the gold standard.

Table 1: Patient characteristics and outcomes

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>100</th>
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<tbody>
<tr>
<td>Age (mean)</td>
<td>47.7</td>
</tr>
<tr>
<td>Male</td>
<td>41/100</td>
</tr>
<tr>
<td>Endoscopic diagnosis: nondysplastic BE</td>
<td>96/100</td>
</tr>
<tr>
<td>Endoscopic diagnosis: BE with LGD</td>
<td>4/100</td>
</tr>
<tr>
<td>Pathologic diagnosis: nondysplastic BE</td>
<td>94/100</td>
</tr>
<tr>
<td>Pathologic diagnosis: BE with LGD</td>
<td>4/100</td>
</tr>
<tr>
<td>Pathologic diagnosis: benign gastric mucosa</td>
<td>1/100</td>
</tr>
<tr>
<td>Pathologic diagnosis: esophageal ulcer</td>
<td>1/100</td>
</tr>
<tr>
<td>Accuracy</td>
<td>98%</td>
</tr>
<tr>
<td>Sensitivity</td>
<td>100% [95% CI (96%-100%)]</td>
</tr>
<tr>
<td>Specificity</td>
<td>0% [95% CI (0%-84%)]</td>
</tr>
<tr>
<td>Positive predictive value</td>
<td>98% [95% CI (93%-99.7%)]</td>
</tr>
<tr>
<td>Negative predictive value</td>
<td>NA</td>
</tr>
</tbody>
</table>

**Results:** In our cohort 41% were male, with mean age of 47.7 years. Endoscopic diagnoses by ECM were divided into nondysplastic BE (96/100) and suspected dysplastic BE (4/100). On pathology nondysplastic BE was found in 94/100 patients. BE with low-grade dysplasia was found in 4/100 patients. Benign gastric mucosa with no alterations (1/100), and ulcerated esophagitis (1/100). The overall accuracy of endoscopic diagnoses using ECM against pathologic diagnosis was of 98%, with sensitivity of 100% [95% CI (96%-100%)], and positive predictive value of 98% [95% CI (93%-99.7%)].

**Conclusion:** Endoscopic diagnosis of BE by directed biopsies of esophageal tissue with use of ECM is highly accurate. Future prospective studies are needed to validate our preliminary findings and assess inter-observer variability.

**Disclosure of Interest:** M. Xu: Grants from BSC, Xlumena, Cook, Olympus, Merit Endoscopy, Apollo, Fujifilm, Aspire Bariatrics, EMcision, Concordia, MTech, Maunaika Tech, Ninepoint Medical, W.L. Gore, ASGE. M. Kahaleh: Grants from BSC, Xlumena, Cook, Olympus, Merit Endo, Aspire Bariatrics, GI Dynamics, Apollo, Fuji, Pentax, Emcision, Concordia, MTech, Maunaika Tech, Ninepoint Medical, W.L. Gore, ASGE. All other authors have declared no conflicts of interest.

**P1453 DOES “INVISIBLE” DYSPLASIA IN BARRETT’S OESOPHAGUS REALLY EXIST?**

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**Introduction:** Barrett’s oesophagus (BO) is the main risk factor for oesophageal adenocarcinoma (OAC). International guidelines recommend endoscopic surveillance for early detection of dysplasia (DYS) and/or OAC but current biopsy protocols can miss areas of endoscopically unapparent neoplasia. At present, advanced diagnostic imaging technologies and specific endoscopist and pathologist expertise in detecting the subtle phenotypic changes associated with DYS/OAC or visible lesions are available (i.e. deep sedation, HD magnification endoscopes + NBI + acetic acid chromoendoscopy, Target biopsies and/or EMR were obtained in case of endoscopically visible lesions; 4-quadrant biopsies were obtained otherwise. All the specimens were diagnosed by two expert GI pathologists, who reached a final diagnosis (FD). In Group 2 patients where FD was BO without DYS/OAC, previous history was reviewed by two expert pathologist.

**Results:** Results are summarized in Table 1. Group 1 (n = 82): FD of DYS/OAC with visible lesion was reached in 2 out of 82 patients (2.4%), both treated by EMR + RFA. No one had a FD of DYS/OAC without visible lesions. Group 2 (n = 33): FD of DYS/OAC with visible lesions was reached in 13 out of 33 patients (39.4%); 11 were treated by EMR + RFA. 1 by surgery and 1 chemoradiotherapy. In 20 patients the AD was downgraded to uncomplicated BO: in 19 patients (57.6%), a review of previously taken biopsies by expert pathologist excluded neoplasia. In only one patient no lesion was found but the review of original histology slides confirmed a low-grade DYS and the patient was treated by RFA. Group 3 (n = 4): DYS/OAC was confirmed in all the 4 patients (2 treated by EMR + RFA, and 2 by surgery).

**Conclusion:** When upper endoscopy is performed in a BO reference center where specific facilities and expertises are available (i.e. deep sedation, HD magnification endoscopes, chromoendoscopy, expert endoscopist and pathologist) “inivisible” DYS is a very rare diagnosis.

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

**References**

EVL was performed as primary prophylaxis in 50.9% (n = 226) and secondary prophylaxis in 11.2% (n = 22). Mortality-nil. Follow up endoscopy at 4 weeks showed healing in all 17 patients. Median follow up months = 24.

Conclusion: EVL 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 intraperitoneal full-thickness defects. Further studies comparing EVL and surgery are recommended.

Disclosure of Interest: A. Bapaye: Speaker-Boston scientific corporation, Cook endoscopy, Olympus and Taewoong medical

All other authors have declared no conflicts of interest.

P1455 PROPHYLAXIS OF VARICEAL BLEEDING IN CIRRHOTIC PATIENTS: EFFICACY AND SAFETY OF ENDOSCOPIC VARICEAL LIGATION (EVL) IN PRIMARY PROPHYLAXIS.

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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 mortality and recurrence. Current guidelines for endoscopic and medical therapy recommend early use of prophylaxis with endoscopic variceal ligation (EVL) in primary prophylaxis and the combination of both in secondary prophylaxis.

Aims & Methods: We aimed to evaluate the efficacy of EVL therapy in both prophylaxis of variceal bleeding in cirrhosis and to establish the patient’s clinical outcome. This was a retrospective observational cohort study of a total of 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 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 ± 9.8 years and a predominance of male gender (80.4% ± n = 201). At initial endoscopy, 237 (53.2%) patients had active variceal bleeding (AVB) and 207 (46.8%) had chronic esophageal varices. 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 post-banding ulceration (7.5% ± n = 27) and infection (22.2% ± n = 9), with mean time between EVL and complication occurrence of 11.1 ± 11.8 days (minimum:0;maximum:43). Intra-procedure complications occurred in 11 (2.5%) patients with no death, despite of two cases of Sengstaken-Blakemore devices used necessary. The overall mortality was 3.4% (n = 24), being 0.4% (n = 2) related to varical bleeding.

Conclusion: EVL seems to be an efficient, safe and relatively simple therapeutic option for primary prophylaxis of variceal bleeding in cirrhotic patients. Since the main complications occurs over 1 week after EVL procedure, the majority of patients can be safely treated in an ambulatory setting.

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

P1456 THE VALUE OF ENDOSCOPIC FULL-THICKNESS RESECTION FOR GASTRIC AND DUODENAL SUBMUCOSAL TUMORS ORIGINATING FROM THE MUSCULARIS PROPRIA LAYER.

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Introduction: Given diminishment of quality of life caused by surgery in the stomach and duodenum, a minimally invasive treatment is desirable for gastric and duodenal submucosal tumors (SMTs).

Aims & Methods: We aimed to assess the value of endoscopic full-thickness resection (EFTR) technique for gastric and duodenal submucosal tumors (SMTs) originating from the muscular propria (MP) layer. A total of 276 patients with single gastric SMTs originating from the MP layer were performed EFTR between January, 2010 and February, 2014. The light adhesion of the tumour to gastric or duodenal serosal layer could be seen in every case from endoscopic ultrasound (EUS) before the procedure. The SMTs oriented endoscopically were performed EFTR using a standard ESD technique without laparoscopic assistance under direct endoscopic view. The defect of gastric and duodenal wall was closed after resection.

Results: A total of 276 patients included 94 males and 182 females. Their median age was 57.8 years (range, 30–81 years). Among all the 276 SMTs in our study, 165 located in gastric fundus, 96 located in gastric body, 8 located in the antrum, 1 located in pylorus, 1 located in duodenal bulb and 1 located in duodenal ulcer–C6. Closure of the defect in distal extra peritoneal rectum left open intentionally for healing by secondary intention; techniques—through-the-scope (TTS) clips–7, over-the-scope clip–4, omental patch + clip–2 (TTS–1, OTS–1), endoscopic suturing–1, endoloop + clip–1. Mortality-nil. Follow up endoscopy at 4 weeks showed healing in all 17 patients. Median follow up months = 24.

Conclusion: EFTR is safe and effective for resection of SMTs. Pre EFTR EUS and CECT may be useful to select appropriate candidates. Secure closure of defect is necessary for intraperitoneal full-thickness defects. Further studies comparing EFTR and surgery are recommended.

Disclosure of Interest: A. Bapaye: Speaker-Boston scientific corporation, Cook endoscopy, Olympus and Taewoong medical

All other 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 imaging technology is the so called Multi Light Illumination, that composes light output 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 reallocates colour tones resulting in a high contrast of different red tones. Until now only few data exist about the use of LCI and BLI in chronic gastritis (CG).

Aims & Methods: We aimed to analyse the use of LCI and BLI in detecting and characterisation of chronic gastriatic and premalignant conditions of the stomach. All patients were consented. All patients received LCI and BLI. 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 ENDOSCOPIC SUBMUCOSAL DISSECTION(ESD) FOR RELATIVE INDICATION GROUP OF EARLY ESOPHAGAL SQUAMOUS CARCINOMA (ESECC) IN AGED PATIENTS

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Introduction: According to the Japanese Esophageal Society Guidelines, Early Esophageal Squamous Cell Carcinoma (ESECC) involving the muscularis mucosa or <200μm invasion of the submucosa, and circumferential extent of >2/3 were relative indications (RI) for ESD. Additional treatment (AT, including esophagectomy or chemoradiotherapy) may be needed after ESD. But in aged RI patients, most will refuse AT due to higher rates of debilitating symptom in China.

Aims & Methods: The aim of this study was conducted to evaluate the long-term outcomes of aged RI patients without AT after ESD.

Results: Between January 2008 and December 2013, a total of 158 aged ESECC patients were included in the present retrospective study. Prognosis outcomes were analyzed.

Results: 89 patients included in absolute indication (AI) group and 69 in RI group, the baseline characteristics were balanced between two groups. During the follow-up time (median 56 (1-108) months), short-term adverse events (4.3% vs. 1.1%, p = 0.319) and postoperative stricture rate (31.8% vs. 21.3%, p = 0.104) were higher in RI group than in AI group. 5-year recurrence-free survival rate (85.8% vs. 87.2%, p = 0.561), metastasis-free survival rate (100% vs. 96.8%, p = 0.437), overall survival rate(96.6% vs 90.0%, p = 0.613) and cause-specific survival rate(98.9% vs 98.5%, p = 0.264) for AI group and RI group were comparable.

Conclusion: Aged ESECC 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.

**References**


**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, 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 solitary FB. The most frequently found foreign bodies were meat bones (8% (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 mobilization). In surgery group, complications occurred in 6 patients (1 leakage, 1 stricture, 1 hernia and bowel obstruction, 1 wound infection and 2 worsened stricture).

Endoscopy under sedation was performed in 20 cases (9,7%). About ¼ had associated comorbidities, the most common were esophageal ring in 22 (10.7%) and benign stenosis in 178.3()% patients. Major complications were rare: 1 perforation (0.3%) and 3 deep esophageal lacerations (1.5%). Age (>55years), presence of comorbidities, and previous episodes were associated with presence of FB/FI on Endoscopy (Odds Ratio 2.01, 3.59 and 4.63 respectively).

Conclusion: Endoscopy is frequently preformed for suspicion of FB/FI in our emergency setting. Presence is confirmed in the majority of the cases. Predictive factors for presence were identified. Most FB/FI were removed with success with low complication rates. This data favor the endoscopic approach on suspicion of FB/FI.

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

**P1460** LEARNING CURVE FOR ENDOSCOPIC SUBMUCOSAL DISSECTION OF GASTRIC NEOPLASMS; LOW-VOLUME SINGLE-CENTER EXPERIENCE

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Introduction: Endoscopic submucosal dissection (ESD) has become a standard therapy for early gastric neoplasia. There is no consensus yet about the number of experiences required for performing ESD alone.

Aims & Methods: We aimed to investigate the learning curve of ESD performed by a single beginner endoscopist focusing on developing the performance of dissection, shortening the procedure time, and preventing complications.

Methods: Records of 120 consecutive ESD procedures performed by a single beginner endoscopist with an ESD knife from March 2012 to February 2016 were collected. For analysis of the learning curve, total procedures were divided into four periods, each comprising 30 sequential ESD. The parameters assessed were the en-bloc resection rate, complete resection rate, procedure time, and related complications.

Results: In the procedure time according to the number of experiences, the procedure time decreased from 30 experience. However, there was no statistical difference from the first (63.5±54.0) to the second quarter (44.7±31.4, p = 0.19), to the third quarter (40.7±27.8, p = 0.08), and to the fourth quarter (40.8±23.1, p = 0.09). There was no procedure that exceeded 100 minutes from the third quarter. There were a total of seven perforations, four of which were in the first quarter, two in the second, and one in the third. In the procedure time according to the location of the lesions, upper third lesion (92.6±43.7) showed longer procedure time than middle (46.6±40.2, p < 0.01) and lower third (39.5±27.5, p < 0.01) with statistically significant difference. In addition, in the fibrotic lesions, regardless of size and location, all took a very long time, more than 100 minutes.

Conclusion: It needs accumulate experience with the help of a professional expert up to 30 cases, and to the more advanced level, about 90 procedures are needed. And, the location of the lesion is the important factor in determining the difficulty of the procedure. Therefore, it is best to avoid the upper third lesion as far as possible until experience 90 cases or at least 30 procedures.

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

**References**


Introduction: Examination of major duodenal papilla (MDP) by standard forward-viewing endoscopy presents many limitations for the access the validity of Cambridge protocol with a high resolution endoscope in patients with proven pathological conditions–7 (36.8%) (gastric–3, duodenum–2, rectum–2); and closure of chronic fistulae–5 (26.3%) (esophagus–3, duodenum–1, rectum–1). Previous h/o spreading tumor–1); for closure of bowel perforation during endoscopic resection–the clip was loaded on the distal end of the endoscope and endoscope–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. Chronic success–bleeding arrested in 7/7 (100%); bowel perforation sealed–7/7 (100%); fistula closure successful–4/5 (80%). In one patient of chronic duodenal fistula, fistula reopened 12 weeks after initial sealing of fistula and required surgery. Follow up at 4 weeks revealed no delayed adverse events in any patient.

Conclusion: The new OTS Clip (Padlock™) is safe and effective for treatment of severe bleeding and for closure of post ER full-thickness defects and chronic fistulae. Further studies with larger sample size are recommended.

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

References

P1462 CAP ASSISTED UPPER ENDOSCOPY VERSUS SIDE-VIEWING ENDOSCOPE FOR EXAMINATION OF THE MAJOR DUODENAL PAPILLA: A RANDOMIZED, BLINDED, CONTROLLED, NON-INFERIORITY CROSSOVER STUDY (CAPPA-II STUDY)
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Aims & Methods: Prospective, randomized, blinded, controlled, non-inferiority crossover study. Subjects scheduled for elective EGD were randomized to undergo CA-EGD (group A) or SVE (group B) before undergoing second examination by the alternate method. Image of the MDP was evaluated, after image processing, by three blinded multicenter-experts. Our primary outcome measure was complete examination of the papilla. Secondary outcome measures were image quality of mucosal pattern, ability to obtain an overview of the papilla and overall satisfaction of the evaluators. For secondary outcomes, a score was given from 1 to 10 (1=poor, 10=excellent).

Results: A total of 62 patients were randomized and completed the study. Complete examination of MDP was achieved in 59 patients using CA-EGD compared to 60 patients using SVE (95 vs. 97%, p=0.001). 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 complete examination of the MDP.

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

P1463 INACCURACY OF CAMBRIDGE PROTOCOL FOR PATIENTS HARBOURING CHD1 MUTATION: A CONSECUTIVE SERIES
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Introduction: Hereditary diffuse gastric cancer (HDGC) accounts for 1 to 3% of all gastric cancers. It can be caused by a germline mutation of the gene CDH1. Life time risk for gastric cancer is 80% with a mean age at diagnosis of 40 years. Affected individuals generally present multiple foci of signet ring cell carcinoma (SRCC) scattered throughout the gastric mucosa, difficulty detected by endoscopy.

Aims & Methods: The aim of this study was to access the validity of Cambridge protocol with a high-resolution endoscope 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 any visible lesion. The total number of biopsies and the total number and localization of SRCC foci was recorded. For those patients submitted to prophylactic gastrectomy, data was compared with surgical specimen histology. To access the validity of Cambridge protocol with a high resolution endoscope in patients with proven pathological germline mutation of the gene CDH1.

Results: During the 11 endoscopies a total of 353 biopsies (329 random biopsies and 24 targeted biopsies; mean of 32.1 biopsies per patient) were performed. Two patients presented 1 SRCC foci in random biopsies, being that one of them presented 2 SRCC foci. The total number of biopsies and the total number and localization of SRCC foci was registered. For those patients submitted to prophylactic gastrectomy, data was compared with surgical specimen histology. To access the validity of Cambridge protocol with a high resolution endoscope in patients with proven pathological germline mutation of the gene CDH1.

Conclusion: Despite the use of high-resolution endoscopes and the high number of random biopsies, endoscopic examination presents many limitations for the diagnosis of HDGC. According to literature, prophylactic total gastrectomy remains the only option to prevent cancer propagation.

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

P1464 SINGLE-CENTER CLINICAL EXPERIENCE WITH A RECENTLY DEVELOPED FULL-THICKNESS ENDOSCOPIC CLIP
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Introduction: Endoscopic clips are used in a variety of clinical situations in GI endoscopy—for arrest of bleeding or for closure of bowel perforations or chronic fistulae. Conventional through-the-scope clips often cannot provide optimum results; and therefore full-thickness (FT) over-the-scope (OTS) clips have been devised.

Aims & Methods: Current study describes the clinical experience of use of a recently developed FT OTS clip (Padlock™, Aponos Medical, USA). Data from a prospectively maintained database of all patients undergoing the new procedure was abstracted, primary diagnosis, history of previous endotherapy, endoscopic procedure, indications for FT OTS clip usage, technical and clinical success and early and delayed adverse events were recorded. The clip–clip is available in two different sizes for use in upper and lower endoscopy. It is supplied preloaded on a cartridge that fits on the distal end of the endoscope. The trip-wire travels alongside the endoscope, enabling additional instruments to be passed through the endoscope channel, and special double-channel endoscope is not required for its application. Technique of clip application–the clip was loaded on the distal end of the endoscope and endoscope advanced to site of interest. Bowel wall defect or bleeding point was positioned within the clip and strong suction was applied. Clip was fired by closing the handle on the delivery system. Suction was slowly released and site was inspected. Results: Total 21 clips used in 19 patients. M: F–12:7, mean age–57.9 years (range –24–84 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 resections–7 (36.8%) (gastric–3, duodenum–2, rectum–2); and closure of chronic bowel fistulae–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. Chronic success–bleeding arrested in 7/7 (100%); bowel perforation sealed–7/7 (100%); fistula closure successful–4/5 (80%). In one patient of chronic duodenal fistula, fistula reopened 12 weeks after initial sealing of fistula and required surgery. Follow up at 4 weeks revealed no delayed adverse events in any patient.

Conclusion: The new OTS Clip (Padlock™) is safe and effective for treatment of severe bleeding and for closure of post ER full-thickness defects and chronic fistulae. Further studies with larger sample size are recommended.

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

P1465 ENDOSCOPIC AMPULLECTOMY OUTCOMES IN A TERTIARY ENDOSCOPY DEPARTMENT
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2Department Of Gastroenterology And Hepatology, Victor Babes University of Medicine and Pharmacy Timisoara, Timisoara/Romania

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Introduction: Endoscopic resection of ampullary adenomas has increased in the last decade due to the high morbidity with a high mortality in patients undergoing surgical procedures.

Aims & Methods: This study aims to evaluate the outcome of endoscopic ampullectomy (EA) in a tertiary endoscopy department. We included in the study patients that underwent EA between January 2014 - April 2017 at the Regional Institute of Gastroenterology and Hepatology Cluj-Napoca, Romania. All patients had a benign pathological result prior to the EA. Post-procedural complications such as bleeding, perforation, cholangitis, pancreatitis and mortality were analyzed. Data about resection type, post EA histology and 1 year follow-up was also processed.
Results: 19 patients underwent EA, with a mean age of 63.5±17.7 years and a male to female ratio of 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 was 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.

Table 1 Continued

<table>
<thead>
<tr>
<th>Patient Demographics</th>
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<tr>
<td>Prior POEM (n) (%)</td>
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<tr>
<td>&gt;2 prior treatments (n) (%)</td>
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<tr>
<td>ASA Physical Status Classification</td>
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<tr>
<td>ASA grade I (%)</td>
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<tr>
<td>ASA grade II (%)</td>
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<tr>
<td>ASA grade III (%)</td>
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<tr>
<th>Prior POEM (n) (%)</th>
<th>&gt;2 prior treatments (n) (%)</th>
<th>ASA grade I (%)</th>
<th>ASA grade II (%)</th>
<th>ASA grade III (%)</th>
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</thead>
<tbody>
<tr>
<td>3 (6)</td>
<td>4 (8)</td>
<td>21 (41)</td>
<td>22 (43)</td>
<td>8 (16)</td>
</tr>
</tbody>
</table>

Conclusion: This is the largest UK case series of POEM for achalasia including the first successful UK POEM procedure for DES. At our institute, POEM was performed successfully in a potentially more challenging cohort where 52.9% had prior endoscopic/surgical treatment and 65.8% required conversion to a posterior approach. Our results are in line with international consortia and ASGE findings that POEM is a safe and efficacious procedure for the treatment of achalasia and oesophageal spastic disorders for both short term and sustained symptomatic benefit.

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

Reference
1. Stavropoulos S, Desilets D, Fuchs KH et al; Per-oral endoscopic myotomy white paper summary; Gastrointestinal Endoscopy; 2014;1:1–15

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. Endo-Laser displacement was encountered in n=2 and replaced endoscopically including readmission of 1 patient for delayed mucosal incision site healing (Clavien-Dindo Grade IIb). There were no cases of mortality, perforation, infection/major bleeding.

Table 1: Baseline characteristics

<table>
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<th>Table 1</th>
<th>Baseline characteristics</th>
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<tbody>
<tr>
<td>Patient Demographics</td>
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</tr>
<tr>
<td>Age (mean, SD, range) (years)</td>
<td>48.6±1/3.3</td>
</tr>
<tr>
<td>Male (n) (%)</td>
<td>29 (57)</td>
</tr>
<tr>
<td>Female (n) (%)</td>
<td>22 (43)</td>
</tr>
<tr>
<td>Clinical Data</td>
<td></td>
</tr>
<tr>
<td>Duration of disease (mean, SD, range) (years)</td>
<td>4.4±1/7.2</td>
</tr>
<tr>
<td>Eckardt Score (median, range)</td>
<td>8 (12)</td>
</tr>
<tr>
<td>Chicago Subcategorisation</td>
<td></td>
</tr>
<tr>
<td>Achalasia Type I (n) (%)</td>
<td>4 (8)</td>
</tr>
<tr>
<td>Achalasia Type II (n) (%)</td>
<td>42 (82)</td>
</tr>
<tr>
<td>Achalasia Type III (n) (%)</td>
<td>2 (4)</td>
</tr>
<tr>
<td>DES</td>
<td>1 (2)</td>
</tr>
<tr>
<td>Uncategorised (EndoFLIP used)</td>
<td>2 (4)</td>
</tr>
<tr>
<td>Non-Sigmoid Oesophagus (n) (%)</td>
<td>45 (88)</td>
</tr>
<tr>
<td>Sigmoid Oesophagus (n) (%)</td>
<td>6 (12)</td>
</tr>
<tr>
<td>Treatment History</td>
<td></td>
</tr>
<tr>
<td>Prior Achalasia Treatment</td>
<td>27 (55%)</td>
</tr>
<tr>
<td>Prior Botulinum Toxin Injection; BTX (n) (%)</td>
<td>9 (18)</td>
</tr>
<tr>
<td>Prior Pneumatic Dilatation; PD (n) (%)</td>
<td>13 (25)</td>
</tr>
<tr>
<td>Prior Heller Myotomy; LHM (n) (%)</td>
<td>9 (18)</td>
</tr>
</tbody>
</table>

(continued)
Grade 2A) corrosive-induced injury of upper gastrointestinal tract. Patients in whom gastroscopy could not be done or who had been hospitalised 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. **P**-value of <0.05 was considered as significant. All continuous variables were expressed as mean ± SD and the non parametric continuous variables were expressed as median. Comparison between groups was done using Fisher’s exact test.

**Results:** During the study period a total of 112 patients presented with ACI. In all 82 patients were included in the study. Amongst them, 53% of the patients were females and the mean age was 36.5 ± 15.5 years. The intent of corrosive ingestion was suicidal in 70% and accidental in 30%. In majority (50%) of patients the natural history of corrosive 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. None of the 71 patients in whom the median follow up period was 31 months (range 2–72 m) during which 12 (16.9%) patients expired (73% related to ACI). Amongst the 59 patients, that were alive 16(27%) were symptomatic, 12(20%) had dysphagia, 5(6%) had regurgitation, 4(5%) had chest pain, 67% had weight loss and 11(18%) patients required endoscopy. 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 esophageal and stomach 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% (5/27) with Grade III B injury and 14%(4/28) 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**

A prospective, single-center, cross-over controlled trial of confocal laser endomicroscopy assessment of persistent or recurrent intestinal metaplasia and recurrence of neoplasia after endoscopic treatment of Barrett’s esophagus-related neoplasia (born). J. Krajciová1, M. Kolář2, J. Malušková2, M. Kment2, Z. Vacková1, J. Spicák1, J. Martiněk1; 1Department Of Hepatogastroenterology, Institute for Clinical and Experimental Medicine, Prague/Czech Republic; 2Clinical And Transplant Pathology, Institute for Clinical and Experimental Medicine, Prague/Czech Republic

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Introduction: Probe-based confocal laser endomicroscopy (pCLE) has been developed to overcome limitations of the current endoscopic sampling techniques. pCLE allows detailed examination of cellular structures and may examine larger areas compared to standard biopsy. Patients after endoscopic treatment of Barrett’s esophagus (BE)-related neoplasia (BORN) should undergo endoscopic surveillance with biopsies to detect persistence or recurrence of intestinal metaplasia (IM) or neoplasia (N). Aims & Methods: The aim of this prospective study was to evaluate the efficacy of pCLE (vs. standard biopsies) in detection of persistent/recurrent IM/neoplasia in patients after endoscopic treatment of BORN. A single-center, prospective, controlled and pathologist-blinded (still ongoing) study in patients undergoing surveillance after endoscopic treatment of BORN. pCLE images were obtained from the neo-Z-line (a few cases including macroscopically visible tongues), the cardia and the esophagus. Thereafter, standard biopsies were taken and sent for histopathological analysis (4 biopsies from macroscopically normal neo-Z-line, 2 biopsies from the cardia and the esophagus and targeted biopsies from visible abnormalities, if present). BE was defined in pCLE as columnar-lined epithelium with dark mucin in goblet cells, a villiform pattern, and regular-shaped capillaries in the mucosa. The dysplastic BE was characterized by black cells with irregular borders and shapes, high dark contrast to the surrounding tissue, and irregular leaking capillaries in the mucosa.

Results: We examined 29 patients, from these 14 patients (48%) had the initial diagnosis of intraepithelial neoplasia (LIN), 7 patients (24%) had high-grade intraepithelial neoplasia (HGIN) and 8 patients (28%) had an early adenocarcinoma (EAC). Persistent/recurrent IM was detected at the level of neo-Z-line in 10 patients (34.5%) by both standard biopsies and pCLE. pCLE but not biopsies detected persistent/recurrent IM in 2 patients (6.7%), another 2 patients had IM present in biopsies but not in pCLE. pCLE diagnosed one patient with recurrent LGIN in a macroscopic visible tongue arising from neo-Z-line, which was not confirmed in biopsies. Sensitivity and specificity of pCLE detection of persistent/recurrent IM was 83.3% (95% CI 51.6–97.9) and 89.47% (95% CI 66.9–98.7), respectively, with positive predictive value 83.3% (95% CI 56.1–95.0) and negative predictive value 89.5% (95% CI 70.4–96.8). Agreement of pCLE and histopathological findings was 86%.

Conclusion: pCLE seems to be comparable to standard biopsies in detection of persistent/recurrent IM after endoscopic treatment of BORN. Nevertheless, these results need to be confirmed in a larger cohort of patients.

Disclosure of Interest: All authors have declared no conflicts of interest.
3. Friedrich K, Scholl SG, Beck S, et al. Respiratory Complications in older patients undergoing oesophagectomy with gastric transposition are limited. Although commonly seen in the elderly, pneumonia is not infrequent in younger patients receiving thoracic surgery. In a multi-institutional study of 1,167 patients, the incidence of pneumonia was 1.9%. Pneumonia was associated with an increased risk of postoperative complications, including wound infections, sepsis, and death. 

Introduction: Therapeutic options for gastroparesis or delayed gastric emptying vary and there are limited data on the efficacy of these therapies in a publically-funded Western healthcare setting. This study assessed the effectiveness of these therapies in a Western setting as well as the rate, timing and predictors of complications in this patient population.

Aims & Methods: Endoscopic submucosal dissection (ESD) is an established technique for the treatment of early gastric cancer. The aim of this study was to evaluate the feasibility, safety and efficacy of ESD for gastric and duodenal lesions in a Western setting. 

Results: A total of 410 ESD procedures were performed at these locations. The use of anticoagulants is a risk factor for bleeding and perforation. Patients with a history of anticoagulant use were more likely to experience complications compared to those without. The overall complication rate for ESD procedures in this study was 10.5%. The most common complications were bleeding (7.3%) and perforation (3.2%). The bleeding rate was significantly higher in the group of patients receiving anticoagulants (12.2%) compared to those not receiving anticoagulants (5.5%). 

Conclusion: ESD in this Western setting was more commonly performed for colonic and esophageal lesions rather than gastric as seen in Japan. The complication rate is modest and almost all were managed successfully with an endoscopic approach. The procedures 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 bleeding and perforation. 

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

References:
3. Friedrich K, Scholl SG, Beck S, et al. Respiratory Complications in older patients undergoing oesophagectomy with gastric transposition are limited. Although commonly seen in the elderly, pneumonia is not infrequent in younger patients receiving thoracic surgery. In a multi-institutional study of 1,167 patients, the incidence of pneumonia was 1.9%. Pneumonia was associated with an increased risk of postoperative complications, including wound infections, sepsis, and death. 
7. Gastroenterology, Queen Alexandra Hospital, Portsmouth/United Kingdom
8. Gastroenterology, Portsmouth Hospitals NHS trust, Hampshire/United Kingdom
10. United European Gastroenterology Journal 5(5S)
11. No significant differences for the occurrence of pneumonia (1.6%, GIES group vs. 0.4%, control group, p=0.041) in the age of the older age group (2.6% vs. 0.0%, p=0.041, and 7.8% vs. 2.5%, p=0.034, respectively) were detected. Inflammatory parameters were significantly increased after GIES, particularly on day three. GIES patients received antibiotic treatment more frequently and pulmonary infiltration did not differ significantly.
12. Conclusion: This study confirms a higher risk of pneumonia due to GIES in the advanced aged population. In general, patients are more likely to develop inflammation and to receive antibiotic treatment suggesting an increased risk of radiologically non-visible inflammation due to micro-aspiration. 
13. Disclosure of Interest: All authors have declared no conflicts of interest.

Aims & Methods: 33 patients (13 male; mean age 45, range 17–80) underwent a total of 225 consecutive endoscopic procedures over 2 years. Treatments were either 100IU units of Botox injected into 4 quadrants of the pylorus or pneumatic dilatation (PD) incrementally up to 16–20mm (Hercules; Cook Medical). Patients with gastric malignancy, previous pyloric surgery or no documented follow-up were excluded. Non-therapeutic responses were assessed at first follow up post-procedur-
factor for delayed bleeding. Given that the majority of delayed complications occurred due to post-procedure, a standardised 5 day inpatient stay would prove futile in our cohort.

Disclosure of Interest: P. Bhandari: Educational grants from Fujifilm, Olympus and Pentax

All other authors have declared no conflicts of interest.

P1478 PREDICTIVE FACTORS AND MANAGEMENT OF REFRACTORY BENIGN OESOPHAGEAL STRICTURES

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Introduction: The optimal management and the predictive factors of response to endoscopic dilation of refractory benign oesophageal strictures remains controversial.

Aims & Methods: To evaluate the prevalence and factors predicting response to treatment of benign refractory oesophageal strictures with scheduled endoscopic dilatation. Retrospective analysis of 75 patients submitted to scheduled endoscopic dilation of benign oesophageal strictures between October 2010 and November 2016. Strictures were classified as refractory when ≥5 endoscopic dilations 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 years (12–76). Dysphagia scale at baseline was solids (1)–17 (22%), semi-solids (2)–23 (30.7%), liquids (3)–23 (30.7%) and complete (4)–12 (16%). Body mass index (BMI) at baseline was 22 ± 5 Kg/m². The aetiology of the benign strictures was: surgical–31 (41.3%), peptic–15 (20%), caustic–10 (13.5%), radiotherapy–10 (13.5%) and others–9 (12%). The location of the oesophageal stricture was as follows: proximal: third–34 (45.3%), middle–third–12 (16%), distal third–27 (36%) and multiple locations–2 (2.7%). Stricture type: simple–44 (58.7%), complex–31 (41.3%). Patients underwent a median of 4 (1–26) endoscopic dilation over a median period of 19 weeks (1–229). Dilations were done with Savary-Gilliard dilators–35 (46.7%), TTS-balloons–24 (32%) or both–16 (21.3%). The mean diameter of dilation achieved was 15.7 ± 2.2 and a dilation diameter of ≥15 mm was achieved in 36 (74.6%) patients. Local injection of corticosteroids (p = 0.001) and higher dilation diameter (p < 0.001) were significantly associated with the need for local corticoid injection. In this subgroup, there was a significant association with post-surgical aetiology (p = 0.042), location (p = 0.039), higher rate of local injection of corticosteroids (p < 0.001) and higher dilation diameter (p < 0.001). Refractory strictures were significantly associated with the presence of local cortical injection (OR 9.76, 95%CI 0.35–0.46, 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 lateral decompressions during subsequent procedures.

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

P1479 LOCAL CORTICOSTEROIDS IMPROVE EARLY CLINICAL OUTCOMES IN PATIENTS UNDERGOING ENDOSCOPIC DILATION OF BENIGN OESOPHAGEAL STRICTURES

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Introduction: Local corticosteroids have been shown to improve outcomes in patients undergoing endoscopic dilation of peptic strictures.

Aims & Methods: To evaluate factors predicting early clinical response to endoscopic dilation of benign oesophageal strictures. Retrospective analysis of 75 consecutive patients submitted to scheduled endoscopic dilatations between October 2010 and November 2016. Clinical improvement was defined as dysphagia improvement ≥95% (mean 89.4%, 95%CI 86.4–91.4) post-dilatation. Endoscopic improvement was achieved with curative resection for benign adenomas 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 papillotomy on duodenal papilla tumors.

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

P1480 TRENDS IN CERTIFICATION FOR GASTROINTESTINAL ENDOSCOPY AND VARIATIONS BETWEEN TRAINEE SPECIALTIES: RESULTS FROM THE UK TRAINEE ENDOSCOPY DATABASE


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Introduction: In the UK, endoscopy certification is overseen by the Joint Advisory Group. Since 2011, certification has been awarded for upper and lower GI endoscopy online via the JAG Electronic Training System (JETS). We aimed to analyse trends in endoscopy e-certification, and assess for differences between trainees in gastroenterology (GI), surgical (GS) and non-medical endoscopy trainees (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, forative assessments, and key performance indicators (KPIs) at the time of certification. Comparisons between specialties were analysed using a combination of chi², Mann-Whitney and median tests.

Results: Between June 2011-Dec 2016, 2857 applications were awarded certification. Most certifications were awarded to GI trainees (Figure 2). Median procedural numbers (p < 0.001) and formatives (p < 0.001) pre-certification varied for each modality in the order of NME > GI > GS. Caecal intubation rates (CIR) at full certification were similar between GI (95.6%) and GS (95.6%, p = 0.81), but lower in NME (93.6%, p = 0.02 vs. GS, p = 0.006 vs. GI), despite no differences at provisional certification (median CIR 95.6%, p = 0.32). Rates of D2 intubation (median 98.7%) varied across groups (GS > GI > NME, p = 0.002). Certification awarded at first attempt were similar across specialties (mean 89.4%, p = 0.19), but varied for gastroscopy (NME 95.5%, GS 80.1%, 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 GI trainees. 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 PAPILLOCTOMY FOR TREATMENT OF DUODENAL PAPILLA TUMORS

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Introduction: A duodenal papilla tumor is an uncommon neoplasm in the upper gastrointestinal tract. In the early stage, patients often have no complaints and the tumors are usually occasionally found during gastroduodenoscopy examination. Endoscopic papillotomy 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 papillotomy on duodenal papilla tumors.

Aims & Methods: From June 2009 to November 2016, the information of patients who received endoscopic papillotomy was recorded, which included basic characteristics and clinical outcomes, such as recurrence rate, bleeding, pancreatitis. Endoscopic papillotomy was performed in 40 cases (21.3%). The procedural success rate was 95% (38 cases). The mean diameter of the duodenal papilla tumor was 15.7 ± 2.2 and dilation of ≥15 mm was achieved in 56 (74%) of patients. Local corticosteroid injection (dexamethasone 5 mg) was performed at least once in 39 (52%) patients and in ≥52% of dilations also in 39 (52%) patients. The rate of complications was 13.3% (perforation (n = 9) and bleeding (n = 1)). Surgery was performed in 10 patients (13.3%) (refractory stricture and post dilation perforation (n = 3)). Improvement of dysphagia symptoms was only associated with the maximum dilation diameter (p = 0.026) and local injection of corticoids (p < 0.001) as was confirmed by binary logistic regression wherein both maximum dilation diameter (OR: 4.92, 95%CI 1.05–2.04, p = 0.027) and topical injection of corticosteroids (OR: 7.22, 95%CI 0.021–0.55, p = 0.007) were strongly associated with improved dysphagia scores.

Conclusion: In our study sample with multiple aetiologies of benign oesophageal strictures, only the maximum dilation diameter and local injection of corticosteroids were associated with improved clinical outcomes in patients undergoing endoscopic dilation of benign oesophageal strictures.

Disclosure of Interest: All authors have declared no conflicts of interest.
PROCEDURAL SKILLS (DOPS) FORMS IN ENDOSCOPY TRAINING

P1482 CHANGES IN SCORING OF DIRECT OBSERVATION OF DOPS scores for gastroscopy (n = 2296) and polypectomy (n = 370) in the 6-months before July 2016 (old DOPS) versus after (new DOPS) for trainees at early and late stages of training (p < 0.001). To allow analysis, the new DOPS rating scale was aligned to a 4-point scale, hence a score of 4 on new DOPS = Scores 3 or 4 on old DOPS, and scores on the new and old DOPS compared using the Mann-Whitney U-test. Results: P1717 DOPS (77.7% new and 22.3% old) were included for analysis. Overall, there were variations in distributions of all scores (p < 0.001) between forms (Figure 1). Compared to new DOPS, scores of 1 were underutilised on old DOPS (0.6% vs. 3.0%, p < 0.001). Frequencies of low scores (pooled scores of 1 & 2) were similar for gastroscopy (p = 0.53) 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 adenoma carries an increased risk of perforation compared to other locations in the upper or lower GI tract. Additionally in endoscopic resection of widespread adenomatia (Spiegelman III/IV) at the level of D2/D3 there is an increased risk of secondary perforation due to auto-digestion of the denuded duodenal wall by pancreatic enzymes and bile independent of the primary endoscopic resection method. We recently reported 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. Aims & Methods: From September 9th, 2015 to March 20th, 2017 endoscopic resection of widespread duodenal or papillary adenomatia 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 adenomatia were included (2x papilla, 3x D2/D3 extrapancreal adenomatia; 3x tubular; 2x HGIN, 1x LGIN). The macroscopic mean maximum diameter and perpendicular diameter of the lesions were 4 x 2.8 cm (largest 7.5 x 3.7 cm; smallest 2.2 x 1.8 cm). In all cases the implantation of a mini-vacuum sponge EsoVac reduced in volume to 1.2 x 1.5 cm (diameter, length) and suction tube; Braun Corp., Melsungen). Continuous suction was applied over several days (~125 mm Hg; ActiVac, KCI Medical, Wiesbaden) depending on the size of the resection area and healing status (m = 10 days, 4–14 days). An endoscopic/radiologic vacuum sponge exchange was performed every 3–5 days. In 4 cases additional atrumatic over-the-scope-clips (OTSC, Ovesco Tuebingen) were placed during the procedure and in 5 cases additional hemoclip were applied to secure the wall and for hemostasis. In 5/5 cases (100%) an excellent healing could be observed during follow-up. No patient had to be operated during or following the intervention (FU 2–14 mo.). In all cases the resection was curative with ‘en bloc’ resection, though in one case the specimen ruptured during retrieval into three parts (4x HGIN, 1x LGD, 4x R0, 1x Rx). In one case 10 days after resection an acute bleeding occurred with the need of endoscopic clipping and prophylactic radiologic coiling of the gastroduodenal artery with uneventful course. In a second case a minor bleeding occurred without necessity of transfusion during ablation of an OTSC three mo after the primary intervention. All patients were asymptomatic during follow-up.

Conclusion: The endoscopic resection of large duodenal adenomata in D2/D3 is feasible and was safe in our collective using the application of a duodenal mini-vacuum sponge with extended length of the suction tube and reduced in volume compared to a standard esophageal vacuum sponge. All authors have declared no conflicts of interest.

Aims and Methods: We used the UK trainee endoscopy database (JETS) to collect DOPS scores for gastroscopy (n = 1934), sigmoidoscopy (n = 517), colonoscopy
P1405 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 (Chorochane 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.

Conclusion: Our study suggests that endoscopic closure is a suitable treatment option for acute iatrogenic gastrointestinal perforations with a reasonable technical success. Further confirmation from prospective studies in human is needed.

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

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Introduction: Colorectal endoscopic submucosal dissection (ESD) is a technique with remarkably greater difficulty than upper gastrointestinal ESD because of unstable maneuvers and inherited anatomic variability in the colon. Thus, aiming at reducing these restrictions, we have used single balloon (SB) overtube to assist colorectal ESD in cases considered to have difficult operability. In this study, to evaluate the usefulness of a single balloon overtube to assist colorectal ESD.
Aims & Methods: The study included 35 patients with 39 colorectal lesions who underwent ESD (group SB) or ESD without SB (group NSB). The background of the patients in group NSB were corrected by using the propensity score matching method. The application of the combined use of SB was determined when the circumferential access to the lesion was difficult, and paradoxical movement was observed.

Results: The characteristics of the lesions in group SB were as follows: proximal, 28 (73.7%); distal, 11 (26.3%); mean size of tumors, 37.6 ± 9.8 mm; gross findings 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 (51 ± 17 min vs 106 ± 35 min; p < 0.05). No significant differences were found in en bloc resection, complete resection, postoperative bleeding, and perforation rates. No accidental symptom associated with balloon endoscopy was observed.

Conclusion: Using a balloon overtube can be expected to improve not only access to the lesion but also facilitate scope manipulation for colorectal ESD.

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

P1490 COMPUTER-AIDED POLYP MEASUREMENT OF 78 POLyps DURING LIVE COLONOSCOPY (CAPME): A PROspective STUDY

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Introduction: Polyp size measurement is an important outcome in current endoscopic practice. Polyp size estimation is mandatory to determine the surveillance interval after polypectomy and useful to anticipate and prevent complications in therapeutic procedures, for it has been proven that polyp size is one of the most important factor of complications (mucosal bleeding, perforation). Nevertheless, a high degree of subjectivity exists (especially overestimation of polyp size) in polyp size estimation because of a lack of validated and reproducible measurement methods. The aim of this study was to compare a computer-aided polyp measurement (CAPME) to an unassisted visual estimation (UVE) and an endoscopic reference measurement (ERM).

Aims & Methods: This prospective monocentric study was led between November 2015 and July 2016 in the University-affiliated Hospital of Clermont-Ferrand, the Blaise P1260cmvm (BPI) and the Image Science For Interventional Techniques (ISIT) research unit of Clermont-Ferrand (France). Video-endoscopic procedures were recorded and secondly used for the CAPME method. The endoscopic acquisition protocol was standardized with a slow back-and-forth movement of the endoscope and photography of each polyp was taken with an open biopsy forceps placed on the base of the polyp. ERM was then measured thanks to a simple rule of three knowing the fixed size of the open biopsy forceps (8 millimetres, mm). UVE was determined on the same photography without any measurement devices by two different endoscopists. All the measurements were realized blinded of the other results. Accuracy of the CAPME and UVE methods were defined by a variation less than 1 mm with the ERM. We used the Lin concordance correlation coefficient (CCC) to measure the agreement between the variables.

Results: 33 patients and 78 polyps were included in this study. The mean polyp size was 5.3 mm, with 73.1% (n = 57) of polyp less than 5 mm. The Lin CCC with the ERM was 0.972 (95% CI, 0.960–0.981; p < 0.001). Inaccuracy of polyp size estimation proportionally to polyp size (40.9% of inaccurate polyp measurement for polyps greater than 10 mm) and we observed a systematic overestimation of supracentimetric polyps for UVE method. Unlike UVE, CAPME accuracy was not impacted by polyp size variation in our study (11.1%; 14.7% respectively). Accuracy of the CAPME method was higher than UVE method (0.972 vs 0.960; p < 0.001). Agreement analysis showed a higher agreement rate for CAPME than UVE method (82.1% vs 63.4% respectively).

Conclusion: To our knowledge, this is the first prospective study with significant data analysing a computer-aided polyp measurement in live colonoscopic procedures. In our study, this methods shows more accuracy than the visual estimation, which is the actual gold standard. The main limitation of this study is the endoscopic protocol (back-and-forth movement of the endoscope) that increases the degree of subjectivity exists (especially overestimation of polyp size) in polyp size estimation. The use of DualFocus might be a solution to overcome this problem.

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

References

1 Haute Autorite de Sante - Quand faut-il faire une colonoscopie de controle apres une polypectomie?

P1491 USING THE MULTI-ASSISTANT RATING SCALE (MARS) FOR ENDOSCOPIC NON-TECHNICAL SKILLS PERFORMANCE: AUGMENTS USE OF STANDARD KEY PERFORMANCE MEASURES IN INDEPENDENT COLONOSCOPISTS

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Introduction: Endoscopic Non-Technical Skills (ENTS) are an essential component of high quality endoscopic practice. Giving information about performance of these skills in a fair and accurate way is a major challenge for assessment of ENTs. Against this background there are essentially 2 possible answers, which we explore in this paper. One possible solution is to obtain a consensus in the literature regarding the technique of anaesthesia/sedation method. The application of the combined use of SB was determined when the circumferential access to the lesion was difficult, and paradoxical movement was observed. 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 Cochran library and Embase were searched. Original articles or abstracts for congress in English were included. The author was sent to 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 longitudinal studies. In (10/18) 55.6% of cases, general anaesthesia was used according to the cases and clinician decision. A total of (10/18) 55.6% of the institutions used sedation instead of general anaesthesia. In (8) 44.4% of the institutions propofol was used in (8) 44.4% of the institutions. In (3) 16.7% of institutions, conscious sedation was used for polyps of >10 mm; 5–10 mm and <5 mm respectively.

Conclusion: The sedation strategy used in colorectal ESD in Western world is heterogeneous. Most institutions opt for deep sedation administered by anaesthesiologists within the endoscopy room. By and large, patients are admitted post procedure for observation. Greater sharing of experience is required to better understand and the optimal method of sedation for this technique within the context of western practice.

Disclosure of Interest: All authors have declared no conflicts of interest.
domains—Communication (COMM), Situational Awareness (SITA), Leadership (LEAD) for Decision-making (D&M). Each MARS domain was represented by 10 items and is assessed on a 7-point scoring scale – endoscopists should score >90 in each domain (80–90 = need for improvement, <80 = suboptimal performance). CIR and PDR measures are routinely calculated for all colonoscopists using the HICCS Electronic Reporting System with manual validation of these data. Feedback is presented on a quarterly basis to practitioners—endoscopists are expected to achieve 90% CIR and 20% PDR. Correlation of these factors with practitioners ENTS scores were measured using the Pearson test.

Results: 9 endoscopists with known variability in standard colonoscopy KPIs consented to an assessment of ENTS using the MARS tool. Their ENTS scores were correlated with existing KPIs for each colonoscopy (Oct 2016—May 2017), with an overall positive correlation between ENTS domains and CIR (COMM 0.58; SITA 0.66; LEAD 0.66; D&M 0.75) and PDR (COMM 0.49; SITA 0.55; LEAD 0.50; D&M 0.60). Three endoscopists were identified as having sub-optimal scores in all of the ENTS domains (operators 5, 7, 9). Taking into account important KPI thresholds 2 out of 3 (33%) of these endoscopists identified were not meeting CIR targets (c.f. 66% of ENTS competent group) and one (33%) did not meet PDR targets (c.f. 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 not as strong a representation of the MARS 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 COLONOSCOPY IN HOSPITALIZED PATIENTS

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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 hospitalization.

Aims & Methods: We performed a prospective, randomised endoscopy blinded clinical trial between February 2016 and January 2017 included. Our aim was to evaluate the impact of a visual educational booklet in the level of cleanliness achieved in hospitalized patients who are undergoing a colonoscopy. Hospitalized patients >18 years undergoing colonoscopy were included. Exclusion criteria were: previous colonoscopy in the last 3 years, previous colorectal, known inflammatory bowel disease, urgent colonoscopy, dementia or refusal to participate in the study. Both groups received 4L polyethylene glycol solution. The intervention consisted of a visual educational booklet (visual cohort). Demographic data, personal history, reason for admission and for colonoscopy, work shift in which it was performed, findings at endoscopy were collected. The Boston Bowel Preparation Scale (BBPS) was used to assess the bowel preparation. A BBPS score <6 or with at least one segment was considered a poor preparation.

Results: One hundred and thirty six patients were included, 51.5% were male, with a mean age of 64.3±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 71.6%. Most patients had hypertension (51.0%), diabetes (17.2%), 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 bowel cleansing. Attained factors that impacted on the level of well and properly prepared patients in the bivariable study were: age (62.1±18.7 vs 70.5±14.8; p = 0.019), diabetes mellitus (72.3±42.2% vs 0.024), hypertension (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). In the multivariable analysis the only factors associated with a poor bowel cleansing were age (OR 7.34; 4.60; p = 0.001), and colorectal cancer on colonoscopy (OR 3.82 (1.26–11.61); p = 0.018).

Table 1: Baseline characteristics, bowel cleansing and endoscopic findings.

<table>
<thead>
<tr>
<th>PATIENTS N = 136 (n)</th>
<th>Standard management (n = 70)</th>
<th>Educational booklet (n = 66)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>66.2 (36.8–78.4)</td>
<td>63.3 (33.0–78.3)</td>
</tr>
<tr>
<td>BMI (kg/m²)</td>
<td>26.9 (24.2–29.7)</td>
<td>26.9 (23.5–29.9)</td>
</tr>
<tr>
<td>Diabetes Mellitus 136</td>
<td>18 (25.71%)</td>
<td>19 (28.79%)</td>
</tr>
<tr>
<td>Hypertension</td>
<td>33 (47.14%)</td>
<td>33 (50.0%)</td>
</tr>
<tr>
<td>Smoking habit</td>
<td>19 (27.14%)</td>
<td>15 (22.73%)</td>
</tr>
<tr>
<td>Alcoholism (g/d)</td>
<td>8 (1.51%)</td>
<td>4 (21.21%)</td>
</tr>
<tr>
<td>Cardiovascular disease</td>
<td>11 (15.71%)</td>
<td>16 (24.24%)</td>
</tr>
<tr>
<td>Chronic kidney disease</td>
<td>5 (7.14%)</td>
<td>9 (13.64%)</td>
</tr>
</tbody>
</table>
Table 1 Continued

| PATIENTS N = 136 (n) | Standard management (n = 70) | Educational booklet (n = 66) | p  
|----------------------|-----------------------------|-----------------------------|-------
| Chronic Obstructive Pulmonary Disease (135) | 6 (8.70%) | 5 (7.14%) | 0.81  
| Obstructive Sleep Apnea Syndrome (136) | 6 (8.57%) | 3 (4.55%) | 0.34  
| Cirrhosis (136) | 2 (2.86%) | 3 (3.03%) | 0.95  
| Stroke (135) | 8 (11.59%) | 8 (12.12%) | 0.93  
| Mild dementia (136) | 3 (4.29%) | 1 (1.52%) | 0.34  
| Stroke (135) | 8 (11.59%) | 8 (12.12%) | 0.93  
| Cirrhosis (136) | 2 (2.86%) | 3 (3.03%) | 0.95  
| Apendicectomy (136) | 18 (25.71%) | 4 (6.06%) |  
| Need for diaper during admission (128) | 9 (13.64%) | 10 (16.13%) | 0.69  
| Colonrectal cancer | 8 (11.43%) | 8 (12.12%) | 0.90  
| Advanced Adenomas | 9 (12.85%) | 5 (7.57%) | 0.48  
| 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  
| Cecal intubation rates | 67 (95.71%) | 62 (93.94%) | 0.49  
| Other gynecological surgery (136) | 4 (5.71%) | 5 (7.58%) | 0.66  
| Hysterectomy (136) | 8 (11.43%) | 4 (6.06%) | 0.27  
| Umbilical herniorrhaphy(136) | 3 (4.29%) | 2 (3.03%) | 0.70  
| Hypertension (136) | 8 (11.43%) | 6 (9.09%) | 0.27  
| Caesarean (136) | 1 (1.45%) | 4 (6.06%) | 0.15  
| Other surgical interventions (136) | 4 (5.71%) | 5 (7.58%) | 0.66  
| Other surgery (136) | 21 (30%) | 29 (42.86%) | 0.18  

**Conclusion:** The use of a visual educational booklet for the preparation of colonoscopies does not provide a significant improvement in hospitalized patients in our health area. Heart disease and/or colon cancer were predictors of poor preparation for colonoscopy. An optimized preparation should be considered for this type of patients.

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

**References**


**P149 STUDY OF ULCERATIVE COLITIS COMPlicated BY PRIMARY SCLEROSING CHOLANGITIS**

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**Introduction:** Primary sclerosing cholangitis (PSC) is often associated with autoimmune diseases, and approximately 70% of PSC patients in Europe/United States and 32% in Japan also have ulcerative colitis (UC). While the complication of PSC is confirmed in about 5% of UC patients, the clinical features of UC associated with PSC differ from those of UC without PSC.

**Aims & Methods:** We investigated the clinical and colonoscopic features of patients with PSC and UC. We retrospectively examined the clinical features, including the clinical course and colonoscopic findings, of 25 colitis patients with PSC attending our hospital between 2000 and 2016.

**Results:** The male-to-female ratio was 12:13 and the age at diagnosis of PSC was 49 ± 15 years. PSC was the initial diagnosis in 12 patients (48%), while colitis was the first to be diagnosed in 4 patients (16%), and both diseases were found concurrently in 9 patients (36%). Among the 21 patients with the diagnosis of PSC concurrently, 12 patients (57%) had UC and the other 9 patients had nonspecific colitis (43%). Among the 24 patients in whom the disease extent was assessed, 22 had pancolitis, 1 had left-sided colitis, and 1 had proctitis. Inflammation predominantly affected the right colon in 20/22 patients with pancolitis and also involved the terminal ileum in 9 patients (45%). The Mayo score for colonoscopic evaluation of UC was 1 in 16 patients (64%), 2 in 8 patients (32%), and 3 in 1 patient (4%). There were no rectal lesions in 10 patients (40%). Liver biopsy was performed in 17 patients, and Ludwig’s stage was Stage I in 1 patient (6%), Stage II in 12 patients (71%), Stage III in 3 patients (18%), Stage IV in 1 patient (6%). Ludwig’s stage did not correlate with the Mayo score. All patients with PSC and enterocolitis received oral urso-deoxycholic acid (UDCA), including 13 patients with UDCA only (52%), 2 patients with combination of ursodiol and UDCA (8%), 5 patients in combination with 5-aminosalicylic acid (5-ASA) (20%), 2 patients in combination with prednisolone (PSL) (8%), 1 patient with the combination of PSL and UDCA (4%), and 2 patients with 5-ASA + PSL (8%). The UDCA dose was 100 mg in 2 patients (8%), 600 mg in 15 (60%), and 900 mg in 5 (20%).

**Conclusion:** In colitis patients with PSC, there was no clear association between colonoscopic disease activity and the severity of PSC. There was no sex difference and the age at diagnosis of PSC showed a bimodal distribution (30s and 60s). Pancolitis was very frequent and predominantly affected the right colon, but disease activity was low. Rectal lesions were mild or absent. About half of the patients had inflammation of the terminal ileum.

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

**Conclusion:** The use of a visual educational booklet for the preparation of colonoscopies does not provide a significant improvement in hospitalized patients in our health area. Heart disease and/or colon cancer were predictors of poor preparation for colonoscopy. An optimized preparation should be considered for this type of patients.

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

**References**


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 effective 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 over 9 periods of time. We have previously demonstrated that the ENTS questionnaire is a useful tool in identifying low performers and those requiring specific feedback. We also showed that feedback from endoscopy assistants is helpful in identifying actions to improve. The current study aimed to develop feedback formats which can be used in the ENTS domain feedback tool. To achieve this, we have designed a feedback table which caters for low, average, and high performance levels.

Example Feedback table - Situational Awareness Domain for Endoscopist 9

| SITA 1 | Pre-assessment of potential patient risks | GREEN |
| SITA 2 | Recognises problems in a timely fashion | GREEN |
| SITA 3 | Aware of working environment, minimises disruptions | GREEN |
| SITA 4 | Effectively troubleshoots technical problems that arise | RED |
| SITA 5 | Recognises and assesses pathological findings effectively | GREEN |
| SITA 6 | Reacts flexibly and effectively to unexpected or unforeseen circumstances | RED |
| SITA 7 | Aware of patient safety parameters during procedure, responds well | AMBER |
| SITA 8 | Considers other opinions and guidance when faced with an untoward event | AMBER |
| SITA 9 | Predicts well the likely outcome of a situation and plans for this eventuality | AMBER |
| SITA 10 | Constantly checks patient aiming to minimise procedural discomfort | AMBER |

Conclusion: The MARS tool is a practical way to measure ENTS performance allowing identification of an individual’s strengths and weaknesses and the provision 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 EXTENSIVE MANIPULATION
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Introduction: Substantial manipulation or sampling of large colorectal lesions prior to endoscopic resection can have significant effects on the feasibility and outcomes of endoscopic treatment. Failed attempts at resection and extensive sampling or tattooing into lesions prior to referral to a specialist centre are common in western practice. However, there are few data defining the scope of prior manoeuvres and the effects on outcomes following endoscopic resection. We examined the effect of significant prior manipulation on the feasibility and outcomes of endoscopic resection of complex colorectal neoplasms in a UK tertiary referral centre.

Methods: Consecutive patients who underwent endoscopic resection of colorectal lesions ≥2 cm were included. All lesions were assessed with magnification chromoendoscopy supplemented by colorectal ultrasound in selected cases. A lesion specific approach was used to decide on resection technique. Patients were grouped according to whether they had underperformed (5%) at resection, heavy manipulation (≥6 biopsies or tattoo into the lesion), or minimal sampling only (<6 biopsies). Outcomes included initial successful endoscopic resection, complications, recurrence and the need for surgery.

Results: Of 437 lesions ≥2 cm, 252 (58%) had been subjected to failed attempts at resection or heavy manipulation prior to referral. In 97 lesions (22%), an average of 1.5 (range 1-5) previous attempts at resection had been made. During 45 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 manipulation were more frequent (p = 0.022) with failed attempts at resection and minimal sampling (14% versus 5% and 3%, p < 0.001). Recurrence rates were 21.4%, 14.6% and 12.2% respectively (p = 0.07). 95% of patients without invasive cancer who had prior failed attempts at resection were salvaged by surgery.

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 endoscopy centre is associated with 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 NBI VERSUS BLI WHICH MODALITY IS BETTER FOR OBSERVATION OF MUCOSAL BLOOD FLOW IN THE SMALL AND LARGE BOWEL USING NBI (NARROW BAND IMAGING) OR BLI (BLUE LIGHT IMAGING)
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Introduction: In recent years, significant advances and innovations have been made in gastrointestinal endoscopy technology. The special light observation using a narrow band light source different from conventional white light is one such innovation. The special light observation with a magnifying procedure has more contributed to improve the diagnosis of lesions in the stomach, the intestines, the colon, the 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 use of blue laser imaging (BLI) by Fujifilm Co., Ltd. These systems are applied to magnifying endoscopy in clinical practice. Studies have examined the usefulness of magnifying observation with NBI (m-NBI), BLI (m-BLI), and new and brighter BLI (m-BLI bright) for the diagnosis of neoplastic diseases, especially for the early detection of gastrointestinal cancers. However, there are relatively few reports describing the application of these techniques to benign diseases.

Aims & Methods: This basic study aimed to explore the potential of magnifying observation with a blue 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-LI200ZP, a high-end instrument manufactured by Fujifilm Co., Ltd. (group F), CF-HQ290ZL, a high-end instrument manufactured by Olympus Co., Ltd. (group O1) or PCF-H290ZI manufactured by Olympus Co., Ltd (group O2). Each group consisted of 25 patients. The visualization of mucosal blood flow in the small and large bowel by magnifying endoscopic observation with a blue 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 endoscopy used in group F has a bright laser light source and maximum optical magnification levels up to 135 times and maximum electronic magnification levels up to 270 times. On the other hand, the endoscopes used in groups O1 and O2

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

Note: The above text contains numerous medical terms and technical specifications that may require specialized knowledge to fully understand. The content is presented as text, without any visual aids or diagrams.
and O2 have relatively dark xenon light sources and maximum optical magnifi-
cation of 110 times, respectively. Therefore, the differences in visualization of mucosal blood flow in the small and large bowel among the groups were considered to be attributable to differences in instrument efficiency.

Conclusion: Our results show that magnifying observation with BLI is superior to that with OFI 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 GERMINE MUTATION: A HETEROGENEOUS SUBGROUP OF PATIENTS

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Introduction: Multiple colorectal adenomas (MCRA) can be defined as an endos-}

Aspects of colorectal adenomas in 10 colorectal adenomas (MCRA) patients), without deleterious mutations of APC or MUTYH genes, were recruited for the study. Clinical features at diagnosis and extracolonic manifestations were reported. Forty patients underwent annual colonoscopy at our division with a median number of biopsies (range 1 to 30) taken from colonoscopy gastrodu-
denoscopies were also recorded. Eight patients were lost at follow-up.

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, larynx). Twenty-five pts (52%) needed surgery, ten underwent a subtotal coliec-
tomy 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 character-
istics to MUTYH associated Polyposis (MAP) affected patients. They were
generally diagnosed at a mean age of >50 years, they had more than 20 polyps (56.3%) at diagnosis, associated with ADC in 22.9% of the cases and required surgery in the majority of cases (52%). During follow-up, pts also developed recurrent adenomas. Clinical characteristics and family history in these patients support the hypothesis that pathogenic alterations in yet unknown genes may be involved. Next-generation sequencing is a promising technology aimed at this purpose. However, these patients should undergo a closer surveillance than those with sporadic adenomas.

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

P1500  EVALUATION THE RELATIONSHIP BETWEEN NUMBERS OF BIOPSIES PER CASE AND DEGREE OF FIBROSIS IN COLON

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Introduction: A degree of fibrosis on targeted lesions from one of the widely known factors which affects the results of Endoscopic mucosal resection (EMR) and Endoscopic submucosal dissection (ESD). Severe fibrosis is associated with com-

P1501  ADVANCED NEOPLASIA YIELD IN PATIENTS UNDERGOING COLONOSCOPY AFTER SCREENING FLEXIBLE SIGMOIDOSCOPY: DOES THE DISTAL COLON PATHOLOGY PREDICT THE YIELD IN PROXIMAL COLON?

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Introduction: Currently patients undergoing a screening flexible sigmoidoscopy (Bowel Scope) examination at the age of 55 are referred for colono-

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All other authors have declared no conflicts of interest.

Table 1 Continued

<table>
<thead>
<tr>
<th>Indication</th>
<th>Number of patients</th>
<th>Proximal Advanced adenoma</th>
<th>Proximal SSA/P</th>
<th>Proximal advanced adenoma</th>
<th>Proximal SSA/P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adenoma &gt; 1 cm</td>
<td>153</td>
<td>14.4%</td>
<td>5.5%</td>
<td>2.6%</td>
<td>1.5%</td>
</tr>
<tr>
<td>Villous features</td>
<td>189</td>
<td>14.3%</td>
<td>3.2%</td>
<td>0.5%</td>
<td>0.4%</td>
</tr>
<tr>
<td>High-grade dysplasia</td>
<td>169</td>
<td>36.4%</td>
<td>8.3%</td>
<td>0%</td>
<td>0%</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>1.6%</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 colonscopy 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. For adoption of optical diagnosis in clinical practice, colonscopists 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 an 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 THE TREATMENT OF 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 patients, 21 lesions were located in the colon, 9 located in the intraperitoneal rectum and 26 located in the extraperitoneal rectum. The tight adhesion of the lesion to the serosal layer was identified before 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 haematomata. 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 find it difficult to detach the colorectal neoplasm in ESD, we should take the training more. If there are lots of vessels and fibrosis in the submucosal layer, it is necessary to choose adequate tools. And if patients have complicated colon, suitable endoscope need to be selected. In such cases we always use DBE.

Aims & Methods: We evaluated the outcomes of colon ESD by using DBE (DBE-ESD). Short DBE we used were EC450B1, EN550Bi and EI80BT (Olympus Co., Tokyo, Japan). We’ve performed DBE-ESD on 213 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 horizontal and vertical position, we were able to get good working space. Therefore, DBE should be one option for difficult cases in ESD.

Disclosure of Interest: All authors have declared no conflicts of interest.
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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 of WT alone or in combination with the use of FUSE would be able to increase the ADR. In a prospective non-randomized observational study, consecutive outpatients, aged 18-85 yr, undergoing colonoscopy with different indications were enrolled. In phase 1, endoscopists performed 660 colonoscopies either with standard forward-viewing endoscope (SFVE) or with FUSE (n = 330) without a dedicated WT protocol. In this phase, colonoscopy WTs were measured without the endoscopists’ knowledge of being monitored. In phase 2, endoscopists were informed of being monitored and performed further 660 colonoscopies either with SFVE (n = 330) or with FUSE (n = 330).

Results: No differences were observed among the four arms in terms of demographic, clinical features, and indications to colonoscopy. WT was lower in phase 1 arms compared to phase 2 arms (SFVE: 267 ± 96 vs. 387 ± 65, p = 0.001; FUSE: 293 ± 112 vs. 430 ± 93, p = 0.001). When endoscopists were aware of being monitored and used full-spectrum endoscope we observed a higher ADR: phase 1 SFVE 27.3% (90) phase 1 FUSE 33.0% (109) phase 2 SFVE 33.6% (111) phase 2 FUSE 41.8% (138); p = 0.001 and adenoma per colonoscopy (APC) phase 1 SFVE 0.43 ± 0.85 phase 1 FUSE 0.5 ± 1.08 phase 2 SFVE 0.4 ± 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 sub-optimal WT, which increases with them aware to be monitored. Use of full spectrum scopes combined with WT monitoring results in increase of adenoma detection rate. In particular, monitoring WT increases the detection of adenoma in proximal colon, whereas the use of FUSE seems to increase the detection of adenomas in distal colon.

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

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Introduction: Systemic diseases including several types of cancer have been associated with periodontitis, potentially owing to the constant systemic inflammatory state in those patients. Data on a potential association of periodontal disease and colorectal neoplasia is scarce and conflicting.

Aims & Methods: Data from 25,407 patients undergoing healthy check up assessing periodontal disease according to 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 multivariable 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: 0.981; 1.247]. Regarding the prevalence of adenomas, patients with periodontal disease, likewise, had similar odds as those with healthy periodontal tissue [adjOR 1.010; 95% CI: 0.840; 1.213]. Similarly, those with periodontal disease had comparable odds for colorectal adenomas as those without signs of periodontal disease [1.055 (0.785; 1.418)].

In the table below the adenoma detection rate (ADR) and advanced adenoma detection rate (AADR) divided into the periodontosis-risk classes.

### Table 1: ADR (adenoma detection rate) and AADR (advanced adenoma detection rate) according to the periodontosis-risk classes

<table>
<thead>
<tr>
<th>PRC 0</th>
<th>PRC 1</th>
<th>PRC 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adenoma (ADR)</td>
<td>19.34%</td>
<td>19.56%</td>
</tr>
<tr>
<td>Advanced adenoma (AADR)</td>
<td>5.42%</td>
<td>6.1%</td>
</tr>
</tbody>
</table>

Conclusion: Periodontal disease has no impact on the adenoma and advanced adenoma detection rates in a large screening colonoscopy cohort.

Disclosure of Interest: All authors have declared no conflicts of interest.
P1508 OUTCOMES OF ENDOSCOPIC RESECTIONS OF LARGE NON-POLYPOID LESIONS IN INFLAMMATORY BOWEL DISEASE: A SINGLE UNITED KINGDOM CENTRE EXPERIENCE

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Introduction: Patients with colitis carry an increased risk for the development of dysplasia compared to those without 1. The SCENIC consensus statement recommends endoscopic resection of all visible dysplasia 2. Due to technical challenges and limited experience in the West of large colitis associated non-polypoid endoscopic resections, such patients are often subjected to colectomy. The King’s Institute of Therapeutic Endoscopy (KITE) is a tertiary centre for endoscopic assessment and resection of large/challenging colorectal polyps. Here we present the largest single-centre case series of large non-polypoid resections associated with colitis.

Aims & Methods: Adults with confirmed colitis (ulcerative colitis extending beyond the rectosigmoid junction and crohn’s colitis affecting at least the left colon) with lesions at least 20 mm in size within the colitis segment were included. Data including demographics, clinical history, lesion characteristics, method of resection and post-resection surveillance were collected prospectively in patients from January 2011 to November 2016. Resection techniques included endoscopic mucosal resection (EMR), endoscopic submucosal dissection (ESD) and hybrid ESD. Surveillance of resection site with magnification chromoendoscopy (mCE) was performed at 3 months with pan colonic mCE at 1-year post resection and annually thereafter.

Results: 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 microscopically 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 within 30 days post resection was 0%. Median follow up was 28 months (12-35) with no recurrence. Alternative site dysplasia was detected in 2 patients. All lesions were sub 20 mm and resected endoscopically. Two patients were referred for colectomy due to a concomitant diagnosis of neuroendocrine tumour and the second with alternate site advanced dysplasia.

Table 1: Baseline characteristics.

Patient Demographics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age at time of resection (mean, SD, range) (years)</td>
<td>57.31 +/- 12.7, 30-81</td>
</tr>
<tr>
<td>Male (%)</td>
<td>10 (77)</td>
</tr>
<tr>
<td>Female (%)</td>
<td>3 (23)</td>
</tr>
<tr>
<td>Clinical Data</td>
<td></td>
</tr>
<tr>
<td>Duration of disease (mean, SD, range) (years)</td>
<td>19.9, 14.2-1-50</td>
</tr>
<tr>
<td>Disease extent</td>
<td></td>
</tr>
<tr>
<td>Splenic Flexure (n) (%)</td>
<td>3 (23)</td>
</tr>
<tr>
<td>Pan-colonic/Extensive (n) (%)</td>
<td>10 (77)</td>
</tr>
<tr>
<td>Primary Sclerosing Cholangitis</td>
<td>3</td>
</tr>
<tr>
<td>IBD Medication</td>
<td></td>
</tr>
<tr>
<td>5-ASA* (n) (%)</td>
<td>11 (84)</td>
</tr>
<tr>
<td>Azathioprine (n) (%)</td>
<td>2 (15)</td>
</tr>
<tr>
<td>Biologics (n) (%)</td>
<td>1 (7)</td>
</tr>
<tr>
<td>ASA Physical Status Classification</td>
<td></td>
</tr>
</tbody>
</table>

Table 1 Continued

Patient Demographics

<table>
<thead>
<tr>
<th>Type</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASA grade II (n) (%)</td>
<td>7 (54)</td>
</tr>
<tr>
<td>ASA grade III (n) (%)</td>
<td>4 (31)</td>
</tr>
<tr>
<td>ASA grade IV (n) (%)</td>
<td>2 (15)</td>
</tr>
</tbody>
</table>

Conclusion: This cohort series demonstrates that endoscopic resection of large non-polypoid lesions in association with colitis is feasible using an array of resection methods, safe and has good long term outcomes in a western tertiary endoscopic centre.

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

References


P1509 RESEARCH ON APPLICATION OF TRANSANAL TUBE DECOMPRESSION FOR PREVENTION OF COMPLICATIONS IN COLORECTAL MUCOSAL LESIONS AFTER ESD

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Introduction: Endoscopic submucosal dissection (ESD) has been widely used in the minimally invasive treatment of early colorectal mucosa and submucosal lesions. This technique has made it possible to resect even large mucosal or submucosal lesions en bloc, and the recurrence rate is lower. However, due to the thinner colorectal wall and more abundant blood vessels, postoperative complications after ESD is higher in this site. As a result, how to prevent complications related to ESD for colorectal lesions has raised widespread concern. In recent years, more and more researchers placed transanal tube for patients with colorectal cancer resection or intestinal obstruction to promote the early discharge of the gas and liquid in the intestine. The efficacy of this method to reduce incidence of complications and to promote recovery of intestinal function have been verified by a number of studies. Based on this, we applied transanal tube to some patients with colorectal ESD, hoping to provide new ideas for the prevention and treatment of complications.

Aims & Methods: We aimed to evaluate transanal tube for prevention of complications in colorectal mucosal lesions after endoscopic submucosal dissection (ESD). Data of 61 patients with colorectal mucosal lesions undergoing ESD from January to December 2016 were reviewed. All patients were followed up and we analyzed the incidence rate of complications after ESD within one month.

Results: The median age of 61 patients was 61(32 ~ 83) years. 21 of all lesions were located at right-half colon, 9 at left-half colon and 31 at rectum. The mean diameter of the lesions was 3.26 ± 2.27 (0.8-12.0) cm. There were not intraoperative complications including serious bleeding and perforation. Delayed bleeding on the eighth post-ESD day was detected in 1 (1.6%) patient who was cured by transfusion. 3.4% 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.

References


References

P1510 OUTCOMES FOLLOWING UNDERWATER ENDOSCOPIC MUCOSAL RESECTION (UER) OF >10MM COLONIC POLYPS: A PROSPECTIVE DUAL-Centre STUDY
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Introduction: Underwater endoscopic mucosal resection (UERM) is an alternative to conventional EMR for the resection of colonic polyps. With this technique, water insufflation is used in place of air or CO2, and submucosal lifting is usually not required, as water-immersed submucosa cushions itself from the muscularis propria.1,2 Theoretically, this reduces the risk of diathermy-induced injury,1,3 and allows for more complete resection margins.1,2

Aims & Methods: In this prospective dual-centre study, we aim to evaluate the safety and efficacy of UERM for clinically significant (>10 mm) colonic polyps. Studied outcomes included: 1) completeness of UERM, 2) intraprocedural 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 chi2 to identify predictors of measured outcomes.

Results: Between June 2014 and March 2017, and A total of 85 patients (median age 69.5 years, interquartile range [IQR] 11, 50.6%) male underwent UERM 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 17.3%. Histology comprised of: low-grade dysplasia (80.2%), high-grade dysplasia (12.5%), adenocarcinoma (3.1%) and non-dysplastic sessile serrated polyp (4.2%). Overall, resection at index UERM 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 1.13–9.38, p = 0.011), but not morphology (flat vs. sessile, p = 0.099). The 30-day complication rate was 4.1% (n = 4), comprising of: 3) intraprocedural 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-UERM, the rate of recurrence or residual polyp was 14.8% (6/42) at 4 months and 11.59 (22.0%) within 1 year. Significant predictors of post-UERM recurrence included: piece-meal vs. en bloc resection (OR 5.59, 95% CI 1.10–27.6, p = 0.03) and previous polyp (OR 4.17, 95% CI 1.02–17.05, p = 0.04), but not polyp size, site, morphology or dysplasia status, use of submucosal lift, APC, patient age, or study centre. Conclusion: UERM is a safe alternative to conventional EMR for the management of clinically significant colonic polyps. However, our post-UERM recurrence rate of 22.0% appears higher than other studies,1,2 but may be skewed by the tertiary nature of referrals. Although randomised trials are awaited, we strongly suggest that those performing UERM 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 a 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 each water-aided colonoscopy in the past decade. Study 2: 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. Results: After calculating the proportion of patients with different modes of sedation, respondents selected yes (1) or no (0) responses to each of 16 questions related to their practice of water-aided colonoscopy.

Results: Study 1: In the past decade, 48 trials of water-aided colonoscopy were registered at Clinicaltrial.gov. They aimed at evaluation of insertion pain in unsedated, minimally sedated, or on demand sedation patients; assessment of efficacy in difficult colonoscopy; study of the impact on adenoma detection; and underwater mucosal resection or polypectomy. Study 2: Questionnaire responses are summarized in Table 1. Respondents: n = 23. Water-aided colonoscopy is used in patients sedated with propofol, minimal sedation on demand or sedation (3–16%) but more commonly in patients with moderate or no sedation (30–34%). During insertion 95.5% use infusion of water and only 36.4% leave the air/CO2 pump on. 42.9% and 33.3% record volumes infused and suctioned upon arrival to the cecum. 52.4% remove almost all infused water during insertion. 71.4% and 59.1% performed polypectomy (<20 mm and >20 mm, respectively) underwater during withdrawal.

Table 1A: % of respondent’s patients

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Sedated with propofol</th>
<th>Received minimal sedation</th>
<th>Are unsedated</th>
<th>Receive on demand sedation</th>
<th>Receive moderate sedation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>16 (30)</td>
<td>11 (19)</td>
<td>34 (35)</td>
<td>5 (3)</td>
<td>30 (39)</td>
</tr>
</tbody>
</table>

Table 1B: Proportion of respondents using the following approaches (%)

<table>
<thead>
<tr>
<th>Approach</th>
<th>Insertion</th>
<th>Withdrawal</th>
<th>Insertion</th>
<th>Withdrawal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infuse water during</td>
<td>95.5</td>
<td>36.4</td>
<td>90.0</td>
<td>95.5</td>
</tr>
<tr>
<td>Leave air/CO2 pump on</td>
<td>36.4</td>
<td>90.0</td>
<td>36.4</td>
<td>95.5</td>
</tr>
</tbody>
</table>

Conclusion: The variable modes of application amongst respondents who profess to use water-aided colonoscopy reflect the versatility and strength of the paradigm-changing approach, which is easily adaptable to meet the diverse needs of individual colonoscopists. Standardization based on results of randomized controlled trials appears to be prudent to permit further assessment of water-aided colonoscopy in clinical, educational and research settings.

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

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P1512 ENDOSCOPIC SUBMUCOSAL DISSECTION: RESULTS AND LEARNING CURVE OF A LARGE PROSPECTIVE SERIE OF 183 CASES IN THREE CENTERS
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Introduction: Endoscopic submucosal dissection (ESD) is a suitable technique used for the endoscopic management of selected early gastrointestinal neoplasms (EGN).

Aims & Methods: This is a prospective study of patients with EGN eligible for ESD in three tertiary hospitals. The main goal was to evaluate initial therapeutic results and learning curve of ESD. Initial Technical success rates, procedure speed, en-bloc & R0 resection, R0, speed and complications rates were prospectively evaluated. The results of the learning curve were analyzed by chronological order of bocols of 50 cases. Perforation was established as any disruption of the muscular layer, regardless of size or identification of peritoneal fat. Time of procedure was considered from initial submucosal injection to final detachment of the specimen.

Results: ESD was attempted in 183 lesions from January 2012 to April 2017. Majority of procedures were performed at Puerta de Hierro University Hospital (160/187%). Mean age was 67 (SD 10.6) years, with male proportion 55.2%. Most common location was colorectal (77.8%), followed by gastric (12.8%) and esophageal (9.4%). Success was observed in 96.2% of patients with en-bloc and R0 resection of 93.9% and 92.3% respectively. Mean lesion size was 46.5 mm (range 8–130) with a mean speed of 9.01 min/cm2 (range 1-209). Perforation was...
the main complication (48 (26.2%) events), requiring surgery in 5 (10.4%) cases. Perforation was statistically significant to location (p = 0.05) and LST morphotype (p = 0.05). Most frequent location of perforation was transverse colon (OR 88.3; SE 37.0), followed by descending colon (OR 13.5; SE 19.4) and splenic flexure (OR 6.3; SE 11.8). Perforation was more common in LST-NG lesions vs LST-G (OR 141.5; SE = 19.3 vs 11.6 SE 15.0). Perforation rates were not statistically associated with the presence of severe submucosal fibrosis compared to absence of fibrosis (0.8 SE 0.6 vs 1 SE 1 p = 0.9). Post-ESD complications were observed in 15 (8.2%) patients (delayed perforation(7), bleeding(4), electrocoagulation syndrome(1), severe esophageal strictures(1), haemopterontium(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 block) 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 blocks. 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 (96.9%). Surgery was required for severe complications, incomplete ESD and/or perforation (n, %) (16 cases, 8.7%).

Conclusion: On clinical ESD, high rates of success and en-bloc and R0 resection can be achieved along the learning curve. Perforation is the most common complication and is still a challenge for Western countries. However, increasing experience reflects a high success in endoscopic management of perforation.

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

References

Endoscopic submucosal dissection: European Society of Gastrointestinal Endoscopy (ESGE) Guideline

PI1513 ENDOSCOPIC SUBMUCOSAL DISSECTION FOR COLORECTAL LESIONS: THE EXPERIENCE OF A UK TERTIARY REFERRAL CENTRE

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Introduction: Despite the advantages of endoscopic submucosal ressection (ESD) demonstrated in large series from the far east, the procedure is not commonly practiced in the west and its role in standard practice is still debated. Although limited evidence regarding its efficacy in European practice is emerging, very few centres in the United Kingdom perform ESD regularly, if at all. We report the experience of a UK tertiary referral institution using ESD as part of a lesion specific, pragmatic approach to endoscopic resection in a complex patient cohort.

Methods: Consecutive patients who underwent endoscopic colorectal lesions were included. Lesions were assessed with magnification chromoendoscopy supplemented by colonoscopic ultrasound in selected cases. A lesion specific approach was used to decide on resection technique, which included assessment of morphology, pit pattern, risk of submucosal invasion, and presence of submucosal fibrosis or scarring. ESD was used where en bloc resection was deemed essential, and should be managed in a tertiary institution. Although there is a significant risk of stenosis, it appears that most cases are asymptomatic and spontaneously improve with expectant management.

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

References

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. Clinico pathological 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. 1 patient developed a post-ESD haemorrhage, which was successfully managed expectantly.

Conclusion: The majority of patients with these extensive complex lesions can successfully be treated with endoscopic resection and avoid surgery. However, these patients have a significantly greater risk of complications and recurrence and should be managed in a tertiary institution. Although there is a significant risk of stenosis, it appears that most cases are asymptomatic and spontaneously improve with expectant management.

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

References
Lambert CL et al. (2006) Endoscopic management of colorectal cancer involving more than 75% of luminal circumference. Gastrointest Endosc 64:1089–96.

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 UNIT

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Introduction: There is limited evidence regarding the efficacy in European practice is emerging, very few

Methods: Consecutive patients who underwent endoscopic resection of colorectal lesions were included. Lesions were assessed with magnification chromoendoscopy supplemented by colonoscopic ultrasound in selected cases. A lesion specific approach was used to decide on resection technique, which included assessment of morphology, pit pattern, risk of submucosal invasion, and presence of submucosal fibrosis or scarring. ESD was used where en bloc resection was deemed essential, 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.

Abstract: PI1512
N = 183

Colorectal location (n, %)
1–50
51–100
101–150
151–183
Total (n, %)
40/50 (80%)
42/50(84%)
34/50(68%)
25/33(76%)
141/183(77%)
47/50 (94%)
46/50(92%)
50/50(100%)
33/33(100%)
176/183(96.2%)
47/50 (94%)
46/50(92%)
50/50(100%)
33/33(100%)
172/183(93.9%)
45/50 (90%)
45/50(90%)
48/50(96%)
31/33 (94%)
169/183(92.3%)
7.68 (5.02)
15.3(57.8)
6.7(5.5)
6.5(5.1)
9.0(19.1)
16/50 (32%)
13/50(26%)
9/50(18%)
10/33(30.3%) 48/183(26.2%)
2/16 (12.5%)
2/16(12.5%)
9/50(18%)
2/10(20%)
5/48(10.4%)
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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.

P1517 OUTCOMES OF ENDOSCOPIC RESECTION OF RECURRENT COLORECTAL LESIONS TREATED AT A UK TERTIARY REFERRAL CENTRE

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Introduction: Endoscopic resection of large colorectal lesions, especially by piecemeal EMR, carries a significant risk of recurrence. Although several series examine the outcomes and risk of recurrence following endoscopic resection, few focus on the outcomes of patients being treated for recurrence after initial expert resection, and these mostly focus on one technique to deal with recurrence. We evaluated the outcomes after recurrence of colorectal lesions after apparent successful endoscopic resection in a specialised UK tertiary institution employing a range of resection techniques.

Aims & Methods: Consecutive patients who underwent endoscopic resection of colorectal lesions ≥2 cm were included. All lesions were assessed with magnification chromoendoscopy supplemented by colonoscopic ultrasound in selected cases. A lesion specific approach was used to decide on resection technique. Outcomes were evaluated for patients treated for recurrent lesions.

Results: Of 396 colorectal lesions ≥2 cm initially resected, recurrence occurred in 48 patients. 36% of these patients had already had a mean of 1.6 previous failed attempts at resection prior to referral to our institution, and 66% had had either a failed attempt at resection or extensive sampling involving ≥6 biopsies or tattoo placed under the lesion. 69% of patients were successfully treated with further endoscopic resection and avoided surgery. 27 recurrent lesions larger than 20 mm were treated with endoscopic resection, with a mean lesion size of 48.3 ±/̇19.0 mm. Techniques used were EMR (n = 16), ESD (n = 2), Hybrid ESD and EMR (n = 9). The remaining lesions <2 cm were resected using EMR. A mean of 1.4 ±/̇0.75 procedures were required to achieve successful endoscopic treatment of recurrence. Of 23 patients who were ultimately successfully treated with endoscopic resection, 15 required a single further endoscopic resection after recurrence, 8 patients required 2 or more further resections. 8 patients required surgery, 3 as a result of developing invasive adenocarcinoma with the recurrence. There were no perforations as a result of endoscopic resection of recurrent lesions, and only one patient was readmitted with post-procedural bleeding which was managed conservatively.

Conclusion: These data demonstrate the challenges of an advanced endoscopic resection service in much of western practice where patients with recurrent lesions represent a particularly complex cohort, most of whom have already had extensive prior manipulation or attempts at resection. Familiarity with a range of resection techniques and appropriate equipment is essential to successfully treat recurrent lesions in this group with endoscopic resection, which can be achieved in the majority of patients without significant morbidity.

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

P1518 THE EFFECTIVENESS OF NEW TECHNIQUE WITH SELF-EXPANDABLE METALLIC STENT INSERTION IN TREATING RIGHT-SIDED COLONIC OBSTRUCTION

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Introduction: Self-expandable metallic stent (SEMS) is widely used to treat malignant colonic obstruction. However, most reports about SEMS insertion have represented a particularly complex cohort, most of whom have already had extensive prior manipulation and technical and clinical success, complications, and technical difficulties were analyzed. We compared the results between SEMS insertion and decompression tube placement in right colons and the outcomes of SEMS insertion between right- and left-sided colonic obstructions.

Results: Cannulation time with a curved type guiding tube decreased of all cases (20 mm vs 8.5 mm). For ascending colons, the technical and clinical success rate of SEMS insertion with new technique significantly 100% (10/10). There was no...
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.

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**References**


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**References**

All investigated purgatives met the required quality standards of

Conclusion:

90% according to the actual ESGE guidelines (Kaminski et al., 2014). Bowel preparation influences the adenoma detection rate (ADR). Single variate analysis showed evidence of an increased risk of residual neoplasia at surveillance endoscopy. The recording of the quality of the bowel preparation was described as one of the important quality parameters in endoscopy. 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 among 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 important quality parameters in endoscopy. 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 among 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 important quality parameters in endoscopy. 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 among private practices and hospitals.

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

References

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All authors have declared no conflicts of interest.

P1522 QUALITY IN BOWEL CLEANSING, PERFORMANCE MEASURES AND PATIENT SATISFACTION USING DIFFERENT PUGRATIVES 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 experi-

P1524 DIFFERENCES IN QUALITY OF BOWEL PREPARATION AT SCREENING COLONOSCOPING 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 among 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 important quality parameters in endoscopy. 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 among private practices and hospitals.

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

P1523 DIFFERENCES BETWEEN BOWEL PREPARATION QUALITY OF SURVEILLANCE AND SCREENING COLONOSCOPY


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Introduction: Clinical bowel preparation is necessary for a successful and complete colonoscopy. Minimum of adequate rate (excellent + good + fair) should be 90% according to the actual ESGE guidelines (Kaminski et al., Endoscopy 2017). The aim of study was, to verify if there is a difference at quality of preparation between screening and surveillance colonoscopy. It might be that there is an improvement at surveillance colonoscopy due to better knowledge.

Aims & Methods: 107,614 examinations from 288 endoscopists were analysed between 2012 and 2017 within the Austrian certificate of screening colonoscopy. For this analysis different categories were included: excellent, good, fair, unsatisfactory, poor only in the right colon. Data are shown as Mean and SD. Results: 8578 surveillance colonoscopies (43.88% female, mean age 66.67) and 99271 screening colonoscopies (51.94% female, mean age 62.31) were included. Within screening colonoscopy 37.59% (SD = 31.50) were excellent prepared vs. 34.60% (SD = 33.98) within surveillance colonoscopy, good 47.43% (SD = 27.28) vs. 45.61% (SD = 31.28), fair 11.39% (SD = 11.58) vs. 14.39% (SD = 21.69), poor 2.38% (SD = 3.06) vs. 3.68% (SD = 9.75), unsatisfactory 0.77% (SD = 1.20) vs. 0.89% (SD = 3.69), poor only in the right colon 0.69% (SD = 1.81) vs. 0.39% (SD = 1.22). Calculations revealed no significant differ-

Aims & Methods: This prospective non-interventional study compared bowel preparation quality according to the Harefield Scale, performance quality mea-

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 adenocarcinoma. 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 presence.

Aims & Methods: This retrospective study in a high-volume tertiary-referral center examined patients who had undergone EMR between 2013 and 2015 and who had had at least 1 surveillance colonoscopy after the initial treatment. LRN was defined histologically as the presence of neoplastic tissue in the post-EMR site. Results: 160 laterally spreading tumors were diagnosed in 138 patients (62% men, mean age 67 years). Mean follow-up interval for surveillance colonoscopy was 6 months. Residual neoplasia at surveillance endoscopy was present following 21% of EMRs. Single variate analysis showed evidence of an increased risk of residual neoplasia for LST ≥ 20 mm (p = 0.006), villous adenomas (p = 0.001), pimecellar 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 colonoscopic surveillance after EMR and the use of new methods to further reduce residual neoplasia are needed.

Disclosure of Interest: All authors have declared no conflicts of interest.
P1527 BOWEL PREPARATION FOR FLEXIBLE SIGMOIDOSCOPY: COMPARISON OF POLYETHYLENE GLYCOL ELECTROLYTE SOLUTION (PEG-ES) AND PHOSPHATE ENEMA IN 4,949 PATIENTS AT TWO UK HOSPITALS

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Introduction: Flexible sigmoidoscopy is increasingly used to optimise the diagnostic yield of the test, and also to minimise the number of repeat procedures. However, the optimum bowel preparation for this procedure has consistently been debated.1-3

Aims & Methods: Both phosphate enema and (PEG-ES) are commonly used for bowel preparation in flexible sigmoidoscopy at both hospitals participating in this study. We therefore wanted to compare the outcomes for these two methods. We retrospectively reviewed all the patients who underwent flexible sigmoidoscopy from January 2014 to December 2016 using each hospital’s electronic system. 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 ≥10mm) and CRR.

Results: 30 patients submitted to IRA were included (50% women), with a mean age of 43 years, 2 patients with attenuated phenotype. Nine patients had adenocarcinoma in the resected colon. Six patients started chemoprophylaxis after surgery (sulindac-4; celecoxib -1). The median time to adenoma appearance was 5 years (95% CI 3.4-6.6) and to HRA/CRR 12 years (95% CI 5.2-18.8), with a decreased median time to both adenomas and HRA/CRR in patients under chemoprophylaxis. The cumulative risk of adenomas was 20% at 1 year after surgery, 34.1% at 3 years and 57.4% at 5 years. During the follow up period CR were developed in 17 patients (56.7%) HRA–12 patients (40%); intramuscular carcinoma–2 patients (6.7%); invasive adenocarcinoma–3 patients (10%). None of the patients died with CR. 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 colonic resection prior to surgery (p = 0.008) and a higher number of adenomas resect in the rectal remnant (p = 0.017).

Conclusion: The CAP endoscopic surveillance program allowed detection of HRA/CRR in a high percentage of patients. Based on these results, an intensive surveillance program should be suggested but endoscopic surveillance intervals widen in the first 5 years after surgery.

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

References

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. An adequately performed endoscopic submucosal dissection (ESD) is now the only acceptable option for the management of these lesions outside referral centers are reported in the literature.

Aims & Methods: Aim of present study is to evaluate the management of endoscopic resection of LCLs and intra-procedural complications in a real-life setting. In a prospective, multicenter, observational study in 20 centers, data from consecutive endoscopic resections of LCLs performed over a 6-month period were collected by a web-database. All patients undergoing LCLs resection were enrolled at procedure-time and followed-up at 15 days for adverse events and at 6 months for endoscopic/histological recurrence.

Results: 1453 LCLs (mean size 30.6 mm, SD 12.4; 41.4% lateral spreading tumor, 28.1% sessile, and 30.5% pedunculated) were removed 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%, underwater 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 antithrombotic, 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 poly size (Odds Ratio 1.02 95% Confidence Interval 1.01–1.04), and inversely with execution of pre- and post-resection prophylaxis maneuvers (Odds Ratio 0.55 95% Confidence Interval 0.37–0.82 and Odds Ratio 0.55 95% Confidence Interval 0.37–0.82 respectively). As concerns
complications, delayed bleeding occurred in 4.5% of the subjects, whereas per- formed colonoscopies in 1.5% (0.9% early and 0.6% delayed) of patients, 86.7% of whom were successfully managed endoscopically. At the moment, 6-months follow-up is available for 35% of the patients, with a positive endoscopic and/or histological recurrence documented in 22.8%.

Conclusion: The management of resection of LCLs varies widely. The incidence of intra-procedural bleeding correlates with polyp size and prophylactic maneuvers, and its endoscopic management is successful in most of cases. Overall, complication rate is marginal and efficacy is good, even in a real-life setting.

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

Reference

1. Ferlitsch M, Moss A, Hassan C, et al. Colorectal polypectomy and endo-
scopic mucosal resection (EMR): European Society of Gastrointestinal

Results: We included 1721 endoscopic procedures of polypectomy and EMR, corresponding to 1250 patients; 64.5% (n=910) of patients were aged 65 years and over; 1381 (80.2%) sessile polyps, 153 (8.9%) flat lesions and 187 (20.9%) pedunculated polyps were identified, with a mean size of 7.9 ± 7.0 mm. Regarding sessile and flat polyps, one of the recommended excision techniques was performed in: 84.6% (n=270) of ≤3 mm polyps (75.7% in 2011 vs. 95.8% in 2016; p < 0.001); 22.2% (n=109) of 4–5 mm polyps (12.5% vs. 36.5%; p < 0.001); 13.4% (n=59) of 6–9 mm polyps (5.4% vs. 23.8%; p < 0.001); 100% (n=206) of 10–19 mm polyps; and 100% (n=88) of ≥20 mm lesions. For pedunculated polyps, the excision technique was adequate in: 99.3% (n=134) of polyps of size ≤20 mm (100% vs. 97.6%; p > 0.05) and in 84.6% (n=44) of those ≥20 mm (82.6% vs. 86.2%; p > 0.05). Overall, 52.3% (n=900) of endoscopic procedures of polypectomy or EMR were performed as recommended; 42.7% (n=410) in 2011 vs. 64.5% (n=490) in 2016; p < 0.001.

Conclusion: Even before publication of the European recommendations, there has already been an increase in the proportion of polypectomies performed ade-
quately in the different groups of lesions. There is still a need to adjust clinical practice in some subgroups, especially in polyps of size 4–9 mm, in order to strictly comply with the recommendations.

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

Reference

1. Ferlitsch M, Moss A, Hassan C, et al. Colorectal polypectomy and endo-
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Conclusion: Even before publication of the European recommendations, there has already been an increase in the proportion of polypectomies performed ade-
quately in the different groups of lesions. There is still a need to adjust clinical practice in some subgroups, especially in polyps of size 4–9 mm, in order to strictly comply with the recommendations.

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

Reference

1. Ferlitsch M, Moss A, Hassan C, et al. Colorectal polypectomy and endo-
scopic mucosal resection (EMR): European Society of Gastrointestinal
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 OCCLUSIVE COLRECTAL CANCER AS PALLIATIVE TREATMENT

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Introduction: Colorectal cancer (CRC) is one of the most common malignancies in Western countries, with associated occultive disease being relatively common. Endoscopic placement of self-expandable metallic stent (SEMS) is the first-line palliative treatment for malignant bowel obstruction.

Aims & Methods: Evaluate the outcome of endoscopic SEMS placement in CRC obstruction. Retrospective analysis of patients CRC submitted to endoscopic placement of SEMS from 2009 to 2016 in the Gastroenterology Department of Centro Hospitalar do Algarve. Statistical analysis was performed with SPSS version 23.

Results: The study included 23 patients with CRC obstruction, who were submitted to endoscopic SEMS placement, with a mean age of 75.2 ± 13.47 years. The stents were placed with a palliative purpose in 69.6% of cases (n = 16) and a transitory procedure before surgery in 30.4% of cases (n = 7). Technical and clinical success was found in 91.3% of the patients, without any recorded death during the procedure. In patients whose goal was palliative treatment (75% men and 25% women) they had a mean age of 81.6 ± 9.28 years. In 43.8% of the patients the tumor was located in the rectum, 31.6% in the sigmoid region and 25% in the recto-sigmoid transition. Being the majority (75%) well differentiated. There was a need for dilatation in 31.3%, most of the stents were uncovered (56.3%), 25% of the patients had complications. After stent placement, almost 25% of the patients died. 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 malignant lesions, 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 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 aimed to evaluate the outcomes of EMR for large colorectal adenomas and identify the risk factors for adenoma recurrence. We did a prospective study of the colorectal EMR performed between January 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 ≥20 mm in size were removed by EMR with associated polyps (mean age 68 years). 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 polyectomy 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 ≥40 mm in size (p = 0.0001) 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-hundred one-hundred and sixty-six patients (mean age: 60.66 ± 5.86 years, 69.1% men) who underwent a baseline colonoscopy with ≥adenomas and/or ≥10 mm between 2007–2012 were included. A Kaplan-Meier regression and a comparative subgroup analysis by Long-Rank test were carried out to determine the impact of real times in adenoma detection rate.

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.

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3. Torrella Cortes1, E.A. Conclusions: The real follow-up times in ≥3 adenomas (n = 853, 73.18%) and ≥10 adenomas ≥10 mm (n = 779, 66.81%) were 38.54 ± 11.57 and 38.66 ± 11.68 months. The risk of advanced lesions were 0.26%, 1.46%, 2.26%, 0.93% and 10.38% (n = 121 advanced lesions) in 12, 24, 36, 48 and ≥60 months respectively. The most important increase was at 3–4 years (10.52%). The proportion of advanced lesions within 1–2 adenomas and ≥3 adenomas subgroups at 48 months were 5.43% and 10.43% (p < 0.0001), with no differences in small adenomas < ≤10 mm (p = 0.478).

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 submucosal dissection (ESD) for advanced neoplasia (i.e. submucosal invasion) remain elusive. Large sessile and flat lesions are difficult to remove en bloc with ESMC, resulting in a higher level of tumor recurrence. Thus, endoscopic resection of large (>2 cm) sessile and flat malignant lesion with snare or EMR is not recommended in men and locoregional submucosal dissection (ESD) results in high mucosal resection rates of large (>2 cm) 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 large 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, Sweden from January 2014 to December 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 comorbidity excluding surgery. In this study, we included 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 Ia, 6 cases), sessile (Paris classification Ia, 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 (4%). In order to complete the resection, R0 was achieved after an en bloc resection of 89 min (range 59–594 min). Macroscopic complete resection was obtained 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 invasion was seen in 6 cases (21%), R1 was found in 3 (10%) as follows; Sm1: 15, Sm2: 7, Sm 3: 7. In total four suspected immediate perforations occurred, three of these were managed conservatively (clips, fasting and antibiotics) and in one case, ESD was aborted and the patient was taken to emergency surgery. Pathological assessment of the resected sigmoid segment revealed T3N0. No acute significant bleeding occurred during the procedures. One patient sought emergency care 12 days after the procedure with rectal bleeding, no colonoscopy was performed to determine the site of bleeding. Five patients underwent additional surgery since the pathological report stated that the resection was R1. Tumour residue was only found in one of the five resected specimens. 18 patients have undergone endoscopic follow up, to this date without any sign of recurrence. Two patients await surgery and three patients with endoscopic follow up, to this date without any sign of recurrence.

**Conclusion:** We herein present our findings on performing ESD on 29 patients with early CRC. Our results indicate that colorectal ESD is a safe and effective treatment in meticulously chosen patients even with malignant lesions. Further studies with a longer follow up is needed.

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

P1537 **TRENDS IN STATISTICS REGARDING EFFECTIVE ELECTRIC ERCP PROCEDURES IN THE VENETO REGION: A RETROSPECTIVE STUDY BASED ON ADMINISTRATIVE DATABASES**

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**Introduction:** Since its introduction in 1968, Endoscopic retrograde cholangiopancreatography (ERCP) has become a highly effective procedure used to diagnose and to treat conditions associated to the pancreatobiliary system. It is nevertheless associated to the highest risk of complications of all routine endoscopic procedures. It is important to have a thorough understanding of the potential complications and the adverse events that may be associated to ERCP procedures so that these may be managed appropriately should they occur. The aim of this study was to examine the trends in ERCP usage here in the Veneto Region (Northeastern Italian area) and, in particular, the complications and mortality rate associated to it.

**Aims & Methods:** Utilizing an anonymous database of hospital discharge records referring to the period between 2007 and 2015, a retrospective study was carried out to examine the complications associated to ERCP. All of the elective hospitalizations for gallstones in the bile duct during which the procedure was carried out within two days of being hospitalized were examined. Hospitalizations for neoplasms were not considered. The study considered the onset of complications or death as outcome indicators as well as the patients’ post-procedure 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 performed more than 100 ERCPs per year. The mean sex ratio was 1.3, the mean age was equal to 68.3±14.2 (range 6–98 yrs), was higher in the males (69±1.49 vs. 67.5±13.5); significant differences were present throughout the period examined. 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 subjects (110±13.9 vs. 4.2±1.8 days, p<0.05), the within hospital mortality was 4.1% (13 cases) and there was a 6.1% of deaths due to complications. As far as the post-procedure hospital stay was concerned, in 55% of the cases, the discharge of patients within a two day period was more frequent in those assisted in public hospitals (OR:1.55;IC95%:1.21–1.90 p<0.05) in which 90% of the activities were performed and came out differently related to their characteristics. The stratification of complications according to the type of hospital (range 2–17%) did not show any significant differences. In particular, the type of hospital and the type of complication of the hospital can be attributed to the effectiveness of the regional hospital organization characterized by a capillary network of specialists capable of performing complex 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.

P1536 **ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD) VS HYBRID DISSECTION: WHICH TECHNIQUE TO FAVOR IN LARGE COLORECTAL LESIONS?**

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**Introduction:** Large colorectal lesions (> 20 mm) can be removed endoscopically by endoscopic mucosal resection (EMR), often in a piecemeal fashion resulting in low en bloc and radial (R0)-resection rates. In this context, submucosal dissection (ESD) allows en bloc resection whatever the size, but still remains technically difficult and time consuming. A hybrid endoscopic technique has been developed, called simplified or hybrid dissection. The aim of our study was to evaluate the effectiveness and the complications of endoscopic dissection by hybrid technique compared to classical endoscopic submucosal dissection.

**Aims & Methods:** Our study was carried out from January 2013 to June 2016 from a prospective database. The 40 lesions removed by hybrid technique were compared to 109 lesions removed by classical ESD technique. The procedures were performed as follow: submucosal injection around the lesion of macromolecules, circumferential mucosal incision and submucosal dissection using the tip of a single-strand snare by endoscopic mode, central submucosal injection of the lesion and final resection with the single-strand snare, if possible in en-bloc.

Patient characteristics, tumor location and size, dissection characteristics, "block" resection rate, R0 resection rate (healthy margins), procedure and hospitalization time, and complications were identified and compared with the so-called "classical" ESD technique.

**Results:** Lesions were more frequently located in the colon (vs rectum) in the hybrid dissection group compared to the ESD group (72.5% versus 28.6%, p<0.001). The mean lesion size was 13 mm in the hybrid dissection group vs 10.4 mm in the ESD group (p=0.6). The mean size of the lesions was lower in the hybrid dissection group than in the ESD group (32.4 mm±13 mm compared to 54.4 mm±26.7 mm, p<0.001). An en bloc resection was performed in 52.5% and 84.4% in the hybrid dissection and ESD group, respectively (p<0.001). The procedure time (including general anesthesia time) was lower in the hybrid dissection group compared to the ESD group (103 min±62 min vs 191 min±73 min, p<0.001, respectively). The hospitalization time was lower in the hybrid dissection group than in the ESD group (1.1 days±1.13 days vs 2.8 days±1.8 days, p<0.001). R0 resection rates were lower in the hybrid dissection group than in the ESD group (47.5% and 61% respectively, p<0.001). Hybrid dissection was performed for adenocarcinoma, adenoma with high grade dysplasia and adenoma with low grade dysplasia in 12.5%, 42.5% and 40%, respectively. The rate of adenocarcinoma was lower compared to the ESD group (12.5% versus 30.8%, p=0.009). In the hybrid dissection group, the rate of perforation was lower than the ESD group (5% versus 20%, p=0.001). There was no statistical difference between the R0 resection rates in the bleeding (1.8% in the hybrid dissection group and 2.5% in the ESD group).

In case of complication, there was no need of surgical treatment in the hybrid dissection group, but was needed in one patient in the ESD group.

**Conclusion:** Hybrid dissection is less effective in terms of en bloc resection of large colorectal tumors. Classical endoscopic submucosal resection should be preferred, especially in case of suspected adenocarcinoma despite longer procedure and hospitalisation time.

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

P1538 **EFFECT OF OBESITY, DIABETES AND DIABETES MELLITUS ON THE RISK OF POST-ERCPC PANCREATITIS**


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**Introduction:** Risk factors for post-endoscopic retrograde cholangiopancreatography pancreatitis (PEP) have been widely investigated. Nevertheless, studies focusing in metabolic conditions especially obesity, dyslipidemia and diabetes mellitus (DM) are still limited by the frequency of PEP 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
Disclosure of Interest: All authors have declared no conflicts of interest.

P1539 PLACE OF ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY (ERCP) IN THE MANAGEMENT OF HEPATIC HYDATID DISEASE

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Introduction: Hepatic hydatid disease (HHD) is a major endemic health problem in certain areas of the world such as Tunisia. Intrahepatic rupture of a hepatic hydatid cyst is a common complication ranging between 3 and 17%. Furthermore, biliary leakage is the most frequent postoperative complication following surgery for hydatid cysts of liver. Both conditions require endoscopic biliary drainage.

Aims & Methods: The aim of this study was to assess the results of ERCP in patients with HHD. We retrospectively analyzed the results and complications of all ERCP performed for HHD whether before or after surgical treatment over a 10 years period [January 2007 - December 2016] and carried out at the gastroenterology unit of our hospital.

Results: Sixty seven procedures were included (mean age 40.4 years [15-82] and sex ratio male/female [31:36]. Of the 67 procedures, 58 (86.6%) were performed in patients who had undergone previous surgery. The indications of the ERCP were persistent external biliary fistulae in 77.6%, overflow obstruction or cholangitis due to residual materials within bile duct in 20.7% and secondary biliary strictures in 1.7%. In patients who had not undergone previous surgery (13.4%), the indications of the ERCP were cholangitis due to intra-biliary rupture of hydatid cyst in 44.4% associated with acute pancreatitis in 55.6%. The cannulation of the papilla was impossible in 6 cases (8.9%) and the endoscopic sphincterotomy (ES) could not performed. When papilla cannulation was obtained, per endoscopic cholangiographic findings were: dilation of the biliary tract (21.3%) with filling defects of varying size and shapes (52.5%), leakage of contrast medium into the cyst cavity (41%) and distal strictures (3.3%). ES was then performed in all cases with satisfactory results. Thus, hydatid membranes (36%) or daughter cysts (1.6%) encountered in bile ducts have been emptied out in 93.4% by biliary occlusion balloon and/or Dormia basket. Nevertheless, two patients required biliary stenting due to the bile leakage and two others required nasobiliary drainage. One patient presented post ERCP pancreatitis (1.5%).

Conclusion: ERCP is a safe and effective way to manage biliary complications of HHD. In most patients, ES is the most efficient treatment of postoperative external biliary fistulae, jaundice and accompanying cholangitis. In some cases, biliary stenting or nasobiliary drainage may be required.

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

References
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 trans-hepatic cholangiodrainage (PTCD) at the University Medical Centre 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 (OR 0.30; 95% CI 0.10-0.97; p = 0.018) and higher pre-interventional serum-bilirubin levels (OR 0.88; 95% CI 0.76-0.98; p = 0.037) were less likely to achieve remission. The most informative bilirubin cut-off to predict the outcome was 5 mg/dl. This cut-off maintained a significant association with outcome in the multivariate model (OR 0.30, 95% CI 0.08-0.95; p = 0.049). In the ERCP-subgroup, dilatation with a higher maximal balloon-diameter was associated with a favourable outcome (p = 0.043).

Conclusion: Both ERCP and PTCD can provide long-term benefit in patients with BTC after LT. However, patients with NAS and requirement of PTCD had less favourable outcomes. The pre-interventional bilirubin level was a valuable parameter to identify patients at risk of treatment failure. Larger ERCP balloon diameters may benefit remission.

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

P1543 RESULTS OF THE FRENCH NATIONAL OBSERVATIONAL STUDY CONCERNING THE PRACTICE OF PROGRESSIVE BASED CONFOCAL ENDOMICROSCOPY (CELLVIZIO®)
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Introduction: Confoal endomicroscopy is an endoscopic imaging technique permitting the microscopic analysis of the digestive mucosa in real time (esophagus, stomach, duodenum, colon, biliary tract and pancreas) due to injection of fluorescein which is a intravascular contrast. The aim of this national observational study under the guidance of SFED is to evaluate the practice of confocal endomicroscopy in France, specifically its indication, histologic correlation, therapeutic benefits depending on the operator and complications.

Aims & Methods: We executed a multicentric observational prospective study from September 2013 to February 2015. Collection of data was based on a standardized collection sheet. All patients were treated on performing confocal endomicroscopy. The intravenous injection of fluorescein was given either in bolus or in a perfusion method at a dilution of 1 or 10%. Demographic, clinical, endoscopic and endomicroscopic data were collected. For each act the correlation of 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 performed in 12 centers. The main indications were: diagnosis and monitoring of Barrett esophagus 28% (111/399), surveillance of gastritis 4% (16/399), characterization of colorectal polyp and searching for dysplasia in IBD patients 17% (68/399), undetermined biliary stenosis 11% (42/399), pancreatic cysts 30% (123/399) and other rare cases (lymph nodes characterization, lymphoma, GIST, celiac disease, control post mucosectomy of gastric and duodenal polyp) 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 favorable for three main indications: Barrett’s esophagus (especially for targeting biopsy), serious 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) represents 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
P1546 ASSOCIATION BETWEEN PREDICTIVE FACTORS AND RADIATION DURATION OF ERCP: COMPARISON BETWEEN CONVENTIONAL AND DOUBLE-BALLOON ENTEROSCOPY-ASSISTED ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY

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Introduction: The technical and therapeutic success rates of ERCP in patients with altered GI anatomy who underwent DBE-ERCP at our institution between February 2011 and March 2017. The primary endpoint was the global success rate defined as successful cannulation of the native papilla or successful biliary access at the same procedure. Immediate complications were observed in 8 cases (8%), 6 of them (6%) were bleeding. All were successfully controlled, and none of the patients required blood transfusion or repeated endoscopy.

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

Results: As a result of analysis of the 892 ERCPs performed during 4 years, the mean duration of fluoroscopy time was 5.52 mins (95% CI, 5.15–5.93). Mean radiation duration were as follows: CBD stones (n = 511, 5.76 mins); malignant stenosis of bile duct (n = 189, 5.78 mins); pancreatic disease (n = 95, 5.28 mins); benign stenosis of bile duct (n = 51, 5.32 mins); and peripapillary stenosis (n = 189, 5.32 mins).

Discussion: 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 pancreaticobiliary disorders will be also measurable.

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 universal acceptance of 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 the specific procedure. The endoscopists should be aware of the 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.

P1548 ASSOCIATION BETWEEN PREDICTIVE FACTORS AND RADIATION DURATION 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 fluoroscopy has positive relationship with radiation exposure, it makes a risk of the development of cancer and other radiation toxicity. The increasing exposure of patients and endoscopists to radiation is concerning.

Aims & Methods: The aim of our study was to evaluate of predictive factors of radiation exposure to the patients and endoscopists during procedure as determined by radiation dose in dose area product (DAP), absorbed dose (AD) and fluoroscopy time. And we correlated them with age, sex, body mass index, diagnosis, duration of procedure, procedure name and procedure complexity.

Results: A total of 153 ERCP procedures were carried out in 103 patients with SMGA (mean age: 75.4 ±11.3 years, men:80.6%). The breakdown of surgical procedures were: Billroth I-17.7% (n = 80), Billroth II-11.0% (n = 51), Roux-en-Y-8.7% (n = 9); post-duodenopancreatectomy-2; gastric sleeve-1. We decided to develop a web-based registry which is easy to use and captures relevant procedure related information. The primary aim of the registry is to monitor relevant outcome data of ERCP.

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

P1549 DOUBLE-BALLOON ENTEROSCOPY FOR ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY IN PATIENTS WITH SURGICALLY ALTERED UPPER GASTROINTESTINAL ANATOMY

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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 upper gastrointestinal anatomy. We studied the feasibility and efficacy of DBE-ERCP at our institution.

Aims & Methods: This is a retrospective study of all patients with surgically altered GI anatomy who underwent DBE-ERCP at our institution between February 2011 and March 2017. The primary endpoint was the global success rate of DBE-ERCP. The secondary endpoints were: (1) the success rate of enteroscopy defined as reaching the desired postsurgical anatomical target, (2) 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 m DBE with a 2.7 cm 2.0 mm of operating channel (EN-450 T5, or EN580F Fujinon inc Saitama Japan).

Results: A total of 12 patients (sex ratio1/1) with a mean age of 65 [47–82] underwent 14 DBE-ERCP. 7 patients had Roux-en-Y gastro-jejunostomy with a bilio-jejunostomy had Roux-en-Y with a native papilla, and 1 patient had a Billroth II gastric bypass. Enteroscopy success rate was 93% (13/ 14 procedures). The diagnostic success rate was 85% (11/13 procedures) with 4/5 of native papillae. Therapeutic interventions including sphincterotomy (n = 4), biliary stone extraction (n = 4) and biliary dilation (n = 2) were needed in 8/11 procedures and their success rate was 100%. The global success rate of DBE- ERCP was 78% (11/14 procedures). Our results were comparable to those of the literature (global success rate of 82%). The only complication was one case of superficial intestinal lacerations without perforation (complication rate 7%).

Conclusion: DBE-ERCP in patients with surgically altered GI anatomy is a safe and efficient procedure with a global success rate of 78%. Using shorter enteroscopes with wider operating channel in the future might improve the success rate of the technique.

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

Reference

P1549 NEEDLE-KNIFE SPHINCTEROTOMY (NKS) VERSUS TRANSPANCERIC 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 technique for difficult cases is transpancreatic sphincterotomy. Both situations are well known as Post-ERCP pancreatitis risk factor (2). To best of our knowledge only few studies compared success rate and adverse events in these techniques (3–7).

Aims & Methods: We aimed to compare the efficacy and safety of NKS comparing to TPS in difficult biliary cannulation We conducted a bibliographic search using PUBMED, EMBASE including 2 RCTs and 4 non randomized trials from January 2000 to December 2016. OR using the Manthel-Haenszel method was used for dichotomous variables. Quantitative synthesis was performed using Review Manager version 5.0. Primary outcome was success rate. Secondary outcomes were rate of overall complications, and pancreatitis. Clinical heterogeneity was assessed by I² value, where a value exceeding 50% was indicative of heterogeneity. A random effect model was used in case of heterogeneity. A previous study had suggested that TPS might be as effective as double guidewire cannulation (DGW) technique in achieving biliary cannulation in difficult cases and has a lower pancreatitis rate. [1].

Aims & Methods: The aim of this study was to review the practice, complications and outcomes of TPS in University Hospital of North Tees (district general hospital in the north-east of UK). All ERCP procedures between January 2014 and October 2016 were reviewed. Endoscopy reports, blood results and discharge letters were used for data collection.

Results: 1365 ERCP procedures were performed in the study period. Overall CBD cannulation rate was 91.3%, 105/1365 (7.7%) were guided TPS procedures were performed. Mean age 67.7 years (range 20–99). 67 patients (50%) were male and 64 (47.4%) were female. Mean CBD diameter was 10 mm (range 5–16 mm). Indications for TPS were: (1) Therapeutic success rate regarding complete clearance of the bile duct. Statistical analysis revealed that success rate was 100%. The global success rate of DBE-ERCP was 78% (11/14 procedures). Our results were comparable to those of the literature (global success rate of 82%). The only complication was one case of superficial intestinal lacerations without perforation (complication rate 7%).

Conclusion: DBE-ERCP in patients with surgically altered GI anatomy is a safe and efficient procedure with a global success rate of 78%. Using shorter enteroscopes with wider operating channel in the future might improve the success rate of the technique.

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

Reference
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 Reference stones 7–15 mm can be successfully removed by using retrieval balloon or lithotriptor combined with balloon dilator. Most intermediate CBD stones 7–15 mm was balloon dilator combined with retrieval balloon. In most patients who underwent endoscopic extraction by using a retrieval balloon combined with balloon dilator (Group 5). The success rate in this group was 90% for a mean stone diameter of 14.8 mm with a mean CBD diameter of 12.4 mm. In Group 6 we included cases which required combined techniques (≥ 7.8). We observed a mean stone diameter of 9.4 mm with a mean CBD diameter of 13.8 mm in patients solved endoscopically, compared to those referred to surgery who had a mean stone diameter of 14.2 mm with a mean CBD diameter of 14.3 mm (P < 0.001). In this group the success rate was 67.2%. Overall, we had a success rate of 91.3% for endoscopic removal of choledocholithiasis with a mean stone diameter of 7.1 mm and a mean CBD diameter of 12.1 mm, compared to 3.8% of cases referred to surgery with a mean stone diameter of 13.6 mm and a mean CBD diameter of 14.3 mm (P < 0.001).

Conclusion: The most successful endoscopic method to remove large stones ≥15 mm was balloon dilator combined with retrieval balloon. Intermediate stones ≤15 mm can be successfully removed by using retrieval balloon or lithotriptor or a combination of basket with retrieval balloon ≥ balloon dilator. Most CBD stones <7 mm were successfully removed by using basket. In conclusion, any diameter >7 mm will most probably require more elaborate techniques.

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

Reference

A698 United European Gastroenterology Journal 5(3S)

P1552 DICLOFENAC AND Iodomethacin 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 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 prophylaxis 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) for relevant articles was 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/CIs):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 higher risk of PEP (P = 0.6231). The effect of the rectal administration of indomethacin or diclofenac was not significant (P = 0.1507), but rectal route was effective (P = 0.0005) with a NNT of 19. The administration of indomethacin or diclofenac was avoided in patients with renal failure. Substantial adverse events were not detected.

Conclusion: The use of rectally administered inexpensive and safe diclofenac or indomethacin before or closely after ERCP is recommended in every patient (without renal failure) undergoing ERCP.

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

References


P1553 RECTAL DICLOFENAC AND PANCREATITIS AFTER ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY
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Introduction: Rectal diclofenac or indomethacin reduces the risk of pancreatitis after endoscopic retrograde choledangiopancreatography (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 1534 ERCPs performed at the Hospital Clínico Universitario between 2009 and July 2016 was collected. The median age of the patients was 75 years old (between 12 and 102 years). 54% were male and 45.9% were female. 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 data were similar in age, sex, suspicion of Oddi sphincter dysfunction, recurrent acute pancreatitis, chronic pancreatitis, cannulation time, use of pre-cut, previous PEP, dilation 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 7.8% in the patients who did sphincterotomy in the Diclofenac group (p=0.004). 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%.

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When taking only patients with de novo sphincterotomy, there was no difference between the number of PEP between the two groups being 4.4% in those treated with Diclofenac versus 4% in the untreated patients. In those patients who were cannulated Wirsung, an incidence of PEP of 8.2% was observed in the group treated with Diclofenac, compared to 6% in the control group (p=0.006). There were not 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 CANCER BY USING THE DEEP LEARNING TECHNOLOGY

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Introduction: The confocal laser endomicroscopy (CLE) is of two types, an endoscope-based CLE (eCLE), which is integrated in the tip of the endoscope, and a probe-based CLE (pCLE), which goes through the accessory channel of the endoscope. The biliary tract, which cannot be reached by using eCLE, is observable with pCLE by using 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 histologic 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, MA, U.S.A). 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%, and 90%, respectively. Although the negative-diagnostic value was good, the pCLE image was thought to have a characteristic suitable for CAD by using deep learning technology. However, many false-negative diagnose with a probability 1.0 may have occurred owing to deflection and the lack of learning sets. To improve this situation, a set of images was added to the learning set.

Conclusion: Automated diagnosis of bile duct cancer can be achieved by using the deep learning technology of pCLE imaging. Our CAD system will be improved with the appropriate learning sets.

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, controversy still remains that which EUS-TS techniques would result in better acquisition of core tissue and diagnostic accuracy.

Aims & Methods: The aim of our study was to evaluate EUS-TS techniques with a ProCore needle using suction and slow pull suction for solid pancreatic lesions with the use of endoscopic ultrasound-guided fine needle aspiration (EUS-FNA). Patients who referred to EUS-TS for pancreatic mass were enrolled. We performed EUS-guided fine needle biopsy (EUS-FNB) using a ProCore needle (Cook Medical, Limerick, Ireland) with two needle passes and applied each pass of different techniques (suction or slow pull suction) which were randomly allocated. EUS-TS specimens were evaluated by one experienced cytopathologist who was blinded to applied techniques. The acquisition of core tissue and diagnostic performances were compared between two techniques.

Results: From Aug. 2014 to Dec. 2016, 94 patients with pancreatic mass were enrolled and 12 patients were excluded due to no final diagnosis (n = 5), cystic lesion (n = 5) and loss of follow up after EUS-TS (n = 2). Finally, 82 patients (48 males; median age, 63 years) with 164 needle passes were included without technical failure and procedure-related adverse events. The median size of the lesion was 15 mm (range, 11 to 31 mm). There were 31 pancreatic cysts and 14 benign lesions. Overall core tissue acquisition and diagnostic accuracy was 84.8% (139/164) and 73.2% (120/164), respectively. There was no significant difference between suction and slow pull suction in the acquisition of core tissue (85.4% vs. 84.1%, p = 1.000) and diagnostic accuracy (72.0% vs. 74.4%, p = 0.860).

Conclusion: Although our study revealed no differences between EUS-TS techniques in the core tissue acquisition and diagnostic accuracy for pancreatic solid lesions, further prospective study including variable lesions and sizes of needle is needed to validate for optimal application and sequences of EUS-FNB techniques.

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

P1560 EUS-GUIDED GALLBLADDER DRAINAGE FOR ACUTECHOLECYSTITIS 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 endoscopic centers by 4 experienced endoscopists (≥50 EUS-FNB performed yearly), by using the NAGI-stent. Each attempt to access the gallbladder was firstly performed from the transduodenal position and resulted successful in 13 (81%) patients, whilst a transgastric approach was preferred in the remaining 3 patients. Two different approaches were performed for the EUS-guided gallbladder puncture: a) a 0.035-inch wire was advanced through a 19G-needle into the gallbladder and dilation of the access was achieved with a 10 Fr cystoenteroscope; b) a 0.035-mch wire was advanced through a 10 Fr cystoenteroscope directly, a 26G-needle, and a 10 Fr cystoenteroscope were advanced 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, 7 months and one for chronic 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 safe 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 ENDOSCOPIC ULTRASOUND FINE NEEDLE ASPIRATION FOR SOLID PANCREATIC MASSES: A SYSTEMATIC REVIEW AND META-ANALYSIS BASED ONRCTS

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P1562 OUTCOMES AND LEARNING CURVES OF EUS-GUIDED GALLBLADDER DRAINAGE: A CADAVERIC MODEL

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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: Aims & Methods: We aimed to evaluate the technical feasibility of EUS-guided gallbladder drainage (EGBD) in cadaveric specimens. Using a linear EUS scope, the interface between the head of the pancreas and the duodenal wall to increase the physical distance between the head of the pancreas and the duodenal wall. A novel, injectable hydrogel, synthesized as iodinated polyethylene glycol microparticles, has been FDA-approved for use as a soft tissue fiducial marker. The hydrogel remains stable for 3 months and is absorbed by 7 months. To date, there has been no reports on the technical feasibility of endoscopic ultrasound (EUS)-guided hydrogel injection into the interface between the head of the pancreas and the duodenal wall to increase the peri-pancreatic space for the course of radiotherapy.

Aims & Methods: We aimed to evaluate the technical feasibility of EUS-guided hydrogel injection into the interface between the head of the pancreas and the duodenal wall in a cadaveric model. Baseline CT was performed on three unfixed cadaveric specimens. Using a linear EUS scope, the interface between the head of the pancreas and the duodenal wall was identified in a cadaveric model. A 19-gauge FNA needle was used to inject the hydrogel into the peri-pancreatic space with creation of a visible separation between the duodenal wall and the pancreatic parenchyma. The procedure was repeated along the length of the head and uncinate of the pancreas. CT was performed post procedure to confirm location and to measure the distance created between the duodenum and pancreas. Gross dissection of the pancreas and duodenum was performed to evaluate localization of the hydrogel.

Results: All three cadavers underwent successful EUS-guided hydrogel injection into the interface between the head of the pancreas and the duodenal wall. Recurrent cholecystitis occurred in 1 patient (2%) during follow-up. When comparing the first 25 procedures to the subsequent 25 procedures, significant differences were observed in the procedural time [29.21 (10.65) vs 15.6 (1.66) minutes, P < 0.001], the need of an additional stent [24% vs 0%, P = 0.022] and hospital stay [7.76 (5.13) vs 5.75 (5.50) days, P = 0.090]. While there were no differences in the technical and clinical success rates and adverse events.

Conclusion: EGBD is a safe and effective method for achieving gallbladder drainage in patients that are at high-risk for cholecystectomy. Performance of 25 procedures are required to gain competency in the procedure.

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 64.3 years old and 42% were male. 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.

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.

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P1564  EX-VIVO RADIOFREQUENCY ABLATION OF PORCINE LIVER: A PROSPECTIVE STUDY OF EFFICACY OF A NEW SYSTEM

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Introduction: There are few published studies about the use of a novel radiofrequency (RF) system (EUSRA RF needle; VIVA RF generator; STARmed Co., Ltd.) in pigs. With poor standardization of the procedure in terms of ablation powers and ablation times, resulting in great heterogeneity of the results.

Aims & Methods: To standardize the radiofrequency ablation (RFA) procedure using this 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 Forniacci excisional dose scheme, used in phase I studies. We registered macroscopically: the size (millimeters) of the global treated area and the size of the coagulative necrosis, coagulating the insertion point of the needle deflection (A zone) with a maximum diameter of 4 millimeters and a surrounded larger area of "diaphanization" (B zone), showing mild signs of cellular alterations (cytoplasmic hypochromia) without cellular necrosis. A zone sizes didn’t change among different ablation times (mean size: 3.25 mm) while B zone diameter increased with the increase RF application at the fixed power of 10 W. At the microscopic analysis the pathologist didn’t see any difference in size of coagulative necrosis among the different ablation powers (R = 0.24).

Conclusion: With this new system is feasible and effective to produce very small areas of coagulative necrosis (millimeters) well-demarcated in respect to the surrounding parenchyma and could be useful, in the future, to treat, with multiple passes and higher precision, target lesions with a flexible needle. Moreover, the system can produce larger zones of mild cellular alterations at lower ablation powers (10 W), increasing with the increase 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 ENDOSCOPIC ULTRASOUND IN PANCREATIC CANCER: A CASE SERIES

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Introduction: Malignant associated thromboembolic disease (TED) has a complex multifactorial pathogenesis. Tumor cells activate platelets and express procoagulant factors including tissue factor and thrombin; in addition, normal host tissues express procoagulant activity in response to the tumor. Thrombotic risk varies substantially according to cancer location and pancreatic cancer is one of the leading causes. The clinical spectrum includes migratory superficial thrombophlebitis, arterial thrombosis, deep venous thrombosis, portal vein thrombosis and disseminated intravascular coagulation. We report here to assess the role of endoscopic ultrasound (EUS) diagnosing TED in pancreatic cancer patients.

Aims & Methods: We 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, 46-81). In 1 patient the EUS indication was a large abdominal mass whose origin was not clear, in the remaining 4 the indication was the pancreatic neoplasm. In all of them was performed EUS with fine-needle aspiration (EUS identified a superficial bulbar lesion (PE) and 1 inferior vena cava 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>
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<td>Adenocarcinoma</td>
<td>Yes</td>
<td>70</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 importance of a systematic, station approach EUS technique, namely in the mediastinum regardless the clinical indication. TED is a common complication of pancreatic cancer and has major therapeutic and prognostic implications.

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

References

P1566  THE ROLE OF EARLY ENDOSCOPIC ULTRASOUND FOLLOWING TRANSDOMINAL ULTRASOUND IN PATIENTS WITH SUSPECTED BILIARY COLIC

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Introduction: Cholecodolithiasis is the most common cause of biliary pain, leading to hospital admission. Patients affected by cholecodolithiasis presents an incidence of cholecodolithiasis ranging from 8% to 20%. When the suspicion of choledocholithiasis is confirmed, stones should be removed by ERCP, but this operative measurement is associated with high rates of adverse events as post-ERCP pancreatitis, bleeding or perforation. A correct diagnosis of cholecodolithiasis, before ERCP, is mandatory to decrease the operative risk and health care costs. Endoscopic ultrasound (EUS) has a high sensitivity and specificity in the diagnosis of CBD stones and could substitute other imaging modalities as CT-scan or MRCP, when indicated.

Aims & Methods: The aim of our study was to assess the role of early EUS (<48 hours), in patients undergo ERCP in emergency room for suspected biliary colic.

We retrospectively evaluated all the patients admitted at first aid for suspected biliary colic (i.e. right upper quadrant pain and/or epigastric region, associated with an elevation in serum ALT, AST, GGT, ALP, or total bilirubin, but in absence of amylase or lipase elevation). All patients, irrespective of the finding at the US, performed an EUS within 48 hours since admission. Data are presented as proportions with 95%-CI and mean±standard deviation (SD). Correlation between categorical variables was evaluated by computing the “phi” coefficient. We computed the number needed to misdiagnose, i.e. the number of patients who need to be tested in order for one to be misdiagnosed by the test, as 1/(1-diagnostic accuracy).

Results: Overall, from January 2016 to December 2016, 88 patients (56% female; mean age 64 ± 17 years) were admitted to our hospital for suspected biliary colic. All the analyses were run with RStudio (version 1.2.5042). Further, US documented common bile duct (CBD) stones in 58 (65%) patients, CBD sludge in 4 (5%) patients, whereas no cholecodolithiasis was found in 26 (30%) patients. At EUS examination CBD stones were found in 70 (80%) patients. Comparing US to EUS, US gave false negative results in 16 (18%) cases and false positive findings (i.e. identifying CBD stones not documented by EUS) in 8 (9%) patients. The two diagnostic procedures showed little correlation (phi = 0.289). The number of
patients needed to be tested by US in order to provide an incorrect diagnosis was 3.7 (95%CI: 2.6–5.5).

References

P1568 ENDOSCOPIC ULTRASOUND-GUIDED RENDEZVOUS GUIDES 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 scan were included. EUS-FNA(one pass) and CH-EUS-FNA (one pass) were performed randomly in each patient 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), chronic pancreatitis (n = 2) and other pancreatic mass (n = 1). The lesions were located in the head of the pancreas (60%), body (32%) and tail (8%). The diagnostic sensitivity and specificity based on core histology was 89% and 94% in the CH-EUS-FNA passes and 86% and 91% in the EUS-FNA passes 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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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 (VCE) provides better localization of bleeding when compared to clinical symptoms alone.

Methods: We recruited patients with inflammatory bowel disease (IBD) from a tertiary center. CDAI was taken to be significant.

Results: Out of 31 patients screened, 24 were eligible, and 22 completed the study. Disease severity was assessed by the capsule endoscopy Crohn’s Disease activity index (Cedcadi) score. MH was defined as Cedcadi score < 3.

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unknown whether fatigue affects the accuracy of SBCE reporting and how many SBCE readers can be used 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 the influence of fatigue on the accuracy of SBCE interpretation and how many cases can be read before accuracy declines.

Results: In keeping with existing literature, high intra-reader variability amongst the participants was observed, with experienced readers reaching kappa values of 0.51 with the gold standard and 0.08 amongst novices. As 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 assessed 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 analyzed as a whole. The accuracy of experienced readers decreased after just one study read, from 38% to 27% and plateaued thereafter. Novice readers demonstrated no significant change in accuracy at the time points with 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 as well as increased inconvenience for the patient. Same-day CCE may offer a more convenient and cost-effective mode of colonoscopic examination post IC.

Aims & Methods: We aimed to determine the feasibility of same-day CCE post incomplete colonoscopy (IC) in consecutive patients. Patients were selected without a contraindication to CCE with an IC for reasons other than poor bowel preparation. Of 84% (n = 34) of patients deemed to be excellent in 16% (n = 15), inflammation 22% (n = 12) and severe diverticular disease 30% (n = 12). The 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), intussusception 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 = 33). 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 patients. Overall findings were normal 25% (n = 10), polyps 38% (n = 15), inflammation 22% (n = 9), diverticular disease 25% (n = 10), intussusception 30% (n = 12). Amongst the patients who had polyps, 8 required polypectomy and the remaining 7 were put on a surveillance programme. Based on the CCE findings, 4 of the IBD patients required treatment escalation. In terms of adverse events one patient reported abdominal pain during the procedure and one patient retained the capsule due to an inflammatory stricture.

Conclusion: CCE would appear to be feasible in the majority of patients and significantly detects colonic pathology.

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

Reference

P1575 DEDICATED DIFFUSION WEIGHTED MR IMAGING FOR STAGING PERITONEAL METASTASES IN COLORECTAL CANCER; AN ACCURATE PREOPERATIVE SELECTION TOOL FOR CYTOREDUCTION SURGERY (CRS/HIPEC) CANDIDATES

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Introduction: Peritoneal carcinomatosis (PC) is a well-known mechanism of spread in cancer; it is the second most frequent cause of death in colorectal cancer patients. However, the prognosis of PC patients has dramatically improved due to the development of severe complications and the availability of adjuvant chemotherapy. 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 12%–23% and a mortality rate of 21%2. Obviously, CRS-HIPEC is only an option for patients with a limited life expectancy to avoid pointless and costly aggressive surgical procedures. Hence, recognizing patients with a maximum risk-to-benefit ratio for the procedure is imperative. To select patients who could benefit from CRS-HIPEC the Peritoneal Cancer Index (PCI) is used. The PCI combines the location/size of peritoneal tumours found at surgery in 13 abdominal regions. Each of the 13 regions is scored for implant size on a scale of 0–3 (= no visible tumour implants; 1 = implants < 0.5 cm; 2 = 0.5–5.0 cm; 3 = 5.0 cm). The PCI is the sum of the lesion scores from all 13 areas, and thus can vary between 0–39. The PCI is widely validated and is a quantitative prognostic indicator for long-term outcome. However, with this surgical staging procedure it is not always feasible to inspect all relevant abdominal regions. In this study we evaluate whether the PCI could be used to identify patients who are candidates for undergoing CRS-HIPEC. However, currently there is no validated imaging tool that can accurately predict PCI.

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 study twenty-four consecutively included patients (April 2016–April 2017) with histologically proven peritoneal carcinomatosis from colorectal origin were included. Patients were scheduled for exploratory laparoscopy and/or CRS/HIPEC and underwent preoperative dedicated DW-MRI (scanning time: 30 min).

Two independent readers prospectively determined the PCI on DW-MRI. Patients were categorized as low-risk (PCI 0–21) versus high-risk (PCI 22–39); in our center considered operable versus non-operable. Reference standard was PCI on open surgery. Furthermore, the correlation of PCI with the number of adhesions and/or tumour. So, there is a desperate need for a non-invasive imaging tool that could select those patients who will benefit from CRS-HIPEC. However, currently there is no validated imaging tool that can accurately predict PCI.

Results: 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.

Reference

P1576 HISTOLOGICAL PREDICTION OF COLONIC POLYS BY COMPUTER VISION, PRELIMINARY RESULTS

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Introduction: During colonoscopy, clinicians perform visual inspection of the polyps to predict histology. Kudo’s pit pattern classification is one of the most commonly used for optical diagnosis. These surface patterns present a contrast with respect to their neighboring regions and they can be considered as bright regions in the image that can attract the attention of computational methods.

Aims & Methods: We aimed to assess the accuracy of a new computational system based on the segmentation and characterization of bright regions as...
cases to obtain an automatic histological classification of colonic polyps. Our automatic classification system is based on the segmentation of textural elements from polyp surface and their correlation with Kudo’s pit pattern classification. Textural elements are identified as bright regions on polyp surface and there are characterized according to their shape into tubular and circular: a high presence of tubular patterns is associated to an adenomatous histology whereas the absence of prominent tubular structures is associated to non-adenomatous.

Taking this into account, we characterized segmented bright regions using a tubularity metric (Tub) designed to obtain low values for circular shapes and high values for tubular shapes of the same area. We tested our method in high definition (HD) white light polyp images which were obtained with a colonoscope Olympus CIF-H190 at Hospital Clinic in Barcelona. Neither conventional nor virtual chromoendoscopy were used. These images were selected to show as much variability in polyp appearance as possible. We used the mean of all Tub values for an image to classify it into two classes: Adenoma and Non-Adenoma. A ROC curve was constructed to select the optimal threshold value of Tub. Then, we compared the histology prediction provided by our system and the actual histology obtained after lesion removal.

Results: 51 polyp images were analyzed: 38 (74.5%) adenoma and 13 (25.5%) non-adenoma. Mean size of polyps was 14 ± 13 (range 1–40) and had the following morphology based on Paris classification: 5 (9.8%) 0-Ip, 27 (52.9%) 0-IIa and 19 (37.3%) 0-IIa. Mean Tub values were different for adenoma compared to Non-adenoma (19.5 ± 6.5 vs 14.1 ± 6.3; p = 0.013). An optimal threshold value of Tub = 13.14 to separate adenoma vs. non-adenoma was selected from the operating point of the ROC curve. With this value, our method was able to provide an accurate histological diagnosis in 44 out of 51 images (86%) (table) with a Sensitivity, Specificity, PPV and NPV for the diagnosis of adenoma of 95%, 61%, 88% and 80%, respectively. On the other hand, processing of a single HD image took 2.7 seconds making feasible its use in the endoscopy room.

Conclusion: A computer vision system based on bright regions in the image has a high accuracy for on-line prediction of polyp histology during colonoscopy. Though the use of shape characterization is promising, the inclusion of other polyp characteristics (i.e. shape, color, vessels…) as well as enlarging the validation database could improve the robustness of our methodology.

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

Reference

P1577 COLORECTAL LATERALLY SPREADING TUMORS DETECTED AT CT COLONOGRAPHY

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Introduction: Laterally spreading tumors (LSTs) of the colorectum are classified into the following two subtypes according to their morphology: granular type (LST-G), and non-granular type (LST-NG). Meanwhile, CT colonography (CTC) can effectively detect LST-Gs, while the detection of LST-NGs is limited. The detection of LST-Gs has been shown to be correlated with lesion size, location and presence of prominent tubular structures associated to non-adenomatous. CTC showed a sensitivity of 85.7% for detecting LST-Gs and that for detecting LST-NGs was 50%.

Results: Thirty-five pathologically proven LSTs were identified and matched by CTC (85.7%). 23 out of 24 (95.8%) LST-Gs were detected by CTC, while 12 out of 11 (109.1%) LST-NGs were missed by CTC. Of the 24 LST-Gs detected by CTC, 23 (95.8%) were detected at the optimal threshold for Tub = 13.14.

Conclusion: CTC can effectively detect LST-Gs, while the detection of LST-NGs is still challenging.

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

P1578 ANALYSIS OF CT COLONOGRAPHY MISS RATE OF LARGE NEOPLASTIC LESIONS DETERMINED BY COLONOSCOPY ON JAPANESE NATIONAL CT COLONOGRAPHY TRIAL (JANCT)

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Introduction: CT colonography (CTC) may be readily used for imaging of the colon in elderly or poor risk patients with colon polyps and cancer because of its noninvasive nature and relatively high sensitivity in recognition of polyps. However, it may have drawbacks to make a misdiagnosis may be inevitable. Therefore, analysis of misdiagnosis case is crucial on the new modality for the colon cancer screening examination.

Aims & Methods: We evaluated the misdiagnosed case of large neoplastic lesions (PNL) reported by colonoscopy follow-up after CTC in JANCT by radiologist and gastroenterologist interpretations1,2. Out of 1257 cases enrolled in JANCT, 1181 cases were actually studied, omitting 76 cases according to the exclusion criteria. More than 16 DAS CT were used for CTC, respectively. Images were retrospectively reconstructed by using a 0.5 mm section index. The CTC examination was prepared by PEG-C solution before scanning. CO2 gas as an efferent agent was then administrated just before scanning. This was used for the contrast medium. CTC images were analyzed by AVE Virtual Place software. The CTC and CS were independently analyzed by endoscopist and radiologist in blind fashion. We investigated misdiagnosed lesions with CTC more than 10 mm detected by CS. We considered the pseudo-negative lesions misdiagnosed with CTC interpretation (PNL) by radiologist or gastroenterologist and also considered the true pseudo-negative lesions misdiagnosed with CTC interpretation (true PNL) by radiologists and gastroenterologists. Because we conceived true PNL showed the limitation of CTC interpretation instead of PNL involved a human error.

Results: PNL was diagnosed by CS at 0-Ip (8 cases, 8 lesions) and 0-IIa (17 cases, 19 lesions), respectively according to the criteria of the Paris classification. True PNL was also diagnosed at 0-Ip (case, 1 lesion), 0-IIa (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 lesion not only 0-IIa lesion.

Conclusion: CTC was proven to be a reasonably useful approach to obtain the image of colon diseases without any invasiveness to the patient. On CTC interpretation, lower protruded lesion was considered less detectivity than highly protruded lesion like 0-Ip.

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

Reference

P1579 DIFFUSION-WEIGHTED MAGNETIC RESONANCE FOR ASSESSING FIBROSIS IN CROHN’S DISEASE

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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 medium has been proved useful to study fibrosis in CD patients. Diffusion Weighted Imaging (DWI) through the restriction of the apparent diffusion coefficient (ADC) allows an accurate evaluation of disease activity in CD patients avoiding contrast agents.

Aims & Methods: The aim of this study is to investigate if DWI sequence of MRE was able to identify intestinal fibrosis in CD patients candidate to surgery, using the histopathology specimens and percentage of gain as gold-standard. Thirty ileocolonic CD patients candidates to surgery for structuring disease were consecutively enrolled from October 2010 to November 2015. All patients underwent MRE before the surgery. The histopathological examination was performed using an histological score for inflammation (AIS) and fibrosis in the stenotic segment and in the ileum before the stenosis.

All population had an active disease at MRE. ADC value had a significant correlation with fibrosis score (r = 0.648; 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
Results: Upper gastrointestinal endoscopy was performed after two weeks and the proximal segment of the stent was evaluated. If it was embedding the esophageal mucosa and did not separate from the esophagus with air insufflation, 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 15–30–60 days after stent placement. In cases of migration of the entire length of the stent into the stomach, the patient received a new stent and the same fixation method was employed. In cases of stents partially migrated through the cardia, the same stent was repositioned and fixed with dental floss strands as previously described.

Conclusion: According to the results we believe this homemade technique using dental floss for external fixation of stents is a simple and cheap method that can be applied and used to prevent stent migration.

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

P1582 CLINICAL OUTCOME WHEN USING SELF EXPANDING METAL STENT IN OBSTRUCTIVE COLRECTAL CANCER IN 248 PATIENTS AT 7 YEARS EXPERIENCE IN 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 complications2. 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 3clinical success3 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.

Aims & Methods: Our compilation covers the years 2010–16, when 248 SEMS interventions(53% men, 47% women, age 28–97) were performed at SU/Ostra Hospital. In 78% of cases, the obstruction was located below the left flexure. In 80%, SEMS was made for palliative purposes.

Results: Technically, SEMS succeeded in 98% of cases and had clinical success in 90% of cases(abscence in need of emergency surgery). Complications (colony perforation) occurred in 6% of the cases. Mortality within 30 days was 11% and within 90 days 22%. In our experience, the incidence with regard to 90-day mortality for the indication was palliative vs. bridging, 29 resp. 3%. Based on the clinical outcomes "success" vs "failure", the 90-day mortality rate was 19 resp. 55%.

Conclusion: Our interpretation is that SEMS is an effective method of acceptable safety regarding complications in acute malignant colonic obstruction. The method is suitable for both intended intestinal relief for palliative purposes, as well as awaiting later curative measure (bridge to surgery).

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

References:

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, fistulas 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 variable availability. 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 present the results of this technique in a small cohort.

Aims & Methods: The present study enrolled sixteen patients with esophageal malignancies, anastomotic leaks, esophageal fistulas and extrinsic compression. The stents used in these patients were five partially covered and ten fully covered. We developed a homemade technique using dental floss for external fixation of the stent which prevent stent migration. We pull stripes of dental floss into the stent mesh and using a method similar to exchange of a nasobiliary drainage catheter, the dental floss is drawn out through the nose, tied a knot into it and its loose end is fixed to the patient’s carbole.

Results: Upper gastrointestinal endoscopy was performed after two weeks and the proximal segment of the stent was evaluated. If it was embedding the esophageal mucosa and did not separate from the esophagus with air insufflation, 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 15–30–60 days after stent placement. In cases of migration of the entire length of the stent into the stomach, the patient received a new stent and the same fixation method was employed. In cases of stents partially migrated through the cardia, the same stent was repositioned and fixed with dental floss strands as previously described.

Conclusion: According to the results we believe this homemade technique using dental floss for external fixation of stents is a simple and cheap method that can be applied and used to prevent stent migration.

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

P1580 MOLECULAR IMAGING OF c-MET IN THE CLINICAL MANAGEMENT OF GASTROINTESTINAL CANCERS

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Introduction: The primary indication for c-Met targeted optical imaging agents is the potential for earlier 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 EM-137 and analogues beyond colorectal cancer screening since c-Met is up-regulated in many other cancers.

Aims & Methods: We have synthesised analogues of EM-137 where the fluoroscent reporter was replaced by a radiouclide chelating moiety for PET imaging. The use of this agent alongside EM-137 could enable the PET localization of the lesions prior to surgery guided by fluoroscent signals. Through a systematic analysis of scientific literature databases, and the Human Protein Atlas, we have identified more than 13 different types of solid cancer that are amenable to PET imaging for which there is evidence for c-Met as a target. We believe that imaging of c-Met with EM-137 in these indications has the potential to positively impact critical problems in the existing patient care path and reduce morbidity, mortality, and healthcare costs. We have assessed: 1) the healthcare problem, the impact on patient care path, and the likelihood of adoption by clinicians 2) the hardware landscape; whether imaging hardware required is commercially available or is being developed, and feedback from clinicians in the US and EU 3) our confidence in c-Met as a valid imaging target to address the healthcare problem.

Results: We have identified a number of promising applications within Digestive Oncology; gastric cancer, locally-advanced rectal cancer, and bile duct cancer surgery are all life-threatening indications with urgent healthcare problems that could be improved by utilising imaging of c-Met with EM-137. Compatible imaging systems are commercially available for these indications. There is also strong evidence for c-Met as a biomarker in stratification in Barrett’s oesophagus (BO), a potentially precancerous lesion with the risk of progression to oesophageal cancer. Progression rates are low and overall survival rates in BO patients are similar to the general population. However, due to the poor prognosis of oesophageal cancer, patients with BO lesions are managed by regular endoscopic surveillance and biopsy. This means that there is arguably a disproportionate healthcare burden relative to the level of risk.

Conclusion: Gastric cancer, locally advanced rectal cancer, and bile duct cancer surgery all have strong evidence for c-Met as a valid target, and the healthcare problems are clear and widely recognized, with EM-137 having the potential to have high impact and improve curative procedures in serious, life-threatening conditions. An imaging agent that enabled more accurate risk stratification of BO patients would lead to a change in patient management, with the potential to affect the type of surgery all have strong evidence for c-Met as a valid target, and the healthcare problems are clear and widely recognized, with EM-137 having the potential to have high impact and improve curative procedures in serious, life-threatening conditions. An imaging agent that enabled more accurate risk stratification of BO patients would lead to a change in patient management, with the potential to affect the type of surgery.
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 structure present, respectively. Treatment consisted of hydrostatic balloon dilatation (n = 447); bougienage (4), and iSEMS (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 treatment (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 structure was required in the course of disease.

Conclusion: Endoscopy of symptomatic structure 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 EDICION INTRALESIONAL DE CORRIGER La EFFICACIA EN EL TRATAMIENTO DE BENÉFICO ESTADÍSTICA OSEPSOAGÁSTICO, UN META-ANÁLISIS

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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 oesophageal reflux 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 with injection combined with intralesional steroid injection. A meta-analysis was conducted on the data using the random-effects method by DerSimonian and Laird, because of the high level of the heterogeneity. There were 45 articles found in Embase, 55 in PubMed, and 6 in the Cochrane database. Altogether 11 articles were suitable for analyses, after exclusion of duplicate articles, case reports, results from non-human and pediatric studies. These studies involved 373 patients in total. The periodical dilation intervention was combined with dilation and injection. The combined treatment was compared with dilation alone group (95% CI: 0.777; 0.482, p-value: 0.004). The dysphagia score was comparable in 5 studies, but in this case no significant difference could observed between the two groups (standardized mean difference: 0.274, 95% CI: 0.822; 1.165, p-value: 0.510).

Conclusion: Our meta-analysis showed a significant improvement in the periodical dilation index and total number of repeated dilations in the patients treated by intralesional steroid injection as well. We recommend the use of intralesional steroid injection for benign reflux oesophageal strictures.

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

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Aims & Methods: We aimed to the role of esophageal SEMS in patients with advanced esophageal cancer and expected survival longer than 6 months. Disease control was defined as successful deployment of the stent in the correct position. Clinical success was defined as relief of dysphagia 1 week after placement.

This was a retrospective study of patients with clinical dysphagia and advanced esophageal cancer who underwent SEMS placement with a stent dwell time of greater than 6 months. In all patients the indication for stent placement was dysphagia due to esophageal malignancy.

Results: Forty-to-five patients were followed for 298 days (183–861 days). At the end of follow-up the mortality was 93%. The majority of lesions were located at the proximal/middle esophagus (55%), and were traversable using an ultrathin gastroscope in 79% of patients; in no patient could a standard upper endoscope be passed. In nine patients (15 migrations, 8 overgrowth/ingrowths and 2 stent-induced fistulae). The median stent patency was 236 days (19–513). Two AEs occurred within 30 days of stenting, 7 occurred between 30–90 days, 7 occurred between 90–180 days, and 9 occurred after 180 days. Endoscopic management was attempted in every SEMS-related AE (20 patients required a second SEMS, 2 had successful SEMS repositioning and 1 was treated with argon plasma; 2 SEMS were removed without the need for further therapy), with a clinical success of 100%, however, in 7 patients the previously treated AE recurred (in overgrowths and 3 migrations). Multivariate analysis showed that strictures traversable with an ultrathin gastroscope were associated with a higher risk of AEs (OR 11.7, 95% CI [1.2–114.6], p = 0.035).

Conclusion: Long-term esophageal stenting in patients with advanced esophageal malignancies is associated with a high prevalence of AEs without an impact on mor-tality, and most could be managed endoscopically. Strictures traversable only using an ultrathin gastroscope are a risk factor for AEs.

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

References
available in many centers and have revolutionized the management of iatrogenic bile duct injuries 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 intervention radiology unit in our university hospital. We had 9 males and 21 females (age range: 18-66 years). Patients presented with biliary leaks (n=12), benign biliary strictures with intrahepatic biliary dilations (n=21), postoperative hemorrhage (n=2), biliary 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 plastic stent (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 pseudo-aneurysm (n=1) using tissue adhesives (n=Butyl 2 Cynoacrylate).

Results: All percutaneous procedures were technically successful. No recorded bleeding related hepatic artery pseudo-aneurysm (n=1). Angiography was done for: bleeding recurrence (36.2%), hemodynamic instability (33.3%), both (27.3%) or failure to endoscopic hemostasis (3%). Multidisciplinary meetings were convened in 45% patients undergoing endovascular procedures for the management of biliary leaks. The reasons for deciding not to embolize were: absence of active bleeding (80%), suboptimal embolization result (10%) or post embolization complication (n=4).

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

PI590 WHAT IS THE ROLE OF ANGIOGRAPHY 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 arteriography with or without embolization, admitted to the gastroenterology department of a tertiary hospital between February 2006 and November 2016. Statistics: Chi-square/Fisher exact test, T-student.

Results: Fifty patients (n=50) were evaluated, 63.6% male, mean age = 75 years (29–95). Angiography was done for: bleeding recurrence (36.2%), hemodynamic instability (33.3%), both (27.3%) or failure to endoscopic hemostasis (3%). The aetiology after angiographic study was: presumed diverticular (n=28), angietasis (n=8), confirmed diverticular (n=6), tumor (n=5), post-mucosectomy/polyectomy (n=4), unclarified (n=12), others (n=3): Deulafoy, ileum ulcers, radiation proctitis. Angiography showed additional clinical information in 58% 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-vealus bleeding (9.3%). There were no differences between the groups in demographic data, comorbidities, mortality, source of bleeding, haemoglobin at admission/diagnosis and discharge and creatinine (p > 0.05). Arterial embolization was more frequent if hemodynamic instability (p = 0.029); The average time of hospital stay the 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.

PI591 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 integrated 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%, CD4 ≥ 27, 22.5%) and 4 (3.3%) patients respectively. ROC curve analysis showed oxygen uptake (peak VO2) gave an area under the ROC of 0.66 (95% CI 0.55 to 0.77, p = 0.006) and optimum cut-off of 25 ml/kg/min (sensitivity 80%, specificity 84%). 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 VO2 to be the only independent factor to predict morbidity severity CD3 ≥ 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 VO2 the most important factor.

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

PI592 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 malignant disease. PET/CT is conducted for patients with metastatic 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 496 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 = 0.010). On multivariable analysis, t stage (HR 1.486 [95% CI 1.27–1.74, p = 0.001], p 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 distant in location after PET/CT inception (39.5 vs. 27.0%, p = 0.006).

Conclusion: PET/CT enhanced staging is a significant and independent factor associated with improved survival in patients undergoing oesophagectomy for cancer.

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

PI593 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 has 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 T1a-MM, T1b-SM1 or T1b-SM2 and underwent esophagectomy at the Keio University, Tokyo, Japan between July 2000 and June 2016 were enrolled in this study. Patients who underwent esophagectomy as additional resections after ESD were included. We used random forest analysis to predict lymph node metastasis. Results: There were 62 men and 8 women in this study. The mean age of all patients was 62.8±8.2 years. The major location of the tumor was in the middle thoracic esophagus (Upper: Middle, Lower: 13: 39: 18, respectively). 14 patients had lymph node metastasis in pathological findings; 2 patients (25%) were diagnosed as clinical T1a-MM, 2 patients (6%) were pT1b-SM1 and 10 patients (31.3%) were T1b-SM2. Random forest technique (2000 trees) resulted in an estimate of error rate of 25.7%. Lymph node metastasis was most associated with the factor of pathological T (relative importance 100%) followed by lymph nodes (89.7%) and N (72.3%).

Conclusion: Random forest analysis confirmed the predictors for lymph node metastasis such as pathological T and lymphatic invasion. Disclosure of Interest: All authors have declared no conflicts of interest.

P1594 PROGNOSTIC SIGNIFICANCE OF CARDIORESPIRATORY FITNESS, BODY COMPOSITION ANALYSIS, AND SYSTEMIC INFLAMMATORY RESPONSE IN UPPER GASTROINTESTINAL CANCER

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Introduction: Malnutrition is associated with higher rates of operative morbidity and therefore represent potentially reversible prognostic risk factors. Bioelectrical Impedance Analysis (BIA) is a non-invasive, reproducible and simple means of accurately measuring body composition.

Aims & Methods: The aim of this study was to assess the prognostic value of body composition variables determined objectively by bioelectrical impedance analysis (BIA) and subjectively by analysis potentially undergoing surgery studies in the gastric and cancer (GC) with an enhanced recovery programme (ERP). Consecutive 168 OG patients [median age 65 (24–86) yr., 131 male, 105 OC, 64 GC, 157 ACA, 8 SCC, 3 Neuroendocrine] underwent preoperative measurement of systemic inflammatory response [NIR, including FBC, CRP, Albumin, and modified Glasgow Prognostic Score (mGPS)]. Patients underwent multi-frequency (0.5 kHz, 50 kHz and 100 kHz) BIA assessment using a Maltron Bioscan 920 (Maltron International Ltd, Essex, UK), and Cardiac Pulmonary Exercise (CPX) assessment was performed selectively (70 OC, 27 GC). Primary outcome measure was Clavien Dindo (CD) morbidity severity score (MSS) of ≥3.

Results: Oesophagectomy was performed in 106, gastoecomy in 64, and laparotomy only in 23 patients. Postoperative morbidity and mortality occurred in 75 (45%, CD ≥ 3 in 35, 21%) and 4 (2%) patients respectively. On univariable analysis, MSS ≥3 was associated with anastomotic leakage (p = 0.011), CRP (p = 0.001), mGPS (p = 0.011), intra-cellular water (ICW, p = 0.041), and extracellular water content (p = 0.015). Multivariable logistic regression revealed ICW content [OR: ICW < 3.7 compared to ≥ 3, 3.7 < DR ≤ 3.9, DR ≥ 3.9] correlated significantly with improved DFS in HCC (p = 0.006). OR: ICW 3.7 to 3.9 vs. > 3.9 was (95% CI: 1.06–1.41) p = 0.006 and CRP [OR: ICW < 3, DR ≤ 3.7 vs. > 3.7, OR 1.03 (99–106) p = 0.076] to be independently associated with MSS.

Conclusion: Seven-fold variation in morbidity severity was observed after OG cancer surgery. Multicenter and NIR were the most important prognostic indicators.

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

P1595 COPING AND QUALITY OF LIFE AFTER ESOPHAGECTOMY FOR CANCER

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Introduction: Coping is one the most challenging and burdening operation for its length and the variety of anatomical districts involved. Nowadays, as consequence of the improved postoperative mortality, effects of esophagectomy are chronic and quality of life (QoL) has become one of the main outcome measures to evaluate treatment. Coping is the ability of managing stressful situations such as postoperative conditions. At present, there are no studies focusing on coping after esophagectomy for esophageal cancer.

Aims & Methods: The aim of this study is to describe coping styles and QoL after esophagectomy. EORTC QLQ-C30 was used to assess QoL while the modified Glasgow Prognostic Score (mGPS) was used to evaluate treatment. Coping is the ability of managing stressful situations such as postoperative conditions. At present, there are no studies focusing on coping after esophagectomy for esophageal cancer.

Results: There were 62 men and 8 women in this study. The mean age of all patients was 62.8±8.2 years. The major location of the tumor was in the middle thoracic esophagus (Upper: Middle, Lower: 13: 39: 18, respectively). 14 patients had lymph node metastasis in pathological findings; 2 patients (25%) were diagnosed as clinical T1a-MM, 2 patients (6%) were pT1b-SM1 and 10 patients (31.3%) were T1b-SM2. Random forest technique (2000 trees) resulted in an estimate of error rate of 25.7%. Lymph node metastasis was most associated with the factor of pathological T (relative importance 100%) followed by lymph nodes (89.7%) and N (72.3%).

Conclusion: Random forest analysis confirmed the predictors for lymph node metastasis such as pathological T and lymphatic invasion. Disclosure of Interest: All authors have declared no conflicts of interest.

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

P1596 A RELIABLE AND ACCURATE ALGORITHM TO QUANTIFY THE TUMOR STRONA QTS AMONG TUMOR ENTITIES: HIGH INFILTRATION OF CD3+ AND CD8+ LYMPHOCYTES CORRELATES WITH IMPROVED SURVIVAL IN HEPATOCELULAR 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, the ability to identify these features is critical. 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 (mOC) as well as in paraffin sections of hepatocellular carcinoma (HCC) and pancreatic cancer (PCa) was performed. For each entity 10 slides per antigen were examined (n = 80). In these different entities reliability and accuracy of computed quantification was tested in order to develop a general algorithm (Figure: First, reliability of identification of hot spots was investigated using two blinded observers. Hot spots were defined as regions with the highest density of TILs. The absolute amounts of cells were compared with the intra-class-correlation coefficient (ICC). Second, accuracy was tested. To examine whether quantification of 1 vs 3 hot spots yields accurate results CD3+, CD8+ 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 used. All methods were compared to a manual (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 low/high 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 mOCa, 0.805 in HCC and 0.957 in PCa. The ICC for the ratio of CD3/CD8 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 CD8+ was 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 for their daily activities (i.e. emotions, physical functioning, social and family functioning) 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 good social support.

Disclosure of Interest: All authors have declared no conflicts of interest.
P1598 LIVER RESECTION IN OBESE PATIENTS WITH HEPATOCELLULAR CARCINOMA
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Introduction: Hepatocellular carcinoma 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 steatosis were significantly more frequent in the obese patient 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.

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Introduction: We developed a CT-based patient-specific holographic surgical simulation navigation system of immersive mixed reality (MR).
Aims & Methods: The aim of this study is to identify its benefit of simulating, analyzing and evaluating operative surgical treatment options in gastrointestinal and hepato-pancreato-biliary surgery.
Methods: We used our original immersive MR application using HoloLens, that is a pair of MR smartglasses built-in head-mounted display. By reconstructing the patient-specific 3D surface polygons of each organ out of the patient’s MDCT images, MR anatomy was displayed on the glasses three-dimensionally during actual surgery. We performed pre- and intra-operative imaging with better visualisation of the surgical anatomy and spatial awareness using visualisation of surgical instruments in relation to anatomical landmarks.
Conclusion: We report illustrative benefits of the immersive MR in surgical planing, simulation, education, and image-guided navigation. These could overcome the limitations of the conventional image-guided surgery.
Disclosure of Interest: All authors have declared no conflicts of interest.
Reference

P1599 TIMING OF ELECTIVE CHOLECYSTECTOMY AFTER ACUTE CHOLECYSTITIS - A POPULATION-BASED STUDY
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Introduction: Acute cholecystitis as treatment of acute cholecystitis is standard of care. However, many patients are still treated conservatively and undergo elective cholecystectomy 2–12 weeks following the primary admittance is postulated as a good timing for an elective surgery but there are no studies on the optimal timing for delayed cholecystectomy.
Aims & Methods: The aim of our study was to determine when it is most advantageous to operate when less is less in the obese patients group in the non-obese patients group. All patients treated for acute cholecystitis in Sweden during the years of 2006 and 2013 were identified through the Swedish Inpatient Register. This cohort was cross-linked with the Swedish register for gallstone surgery. Only patients with surgical outcome was retrieved. The impact of time from admission to surgery with regards to operative time, percentage of procedures completed with minimally invasive technique, peri and postoperative complications and bile duct injury or bile leakage was analysed with logarithmic transformation of time and multivariate logistic regression adjusting for gender and age.
Results: During the years 2006 to 2013, 31091 patients were treated for acute cholecystitis in Sweden. After exclusion of patients that did not perform surgery, were not registered in GalRx and patients that were treated with acute cholecystectomy 8532 patients were identified that underwent planned surgery. In multivariate linear regression analysis with adjustment for gender and age the risk for peri- and postoperative complications, bile duct injuries and bile leakage and amount procedures not completed with minimally invasive technique decreases with time from the last hospitalization to surgery. All p-values < 0.05.
Conclusion: For those patients undergoing elective cholecystectomy after an acute cholecystitis the safety increases if surgery is performed later than 30 days after discharge.
Disclosure of Interest: All authors have declared no conflicts of interest.

P1600 MIXED REALITY SURGERY USING CT-BASED PATIENT-SPECIFIC IMMERSIVE 3D Holograms ENHANCED SPATIAL AWARENESS IN HEPATO-PANCREATO-BILIARY AND GASTROINTESTINAL SURGERY
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Introduction: We developed a CT-based patient-specific holographic surgical simulation navigation system of immersive mixed reality (MR).
Aims & Methods: The aim of this study is to identify its benefit of simulating, analyzing and evaluating operative surgical treatment options in gastrointestinal and hepato-pancreato-biliary surgery.
Methods: We used our original immersive MR application using HoloLens, that is a pair of MR smartglasses built-in head-mounted display. By reconstructing the patient-specific 3D surface polygons of each organ out of the patient’s MDCT images, MR anatomy was displayed on the glasses three-dimensionally during actual surgery. We performed pre- and intra-operative imaging with better visualisation of the surgical anatomy and spatial awareness using visualisation of surgical instruments in relation to anatomical landmarks.
Conclusion: We report illustrative benefits of the immersive MR in surgical planing, simulation, education, and image-guided navigation. These could overcome the limitations of the conventional image-guided surgery.
Disclosure of Interest: All authors have declared no conflicts of interest.
Reference
tertiary centers has been performed. DPTS are traced by the pharmacies of our two hospitals and all cases of DPTS were ana lysed thanks to the database of the pharmacies of our two hospitals since May 2014 (first DPTS used for non bariatric upper digestive tract fistula) or 10 french DPTS have been used according to the size of the fistula and the choice of the physician. Technical success was defined as the possibility to place the DPTS within the fistula. Clinical success was a composite endpoint combining clinical amelioration of the patient and healing of the fistula 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 non 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%) and 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%) suffer 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).

N = 17

<table>
<thead>
<tr>
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<tr>
<td>AGE</td>
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<td>Boerhaave</td>
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<td>Aortic surgery</td>
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<td>ASA score</td>
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<td>Associated collection</td>
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<td>Clinical sepsis</td>
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<td>Biological sepsis</td>
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<td>Delay surgery-diagnosis</td>
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<td>Delay Diagnosis-DPTS</td>
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<tr>
<td>Endoscopic procedure</td>
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<tr>
<td>DPTS alone in first intention</td>
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<td>DPTS + SEMS in first intention</td>
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<td>DPTS in second intention</td>
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<td>Technical success</td>
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<td>Clinical success</td>
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<td>Delay for refeeding</td>
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<td>Delay for ablation of DPTS</td>
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<td>Stenosis</td>
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<td>Migration</td>
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<td>Bleeding</td>
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</table>

Conclusion: Endoscopic internal drainage using DPTS seems to be an interesting therapeutic option for upper digestive tract leaks non-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

P1604 ENDOSCOPIC PERORAL DRAINAGE (EPOD) OF PERITONEAL COLLECTIONS AND ABSCESES SECONDARY TO BARIATRIC SURGERY LEAKS: THE PARADIGM SHIFT OF SEEING PERITONEUM AS AN ORGAN AMENABLE TO FLEXIBLE ENDOSCOPIC INTERVENTIONS

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Introduction: Peritoneal collections and abscesses after Bariatric Surgery (BS) leaks are dreaded complications. Laparoscopic or open surgery and percutaneous CT drainage are the current indications. Endoscopic management of pancreatic collections is a rationale for Endoscopic Peroral Drainage (EPOD) approach in cases of BS leaks with abdominal collections.

Aims & Methods: The aim of this study is to evaluate utility and safety of EPOD to treat peritoneal collections and abscesses secondary to BS leaks. Methods: This retrospective study included 65 consecutive patients from 2007 to 2015 at a single center (40 Sleeve gastrectomy, 25 gastric bypass) after 5 to 21 days from...
surgery. Patients presented heart rate over 120 bpm. Images from CT showed left side diverting subcutaneous small free abdominal ileostomy. An Upper GI endoscopy was performed to localize the leak opening and enter to peritoneal cavity. Either 9.8 or 5.8 mm diameter gastroscopy were used. In 10 patients with orifices smaller than 5.8 mm balloon dilatation of the leak opening allowed peritoneal access. The time interval from AK to reversal procedure (100 to 700 ml). Sample was taken for bacterial cultures. The cavity was flushed and suctioned out with sterile saline solution (200 ml to 1000 ml). In cases of inadequate location surgical drains catheters were repositioned or replaced using endoscopic forceps and snare. Fibrinolytic (assemblies to facilitate peritoneal navigation. 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 using endoscopic forceps or knives to facilitate peritoneal navigation.

Results: Heart rate returned to normal within 24 hours and leukocytosis improved after 72 hours. In 50% of patients heart rate returned to normal immediately. Average time for the whole procedure was 45 minutes. Abdominal catheters were removed between 7 and 18 days once full resolution of the drainage was achieved. Twenty patients were discharged within the first 24 hours. The rest were discharged between 3 and 8 days. Partially covered SEMS were placed for 6 to 8 weeks leading to complete closure of leaks. There were no adverse events related.

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 adhesions decreases morbidity logistic regression indexes 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 49.9y ± 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 data was collected in a retrospective manner basing on hospital records. The analyzed parameters included length of hospitalization, gender, age, BMI, comorbid 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 occurred in 15 patients (10.2%). Higher values of BMI and older age have been noted compared to noncomplicated surgeries (27.54 vs. 23.36 and 23.02 ± 3.98; p < 0.001; 54.53 ± 12.3 vs. 50.25 ± 15.95; p = 0.029 respectively). There was significant correlation between patients’ gender and the incidence of AL (p = 0.087). The number of prior surgical procedures and ASA scale positively correlated with the prevalence of AL (p = 0.038; p = 0.003 respectively). There were no significance difference between patient with colorectal cancer and inflammatory conditions (p = 0.534). The average time interval from prior surgery to reversal of the stoma and AL occurrence were not related and did not reveal statistical significance (8.5 ± 4.11 vs. 7.24 ± 4.47; p = 0.25). Univariate logistic regression demonstrated that a BMI levels, patients’ age and average time inter- val from prior surgery to reversal procedure were significantly associated with failure of restoration of intestinal continuity. Multivariate logistic regression analysis showed that patients undergoing loop ileostomy clouser. Patients with elevated BMI, older age and shorter aver- age time interval from prior surgery to reversal procedure presented higher risk of failure of intestinal continuity restoration. The incidence rate of AL was similar in patients operated primarily on for inflammatory conditions and color- ecial cancer.

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

P1606 BODY COMPOSITION AS A PREDICTOR OF MORBI- MORTALITY FOLLOWING BILIOPANCREATIC CANCER SURGERY
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Introduction: The impact of body composition on the outcomes following pan- creaticoduodenectomy is still unclear.

Aims & Methods: The aim of this study was to analyze the association between body composition the postoperative complications and 90-day mortality in patients undergoing biliopancreatic cancer surgery. Retrospective study of patients with pancreatic, ampullary or bile duct carcinoma that underwent sur- gery between March 2012 and October 2016. Body composition (skeletal muscle mass, total body 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+). Patient mortality was calculated.

Results: Fifty-nine patients were analyzed and 11 were excluded due to unavailable CT scan at our institution. Forty-eight were included, 28 were men, with a mean age of 70.9 ± 8.5 years. The incidence of major complications was 25% and 90-day mortality was 8.3%. On simple logistic regression of factors associated with major complications skeletal muscle area (OR 0.97, 95% CI 0.94–1.00, P = 0.09) and index (OR 0.91, 95% CI 0.81–1.00, P = 0.09) showed a trend for protective effect. On multivariate logistic regression, skeletal muscle mass index was a protective factor (OR 0.89, 95% CI 0.79–0.99, P = 0.05) and longer surgery (1.01, 95% CI 0.99–1.03, P = 0.07) was associated with higher incidence of major complications. The receiver-operator characteristic (ROC) curve showed an acceptable power of discrimination on major complications using a model with skeletal muscle index and surgery duration as independent variables (area under the curve of 0.736). On simple logistic regression surgery duration (OR 1.02, 95% CI 1.00–1.06, P = 0.05), visceral fat area (OR 1.02, 95% CI 1.00–1.04, P = 0.02) and ASA grade (OR 1.05, 95% CI 1.00–1.09, P = 0.04) were associated with higher 90- day mortality whereas muscle radiation attenuation had a protective effect (OR 0.88, 95% CI 0.76–0.99, P = 0.05).

Conclusion: These results suggest that low values of skeletal muscle and muscle radiation attenuation as well as high values of visceral fat and low muscle mass that are associated with worse clinical outcomes following biliopancreatic cancer surgery.

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

P1607 GASTROSCHISIS: A 16-YEAR STUDY
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2Pediatric Surgery, Emergency Children’s Clinical Hospital “G. Alexandrescu” Bucharest, Bucharest/Romania
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Introduction: Gastroschisis is a ventral body wall defect through which protrude mainly large and small intestines. The disease’s clinical course and prognosis can often depend on both surgical techniques, severity of the defect, accompanying anom- alies and complications.

Aims & Methods: We performed a retrospective study based on the analysis of patients records admitted to our hospital Neonatal Intensive Care Unit between January 2000 and December 2016. The aims of this study were to evaluate defect’s incidence, management and outcome of patients with gastroschisis in our institution.

Results: During the period 2000–2016 the overall incidence of gastroschisis in our NICU was 1.3% (107/8026). The diagnosis occurred in 125 cases (43.9%). The surgical procedure was performed in 111 cases (88.6%). The postoperative mortality was 33% (37 cases). Since 2011, 84% of cases were born during the period of normal birth. The variables associated with worse clinical outcomes were found in 5 cases (free abdominal fluid, pneumothorax, peritonitis, infection of the abdominal cavity, septic shock).

Conclusion: The management of neonates with gastroschisis depends on several factors including the status of herniated organs, the size of abdominal cavity, the presence of other associated congenital anomalies and last but not least on the resources and experience of the neonatal interdiscipinary team. Significant changes occurred in the management of gastroschisis in our Unit and as conse- quence, the outcome of patients with gastroschisis has dramatically improved during the studied period.
Disclosure of Interest: All authors have declared no conflicts of interest.

References

WEDNESDAY, NOVEMBER 01, 2017
IBD III - HALLSCIENCE

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 variations in fermentable fiber intake. A randomized, double-blind, crossover trial was performed. Patients with quiescent UC (Partial Mayo Score 0) were randomised to two periods of 14 days, one with a high fiber diet (CD) and one with a low fiber (HC) diet. Clinical and dietary data were collected. Samples from 405 IBD patients (283 Caucasian and 122 South Asian) and 137 healthy controls (98 Caucasian and 48 South Asian) were analysed by HNMR spectroscopy. Clinical and dietary data were collected. Orthogonal partial least squares discriminant analysis (OPLSDA) was performed to examine whether there were differences in metabolic data between Cau and SA. R2 (variance), Q2 (quality assessment) and p values (validity) for each model were described.

Abstract: P1608

<table>
<thead>
<tr>
<th>Caucasian (n and %)</th>
<th>South Asian (n and %)</th>
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<tbody>
<tr>
<td>All IBD</td>
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</tr>
<tr>
<td>CD</td>
<td>160 (57%)</td>
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<tr>
<td>UC</td>
<td>123 (43%)</td>
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<td>Controls</td>
<td>98</td>
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</table>

All (Cau and SA) vs All (Cau and SA) All (Cau and SA) vs All (Cau and SA)

Separation P values (100 permutation testing) R2 Cau Cau S
 Controls vs IBD+ Yes p = 0.001 0.596 0.627
 Controls vs CD+ Yes p = 0.001 0.659 0.623
 Controls vs UC+ Yes p = 0.007 0.798 0.757
 CD vs UC+ Yes p = 0.001 0.880 0.282

Separation P values (100 permutation testing) R2 Cau Cau S

Caucasian vs South Asian

Controls vs CD+ Yes 0.634 0.627
 Controls vs UC+ Yes p = 0.012 0.815 0.769
 CD vs UC+ Yes p = 0.008 0.882 0.458

Separation P values (100 permutation testing) R2 Cau Cau S

SA vs SA SA SA

Controls vs CD+ No++ N/A 0.393 –0.214
 Controls vs UC+ No++ N/A 0.337 –0.147
 CD vs UC+ No++ N/A 0.217 –0.071

*Montreal classification
+p OPLSDA model examining the differences in urinary metabolic profiles between these cohorts
+p value cannot be calculated if OPLSDA model has negative Q2 values

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

References
Bacteroides was negatively correlated with the calculated Crohn’s disease activity indices. Our findings showed the specific characteristics and dysbiosis of fecal microbiota within Chinese IBD patients. In addition, the abundance of the Bacteroides was significant lower in active CD group than in inactive CD group. Furthermore, it was negatively correlated with the CDAI, indicating that the Bacteroides could be related with the disease activity.

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

Reference

P1611 HYPOXIA-MEDIATED IRON UPTAKE PREVENTS INFLAMMATORY GENE EXPRESSION IN THE INTESTINAL EPITHELIUM THROUGH THE REGULATION OF NF-κB BINDING ACTIVITY

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Introduction: We sought to elucidate the effects of iron supplementation on hypoxia-mediated responses in the intestinal epithelium. For this purpose, serum starved Caco-2 monolayers were subjected to normoxia (21% O2) or hypoxia (0.2% O2) in the presence and absence of ferric ammonium iron citrate (FAc) and the iron chelator deferoxamine (DFO). Total RNA was isolated and changes in the expression of tumor necrosis factor (TNF), interleukin (IL)-1β, DMT-1, FPN and ferritin was assessed by real-time quantitative PCR. Western blot analysis was performed with antibodies against ferritin, p-NF-kB, HIF-1α, p-STAT6, p-STAT3 and LC3. mRNA synthesis in Caco-2 cells under hypoxia was blocked using actinomycin D. Chromatin immunoprecipitation experiments were carried using antibodies against NF-κB and primers for promoter binding regions of TNF and IL-1β. Healthy volunteers (n = 10) were subjected to hypoxic conditions resembling an altitude of 4,000 m above sea level for 3 h using a hypobaric chamber. Serum samples were collected the day prior to hypoxia, and one day, one week and one month after hypoxia.

Conclusion: Environmental hypoxia has been stabilised to influence the development of inflammatory bowel disease (IBD). Adaptive responses to low oxygen tension are mediated through hypoxia inducible factor (HIFs), which are tightly regulated by oxygen and iron levels through the action of hydroxylases. Dietary iron is mainly absorbed by duodenal enterocytes through the divalent metal transporter (DMT)-1. Once iron is inside the enterocytes, it is either sequestered into ferritin or transported out of the enterocyte into the circulation by ferroportin (FPN). Regulation of uptake, storage and export of iron is mediated by signals reflecting oxygen and intracellular iron levels in enterocytes, and systemic iron requirements. Central to systemic iron regulation is the liver hormone hepcidin, which regulates and is regulated by systemic iron levels. Hepcidin expression is induced by cytokines and results in anemia of inflammation.

Results: Hypoxia induced the mRNA expression of TNF and IL-1β concomitantly with the iron transporters ferritin (Ftn) and Tfrc and the iron transport inhibitor hepcidin (Hamp). All mRNA expression levels were decreased under hypoxic conditions, thereby promoting iron uptake. The iron chelator deferoxamine (DFO) induced HIF-1α stabilization and TNF mRNA expression under both normoxic and hypoxic conditions. Conversely, iron supplementation induced ferritin protein accumulation under normoxic and hypoxic conditions, and reduced TNF and IL-1β mRNA expression. Interestingly, neither iron chelation nor iron supplementation reduced hypoxia-mediated p-NF-kB. Iron induced p-MTOR and blocked autophagy. Iron overload enhanced decay of TNF, but not IL-1β mRNA. Iron also prevented binding of NF-κB to the promoter of TNF and IL-1β. Healthy volunteers presented reduced serum levels of iron, as well as transferrin saturation. Ferritin levels were unchanged indicating absence of inflammation and suggesting enhanced intracellular iron accumulation in enterocytes following hypoxia.

Conclusion: Our results suggest that hypoxia-mediated iron uptake is crucial to counteract hypoxia-induced pro-inflammatory gene expression, and identify iron intracellular uptake and storage as a hypoxia protective mechanism to reduce mucosal inflammation.

Disclosure of Interest: All authors have declared no conflicts of interest.
Introduction: In both forms of inflammatory bowel disease (IBD), Crohn’s disease (CD) and ulcerative colitis (UC), inflammation of the gut wall is associated with extracellular tissue acidification. Low extracellular pH stimulates the family of proton-sensing G-protein coupled receptors (GPCRs). Ovarian cancer G-protein coupled receptor 1 (OGR1), T-cell death-associated gene 8 (TDAG8) and G-protein coupled receptor 4 (GPR4), which activate sepsis and infl ammatory signaling cascades. Recent studies reported a link between IBD and this family of pH-sensing receptors; in genome-wide association studies (GWAS), TDAG8 has been identified as an IBD-risk gene. The mechanism behind the interaction between treatment groups (5-ASA, Azathioprine and Steroids) and OGR1 and TDAG8 is alleged to act in opposition by regulation of the inflammatory response; enhancing or inhibiting infl ammatory pathways respectively, however the interplay between OGR1 and TDAG8 is unclear.

Aims & Methods: In this study we aimed to investigate the role of OGR1 in IBD patients. Expression of OGR1 in surgical specimens from non-IBD (n = 5), CD (n = 10) and UC (n = 10) patients was determined by immunohistochemistry, RT-qPCR and Western blotting. Clinical disease activity was assessed by the Harvey–Bradshaw Index (HBI) and the Modified Truelove and Witts activity index (MTWAI) for CD and UC patients, respectively. Nonparametric Spearman’s rank correlation analysis was performed.

Results: OGR1 immunostaining of human surgical samples from non-IBD patients revealed OGR1 expression mainly in lamina propria cells, with weaker staining in epithelial cells. OGR1 staining in IBD patients was stronger compared to controls; however, in IBD patients OGR1 is highly expressed in both epithelial cells and the lamina propria. Further, paired samples taken at the same time, from non-infamed 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 inflamed IBD compared to non-IBD patients. Furthermore, a significant positive correlation was observed between OGR1 expression and the clinical score in both the non-infamed (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.

References

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Introduction: IBD is a chronic inflammatory disease of the gastrointestinal tract that affects the mucosal lining of the colon and rectum. It is characterized by chronic inflammation, ulceration, and regeneration of the mucosa. The disease can affect either the large intestine (distal colon and rectum) or both the small intestine and the large intestine. The prevalence of IBD is increasing worldwide, and it is estimated that there are currently over 3 million people with IBD in the United States alone. The exact cause of IBD is unknown, but it is believed to be a combination of genetic, environmental, and immunological factors.

Aims & Methods: This study aimed to assess the effect of vitamin D replacement in patients with IBD, with and without ultrasound changes. The study was conducted over a period of 6 months, during which patients were given vitamin D supplementation in addition to their regular treatment for IBD. The effects of vitamin D supplementation were evaluated through changes in disease activity, markers of inflammation, and quality of life.

Results: Eight patients with active IBD and non-IBD controls received 40,000 units of vitamin D weekly for 12 weeks. No demographic differences were noted among the groups. Mean baseline 25(OH) vitamin D levels were 22 ± 9 nmol/L, and vitamin D supplementation increased mean 25(OH) vitamin D to 111 (range 71–158) nmol/L (P < 0.001), and increased 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-aminosalicylic acid. Faecal calprotectin levels reduced from median 275 to 91 μg/g (p = 0.023) in patients with active ulcerative 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. There were no changes in overall bacterial diversity. There was a trend towards an increase in abundance of Ruminococcus gravis 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 recommended, 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 Prof Nicola Hart and Dr Mayur Garg. All other authors have declared no conflicts of interest.
P1615 SUPPRESSION OF PHOSPHOLIPASE A2 OF INTESTINAL MICROBIAL ECTOPHOSPHOLIPASES MEDIATES 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%.

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

P1616 THE IMPACT OF THE RS8005161 POLYMORPHISM ON G PROTEIN-COUPLED RECEPTOR GPR65 (TDAG8) PH-ASSOCIATED SIGNALING IN INTESTINAL INFLAMMATION
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Introduction: Inflammatory bowel diseases (IBDs), Crohn’s disease (CD) and ulcerative colitis (UC) are typically associated with a decrease in local pH. Inflammatory mediators and the pattern of secretion may vary according to their phenotype. We have previously reported that STAT6-dependent macrophages mediate mucosal repair after TNBS-induced acute colitis and that, in a chronic model, STAT6-deficient animals accumulate macrophages expressing the CD6 marker that promote intestinal fibrosis.

Aims & Methods: We aim to analyse whether the expression of pro-fibrotic mediator TGFβ is related with this macrophage phenotype and the relevance of these cells in murine intestinal fibrosis. Murine peritoneal macrophages obtained from both WT or STAT6 (-/-) mice were treated with IL-4 (20 ng/ml), IL-10 (10ng/ml) or vehicle and the mRNA expression of CD16, TGFβ and the collagen synthesis markers (TIMP1, TIMP2) was evaluated in all groups and a positive and significant correlation between CD16 mRNA and TGFβ expression was found (r = 0.5729, P < 0.01; MMP2: r = 0.3958, P < 0.0071).

Results: A positive and significant correlation between CD16 mRNA and TGFβ expression was found (r = 0.5729, P < 0.01; MMP2: r = 0.3958, P < 0.0071).

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

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 nerve. Cholinerig output may be a target to minimize tissue damage in autoimmune disease. Cholinerig 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 BABL/c mice (8–10 weeks old, n = 32) were randomly divided into 4 groups: normal control group, DSS-induced group, GTS-21 treatment control group (DSS-induced mice treated with GTS-21), a-BGT group (DSS-induced mice treated with a-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 (30 μg/ml intraperitoneal injection per day, a-BGT group was pre-treated with a-BGT (0.1 mg/kg/day, intraperitoneal injection) for 30 min prior to GTS-21 injection, and the control group received saline. Caco2 cells were randomly divided into 4 groups; normal control group, TNF-α induced group, GTS-21 treatment control group, a-BGT group. TNF-α group of Caco2 cells were exposed by 25 ng/ml TNF-α, GTS-21 group were given 100 ng/ml GTS-21 for 30 min prior to TNF-α; a-BGT group pre-treated with a-BGT (50 μg/ml) for 30 min prior to GTS-21 injection. BAY 11-2085 (NF-κB inhibitor) group was given 50 μg/ml BAY 11-2085 for 30 min prior to TNF-α. Disease activity index, macroscopic scores, and colonic damage were determined. The intestinal permeability of mice was measured by fluorescein-isothiocyanate-dextran (FITC-Dextran) method. Western blot was used to detect the tight junction protein and NF-κB associated protein expression.

Results: Compared with DSS-induced mice, DAI score decreased and colon length improved after administration of GTS-21 (9.1 ± 0.74 cm vs 6.85 ± 0.53 cm, P < 0.01). The α7nAChR antagonist a-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/ml vs 157.4 ± 32.40 μg/ml P < 0.05), whereas a-BGT can block the decrease (115.5 ± 10 μg/ml vs 49.52 ± 28.59 μg/ml 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). 4. GTS-21 attenuated the NF-κB activation (p < 0.05) and β-catenin translocation reversed the inflammatory effect of GTS-21 (p < 0.05) (Figure 6). 5. GTS-21 improves the distribution of tight junction protein. The mucosa of CD patients accumulate pro-inflammatory macrophages and the expression of Wnt10b in human macrophages are enhanced after treatment with GTS-21 in both, control (83.3 ± 4.8%) and CD (89.6 ± 3.9%). In these GTS-21+cells, an increased expression of CD16 in CD mucosa was observed (Control: 34.5 ± 6.8%; CD: 59.7 ± 6.4%) while that of CD163 was similar in both groups (control: 72.8 ± 8.4%; CD: 85.2 ± 7.3%). The analysis of Wnt10b in CD206+ showed a significantly higher expression in CD patients (56.6 ± 4.2%) than in control samples (30.1 ± 10.4%). Additionally, CD68+ macrophages were more abundant in the CD206+ marker (Control: 29.3 ± 10.2%).

Conclusion: The mucosa of CD patients accumulate pro-inflammatory macrophages measured as CD68+ cells while those macrophages expressing the M2 marker CD206 after their phenotype increasing the expression of both, CD16 and CD163. This may represent the profibrotic mediator Wnt10b.

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

Reference
Ortiz-Masía, D, Salvador P, Macias-Ceja DC, L Gisbert-Ferrándiz, Hernández C, Esplugues JV, Calatayud S and Barrachina MD. Wnt10b could mediated the tight junction protein in DSS-induced mice were enhanced after treatment with GTS-21, which may be due to improving intestinal mucosal barrier function by enhancing the expression of tight junction protein.

All authors have declared no conflicts of interest.

P1621 ANAEMIA PREVALENCE AND TREATMENT APPROACH FOR INFAMMATORY BOWEL DISEASE
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Introduction: For inflammatory bowel disease (IBD), anaemia is the most frequently observed extra intestinal finding, prevalence of which varies from 6% to 74%. It’s of great importance to determine and treat anaemia as it lowers patients’ life quality and leads to labour loss. The main causes of anaemia in IBD are iron deficiency anaemia (IDA) and anaemia of chronic disease (ACD).

In this study, we aim to specify the type and prevalence of anaemia along with a treatment approach for inflammatory bowel disease (IBD). We conducted a retrospective study on 465 patients, who were diagnosed with IBD and followed up at our hospital from June 2015 to June 2016 (male: 254, female: 211, average age: 47 ± 14.4, Crohn disease (CD): 257, Ulcerative Colitis (UC): 108).

Aims & Methods: In this study, we aim to specify the type and prevalence of anaemia along with a treatment approach for inflammatory bowel disease (IBD). We conducted a retrospective study on 465 patients, who were diagnosed with IBD and followed up at our hospital from June 2015 to June 2016 (male: 254, female: 211, average age: 47 ± 14.4, Crohn disease (CD): 257, Ulcerative Colitis (UC): 108).

According to WHO criteria, anaemia stages are below 13 g/dL in men and 12 g/dL in women.

Results: In our study, we determined that 50.3% of total 465 patients had anaemia, which was more frequent in women then men (64% vs. 39%, p < 0.001).

Anaemia frequency was higher in CH cases (57%) then in UC cases (41%) (p = 0.001). CD involvement were as follows: 54.5% in ileal involvement, 60.4% in colonic involvement and 58.5% in ileocolonic involvement. Furthermore, 27.5% of UC patients had proctitis (EI) involvement while 41% of them had proctitis 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), anaemia from B12/folic acid deficiency 6.4% (15), anaemia with other causes 17.5% (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.

Disclosure of Interest: All authors have declared no conflicts of interest.
Conclusion: We found that almost half of all IBD patients (50.3%), whom we followed up, had anaemia, the most frequent reason of which was IDA. Almost half of these patients received anaemia treatment. We should increase the treat- ment rate in our IBD patients that have anaemia.

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

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 succinate, an intermediate of the tricarboxylic acid cycle, in inflammation and the succinate receptor, SUCNR1, has been recently linked with rheumatoid arthritis3.

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, intrarrectally) 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. The colon mucosa gene expression levels of iNOS, Arginase I, COX-2, T NF-α, IL-1β, IL-6 and IL-10 were analyzed 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, four 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); c) the score was significantly reduced (3.5 ± 0.2 vs 4.8 ± 0.5) two days after TNBS treatment. d) The expression in the pro-inflammatory molecules was significantly prevented (P < 0.05) (table 1) while no significant differences were detected in the expression of COX-2 (Table 1).

Table1: mRNA expression of different molecules detected in the colon of TNBS-treated mice. Results are expressed as fold induction vs the value obtained in WT mice.

<table>
<thead>
<tr>
<th></th>
<th>iNOS</th>
<th>Arg1</th>
<th>COX-2</th>
<th>TNFα</th>
<th>IL-1β</th>
<th>IL-6</th>
<th>IL-10</th>
</tr>
</thead>
<tbody>
<tr>
<td>WT</td>
<td>2.6±0.6</td>
<td>1.6±0.7</td>
<td>1.1±0.2</td>
<td>2.6±0.6</td>
<td>1.7±0.2</td>
<td>4.2±1.0</td>
<td>0.8±0.1</td>
</tr>
<tr>
<td>KO</td>
<td>1.5±0.4</td>
<td>2.8±1.0</td>
<td>1.3±0.3</td>
<td>1.3±0.2</td>
<td>1.2±0.1</td>
<td>1.7±0.3</td>
<td>1.4±0.2</td>
</tr>
</tbody>
</table>

Conclusion: Activation of the succinate receptor SUCNR1 mediates murine colitis. These findings highlight the biological significance of SUCNR1 and open the door to novel approaches for IBT treatment.

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

References

P1623 ZIP7 INDUCES DISRUPTION OF THE INTESTINAL BARRIER THROUGH ACTIVATION OF ENDOPAS-
MIC RETICULUM STRESS IN INFLAMMATORY BOWEL DISEASE

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Introduction: Inflammatory bowel disease (IBD) is a chronic intestinal inflammation disease with a tendency to recurrence, and intestinal barrier disorders play a key role in its development. The deficiency of zinc is a clinical manifestation and could worsen the development of IBD. Zinc Transporter Member 7 (ZIP7) is a gatekeeper protein in the intracellular release of zinc in cells. Recent studies revealed that ZIP7 helps to maintain the intestinal mucosal integrity. In addition, ZIP7 can regulate endoplasmic reticulum stress.

Aims & Methods: Our aim was to investigate the role of ZIP7 in IBD initiation and progression. We investigated the expression of ZIP7 in the intestinal mucosa of IBD patients and in interleukin-10 gene-deficient (Il10−/−) mice, and assessed the relation between ZIP7 and disease activity. ZIP7 upregulated/downregulated lenvus was used to infect IEC6 and HIEC cells, then we evaluated the expres-
sion of inflammatory factors, mucosal tight junction proteins (Occludin and ZO-
1), and proteins related with endoplasmic reticulum stress (IRE1, 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 Il10−/− mice, which was associated with disease activity. In IEC6 and HIEC cells, the expression of mucosal tight junction proteins was consistent with the level of ZIP7, but the expression of inflammatory factors and endoplasmic reticulum stress associated proteins were on the contrary. After the silence of IRE1 and the inhibition of JNK pathway, the expression of mucosal tight junction proteins was partly resumed in ZIP7 downregulated cells.

Conclusion: ZIP7 induces disruption of the intestinal barrier, which was asso-
ciated with activation of endoplasmic reticulum stress in IBD. It is expected to provide a novel mechanism of IBD and provide a new target for the treatment of IBD.

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

P1624 EFFECT OF T CELL ACTIVATION AND INFLAMMATION ON THE INTERACTION BETWEEN T CELLS AND ENTERIC GLIAL CELLS

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Introduction: In contact with immune cells, astrocytes participate in the enteric nervous system. These interactions have been implicated in the development of IBD and in the regulation of immune responses. The aim of this study was to evaluate how T cell activation and inflammation influence the interactions between enteric glial cells (EGC) and T cells.

Aims & Methods: To analyse the interactions between immune and enteric neural cells, EGC isolated from the myenteric plexus of the rat digestive tract were co-cultured with CFSE-labeled T cells. Impact of T cell activation on neuro-immune interactions was investigated by treating 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/IL-1 prior their exposition to T cells. After 2 hours, non-adherent cells were removed and the T cells interacting with EGC (S100+) were counted. Immunocytochemistry were also used to characterize the subpopulations of T cells (CD4+, CD8+) that contact glial cells.

Results: Analyses reveal that non-activated T lymphocytes are capable of 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 EGC-T cell interactions was observed after pretreatment of EGC with inflammatory stimuli. This phenomenon was also noted with activated T cells. Characterization of T cells show that both CD4 and CD8 cells are capable of contact with EGC.

Conclusion: Our present data reveal that EGC interact with T cells. These con-
tacts are favored by T cell activation but also by EGC exposure to inflammatory cytokines. Further experimental conditions 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 François Aupetit.

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

P1625 ENTERIC GLIAL CELLS REACTION TO INFLAMMATION IS LOST IN CROHN’S DISEASE

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Introduction: Enteric glial cells (EGC) are essential to intestinal epithelial barrier (IEB) homeostasis. In healthy intestines, EGC reduce IEB permeability and promote mucosal healing. In inflammatory bowel disease (IBD) such as Crohn’s Disease (CD) and Ulcerative Colitis (UC), both EGC phenotype and IEB functions are altered, but putative involvement of EGC in IBD pathogenesis remains unknown. If the astrocyte reactivity is well studied, the reaction of EGC to chronic inflammation is not well documented. We investigated whether EGC impact on IEB permeability was altered in an inflammatory environment and in CD patients.

Aims & Methods: Rat EGC as well as human EGC from control, CD and UC patients were stimulated with the cytokines TNF (lL18+HL1beta) at 1 to 100 ng/ ml) or LPS for 2 or 4 days. Reactive EGC phenotype where characterized and reactive EGC functional impact on IEB permeability was studied (i) in vitro using human intestinal epithelial cells (IEC) in a non-contact co-culture model, or (ii) in vivo by grafting the treated rat EGC in colon wall of Sprague Dawley rats.

Results: Rat and human control EGC induced a significant reduction of IEB permeability after T treatment with untreated or LPS treated EGC. LPS or T treatment had no significant effects on IEC alone. In vivo colon wall grafting with control EGC did not modified the permeability whereas colon wall grafting with EGC preconditioned by T significantly reduced
Disclosure of Interest: All authors have declared no conflicts of interest.

Aims & Methods: In enteric inflammation, liquid chromatography tandem mass spectrometry was performed using high sensitivity liquid chromatography tandem mass spectrometry. Consequences of flolan PGII analogue supplementation were evaluated in a DSS-induced mice model of colitis, measuring disease activity index (DAI), inflammation (pro-inflammatory cytokine mRNA) and IEB permeability (sulfonic acid flux). Molecular mechanisms involved were assessed by quantification of junctional and pro-proliferative or pro-apoptotic protein expression (western blot and immunostaining). Eventually PGII impact on reversing IEB breakdown was assessed in vivo measuring permeability of mice or human mucosal explants treated with staurosporine apoptosis inducer, or permeability of IEB biopsies both treated or not with flolan.

Results: Biopsies from IBD patients had lower PGII production compared to control patients, and addition of flolan reduced their permeability. In vivo PGII supplementation significantly reduced DAI, 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 mice or human mucosal explants treated with staurosporine apoptosis inducer, or permeability of IEB biopsies both treated or not with flolan.

Conclusion: This study not only presents a role of PGI2 in controlling IEB permeability but also shows that EGC patients have lost these reactivity. This could define EGC as active players in CD pathogenesis.

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

Aims: To analyze the serum levels of following cytokines: interleukin (IL)-17A and IL-21, and 22 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-22 (14.68 pg/ml [11.29;17.19] respectively) was observed in patients with UC both in acute stage and remission compared to controls (7.36 pg/ml [5.18;8.06], p = 0.0007, p = 0.00029 respectively). The same trend was observed regarding IL-21, which median values were higher both in acute stage (156.51 pg/ml [133.44;233.53]) and remission (144.02 pg/ml [133.44;154.43]) compared to control group (98.31 pg/ml [89.14;124.86], p = 0.065). IL-21 was revealed that IL-23 which stimulates Th17 functional overactivity was a sign of autoimmune type of inflammation. Statistically significant increase of IL-10 in remission (21.93 pg/ml [17.3;35.3]) compared to controls, however differences were not statistically significant (p = 0.06; p = 0.172). Increase of described cytokines levels could be a sign of Th17 functional overactivity suggesting autoimmune type of inflammation. Statistically significant increase of IL-10 in remission (27.99 pg/ml [17.53;33.55]) compared to controls (4.36 pg/ml [3.26;15.25], p = 0.0046) was found as well. IL-10 was also higher in patients with acute stage (21.93 [3.61;35.35] compared to controls, however differences were not statistically significant (p = 0.06; p = 0.172). Increase of described cytokines levels could be a sign of Th17 functional overactivity suggesting autoimmune type of inflammation. Statistically significant increase of IL-10 in remission (27.99 pg/ml [17.53;33.55]) compared to controls (4.36 pg/ml [3.26;15.25], p = 0.0046) was found as well. IL-10 was also higher in patients with acute stage (21.93 [3.61;35.35] compared to controls, however differences were not statistically significant (p = 0.06; p = 0.172). Increase of described cytokines levels could be a sign of Th17 functional overactivity suggesting autoimmune type of inflammation.

Disclosure of Interest: All authors have declared no conflicts of interest.
The steroid-refractoriness is a common complication of ulcerative colitis (UC). Different responses to glucocorticoids have been implicated in corticosteroid failure. However, there are no conclusive mathematical models generated by means of Systems Biology.

**Results:**

Evaluation of 18 proteins. ANP32e is a secreted protein, mainly detected in the plasma (e.g. RelA), glucocorticoid receptor transcription (e.g. NR3C1 and NCOA3) and angiogenesis (e.g. VEGF), mainly. But among these 18 proteins, the ANP32e has never been related to either steroid-refractoriness or ulcerative colitis. ANP32e is associated with high C-reactive protein (CRP) levels and increased CRP reactivity. In addition, the association of ANP32e with CRP levels does not change over time but increases in the levels of CRP reactivity.

**Conclusion:** In conclusion, this study has identified a potential new MoA related to UC steroid-refractoriness involving chromatin remodeling modifications.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
Results: (before vaccination, 4 weeks after the first vaccination, 4 weeks after the second vaccination group and booster group were randomly assigned to adult patients with Crohn’s disease or ulcerative colitis, and quadrivalent influenza vaccine. Serum samples were assigned to adult patients receiving immunosuppressant therapy, especially infliximab, even with a serological response rate to influenza vaccination was low in IBD (0.06–0.91); H3N2: 0.19 (0.06–0.56)).

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 IB were randomly assigned to single vaccination and booster groups. Eighteen patients received immunomodulatory monotherapy and 20 received anti-TNF-a agents. Nineteen patients received combination therapy of immunosuppressant and anti-TNF-a 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 protein level (SP%) and serum conversion rate (SC%) tended to be lower in influenza. A strain in patients who maintained blood concentrations of H1N1: OR 0.37 (0.11–1.21); H3N2: OR 0.22 (0.07–0.68), SC%; H1 N1: 0.23 (0.06–0.91); H3N2: 0.19 (0.06–0.56).

Conclusion: Serological response rate to influenza vaccination was low in IB patients receiving immunosuppressant therapy, especially infliximab, even with a quadrivalent influenza vaccine.

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

References

Abstract: P1633. Table 1: Incidence rates per 100 000 for inflammatory bowel disease (IBD) in seven ethnically diverse urban populations in England; results from the UK Inception Cohort Epidemiological Study (UNITE)

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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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.1,2 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 Leicester and Pakistan 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 Epicomp database. Chi-squared test was used to detect differences in IBD incidence between ethnic groups. A p < 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 IB, 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 Peninsula, North Manchester and highest 26.11/100,000 in Leicester. Overall incidence of UC was higher than CD (9.69/100,000 vs. 4.80/100,000) and was consistent for all populations except Penny (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 Caucasians and Pakistanis (p < 0.001). Data for disease phenotype was available for 160/219 patients with UC (24% E1, 42% E2 and 34% E3). There was no significant difference in disease extent between ethnic groups.

Conclusion: The incidence rates for IBD in seven urban populations in England is 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 Northwest 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.
**P1634** IBD-RELATED MALIGNANCIES AND MORTALITIES OBSERVED BETWEEN 2015–2016–TWO YEARS' RESULTS FROM THE PROSPECTIVE NATIONWIDE HUNGARIAN REGISTRY


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Introduction: Inflammatory bowel diseases (IBD)-Crohn's disease (CD); ulcerative colitis (UC) are lifelong inflammatory conditions of the gastrointestinal tract. IBD-associated colorectal cancer (CRC) accounts for approximately 1–2% of all cases of CRC. Although data on mortality rates in IBD patients are controversial, CRC has been shown to account for approximately 10–15% of all deaths among IBD patients. The aim of our nationwide registry was to prospectively collect IBD-related mortalities and all types of malignancies diagnosed in the Hungarian IBD population.

Aims & Methods: Data on all death and malignancies developed between 2015 and 2016 in IBD patients were recorded. Each member of the Hungarian Society of Gastroenterology were prospectively interviewed 3 monthly by personal emails to report both death and malignancies observed in their patient population. Demographic and clinical data including previous immunosuppressive and biological therapy were also collected.

Results: Fifty-five newly diagnosed malignancies were reported (mean age: 49.3 years old, mean disease duration was 16.9 years; male:female ratio was 34:21). 30 Crohn’s disease (CD) patients and 25 ulcerative colitis (UC) patients were 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.

Disclosure of Interest: Aims & Methods: The aim of the study was to assess AC HPV infection prevalence and its risk factors in an IBD 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.

**P1636** GUT COLONIZATION WITH EXTENDED SPECTRUM BETA-LACTAMASE PRODUCING ENTEROBACTERIA MAY INCREASE RISK OF MALIGNANCY IN INFECTED COLONIC TUMOURS: PRELIMINARY STUDY RESULTS


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Introduction: Extended spectrum beta-lactamase producing Enterobacteria (ESBL-E) colonization may increase risk of malignancy in infected colonic tumours.

Aims & Methods: The aim of the study was to analyze whether gut colonization with ESBL-E producing Enterobacteria may influence the risk of clinically relevant disease activity increase in ulcerative colitis (UC) and in Crohn’s disease (CD). All consecutive patients with confirmed UC and CD diagnosis, previously hospitalized in two largest tertiary medical care centres in Riga, Latvia during a 7-year period (2010–2016) were included in the study, interviewed, rectal swabs were collected, Enterobacteria were cultured and analyzed for ESBL presence according to EUCAST guidelines. To clinically evaluate disease activity UC patients were evaluated according to Mayo score, 2016 classification, adapted Truelove and Witts criteria and CD patients according to Crohn’s disease activity index (CDAI), suggested by ECCO IBD guidelines (2016).

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

**P1635** ANAL CANAL HUMAN PAPILLOMAVIRUS (HPV) INFECTION IN MEN AND WOMEN UNDERGOING COLONOSCOPY: PREVALENCE AND RISK FACTORS, HIGH INFECTION RISK IN MEN AND WOMEN UNDERGOING COLONOSCOPY.


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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 IBD 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 diseases (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; p = 0.0035, compared to men). Regarding medical history, HR, HPV and HPV16 prevalence were significantly higher in Crohn’s disease patients (30%, p = 0.0051; 14%, p = 0.0072, compared to the rest of the study population). Eleven/12 patients (50%) with perianal CD had an AC infection with any HPV. Multivariable analysis associated female gender and history of sexually transmitted disease with the presence of any HPV in AC; and female gender, history of sexually transmitted disease, lifetime and past year number of sexual partners, active smoking and immunosuppressive treatment (OR 5.3) with the presence of HR HPV.

Conclusion: We demonstrated that CD patients harbor more frequent AC infection with HR HPV 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, BMS. LV receives 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
50% had mild to moderate to severe disease activity, according to Montreal classification disease activity 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 with IBD. Such finding could be clinically relevant and help to improve diagnostic and treatment protocols for IBD patients, because eradication of ESBL producing bacteria might reduce IBD disease activity.

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

Reference:

P1636 IS SMOKELESS CESSATION LINKED TO NEW ULTERCATIVE COLITIS CASES? A RESTROSPECTIVE COHORT-BASED HYPOTHESIS


Disclosure of Interest:

Results: The study population was characterized by a high DMFT index with mean value 19.35. There was a significantly higher number of filled (F) and lower number of lost teeth (M) among patients who underwent respective surgery. No significant incidence of IBD in the family was similar in both groups of patients. Type of treatment has no significant impact on DMFT index values. There were no statistically significant differences between UC and CD group in DMFT index, M and F values. However, it has been found that these groups differ in D values which averaged 4.5 and 3.2 for CD and UC groups (p < 0.05). The analysis of both patients' groups with regard to gender showed statistically significant differences in D and F values. The lowest mean D value was noticed in UC females group (2.8) and the highest in CD males (5.2); average F values were opposite-11.4 for UC females and 7.8 for CD males. Statistical analysis of DMFT index among patient from CD and UC groups according to disease phenotype showed no significant differences in DMFT, D and M in both groups. Average DMFT varied from 18.14 for L1 to 20.59 for L4 patients in CD group and from 17.30 for E1 to 20.55 for E2 in UC group. However, significant difference in F values was observed in CD patients: L1 and L2 have lower average F than those with L3 and L4 (6.66; 7.46, 10.25 and 14.00 respectively; p = 0.0215). D values were significantly higher for patients with none or one extraintestinal symptoms (p < 0.05). Results of D values obtained in our study were higher than for healthy population aged 35-44 in Poland (mean D~2).

Conclusion: The results of preliminary POLIBD study among two groups of IBD patients showed similar values in DMFT index and higher average number of carious teeth in CD patients, especially in men.

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

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Introduction: Smoking has a differential effect on inflammatory bowel diseases (IBD); deleterious for Crohn's disease (CD) and protective for ulcerative colitis (UC). Thickness of the mucus layer, immune system (cytokines production), microvasculature and intestinal microbiome are potential mechanistic factors influenced by the nicotine and numerous other substances. It has been hypothesized that smoking cessation is associated with the second peak of diagnosis in UC patients after 50 years old. Our aim was to confirm this hypothesis using data on smoking status at IBD diagnosis.

Aims & Methods: Adult IBD patients included in the Swiss IBD cohort from November 2006 to November 2015 were asked about their smoking status at diagnosis. We compared the proportion of former smokers in 10-year groups of UC and CD patients.

Results: 2361 IBD patients (1366 CD, 995 UC) were included in the analysis. Among them 52% of CD ans 24% of UC patients were smokers at diagnosis (proportion of smokers in Switzerland (2014): 29%). Among UC patients we found 52% of UC patients showed similar values in DMFT index and higher average number of carious teeth in CD patients, especially in men.

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

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Introduction: Crohn's disease (CD) is a chronic inflammatory disease that can affect any section of the gastrointestinal tract. Malnutrition is a common sequela in these patients and many pathogenic mechanisms could be involved such as poor dietary intake, altered energy expenditure, nutrient malabsorption and/or losses.

Aims & Methods: This cross-sectional study aimed to evaluate the resting energy expenditure (REE) in CD patients, in accordance with clinical status of disease, compared to a control group.

Methods: All consecutive adult women were prospectively enrolled, while a group of healthy women, matched for age and weight, served as control group (C). Patients were classified in clinically active disease (CD-A) and clinical remission (CD-R) according to Crohn's Disease Activity Index (CDAI) (> 150 and < 150, respectively). All subjects underwent REE measure by indirect calorimetry with a canopy system, while body composition variables, such as fat-free mass (FFM) and fat mass (FM), were assessed by bio-impedance analysis (BIA).

Results: Finally, forty-two women with CD, 23 with clinically active disease (CD- A: CDAI = 219 ± 53) and 19 in clinical remission (CD-R: CDAI = 83 ± 41) were recruited for the study, while 40 matched-healthy women were enrolled as control group (C). We found that body weight, FFM and phase angle (PA) differed among groups; but age, height and FM did not. Post-hoc analysis revealed that body weight was significantly lower for CD-A in comparison with C (CD-A: 65.7 ± 9.73 kg vs C: 65.4 ± 6.3 kg; p = 0.02). FFM was reduced in women with CD than with C (CD-A: 39.6 ± 4.43 kg and CD-R: 39.5 ± 6.68 kg vs C: 44.4 ± 6.8kg; p < 0.01) while PA was lower for CD-A compared to both CD-R and C (CDAI > 150 and < 150, respectively). All subjects underwent REE measure by indirect calorimetry with a canopy system, while body composition variables, such as fat-free mass (FFM) and fat mass (FM), were assessed by bio-impedance analysis (BIA).

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Introduction: In aetiology of inflammatory bowel disease (IBD) role of microbial organisms including those from the oral cavity is taken into account. Oral bacteria are known for biofilm formation and enamel demineralisation leading to the formation of caries cavities.

Aims & Methods: The aim of the study was to determine the state of hard teeth tissues measured by DMFT index in adult patients with ulcerative colitis (UC) and Crohn's disease (CD). The study involved 119 UC and CD patients aged from 18 to 72 (mean 34.45). Disease phenotype at diagnosis was classified according to the Montreal classification and only the patients who had confirmed diagnosis of the entire UC or CD tract were included. Following, the data on the occurrence of extraintestinal symptoms, the incidence of IBD in the family, type of treatment, including surgery, were also collected. The complete assessment of the hard teeth tissues based on the DMFT index (decayed, missing, filled teeth) was performed.

Results: DMFT index was performed. Following, the data on the occurrence of extraintestinal symptoms, the incidence of IBD in the family, type of treatment, including surgery, were also collected. The complete assessment of the hard teeth tissues based on the DMFT index (decayed, missing, filled teeth) was performed.

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Magnetic Resonance Cholangiography 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 = 0.0064), 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>Cohort</th>
<th>MRC Total</th>
<th>Normal</th>
<th>Ductopenia</th>
<th>Doubt</th>
<th>PSC</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cohort 1</td>
<td>206</td>
<td>150 (72.8%)</td>
<td>28 (13.6%)</td>
<td>9 (4.4%)</td>
<td>23 (11.2%)</td>
<td>0</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>
<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>
<td>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.

Truecolours Ulcerative Colitis (TCUC): Will Patients with UC Complete Digital Questionnaires in Real-Time?

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Introduction: TCUC is a comprehensive real-time web-based programme for patients with UC. It monitors multiple parameters via electronic questionnaires: symptoms, quality of life (QoL), outcomes (eg emergency department visits) and medication adherence. Patients are entered and personalised treatment guidance is formulated. This information, graphically displayed on a traffic light system, is available to the patient and clinical team via the TCUC website, which is housed on a secure National Health Service server. Patients then received email prompts linked to scheduled questionnaires. Monthly home Fecal Calprotectin (FCaI) measurements were incorporated, monthly blood tests collected and flexible sigmoidoscopy performed at entry and after 6 months. Adherence to all questionnaires and samples incorporated, monthly blood tests collected and flexible sigmoidoscopy performed, and once only (outcomes). Patients then received email prompts linked to scheduled questionnaires. Monthly home Fecal Calprotectin (FCaI) measurements were incorporated, monthly blood tests collected and flexible sigmoidoscopy performed at entry and after 6 months. Adherence to all questionnaires and samples calculated. Usage was assessed via the System Usability Scale (SUS) (n = 59) and qualitative interviews (n = 28). SUS broadly classifies usability of a system from poor (<70) to superior (>90). A deductive approach was used for the qualitative coding and analysis.

Results: Sixty-six patients were recruited (recruitment rate 66/240 invitations delivered, 28%). Of 66 patients, 29 (44%) were male, median age 40.7 yrs.

Table 1: Adherence to Questionnaires

<table>
<thead>
<tr>
<th>Questionnaires</th>
<th>Adherence over 6 months</th>
<th>First 3 months</th>
<th>Last 3 months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duly sympt (SCCAI) questionnaire</td>
<td>76%</td>
<td>81%</td>
<td>72%</td>
</tr>
<tr>
<td>Fortnightly QoL questionnaires (IBD-Control 8, CUCQ-8 and EQ-SD)</td>
<td>95%</td>
<td>96%</td>
<td>94%</td>
</tr>
<tr>
<td>Only once demographic and outcome questionnaires</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Conclusion: Patients with UC will collect digital data in real-time, with good adherence to symptom, QoL, outcome questionnaires and FCaI home testing. Usage was classified as ‘superior’ but further improvements are possible. Larger studies are required to determine cost effectiveness.

Disclosure of Interest: A. Walsh: An unrestricted educational grant from Abbvie Pharmaceuticals was received for this work. Buhlmann laboratories provided all IBDoc kits for this study. All other authors have declared no conflicts of interest.
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) develop structuring complications of the disease at some point. The proper selection of patients with potential benefit of therapy escalation is crucial in order to avoid unnecessary bowel damage. The rapid uptake in the affected bowel segment at intravenous contrast-enhanced ultrasound (CEUS) has been shown to correlate with disease activity but there are no data available on the benefit of CEUS for the therapeutic decision making in this clinical setting.

Aims & Methods: The aim of the study was to evaluate the clinical outcomes of CD patients with structuring disease managed based on the CEUS findings. CD patients with structuring disease were recruited from two IBD centres between June 2015 and February 2017. Patients with penetrating disease complications were excluded. CEUS was performed using a power Doppler (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 biologicals, 1 pts had therapy step-up to antiTNF or thiopurine suppression). Remaining three pts improved subsequently on stable therapy with antiTNF and one patient with longstanding symptomatic colonic stricture was referred for surgery. Ten patients (37%) had no rapid uptake at the CEUS; seven out of these patients had symptomatic structuring 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 continued in therapy after the surgery and none of these patients had recurrence at the surveillance colonoscopy at 12 months.

Conclusion: Contrast-enhanced ultrasound might be helpful in guiding the therapeutic decision making between surgery and therapy intensification in patients with structuring Crohn’s disease.

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

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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 (≥6 months) is strongly associated with inappropriate use of Therapeutic Interventions. Factors Influencing SD may be a function of the country’s health system, but also linked to the particular clinical and evolutionary profile of the disease. The objective of this study was to measure the DD of CD, to describe its distribution and evolution over time and to The factors associated with a long DD (≥Q3).

Aims & Methods: All patients with certain or probable CD between 2004 and 2016 identified by The department’s inflammatory disease hospital registry was included. The socio-demographic characteristics collected included: the patient’s residential area at the time of diagnosis in urban, rural or semi-urban, distance from the nearest hospital (CH). Clinical symptoms and phenotype of CD to diagnosis according to the Montreal classification were collected

Results: Among 247 patients with CD; 90 had a median SD of 03 months. A DD ≥ 7 months was considered a diagnostic delay observed in most patients is 157. In univariate and multivariate analysis at diagnosis, the female sex (54.25%), young age (37.24%), absence of enemas (27%), absence of extra-diagnostic manifestations (25.91%) and Isolated lesions (L1) (34%) and penetrating phenotype (B3) (32.67%) were associated with a shorter DD. The univariate and multivariate analysis at diagnosis, the female sex (54.25%), young age (37.24%), absence of enemas (27%), absence of extra-diagnostic manifestations (25.91%) and Isolated lesions (L1) (34%) and penetrating phenotype (B3) (32.67%) were associated with a shorter DD. Diagnostic delay. Socio-demographic characteristics were not associated with delayed diagnosis.

Conclusion: This study shows that most of the patients, 63.56% have a diagnostic delay significantly associated with the female sex, The young age, the absence of weight loss and a localization of the disease limited to the bowel the penetrating phenotype of disease. No socioeconomic variables or reflective of access to care were found to influence.

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

Reference
Aims & Method: We intend to know the incidence of tuberculosis in IBD patients under anti-TNF therapy in a single tertiary referral centre, analyzing the tuberculosis screening methods and demographic characteristics. IBD patients treated with anti-TNF therapy before January 2000 and December 2016 were retrospectively analyzed.

Results: During this period 166 patients received anti-TNF therapy. Before anti-TNF treatment, screening for LT was performed through medical history, chest X-ray, tuberculin skin test (TST) and/or IGRA. Forty-two patients (25%) had positive screening and received tuberculosis prophylaxis prior to anti-TNF therapy. Fourteen patients (4.2%) developed tuberculosis while under anti-TNF therapy (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-TNF therapy. During screening three patients were under immune suppressive and one under corticosteroid therapy. In the IGRA negative screening patients, the diagnosis of tuberculosis occurred within the first 10 weeks after starting anti-TNF therapy. There were five cases of miliary tuberculosis and two of pulmonary disease. Despite difficult diagnosis, all patients were treated successfully, six of whom needed hospitalization.

Conclusion: In our centre the incidence of tuberculosis in IBD patients under anti-TNF 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. This patient had a previously 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-TNF therapy is needed.

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

References


P.1647 CAN A PATIENT RATE THE ACTIVITY OF THEIR CROHN’S DISEASE THROUGH A MOBILE APP? THE MEDI-CROHN STUDY


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Introduction: The MediCrohn study was designed to evaluate the level of agreement between the Harvey Bradshaw Index (HBI) translated into a patient-based questionnaire completed through a mobile app, and the original HBI questionnaire assessed by the clinician (considered as reference).

Aims & Methods: Patients completed the HBI score through a mobile app designed for both Android and iPhone devices and thereafter (<48 h later), the questionnaire was completed onsite by the gastroenterologist who was blinded for the patients’ responses. We assessed agreement between HBI scores of the clinician and patient on the total sum score and per item. HBI score <5 was considered as inactive disease.

Results: 135 patients participated in the study and completed the HBI trough a mobile app (mean age: 36.8 ± 8 years, 58% women). The proportion of agreement between clinician and patient assessment, both evaluating CD as active or in remission was 91.1%. Only in 12 cases (11%), the patient classified CD as active whereas the physician evaluated it as inactive. No active cases remained undetected by the patient evaluation. Sensitivity, specificity, positive and negative predictive values are shown in Table. The highest agreement was seen for the questions: “abdominal mass” and “general well-being” whereas “number of liquid stools per day” was the item with the lowest agreement.

Patient Rate Clinician Assessment Clinician Assessment Total

<table>
<thead>
<tr>
<th>Active</th>
<th>26</th>
<th>12</th>
<th>38</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remission</td>
<td>0</td>
<td>97</td>
<td>97</td>
</tr>
<tr>
<td>Total</td>
<td>26</td>
<td>109</td>
<td>135</td>
</tr>
</tbody>
</table>

Sensitivity (%) Specificity (%) PPV(%) NPV (%) Agreement

100 89 68 100 91.1% CI(95%)

Conclusion: The HBI score self-administered by the patient through a mobile app resulted in a high percentage of agreement with the gastroenterologist evaluation, and high negative predictive value for disease activity. Results of the MediciCrohn study encourage the use of this mobile app and gives some hints on its conditions of use as a support for the involvement of patients in the management of their disease. Future studies will help to define its precise role in clinical practice.

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

References


P1648 HISTOLOGICAL ASSESSMENT OF REMISSION IN UCERATIVE COLITIS: DISCREPANCIES BETWEEN DAILY PRACTICE AND EXPERT OPINION

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Introduction: Histological remission (HR) has become an important treatment target in ulcerative colitis (UC). However, limited data exist on reliability of histological scoring in daily practice, when it comes to assess minor histological abnormalities. We investigated the reproducibility and reliability of UC histological scores in colonic biopsies assessed by HR by a general pathologist in daily practice. Next, we investigated correlations between the initial histological assessment and the expert review by expert gastrointestinal (GI)-pathologists.

Aims & Method: We performed a retrospective single-centre study in a tertiary IBD referral centre. Colonic biopsies of UC patients with mucosal healing (MH) throughout the examined colon were included. All biopsies were re-assessed by three blinded GI-pathologists using three histological scoring indexes (Geboes score (GS), Riley score (RS), Harpaz-Tarpea Index (HGI)) and a global visual scale (GVS). We evaluated intra- and interobserver variation and correlations between scores and initial histological assessment using Cronbach’s alpha and Spearman’s rho analysis.

Results: We included 270 biopsies from 39 UC patients. The interobserver concordance for all histological indexes was substantial to almost perfect (GS 0.84; RS 0.91, HGI 0.61; GVS 0.74). The correlation between the RS and GS was almost perfect (R = 0.94) as scored by expert GI-pathologists.

Conclusion: Available histological scores for UC are reliable with strong mutual correlations in case of limited histological abnormalities. However, limited data exist on reliability of histological scoring in daily practice, when it comes to assess minor histological abnormalities. We investigated the reproducibility and reliability of UC histological scores in colonic biopsies assessed by HR by a general pathologist in daily practice. Next, we investigated correlations between the initial histological assessment and the expert review by expert gastrointestinal (GI)-pathologists.

Disclosure of Interest: All authors have declared no conflicts of interest.
P1649 EVALUATION OF MODIFIED MAYO ENDOSCOPIC SCORE AND MODIFIED JACOBS ENDOSCOPIC SCORE 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)5. 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] ≤1.0) who underwent colonoscopy between January/2010 and December/2013 were included. MMES and DUBLIN scores were calculated. Analytical and histological activity (defined by Geboes scores ≥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 ≥2.0, 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=0.55, 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=0.005). There was no significant correlation between both scores and analytically.

Relapse occurred in 36.6% (n=30) of patients, with a cumulative risk of 9.8, 18.4, 25.9, 31.5 and 40.0% at 12, 24, 36, 48 and 60 months, respectively. Mayo Endoscopic Subscore (MES) (p=0.001), MMES (p=0.001), DUBLIN (p<0.001) 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 (MES, p<0.0001) and 0.74 (DUBLIN, p=0.001) for prediction of relapse, with MMES significantly higher than MES by a difference of 0.037 (0.002–0.072); p=0.03.

Conclusion: MMES and DUBLIN scores correlate with each other and with histological activity, acting as independent predictors of relapse. MMES was superior to MES in the prediction of relapse.

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

References

P1650 USEFULNESS OF MAGNETIC RESONANCE ENTEROGRAPHY ON MEDICAL DECISION-MAKING IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE (IBD) AFTER A 1-YEAR FOLLOW-UP: A MULTICENTER STUDY

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Introduction: Crohn’s disease (CD) is a chronic progressive destructive disease, resulting in cumulative structural bowel damage, which may predict long-term disability. The Lémann Index (LI) has been developed to measure CD-related bowel damage, including bowel surgery, presence of strictureing and penetrating lesions (Pariente and al, Gastroenterology 2015). The first Inflammatory Bowel Disease - Disability Index (IBD-DI) has recently been validated (Gower-Rousseau, Gut 2015).

Aims & Methods: The aim of the present study was (1) to identify factors associated with bowel damage and with disability in CD and (2) to evaluate the correlation between the LI and the IBD-DI. We performed a prospective study in the tertiary referral center of the Clínica Huérez Hospital in Lille from September 2016 to November 2016, including all consecutive CD outpatients. Bowel damage was assessed by the LI calculated according to the published LI protocol. Abdominal and pelvic Magnetic resonance imaging (MRI) were reviewed and red by the same couple of one gastroenterologist and one radiologist. The IBD-DI was also calculated for all patients. Factors associated with LI and IBD-DI levels were identified by means of bivariate analyses of variance.

Results: 230 patients were prospectively and equally included. Mean age was 34.0 (interquartile range [IQR]: 26.0–46.0) and median disease duration was 10.0 (IQR: 5.0–17.0) years. 65 patients (50%) underwent at least one resection surgery. The median LI was 10.8 (IQR: 0.6–17.5). Disease duration (p<0.0001), cumulative anal location (p<0.0001) and CD activity (p<0.0001) were associated with higher LI scores. Median IBD-DI was 25.0 (IQR: 14.7–41.1). Female gender (p=0.02), CD activity (p<0.0001) and current anoperinal lesions assessed by clinical examination and pelvic MRIs (p=0.001) were associated with higher IBD-DI scores. The correlation coefficient between the LI and the IBD-DI was 0.12 (±0.05, 0.29; p=0.154).

Conclusion: In a large cohort of CD patients from a tertiary referral CD center, disease duration, anal location and CD activity are associated with bowel damage assessed by the LI, while female gender, disease activity and current anoperinal lesions are associated with disability assessed by the IBD-DI. Correlation between the LI and the IBD-DI was low.

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

References
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Gower-Rousseau et al, Gut 2015
P1652 COMPARISON OF CYTOKINES MRNA EXPRESSION IN INFLAMED AND NON-INFLAMED MUCOSA OF PATIENTS WITH INFLAMMATORY BOWEL DISEASE

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Introduction: The aetiology of Crohn’s disease (CD) and ulcerative colitis (UC) is not known. Recent data suggest a different cytokine profile between CD and UC. Aims & Methods: The aim of this study was to analyse the expression of mRNA of proinflammatory, regulatory anti-inflammatory cytokines, chemokines and their ligands (IL-6, IL-10, 12, IL-23, TNFa, CCR1, CCR2, 2-59, IL-10,TLR2, 4, CD80), and transcription factor FoxP3 in the inflamed and non-inflammatory intestinal biopsy samples of mucosa in IBD patients. We performed a cross-sectional study. The cohort consisted of 87 consecutive IBD patients (47 CD and 40 UC) who underwent colonoscopy at the IB Centre of University Hospital Bratislava. We performed biopsy and immunohistochemistry from inflamed mucosa from sigma (CD, UC) and terminal ileum (CD). mRNA was extracted from mucosal biopsy samples, isolated by a RLT buffer and reverse transcribed. We normalized the expression of the target genes to the expression of the house-keeping gene (GAPDH). Finally, we compared the expression of cytokines in inflamed and non-inflamed mucosa separately for CD and UC patients.

Results: In UC patients, we observed higher expression of IL-8 (p < 0.04), IL-23 (p < 0.018) TLR2 (p < 0.002), CCR1 (p < 0.007), CCR2 (p < 0.037), CCR5 (p < 0.01), CD206 (p < 0.011), TNFa (p < 0.002) and IL-6 (p < 0.006) in the inflamed mucosa from sigma. In CD patients, we observed increased expression of IL-8 (p < 0.005) and IL-12 (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 NEUTROPHILIC AND ENDOTHELIAL ACTIVITY MARKERS WITH THE DISEASE ACTIVITY IN INFLAMMATORY BOWEL DISEASE

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Introduction: The disease activity in inflammatory bowel disease (IBD) is not searched yet. The increase in endoglin 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 relation of serum NGAL and endoclin levels in ulcerative colitis (UC) and Crohn’s disease (CD) patients was 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 (CCI)) for UC and CD activity index (CDAI) for CD, and pathologic activity scores and immunohistochemical staining.

Results: There were no differences between UC and CD patients in terms of serum endoglin and NGAL levels. NGAL and endoglin levels were significantly higher in endoscopically active UC group (n = 59) (142.8 ± 67.8 ng/mL and 28.0 ± 15.0 pg/mL) compared to inactive UC (n = 27) (119.7 ± 26.3 pg/mL and 46.5 ± 134.2 pg/mL), to non-IBD (115.8 ± 27.2 pg/mL and 460.6 ± 103.2 pg/mL) and to controls (116.7 ± 31.7 ng/mL and 457.2 ± 114.1 pg/mL). Although there were limited number of inactive CD patients (n = 11), serum NGAL and endoglin levels were significantly higher in endoscopically active CD groups (n = 52) (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 vessel endothelial growth factor (VEGF) (UC r = 0.486, p < 0.001; CD r = 0.383, p = 0.004). 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 <4.0 10^9/l), primarily in the first years of treatment. Dose adjustments were more often associated with moderate leukopenia (leukocyte count <3.0) than with mild leukopenia (p < 0.01). In total, 2 complications were recorded, 1 patient was hospitalized because of pancytopenia and received red blood cell transfusion, and 1 patient was treated for a CMV infection. Both patients presented with symptoms in clinic with preceding normal laboratory values. No mortality due to thiopurine-induced toxicity was observed.

Conclusion: Although mild toxicity is common during maintenance thiopurine therapy, adjustments based on laboratory assessments are rare. Therefore, a less intensive regime to monitor thiopurine-induced toxicity should be considered.

Disclosure of Interest: N.K.H. de Boer: Nanne de Boer has received a research and travel grant from TAKEDA outside the submitted work and served as principal investigator and consultant for TEVA. C.J. van der Woude: CJW has served as a speaker and a consultant for Abbv, MSD and as a consultant for Shire and received funding from Janssen Biologics BV. All other authors have declared no conflicts of interest.

P1656 ULTRASOUND ELASTICITY IMAGING PREDICTS THERAPEUTIC OUTCOMES IN PATIENTS WITH CROHN’S DISEASE TREATED WITH ANTI-TUMOR NECROSIS FACTOR ANTIBODIES

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Introduction: Intestinal fibrosis represents one of the main sources of morbidity for patients with Crohn’s disease (CD), as its onset is associated with the development of CD-related complications which increase the likelihood of hospitalization and surgery. Ultrasound elasticity imaging (UEI) is a non-invasive ultrasonographic technique developed to evaluate tissue fibrosis by measuring tissue strain after application of a force. We have recently demonstrated that UEI can reliably detect severe ileal fibrosis in patients with Crohn’s disease. We therefore hypothesized that a more severe range of fibrosis might influence the therapeutic response to anti-tumor necrosis factor (TNF) treatment.

Aims & Methods: The aim of this explorative study was to assess the ability of UEI to predict therapeutic outcome in active CD patients treated with anti-TNF antibodies. 30 patients with ileal or ileocolonic CD (20 males, age 38.8 ± 14.5 years) initiating anti-TNF treatment were enrolled in the study. All patients completed the induction phase and underwent scheduled maintenance therapy with anti-TNF for 16.1 ± 8.5 months. Patients underwent bowel ultrasound and UEI at baseline and 14 weeks after initiation of anti-TNF. Bowel wall stiffness at UEI was quantified by calculating the strain ratio (SR) between the bowel wall and the surrounding mesenteric tissue. Receiver operating characteristic curve analysis was used to identify the best SR cut off able to predict surgery/bowel obstruction.

Results: Five patients (16.7%) underwent surgery or hospitalization for bowel obstruction during the follow up. Frequency of CD-related surgeries or hospitalizations was significantly greater in patients with SR ≥ 2 at baseline than in patients with SR < 2 (p = 0.02). A significant reduction in bowel thickness was observed after 14 weeks of anti-TNF treatment (from 5.8 ± 1.5 mm to 5.1 ± 1.7 mm, p < 0.005), while SR values remained unaltered (1.5 vs 1.3, p = 0.5). A significant inverse correlation was observed between values of strain ratio at baseline and thickness variations following anti-TNF therapy (p = 0.007). Eight out of 30 patients (27%) achieved transmural healing at 14 weeks. Baseline SR was significantly lower in patients with transmural healing than in patients not achieving this endpoint (1.06 ± 0.16 vs 1.67 ± 0.17, p < 0.05).

Conclusion: This explorative study shows that UEI is be able to predict therapeutic outcomes, including CD-related surgeries and transmural healing, in patients with Crohn’s disease treated with anti-TNF therapy.

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

References:


P1657 CLINICAL CHARACTERISTICS OF RECTAL-SPARING ULCERATIVE COLITIS

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Introduction: Ulcerative colitis (UC) generally involves the entire large intestine extending from the rectum to the ileocecal junction. However, some patients with moderate or severe UC lack any obvious rectal involvement (known as rectal-sparing (RS)-UC).

Aims & Methods: In this study, we evaluated the differences in the clinical characteristics of patients with UC who had rectal sparing compared with patients with UC who did not. The patients were classified into 3 groups: RS (n=70), UC without RS (n=320), and UC with RS (n=1000).

Results: Significant differences were observed in age at onset (10 years older in the RS group), sex ratio (58% male in the RS group vs. 67% male in the UC group), and disease activity (CRP: RS-UC: 2.4, S-UC: 0.05). Other significant differences included greater endoscopic score and relapse rate in the RS group than the standard UC group. We recommend aggressive treatment for patients with UC who exhibit high CRP, endoscopic score, and relapse rate.

Conclusion: There were no significant superiority of FICE, in dysplasia screening. Consistent with the literature, if FICE is to be used in clinical practice, this study showed that FICE could detect diminutive polyps, and evaluating surface patterns without magnification.

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

References

P1658 EVALUATION OF COLONIC MUCOSA WITH FLEXIBLE SPECTRAL IMAGING COLOR ENDOSCOPY (FICE) IN PATIENTS WITH LONG TERM ULCERATIVE COLITIS DURING DYSPLASIA SCREENING

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Introduction: UC associated colorectal cancer risk is related to the age of onset and duration and anatomic extent of the disease. The rate of malignancy 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. However, some patients should undergo colonoscopy before the end of the first decade of onset (2). Recent endoscopic imaging techniques 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 dysplasia 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 acquired by FICE. Random biopsies were taken 129 (48.2%) random and 22 (15.7%) targeted biopsies. While there were no dysplasia in random biopsies, low-grade dysplasia was detected in 22 (15.7%) targeted biopsies. When all the images are analyzed, channels 2 and 9, were found to be significantly different from other channels. When the most rated channels, 2 and 9, were compared to the WLE, the FICE image is better for evaluation of the mucosal and vascular structure. However, there were no significant difference between channels 2 and 9.

Conclusion: There were no significant superiority of FICE, in dysplasia screening. Consistent with the literature, if FICE is to be used in clinical practice, this study showed that FICE could detect diminutive polyps, and evaluating surface patterns without magnification.

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 microbial dysbiosis and clinical 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 grouped 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 (FCaI). (FCaI® ELISA, Bühlmann 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-map™ Dysbiosis Test. Dysbiosis was defined as non, mild or severe (1). Differences in disease activity between levels of dysbiosis severity were analysed using ANOVA at a significance level of P = 0.05. Significant associations between dysbiosis severity and disease activity and log-transformed microbiota profiles were analysed using ANCOVA. P-values corrected for multiple testing, using Benjamini-Hochberg correction, are presented. For enterotypes, we used the reference database of the Human Microbiome Project.

Results: Data on dysbiosis, bacteria profiles, and FCal were available in 57 CD, 80 UC, 12 IBD-U patients and 100 symptomatic non-IBD patients, and 45 healthy controls. CRP was available for 52 CD, 74 UC, 10 IBD-U patients, and 88 symptomatic non-IBD patients. HBI was available for 50 CD patients, while SCCAI was available for 77 UC patients. Disease activity: No association was found between FCal and dysbiosis in UC patients (P = 0.08), CD patients (P = 0.22), and healthy controls (P = 0.57). However, an association was found between FCal and dysbiosis in symptomatic non-IBD patients (P = 0.04) and in IBD-U patients (P = 0.005). An association was found between CRP and dysbiosis in CD patients (P = 0.02), while not for UC and symptomatic non-IBD patients. No association was found between HBI and dysbiosis in CD patients (P = 0.23), and between SCCAI and dysbiosis in UC patients (P = 0.32). Microbiota: Increasing dysbiosis severity in UC and non-IBD patients yielded lower 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 dysbiosis severity in UC and non-IBD patients, and in combination with elevated levels of FCal and/or CRP in UC patients. In the healthy controls, increasing dysbiosis severity yielded higher abundance of Proteobacteria.

Conclusion: In conclusion, a relationship between faecal dysbiosis in subgroups of IBD patients and some bacterial profiles was evident. 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 CALIBRATED ON ENDOSCOPIC FINDINGS FOR ACTIVITY ASSESSMENT OF CROHNS DISEASE
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Introduction: Crohns 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. To date, several studies have shown 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 was enrolled and undergone MREC and ileocolonoscopy or balloon-assisted enteroscopy (BAE). MREC was evaluated for each bowel segment; rectum, sigmoid, descending, transverse, ascending colon, terminal, proximal ileum, and jejunum, according to the consensus of two observers in the derivation phase, and independently by three observers in the validation phase, using a 3-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 ulcer. 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 90.0% 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 agreement.

Conclusion: For clinical use, radiological reporting systems should be simple and provide appropriate levels of accuracy and reproducibility. The 3-point MREC classification meets these requirements, and is useful for evaluating CD activity in the large and small bowel segments.

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

P1661 RISK FACTORS FOR METABOLIC SYNDROME AND ITS COMPONENTS IN INFLAMMATORY BOWEL DISEASE
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Introduction: 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 during a 1-year period. MetS was diagnosed according to the “harmonized” criteria as the presence of >3 criteria among elevated waist circumference, blood pressure, blood glucose, serum triglycerides, or reduced HDL cholesterol. All subjects underwent colonoscopy; endoscopic disease activity was assessed according to SES-CD and Mayo endoscopic scores. CRP, falciprotein (FC), hemoglobin and ferritin levels were also measured.

Results: We enrolled 145 consecutive IBD patients (53 Crohn's disease and 92 ulcerative colitis; 58 M:87 F; mean age 51 ± 18 years) and 250 age- and sex-matched controls. Overall MetS prevalence was 37% in IBD and 21.6% in controls (OR = 2.1, 95% CI: 1.32–3.39). Prevalence according to sex or disease type did not show significant differences. At multivariate analysis, age and BMI ≥ 25 were associated to an increased probability for a positive MetS status both in IBDD (OR = 3.41, and OR = 6.01) and controls (respectively OR = 3.47 and OR = 3.74). In patients under 50 ages, OR (1.24, CRP (OR = 1.9) and FC (OR = 1.35) positivity were associated to MetS status, while a BMI ≥ 25 increased risk at any age (<50ys OR = 3.8, >50ys OR = 1.56). Depression was not associated to MetS status at any age. Interestingly, anti-TNFα treatment was protective in both groups, but reached statistical significance only in older subjects (>50ys OR = 0.08). Regarding individual MetS components, in the <50ys subgroup, age and CRP positivity associated with an impaired glycemic (respectively, OR = 1.15 and OR = 2.28) and lipidemic status (respectively, OR = 1.23 and OR = 2.3). In older patients, CRP positivity only associated to impaired HDL status (OR = 5.41). Importantly, anti-TNFα treatment favourably associated to HDL status (OR = 0.2).

Conclusion: MetS prevalence is increased in IBD compared to healthy controls at any age, and patients with increased BMI and/or inflammatory markers are at higher risk for MetS, while anti-TNFα agents appear to be protective. The components associated to MetS are differently distributed according to age, with the inflammatory ones prevailing in subjects <50 years and metabolic disturbances in older patients. These results indicate that inflammatory markers in the short-term assessment may reduce MetS occurrence and associated risks in subjects >50 years, in younger patients more effective inflammation control measures may prevent MetS and its related long-term neoplastic and cardiovascular complications.

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

P1662 C-REA TIVE PROTEIN/ALBUMIN RATIO IS A GOOD PREDICTOR OF RESPONSE TO INTRA VENOUS 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 in 123 was based on endoscopic remission or non-response, 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 ± 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 non-response to intravenous corticosteroids with an AUC of 0.746, p = 0.01.

Conclusion: A high value of CRP/albumin ratio was significantly associated with the probability 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.

P1663 INSUFFICIENT VARIATION OF MEDIUM CORPOREAL VOLUME (ΔMCV) IN INFLAMMATORY BOWEL DISEASE UNDER THYOPURINES PREDICTS DIFFICULTY IN ACHIEVING CONTINUOUS DEEP REMISSION COMBINATION WITH ANTI-TNF - THE OTHER SIDE OF THE MCV FLOW STUDY
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Introduction: The MCV flow study confirmed the association ΔMCV ≥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 ΔMCV <7 and to identify predictors of combined deep remission outcomes (DeepRem), at the same timepoint, for the patients who subsequently began combination therapy with Anti-TNF (AzaExposed+ Anti-TNF). Evaluation of patients under mAZa with ΔVGM <7 at key timepoint week 26-28 treatment, included for The MCV flow study. Demographic characterization and severity of pre-treatment disease was evaluated [Montreal classification, previous surgery status, Mayo score and Crohn’s disease activity index (CDAI)]. ΔMCV’s association with DeepRem [Steroid-free clinical remission (CDAI ≤150, Mayo ≤2) + mucosal healing (MH)+C-reactive protein (CRP) <10] and need for biological therapy at the week 26-28 of DeepRem was verified. The fourth independent predictor in patients who subsequently started combination therapy. Statistical: Chi-square test; Binary logistic regression.

Results: A total of 106 IBD patients were evaluated [56.6% men, mean age 39 ± 12.5 years; 58 ad, 14% operated] at week 26-28 of mAZa. Identified strong association between a average ΔVGM ≥7 (n=70; 66%) with DeepRem (p <0.05), while a ΔVGM ≤7 was associated with biological therapy need (p <0.05). 45 patients were later started with Anti-TNF therapy
(Aza + Infliximab 46.7%; Aza + Adalimumab 53.3%) and only 44% achieved DeepRem at the key-timepoint. A Crohn’s A3LB3 p+ 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 population. ΔVGM ≥ 7 was associated with DeepRem and ΔVGM < 7 was found to be associated with biological therapy need. However, even after starting Anti-TNF, ΔVGM < 7 was identified as a predictor of the difficulty reaching DeepRem.

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

**P1664 FCAL PROTECTIN PREDICTS SHORT-TERM RELAPSE IN INFLAMMATORY BOWEL DISEASE PATIENTS IN DEEP REMISION**

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**Introduction:** Most inflammatory bowel disease (IBD) patients with clinically successful treatment seem to have some degree of residual mucosal inflammation. Elevated fecal calprotectin (FC) concentrations can be found despite clinical remission and may indicate relapse risk in asymptomatic IBD.

**Aims & Methods:** The aim of this prospective study was to evaluate whether elevated FC values can predict short-term clinical and/or endoscopic relapse. We enrolled 60 IBD patients (30 ulcerative colitis - UC, 30 Crohn’s disease - CD) who were in clinical and endoscopic remission. FC was measured using quantitative immunochromatographic point-of-care test (Quantum Blue® Calprotectin, Bühlmann Laboratories AG, Switzerland). Patients were followed-up by FC examination and clinical activity assessment every second month until relapse or up to 24 months. Heocolonoscopy was performed at inclusion and at the time of clinical remission.

**Results:** During the follow-up 36 (60%) relapsed and 24 (40%) remained in remission. The mean time to relapse in all patients was 13.9 (range 2-20) months. The mean FC levels before relapse were 2.1 mg/L (p = 0.001) lower than before endoscopic relapse. ROC analysis indicated that a cut-off of ≥ 90 μg/g (OR 24, 95% CI = 5.1-117, p < 0.001) in mean FC values 2 months before relapse could predict relapse in UC patients with 83.3% sensitivity and 82.9% specificity. All CD patients with a cut-off of ≥ 155 μg/g (OR 193, 95% CI = 23.1682, p = 0.001) could predict relapse within two months with 91.7% sensitivity and 94.6% specificity. Constantly normal FC values during the follow-up were predictive for deep remission.

**Conclusion:** It is seen that FC elevates two months before clinical and/or endoscopic relapse. FC is a suitable marker for predicting relapse and building a follow-up strategy for IBD patients in clinical practice.

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

**P1665 GLYCEMIC CONTROL AND INSULIN RESISTANCE IN PATIENT WITH INFLAMMATORY BOWEL DISEASE - PRELIMINARY RESULTS FROM THE POLIBD STUDY**

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**Introduction:** Hyperglycemia associated with critical illness - also called stress hyperglycemia - has been linked to the highest prevalence of severe ill patients. It is connected with many factors, including increased cortisol level, catecholamines uptake, glucagon production, glucoseogenesis, insulin resistance and inflammatory markers. It is not considered as an adaptive response anymore. However, hyperglycemia is associated with poor outcomes and significantly increases mortality rates. That is why stress hyperglycemia and insulin resistance may be a marker of severe illness.

**Aims & Methods:** We analysed the data (glycemia, insulin level, HOMA IR level, C-reactive protein level, Hba1c) of 62 patients aged 18 and older (92 women and 40 men, 32.26 +/-13.8 years of age) with IBD hospitalized in our clinic from 2016 to 2017. 16 patient were with Ulcerative Colitis (UC) and 48 patients with Crohn’s Disease.

**Results:** The analysis of the patients with Ulcerative Colitis showed that only one of the patients had hyperglycemia within the range of 140-200 mg (the patient had type 2 DM) but interestingly 37.5% of the patients had fasting hyperglycemia over 100 mg. Over 85% of these patient were admitted to our clinic with the exacerbation of the disease and had abnormal level of C-reactive protein, calprotectin (> 1800) and fasting insulin level over 10 IU/ml. The analysis of the group of patients with Crohn’s Disease showed different results which may be connected with different metabolic profile of these patients. Most of the patients with fasting hyperglycemia (only 12.5%) had elevated C-reactive protein level but not fasting insulin level - it was within normal range. The highest level of the fasting insulin (over 101 U/ml) in this group was observed in 3 patients who had to undergo immediate surgical treatment - two of them because of the bowel obstruction and one of them because of the perforation.

**Conclusion:** In our opinion there is a strong connection between fasting glucose, CRP level and exacerbation of the disease in CA patients but not in case of the Crohn’s Disease. In this group the elevated fasting insulin may be a marker of severe illness.

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

**References**


**P1666 THE ROLE OF MR IMAGING IN ASSESSMENT OF LEMANN INDEX IN THE COURSE OF CROHN’S DISEASE**

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**Introduction:** Crohn’s disease (CD) is a progressive, chronic and destructive inflammatory bowel 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 was performed. Endoscopic examinations 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 was divided into 4 organs: upper digestive tract, small bowel, colon rectum and anus. Each organ was divided into segments (5 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 and the follow-up control MR examinations will allow for a more complete assessment of patients in terms of progressive bowel damage and modification of the therapeutic process.

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

**P1667 OPTICAL CHARACTERIZATION OF LESIONS IN IBD COLITIS: A SYSTEMATIC REVIEW AND META-ANALYSIS**

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**Introduction:** Optical imaging is being increasingly advocated for characterization of polyps during colonoscopy. The accuracy of these techniques during surveillance colonoscopy in colon inflammatory bowel disease (IBD-C) is unclear and with variable results reported. We aimed to perform a systematic review and meta-analysis of the diagnostic accuracy of optical imaging techniques including narrow band imaging and virtual chromoendoscopy, magnification endoscopy and confocal laser endomicroscopy.

**Aims & Methods:** We searched Medline and Embase for relevant papers. Full articles or abstracts were eligible when characterization performance of dye-based chromoendoscopy (DCE), virtual chromoendoscopy (VCE) (narrowband imaging [NBI], i-scan, Fujinon intelligent chromoendoscopy [FICE]), magnification endoscopy and confocal laser endomicroscopy (CLE) had been compared with histopathology, as the reference standard. Enough information had to

with fasting hyperglycemia (only 12.5%) had elevated C-reactive protein level but not fasting insulin level - it was within normal range. The highest level of the fasting insulin (over 101 U/ml) in this group was observed in 3 patients who had to undergo immediate surgical treatment - two of them because of the bowel obstruction and one of them because of the perforation.

**Conclusion:** In our opinion there is a strong connection between fasting glucose, CRP level and exacerbation of the disease in CA patients but not in case of the Crohn’s Disease. In this group the elevated fasting insulin may be a marker of severe illness.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
**P1660 ENDOCUTANEOUS FINDINGS AND COLONOSCOPIC PERFORATION IN MICROSCOPIC COLITIS: A SYSTEMATIC REVIEW OF THE LITERATURE**

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**Introduction:** Microscopic colitis (MC) is a clinical syndrome of severe watery diarrhoea with few or no endoscopic abnormalities. The incidence of MC is reportedly similar to that of other inflammatory bowel diseases. The need for histological confirmation of MC frequently guides reimbursement health policies. With the advent of high-definition (HD) 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, HD colonoscopies. 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±14.1 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 diarrhoea, symptoms included abdominal pain, weight loss, bloating, flatulence and oedema. In the study group we found 616 (38.9%) pts with macroscopic findings. The most common colonic findings were non-ulcerous lesions i.e. pseudomembranes, a variable degree of vasculature pruning & dwindling, mucosal lacerations & abnormalities such as erythema/edema/nodularity, or surface textural alteration (n=537; 87.2% pts). Isolated linear ulcerations were identified in 5 pts(0.8%) and in conjunction with non-ulcer lesions in 74 pts(12.8%).

**Conclusion:** Endoscopic findings are recognized with increased frequency in pts with MC. This could improve MC diagnosis by prompting a more extensive biopsy protocol in such cases and an earlier initiation of treatment. Procedure-related perforation has been reported in this group; therefore, cautious air insufflation is advisable when endoscopic findings are recognised.

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

**Reference:**


TO SUPPORT IRRITABLE BOWEL SYNDROME DIAGNOSTICS

TO SUPPORT IRRITABLE BOWEL SYNDROME DIAGNOSTICS

P1670 PREVALENCE AND QUANTITATIVE ASSESSMENT OF LIVER STEATOSIS IN INFLAMMATORY BOWEL DISEASE PATIENTS

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Introduction: It is well recognized that patients with inflammatory bowel disease (IBD) are at risk for nonalcoholic fatty liver disease (NAFLD). Our aim was to evaluate the prevalence and to quantify hepatic steatosis in IBD patients by using the controlled attenuation parameter (CAP).

Aims & Methods: We prospectively recruited all IBD patients presenting for a disease flare or follow-up visit in our clinic, during a 18 month period. Patients with alcohol intake >20 g/day and those with existing 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 24.3 kg/m²), HSI (61.1 and 59.9) 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 smoking, steatosis and lower 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


P1671 INTESTINAL MICROBIOTA BIOMARKERS AS A NEW TOOL TO SUPPORT IRRETTIBLE BOWEL SYNDROME SYNDROMICS

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Introduction: Irritable Bowel Syndrome (IBS) is a common gastrointestinal disorder that affects around 11% of global population. Despite the high prevalence of IBS, the cause of this disorder remains unknown and the criteria used to diagnose IBS are still unclear. In recent years, disturbances in the intestinal microbiota have been associated to the pathophysiology of IBS. Recently, two accurately measured biomarkers, FprA (Fpra) and Escherichia coli (Eco) have been shown to discriminate between Inflammatory Bowel disease (IBD) and Healthy subjects (H). Therefore, the purpose of this study was to verify the capability of FprA and Eco abundances to distinguish among healthy subjects, IBS, and IBD patients, in order to create a non-invasive system of diagnostic support for IBS patients.

Aims & Methods: A cohort consisting of 33 H and 14 IBS was enrolled. IBS patients were separated by subtypes: IBS with constipation (C-IBS), IBS with diarrhea (D-IBS) and alternating IBS (A-IBS). Rome IV criteria were used to diagnose IBS patients. Moreover, 29 ulcerative colitis (UC) and 15 Crohn’s disease (CD) patients were also included. All subjects were recruited by the Gastroenterology Services of the Hospital Universitari Dr. Josep Trueta, Girona, Spain.

Results: We found lower abundance value of FprA in IBS patients when compared with H (P = 0.005). In contrast, Eco abundance was higher in IBS patients, although the differences observed were not significant (P = 0.221). When comparing among subtypes of IBS (C-IBS, D-IBS, and A-IBS) no significant differences were observed, although FprA abundance was lower in C-IBS. We also used FprA in combination with Eco as a complementary indicator of dysbiosis (Ratio FprA/Eco). This ratio allows a good discrimination between H and IBS (FPR = 0.04). When it comes to discrimination between IBS and IBD patients, significant differences were observed in FprA/Eco ratio between UC and IBS patients (P = 0.008), but not between IBS and CD patients (P = 0.775).

Conclusion: FprA abundance is a good biomarker to discriminate between healthy subjects and IBS patients. The use of FprA/Eco ratio allows to distinguish IBS from H and UC patients. In contrast, none of the used biomarkers was able to differentiate HS and CD patients. These results show that IBS and CD patients share similar dysbiosis parameters opening the need of further study to stablish any eventual pathogenic link.

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

P1672 DISTINGUISH BETWEEN ULERATIVE COLITIS AND CROHN DISEASE USING AN ELECTRONIC NOISE AND DATA MINING: PRELIMINARY STUDY

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Introduction: Inflammatory bowel disease (IBD) and irritable bowel syndrome (IBS) may present in a similar manner [1] [2]. Measuring faecal calprotectin concentration is often recommended to rule out inflammatory bowel disease, however, there are no tests to positively diagnose irritable bowel syndrome and investigative tests are still used to rule out other pathologies [3, 4]. There is a chance, therefore, for novel, non-invasive despecific biomarkers. Volatile organic compounds (VOCs), originating from physiological metabolic processes in the human body, are excreted as waste products through stool samples. For this reason, several biological, non-invasive, simple and low-cost biological markers of inflammation that are useful in clinical practice for both diagnostic screening and therapeutic or course response monitoring are being evaluated in recent years Evolution of the disease. In this sense, stool markers, and especially calprotectin, have become of great importance in recent years as screening to select patients requiring more diagnostic studies and as a marker of activity for therapeutic follow-up [5]. Can the VOCs from stool samples show differences between ulcerative colitis and Crohn’s disease?

Aims & Methods: Five healthy individuals (control group- CON) and nineteen patients diagnosed with IBD were selected for the analysis of their stool VOCs. Healthy participants Healthy control samples (Control) (n = 5) were collected from healthy volunteers workers in the Digestive Diseases Area and they revealed no illnesses related to the gastrointestinal tract and had not undergone antibiotic treatment in the 3 months before sampling. Active patients were defined as a Mayo Clinical score of 3 or more for ulcerative colitis (UC) and a Harvey Bradshaw clinical index of 4 or more for Crohn’s disease (CD). In both cases, calprotectin > 300 mg/mg or relevant endoscopic lesions. Patients were classified according to Montreal and ECCO criteria. This preliminary study is based in a group of CD-UC-CON where was analyzed 10 CD patients, 9 UC patients and 5 controls with 455 samples. Data from stool samples was obtained using eNose MOOSY32 [6].

Results: Figure 1 shows the scatter 3D plot with three voltage parameters for the group CD-UC-CON. These parameters mean the voltage from the eNose’s signals on saturation slice (vB) and late saturation (vE) and the number of sensor from the MOOSY32. Table 1 shows the comparative between relative error absolute and classification.

Table 1: Different algorithms test for matrix classification by Weka software. Classification Relative absolute error

<table>
<thead>
<tr>
<th>Algorithm</th>
<th>Error Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>MLP Cross</td>
<td>92.0%</td>
</tr>
<tr>
<td>MLP</td>
<td>94.1%</td>
</tr>
<tr>
<td>BayesNet Cross</td>
<td>89.8%</td>
</tr>
<tr>
<td>BayesNet</td>
<td>86.0%</td>
</tr>
<tr>
<td>J4 Cross</td>
<td>89.6%</td>
</tr>
<tr>
<td>J4</td>
<td>89.7%</td>
</tr>
</tbody>
</table>

Conclusion: In this preliminary research to distinguish between Ulcerative Colitis and Crohn’s disease, the best algorithm for patient’s classification was the MLP with 30% to train and 70% to test. Although the high classifications result it is hopeful is necessary continue working to understanding how the eNose’s signals affect to the relative absolute error and improving the algorithms to decrease the error.

Disclosure of Interest: All authors have declared no conflicts of interest.
Introduction: In patients with inflammatory bowel diseases (IBDs), comprising Crohn’s disease (CD) and Ulcerative colitis (UC), a patient-tailored therapy is an unmet need that requires accurate monitoring of the intestinal disease activity. We demonstrated recently, that the expression of microRNA (miR)-320a follows the clinical and endoscopic disease activity and may distinguish between CD patients with low (pMayo 3–4), moderate (pMayo 5–6) and severe disease activity (pMayo > 6) as compared to UC patients in remission (p < 0.001). Furthermore, we detected a significantly enhanced miR-320a expression with increasing endoscopic disease activity (eMayo 1: 9.4 ± 1.4 vs. eMayo 2: 210 ± 31, p = 0.0006; vs. eMayo 3: 775 ± 245; p = 0.002). Most importantly, miR-320a expression in CD and UC patients with acute flare of disease was significantly increased as compared to patients with infectious colitis (53 ± 12, p < 0.001).

Conclusion: The miR-320a expression in peripheral blood from IBD patients follows the clinical and endoscopic disease activity and may distinguish between ID patients and infectious colitis. Therefore, miR-320a might serve as biomarker for non-invasively assessing the disease activity in IBD patients.

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

Reference
The intraclass correlation coefficients were 0.81 (p < 0.001) and 0.89 (p < 0.001) for the Quantum Blue® assay and the cut-off levels used in practice, are based on a high time consuming ELISA procedure, processed in a batch-like method (technical delay) and requiring high expertise. An easy to use, rapid point-of-care test would dramatically reduce the turnaround time for results, allowing a faster decision. The aim of this work is to compare a newly developed point-of-care diagnostic test (Quantum Blue® assay) with 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 tested assay Quantum Blue®. According to the manufacturer, the lower and upper limits of quantification are: In the Quantum Blue assay 0.035 μg/ml and 14.4 μg/ml respectively. In the Promonitor assay 0.035 μg/ml and 14.4 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 3.2 s.d. e. 4.39 (0.035–14.4)); Quantum Blue level mean 6.31; median 3.7 s.d. 6.27 (0.4–20). The intra- and inter-assay 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 are shown stratified according to the patient's clinical history. In this study, 7 tracts had a lower and 3 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". Consistent with previous studies, this assay is a really useful technique enabling the fast and friendly quantitative determination of IFX levels to ensure correct dosing in IBD.

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

References
TABLE 1

<table>
<thead>
<tr>
<th>Variable</th>
<th>N = 46</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years), mean ± S.D.</td>
<td>45.6 ± 13.0</td>
</tr>
<tr>
<td>Male gender, n (%)</td>
<td>22 (47.8%)</td>
</tr>
<tr>
<td>Smokers, n (%) Never Current Ex</td>
<td>4 (8.7%)</td>
</tr>
<tr>
<td>Type of Disease, n (%) Crohn's Disease Ulcerative Colitis</td>
<td>33 (71.7%)</td>
</tr>
<tr>
<td>Duration of disease, mean ± S.D.</td>
<td>12.4 ± 8.4</td>
</tr>
<tr>
<td>Localization of the disease, n (%) Crohn's Disease Ileal</td>
<td>10 (30.4%)</td>
</tr>
<tr>
<td>Extraintestinal manifestations, n (%)</td>
<td>21 (45.7%)</td>
</tr>
<tr>
<td>Disease involvement Ulcerative Colitis Proctitis Left-sided Extensive</td>
<td>3 (9.1%)</td>
</tr>
<tr>
<td>Experience to the IM used in combination therapy, n (%)</td>
<td>13 (28.3%)</td>
</tr>
<tr>
<td>Concurrent prednisone at baseline, n (%)</td>
<td>20 (43.5%)</td>
</tr>
<tr>
<td>IFX Concomitant MTX and IFX GOL</td>
<td>5/46 (10.9%)</td>
</tr>
<tr>
<td>Extraintestinal manifestations, n (%)</td>
<td>21 (45.7%)</td>
</tr>
<tr>
<td>Previous resections Crohn's Disease, n (%)</td>
<td>17 (35.3%)</td>
</tr>
<tr>
<td>Disease Activity Crohn's Disease Harvey-Bradshaw Index (HBI), mean ± S.D.</td>
<td>7.7 ± 3.6</td>
</tr>
<tr>
<td>Mayo Endoscopic score, 0/1/2/3</td>
<td>4.1 ± 1.6</td>
</tr>
<tr>
<td>Endoscopy within six months of combination therapy initiation (n = 26) Crohn's Disease SES-CD, mean ± S.D. Rutgeerts score, 0/1/2/3/4 Ulcerative Colitis</td>
<td>9.9 ± 5.8</td>
</tr>
<tr>
<td>Extraintestinal manifestations, n (%)</td>
<td>21 (45.7%)</td>
</tr>
<tr>
<td>Line of anti-TNF therapy, n (%) First Second Third</td>
<td>10 (21.7%)</td>
</tr>
<tr>
<td>Line of anti-TNF therapy, n (%) First Second Third</td>
<td>34 (73.9%)</td>
</tr>
<tr>
<td>Line of anti-TNF therapy, n (%)</td>
<td>2 (4.4%)</td>
</tr>
<tr>
<td>Experienced to the IM in combination therapy, n (%)</td>
<td>13 (28.3%)</td>
</tr>
<tr>
<td>Time between start of anti-TNF therapy and addition of IM (months), mean ± S.D.</td>
<td>7 (13.5)</td>
</tr>
<tr>
<td>IFX + AZA IFX + 6-MP</td>
<td>11/46 (23.9%)</td>
</tr>
<tr>
<td>IFX + MTX IFX + MMF TOTAL IV ADA + AZA</td>
<td>5/46 (10.9%)</td>
</tr>
<tr>
<td>ADA + MTX GOL + AZA GOL + MMF TOTAL SC</td>
<td>12/46 (26.1%)</td>
</tr>
<tr>
<td>ADA + MTX GOL + AZA GOL + MMF TOTAL SC</td>
<td>3/46 (6.5%)</td>
</tr>
<tr>
<td>ADA + MTX GOL + AZA GOL + MMF TOTAL SC</td>
<td>31/46 (67.4%)</td>
</tr>
<tr>
<td>ADA + MTX GOL + AZA GOL + MMF TOTAL SC</td>
<td>2/46 (4.3%)</td>
</tr>
<tr>
<td>ADA + MTX GOL + AZA GOL + MMF TOTAL SC</td>
<td>8/46 (17.4%)</td>
</tr>
<tr>
<td>ADA + MTX GOL + AZA GOL + MMF TOTAL SC</td>
<td>2/46 (4.3%)</td>
</tr>
<tr>
<td>ADA + MTX GOL + AZA GOL + MMF TOTAL SC</td>
<td>3/46 (6.5%)</td>
</tr>
<tr>
<td>ADA + MTX GOL + AZA GOL + MMF TOTAL SC</td>
<td>15/46 (32.6%)</td>
</tr>
</tbody>
</table>

**Conclusion:** In patients with IBD the addition of an immunosuppressant is an effective and safe optimization strategy after loss of response to anti-TNF alpha monotherapy. Low doses of IM are sufficient to achieve a clinical response in this setting.

**Disclosure of Interest:** F.S. Macaluso: Lecture grants from MSD and Takeda Pharmaceuticals S. Renna: advisory board member for AbbVie and MSD; lecture grants from AbbVie, MSD, Takeda Pharmaceuticals, Zambon. M. Cottonie: 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.

**References:**
P1683 TROUGH LEVELS AND ANTIBODIES TO USTEKINUMAB AS AN OUTCOME OF TREATMENT IN CROHN'S DISEASE PATIENTS

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Introduction: Ustekinumab (UST) has been shown to be effective in refractory Crohn's disease (CD) in phase III trials. The aim of the present study was to prospectively evaluate the association between UST trough levels and anti-ustekinumab antibodies, with the response to induction and maintenance UST treatment in CD patients.

Aims & Methods: We performed a prospective study including all CD patients refractory to anti-TNF who received subcutaneous UST from September 2015 to April 2016. All the patients received replacement therapy with ferric carboxymaltose, intravenous or subcutaneous. The study analyzed the effect of iron supplementation 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) ≥50ng/ml or presence of ulcers in colonoscopy. Anaemia was defined according to ECCO 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. The median 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 most common forms of anemia found in CD and UC were IDA (54.1% and 46.3%), followed by 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 CRC 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 = 0.167, p = 0.022). In UC, CRP and FC normalization was associated with ferritin and transferrin saturations (13.63 ± 1.66 vs 12.47 ± 1.38, p = 0.005 and 51.33 ± 25.60 vs 27.63 ± 9.96, 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 or intravenous iron.

Conclusion: It is necessary to differentiate anemia from the two forms of iron replacement were significant difference in the variation of Hb and iron values after treatment with ferric carboxymaltose or intravenous iron.

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

References:

P1684 ECONOMIC IMPLICATIONS IN INFLAMMATORY BOWEL DISEASES: RESULTS FROM A RETROSPECTIVE ANALYSIS IN AN ITALIAN CENTRE

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Introduction: Inflammatory bowel diseases (IBD) are chronic conditions characterized by elevated costs (both direct and indirect). Over the last years also a significative healthcare burden associated with IBD has emerged, due to an increasing use of biological therapies and hospitalization costs. Despite the creation of local or regional databases in Italy data regarding healthcare expenditure are lacking.

Aims & Methods: The aim of this study was to evaluate costs comprehensive of biological treatments and hospitalizations in a series of patients with ulcerative colitis (UC) and Crohn’s disease (CD) and their correlation with demographic and clinical variables. Disease severity was evaluated by clinical scores (partial Mayo score for UC, Harvey Bradshaw Index for CD). We analyzed retrospectively 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 hospital care specific for a department through fares for homogeneous groups 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 44.3 years and male 40.4%; 90 CD, mean age 38.8 years and male 56.7%). About half of CD patients (48.9%) underwent previous 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 Adalimumab (29.9%) and Golimumab (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 1235.41€/month for CD (no statistical differences between the groups) and 358.38€/month for UC and 1148.92€ ± 337.36€/month for UC (no statistical differences between the 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.
RESULTS: From January 2013 to January 2017, 1578 patients were included. Incident cases were 1151 (808 Cronh’s disease [CD], 333 ulcerative colitis [UC]). In the analyzed cohort, 865 patients were included. It was shown that 22.2% of patients experienced more than one type of therapy during the twelve weeks and one year of treatment. As clinical endpoint, we set remission (corresponding to a Mayo Partial Score ≤ 2 for UC, and to a Harvey-Bradshaw Index ≤ 5 for CD) and response (reduction of Harvey Bradshaw Index ≥ 3 for CD and Mayo Partial Score ≥ 2 for UC compared with baseline).

CONCLUSION: In one of the largest “real-life” series of IBD patients on biological therapy reported to date, ADA in CD had a higher success compared to IFX at both 12 and 52 weeks; however, this results could be influenced by the preference of ADA as first-line anti-TNF drug in CD. IFX in UC was superior to GOL and ADA at 52 weeks; once again, this result could be influenced by the preference of IFX as first-line anti-TNF 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 INTESTINAL DISORDERS

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Introduction: Recent studies have shown that FODMAPs (Fermentable Oligosaccharides, Disaccharides, Monosaccharides, and Polyols)-free diet is effective in subjects with Irritable Bowel Syndrome (IBS). Patients with Inflammatory Bowel Diseases (IBD), and celiac disease (CD) can experience functional gastrointestinal symptoms unrelated to inflammation, but data about the use of low FODMAPS diet in these settings is still scarce.

Aims & Methods: To evaluate the usefulness of a low FODMAPS diet on patients with IBS, non-active IBD, and CD on strict gluten-free diet (GFD), we performed a dietetic interventional prospective study evaluating the effect of a low FODMAPS diet on patients affected by IBS, CD following at least a 1-year GFD, and IBD who had been experiencing abdominal symptoms without signs of active inflammation. Each subject was put on a low FODMAPS diet after being evaluated by filling out questionnaires concerning on quality of life and symptoms experienced (IBS-SSS and SF-36), and was re-evaluated twice, first after 1 month and second after 3 months.

Results: 127 subjects were enrolled: 56 with IBS, 30 with IBD and 41 with CD. The analysis of the IBS-SSS survey showed that abdominal symptoms improved after 1 month of low FODMAPS diet in all subjects, with statistically significant difference within each group at T0 (average score in IBS: 293 ± 137 SD, average score in IBD: 206 ± 86 SD, average score in CD: 222 ± 65 SD, p < 0.001). Furthermore, by analysing the SF-36 questionnaire, while we did not observe any significant difference between the three groups in terms of response to diet (p = NS), we observed a clinical improvement from T0 to T3, after the start of the diet, for most of the questionnaire’s domains.

Conclusion: A low FODMAPS diet could be a valid option to counter abdominal symptoms in patients with IBS, non-active IBD or CD on GFD, and, thus improve their quality of life and social relations.

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

P1688  EFFICACY OF VEDOLIZUMAB ON INTESTINAL AND ARTICULAR SYMPTOMS: REAL-LIFE DATA FROM THE SICILIAN NETWORK FOR INTESTINAL 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 pre-scriptions and outcomes of biological therapy in patients with inflammatory bowel disease (IBD). Herein we report data on efficacy of VDZ on intestinal after 10 and 24 weeks, clinical symptoms at initiation of VDZ, and arthritis.

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 naive and non naive 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 0.961, p = 0.047) and presence of steroid-dependence (OR 0.189, p = 0.033) were predictors of reduced rates of clinical benefit at week 10, while a lower serum level of C-reactive protein at baseline (OR 0.950, p = 0.031) was predictor of clinical benefit at week 24. An improvement of articular symptoms was reported in 39.5% of patients with active spondyloarthritides at baseline at week 10, and in 45.4% of patients at week 24. The only factor associated with articular response was the coexistence of clinical benefit on intestinal symptoms, both at week 10 (OR 3.471, p = 0.05) and week 24 (OR 5.600, p = 0.08). Three inductions or flares of spondyloarthritides during treatment with VDZ were reported.

Table 1

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years), mean ± S.D.</td>
<td>50.6 ± 16.0</td>
</tr>
<tr>
<td>Male gender, n (%)</td>
<td>94 (57.7%)</td>
</tr>
<tr>
<td>Smokers, n (%)</td>
<td>134 (82.2%)</td>
</tr>
<tr>
<td>Type of Disease, n (%)</td>
<td>84 (51.5%)</td>
</tr>
<tr>
<td>Duration of disease (years), mean ± S.D.</td>
<td>79 (48.5%)</td>
</tr>
<tr>
<td>Localization of the disease, n (%)</td>
<td>22 (26.2%)</td>
</tr>
<tr>
<td>Disease Activity Harvey-Bradshaw Index, Crohn’s Disease</td>
<td>50 (59.5%)</td>
</tr>
<tr>
<td>Perianal Disease Ulcerative Colitis Proctitis Left-extended Extensive</td>
<td>8 (9.5%)</td>
</tr>
<tr>
<td>Protein, mean ± S.D. (n.v. &lt; 5mg/L)</td>
<td>36 (42.2%)</td>
</tr>
<tr>
<td>Behavior (Crohn’s Disease), n (%)</td>
<td>42 (50.0%)</td>
</tr>
<tr>
<td>Disease Activity Harvey-Bradshaw Index, Crohn’s Disease</td>
<td>51 (60.7%)</td>
</tr>
<tr>
<td>Axial arthropathy Cutaneous Ocular</td>
<td>15 (19.5%)</td>
</tr>
<tr>
<td>Axial arthropathy Active</td>
<td>4 (2.5%)</td>
</tr>
<tr>
<td>Axial arthropathy Inactive</td>
<td>1 (0.6%)</td>
</tr>
<tr>
<td>Previous biological treatments Yes (naive to biologics)</td>
<td>124 (76.1%)</td>
</tr>
<tr>
<td>Cytoadherence for treatment with VDZ Failure of anti-TNFα therapy</td>
<td>109 (66.9%)</td>
</tr>
<tr>
<td>Steroid-dependent, n (%)</td>
<td>144 (88.3%)</td>
</tr>
<tr>
<td>Systemic steroids at baseline, n (%)</td>
<td>103 (63.2%)</td>
</tr>
<tr>
<td>Periarticular therapy with immunosuppressant, n (%)</td>
<td>13 (8.0%)</td>
</tr>
</tbody>
</table>

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; S. Renna: advisory board member for AbbVie and MSD; lecture grants from AbbVie, MSD, Takeda Pharmaceuticals; M. Cotteni: financial support for the organization of a second level Master 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.
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Introduction: Combined immune suppression of antitumour necrosis factor (antiTNF) biologicals and thiopurines is superior to restorative monotherapies in remission induction and maintenance of response in inflammatory bowel disease (IBD). Recent mechanistic studies of this clinical benefit is mutually 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 were in remission with stable dose regimen of 5mg/kg every 8 weeks at the time of the first infliximab administration. 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 IBD 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 pts (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 AZA dose 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 (p=0.005) and reduced AZA dose vs. full AZA dose (p=0.003).

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 clinical remission the infliximab maintenance treatment, the combined immune suppression should comprise full dose of azathioprine.

Disclosure of Interest: Z. Zelinka: Speaker’s fee from Abbvie, MSD, Takeda, Janssen.

All authors have declared no conflicts of interest.

References

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Introduction: Tacrolimus, a calcineurin inhibitor, has been shown to be safe and effective when used as salvage therapy for steroid-refractory ulcerative colitis (UC). Its pharmacological effect has been reported to be dependent on trough level in blood, though little is known regarding predictive factors in relation to the clinical efficacy of tacrolimus in UC patients.

Aims & Methods: The aim of this study was to identify factors related to prediction of short- and long-time efficacy of tacrolimus for UC. We retrospectively reviewed the medical records of patients with moderate to severe steroid-refractory ulcerative colitis who were treated with tacrolimus as induction therapy at Shimane University Hospital between January 2010 and March 2016. Oral tacrolimus was administered at a whole-blood trough level of 10-15 ng/mL to induce remission and then 5-10 ng/mL to maintain remission. Following tacrolimus therapy for 3 months, patients in clinical remission were given azathioprine for maintenance at an appropriate dosage. Using the Rachmilewitz clinical activity index (CAI), clinical remission was defined as a score of ≤4. Predictive factors associated with short- and long-term tacrolimus efficacy were analyzed by evaluating various clinical parameters.

Results: Thirty-six patients received oral tacrolimus for induction, of whom 22 (61.1%) and 27 (75%) experienced clinical remission at 2 and 12 weeks, respectively after starting therapy. Interestingly, there was no significant difference in the remission rate at 2 weeks which was significantly associated with CAI at 12 weeks. Interestingly, of the 22 patients in clinical remission within 2 weeks, 21 (95.5%) remained in remission at 12 weeks. In contrast, only 6 of 14 (42.9%) who did not achieve clinical remission at 2 weeks were not in clinical remission at 12 weeks. For evaluating the long-term efficacy of tacrolimus induction therapy, relapse-free periods were assessed using the Kaplan-Meier method. The relapse-free rate at 48 weeks was higher in patients who achieved clinical remission within 79.0% (vs. 60.0%).

Conclusion: Tacrolimus induction therapy was effective for patients with moderate to severe steroid-refractory UC. Our results clearly indicate that clinical remission achievement within 2 weeks is useful for predicting both short- and long-term outcome in UC patients treated with that therapy.

Disclosure of Interest: All authors have declared no conflicts of interest.
P1602 INFliximab (IFX) IN MODERATE TO SEVERE ULCERATIVE COLITIS (UC): COMPARISON BETWEEN SCHEDULED TREATMENT STRATEGY AND BRIDGE STRATEGY

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Introduction: UC is a potentially severe disease that carries an increased risk of complications and colectomy. Immunosuppressant and biological therapies are relevant tools for complex patients. The ACCENT study showed that in Crohn’s disease (CD), scheduled IFX infusions vs. episodic are associated with greater efficacy, less complications, and costs. In UC, historical difficulties of economic access had conditioned to our IBD center, to use IFX in moderate to severe UC as a bridge to thiopurines in 6mp/aza naïve. In UC, the mentioned strategy was insufficiently compared with a regimen of scheduled IFX treatment, that currently we use. Aim: To compare to scheduled in moderate to severe UC the results of induction with IFX (in thiopurine naïve pts) continuing with 6mp/aza maintenance vs. similar induction followed by scheduled IFX maintenance strategy.

We included a cohort of moderate to severe UC treated with IFX in an IBD center (2006 to 2015) comparing results between IFX bridge followed by thiopurines (re-induction when available for moderate to severe relapse) vs. scheduled IFX (n=135 pts, C6.2 wks and 8 wks 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) Cumulative incidence of colectomy/infliximab (induction 0,2,6 wks and 8 wks’ interval infusions maintenance). We identified 135 UC patients receiving IFX for moderate to severe UC. Results: more ‘consideration’ (β 1.18 (95%CI 0.10–2.27), p = 0.033) as well as the illness outcomes low physical (β = −7.22 (95%CI −9.68 –4.77), p < 0.001) and mental (β = −3.10 (95%CI −5.99 –2.03), p < 0.05) health and increased activity impairment (0.15 (95%CI 0.07–0.23), p < 0.01) were related with higher scores shift of biological drug compared with the scheduled strategy ‘pacing’ (p = 0.03) were found in IFX patients with arthropathies compared with baseline scores. Aims & Methods: Suffering from muscular arthropathies in IBD is strongly associated with different illiness perceptions, coping strategies and illness outcomes and changes of these factors over time. As a gastroenterologist, addressing the maladaptive illiness perceptions, coping strategies and related poor illness outcomes in these patients deals with an important field for behaviour modification in IBD patients including cognitive behavioural therapy (CBT) or physical exercise. Disclosure of Interest: All authors have declared no conflicts of interest.

P1604 INFliximab BIOSSIMILAR CT-P13 THERAPY IS EFFECTIVE IN MAINTAINING ENDOCSONIC REMISSION IN UC PATIENTS: 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, concomitant use of steroid and azathioprine therapy at the time of inclusion were also recorded. At weeks 14 and 54, previous use of anti TNF drug and the need of dose intensification as possible predictive factors for mucosal healing at week 54 were evaluated. Results: Seventy-five UC patients were included in the study of which 74 patients completed the induction therapy and 54 patients had already completed the 54 week treatment period. Mucosal healing was shown in 55.4% of the patients at week 14 and 61.7% at week 54 (p = 0.033). Complete mucosal healing was patient in 24.3% at week 14, but in none at week 54. The median values of CRP (p = 0.017), leukocytes (p = < 0.001), thrombocytes (p = < 0.001), and albumin (p = 0.002) showed significant difference at baseline and week 54. Mean trough level of CT-P13 was 5.02 µg/ml and 4.4 µg/ml at week 14 and 54. Serum antibody positivity was measured in 7.7% at week 14 and 26.2% of cases at week 14 and 54, respectively. Dose escalation was necessary in one third of patients. None of the patients need surgery who completed week 54, however 4 subjects who stopped CT-P13 therapy after induction regimen required colectomy. Conclusion: CT-P13 was related to two 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.

P1605 THE USE OF ANTI-TNFs IN INDUCING CLINICAL RESPONSE AND REMISSION IN UC PATIENTS: 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 golimumb (GOL), have been shown effective and safe in the treatment of moderate-to-severe ulcerative colitis

United European Gastroenterology Journal 5(5S) A743
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 consecutively 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): 59 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 16 (response: IFX vs ADA, p = 0.28; remission p = 0.001) and at week 16 (response p = 0.5; remission p = 0.97), though there was a trend towards a higher rate of response at week 8 with IFX (79% vs 64%). IFX and ADA were more effective than GOL at week 8 (response: IFX vs GOL p = 0.020; remission: ADA vs GOL p = 0.027). At week 16 only IFX seems to be more effective than GOL in inducing clinical response (p = 0.048) but not remission. No significant difference among the three drugs was observed in patients 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. IP is more preferred in steroid-resistant patients to get a faster response, ADA and GOL should be the first option in steroid-dependent patients naïve to anti-TNFs.

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

Reference
Aims & Methods: non-polypoid dysplasia, only a few studies investigated the feasibility of ESD as a treatment for the resection of visible, non-polypoid dysplasia in UC. From August 2009 to January 2017, 19 UC patients with low grade dysplasia (LGD), high grade dysplasia (HGD) or synchronous dysplasia were included prior to first Infliximab infusion. Disease activity was measured by the use of Harvey-Bradshaw-Index (HBI) or partial Mayo Score, C-reactive protein (CRP) and ultrasound (Limberg Score). TNF-expression of LPS-stimulated monocytes was determined using a commercial kit. Adherence was estimated by infusions completed within seven days before or after the date prescribed. The reported date of administration should be indicated in the clinical history to identify patients who did not take the medicine as instructed. 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. Results: in 139 of 140 courses of treatment, patients took more than 80% of infusions on time. In 89% of courses combo therapy with immunosuppressants was used. The prescribed regimens were: every 8 weeks (76.2%), every 4 weeks (77.5%), every 6 weeks (85.7%), every 12 weeks (54.1%) or other (4.5%). The mean duration of the courses was 23 months (range: 6-103). Only 69 out of 1714 infusions (4%), were not properly administered. The reported causes for that included: 36 “unknown” (52%), 18 “change requested by patient” (26%), 14 “due to logistic reasons” (20%) and 4 “other” (6%). Conclusion: the adherence to the scheduled infliximab regimen was very high and it would contribute to maintain the drug efficacy. The reasons for changing the date of administration should be indicated in the clinical history to identify associated factors and minimize the lack of adherence. Disclosure of Interest: All authors have declared no conflicts of interest.

P1697 COST-UTILITY ANALYSES OF BIOLOGICS FOR REFRACTORY ULCERATIVE COLITIS
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Introduction: Although many biologics (Bs) have been approved for the treatment of refractory-to-severe Ulcerative Colitis (UC) in patients who have responded inadequately to conventional therapy, the selection of Bs is controversial due to the lack of head-to-head trials. Indirect economic comparisons of these costly drugs are available from National Healthcare perspectives that are not the most relevant.

Aims & Methods: The objective is to evaluate cost-utility of Bs for the treatment of refractory-to-severe UC both in Italy and in the Lombardy Region. A Markov model (considering 3 transition states: remission, clinical response, relapse) was constructed using the software R and markovchain-package to evaluate incremental cost-utility ratios (ICUR) of adalimumab (ADA), infliximab (IFX), infliximab biosimilar (IFX-B), golimumab (GOL) and vedolizumab (VED) of 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 an N and R perspective (ADA: 10,182/QALY, IFX: 130,595, R: 103,081, E: 948/QALY). From a R perspective, ADA was dominating compared to all other treatments. The ICUR of VED/ADA was 103,081, R: 110,438, E: 68,314, E/C0 18.3%, VED (N: 18,665/QALY, E: 130,595, R: 103,081, E/C0 40.2%), IFX (N: 55%; IFX 14.3%, E: 28.6%), GOL (N: 3) or ECC (n E 15.4 years and mean duration 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 the lesion size (n E 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 morphologic showed Paris IIa (n = 7), IIIb (n = 4), IIIc (n = 1), and Ib+ Is (n = 2). No lesions contained ulceraions. The borders were distinct in 6 and vague but endoscopically assumable in 8 cases. Mean UC endoscopic index of severity was 3.3 at the moment of the proceeding surgery. The 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.

Conclusion: According to our ESD series for dysplasia, ESD seems to be feasible for the 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.
intracellular TNF-expression was analysed by flow cytometry. According to a cut-off point, patients were divided into low-producers and high-producers. Primary endpoint was clinical response, secondary endpoints were decrease in CRP and Limberg Score. Clinical response was defined as a decline in Score of ≥2 (HBI) or ≥5 (partial Mayo Score). A HBI ≤5 or a partial Mayo-Score ≤2 was defined as remission. Results were analysed using the Fisher’s exact test.

Results: Nine patients reached the endpoint at week 6 and were available for further analysis (5 patients with CD, 4 patients with UC). The median TNF-expression was defined as remission. Results were analysed using the Fisher’s exact test.

Aims & Methods: To further evaluate the impact of concomitant CS use on vedolizumab treatment persistence in patients with Crohn’s disease (CD) and ulcerative colitis (UC). We included 50 patients (mean age 45.5 y; male 56%) with Crohn’s disease (CD, n = 28) and Ulcerative colitis (UC, n = 22). 44 (88%) IBD patients had previous anti-TNF therapy. Baseline median HBI was 8 (5–16) and median pMayo was 6 (5–7). Median VTL (Interquartile range, IQR) at weeks 6, 10 and 14 were 38.6 (20.3–53.5), 25.4 (13.4–45.6) and 17.7 (10.1–33.7) ug/ml, respectively. VTL measured at week 6 were significantly higher in clinical responders as compared to non-responders: median (IQR) 38.3 (20.5–49.8) vs 13.4 (8.4–20.6) ug/ml, p = 0.006. Week 6 VTL were also higher in CRP responders (<5 mg/l): median (IQR) 48.1 (32.5–55.8) vs 32.8 (19.7–49.4) ug/ml, p = 0.004. Week 6 VTL were inversely correlated with CRP (rho = −0.39, p = 0.006). By ROC curve analysis, a cut off value of 44.3 ug/ml for clinical response was identified at week 6 (AUC 0.677, sensitivity 61.9%, specificity 79.3%, p = 0.006). 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. Lisner: Donata Lisner 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.

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**P1701 EVALUATION OF CONCOMITANT CORTICOSTEROID AND VEDOLIZUMAB USE IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE (IBD) IN REAL-LIFE CLINICAL PRACTICE**

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Introduction: Corticosteroids (CS) are often used concomitantly with biologics in treatment of inflammatory bowel disease (IBD). However, their side-effect profile causes significant clinical and economic burden in long-term treatment. In this study, we investigated the impact of concomitant CS use on vedolizumab treatment persistence in patients with Crohn’s disease (CD) and ulcerative colitis (UC).

Aims & Methods: This was a nationwide (Finland), retrospective, non-interventional, multi-center chart review. From 27 centers, we included adult (≥18 years of age) IBD patients who received at least one vedolizumab infusion since 2014. Data were derived from patients charts in a standardized case report form. The key data collection points were at baseline, week 14 and month 6 of vedolizumab treatment. The main aim of the study was to analyze vedolizumab treatment persistence among IBD patients using CS in real-world clinical setting.

Results: 247 patients (CD 108, UC 139) were included. At baseline, 47 (43.5%) CD and 84 (60.4%) UC patients were using CS. Higher percentage of patients using CS at baseline discontinued vedolizumab during the 6-month follow-up compared to CS non-users (CD, 14/47 (29.8%) vs. 13/61 (21.3%); UC, 37/84 (44.1%) 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). Over half of the patients on CS at baseline and who persisted on vedolizumab were able to discontinue CS before 6 months (p = 0.0035). VTL measured at week 6 were also higher in CRP responders (<5 mg/l): median (IQR) 38.6 (20.3–53.5) vs 13.4 (8.4–20.6) ug/ml, p = 0.005. The ROC curve analysis identified a cut off of 44.3 ug/ml for clinical response at week 6 (AUC 0.677, sensitivity 61.9%, specificity 79.3%, p = 0.02). Week 6 VTL were significantly higher in patients in clinical remission at their last follow-up (median (IQR) vs 80% vs. 14% at weeks 10 and then every 4 weeks were given to no-responders at week 6. Clinical activity was evaluated at baseline and week 6, 14 and 22 by Harvey Bradshaw Index (HBI) and partial Mayo score (pMayo). C-reactive protein (CRP) was measured at weeks 6, 14, 22. VTL and AVA were assayed by ELISA (Theraflag, Marne La Vallée, France) at weeks 6, 10 and 14. Limits of detection for VTL and AVA were 2 ug/ml and 35 ng/ml, respectively. Clinical response was defined as at least 30% reduction of activity scores from baseline and remission was defined as HBI <5 or pMayo <2. Statistics was performed by Mann Whitney test, Spearman’s rho, receiver operating characteristic (ROC) curve analysis.

Results: We included 50 patients (mean age 45.5 y; male 56%) with Crohn’s disease (CD, n = 28) and Ulcerative colitis (UC, n = 22). 44 (88%) IBD patients had previous anti-TNF therapy. Baseline median HBI was 8 (5–16) and median pMayo was 6 (5–7). Median VTL (Interquartile range, IQR) at weeks 6, 10 and 14 were 38.6 (20.3–53.5), 25.4 (13.4–45.6) and 17.7 (10.1–33.7) ug/ml, respectively. VTL measured at week 6 were significantly higher in clinical responders as compared to non-responders: median (IQR) 38.3 (20.5–49.8) vs 13.4 (8.4–20.6) ug/ml, p = 0.004. Week 6 VTL were also higher in CRP responders (<5 mg/l): median (IQR) 48.1 (32.5–55.8) vs 32.8 (19.7–49.4) ug/ml, p = 0.004. Week 6 VTL were inversely correlated with CRP (rho = −0.39, p = 0.006). By ROC curve analysis, a cut off value of 44.3 ug/ml for clinical response was identified at week 6 (AUC 0.677, sensitivity 61.9%, specificity 79.3%, p = 0.02). Week 6 VTL were significantly higher in patients in clinical remission at their last follow-up (median (IQR) vs 80% vs. 14% at weeks 10 and then every 4 weeks were given to no-responders: median (IQR) 38.3 (20.5–49.8) vs 13.4 (8.4–20.6) ug/ml, p = 0.005. The cut off identified by ROC curve analysis for this outcome was 16.4 ug/ml (AUC 0.820 sensitivity 100% specificity 63%, p = 0.0019). AVA were detected in 2% of patients at week 6, in 5.9% at week 10 and in 4.5% at week 14 and were not correlated with clinical response.

Conclusion: These preliminary data suggest that obtaining a VTL of 44.3 ug/ml after the first 2 Vedolizumab infusions is correlated with early clinical and biological (CRP) response and with clinical remission at a mean follow-up of 20 weeks. Week 14 VTL are correlated with clinical remission at week 22 and identified cut off is 16.4 ug/ml. Immunogenicity of Vedolizumab is low in these patients.

Disclosure of Interest: L. Guidi: Lecture fees by AbbVie, Merck, Takeda, Mundipharma, Zambon
D. Pugliese: Lecture fees by Takeda, AbbVie, A. Armuzzi: Lecture fee and consulting fee: AbbVie, Chiesi, Ferring, Hospira, Janssen, Lilly, Merck, Mundipharma, Nikkiso, Pfizer, Sansum, Takeda, Zambon

All other authors have declared no conflicts of interest.
P1703  EFFICACY, SAFETY AND LONG-TERM OUTCOME OF ENDOSCOPIC BALLOON DILATION THERAPY (VDZ) IN ULCERATIVE COLITIS: IS THE ADHERENCE REALLY IMPORTANT?

Aims & Methods: 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 increased risk of disease relapse, colorectal cancer and worsening of quality of life. Adherence rate has been analysed in several studies with controversial results. Adherence to 5-ASA in our population is low. Older patients that take other non-UC chronic drugs show higher adherence. With a one year treatment, 5-ASA properties (dose, administration regime, formulation), concomitant drugs, smoking habit, Montreal classification, extraintestinal manifestations, complications, disease course (moderate-severe relapse rate that require corticosteroid therapy), UC properties (dose, administration regime, formulation), consumption of other UC and non-UC chronic drugs. A multivariable logistic regression model was applied to discriminate the main factors including the risk factors of the univariable analysis. A Spearman’s rank coefficient analysis was performed to correlate percentage of adherence with relapse rate.

Results: The study cohort included 433 patients, 55% males with a median age at the first 5-ASA prescription of 49 years (IQR 39-61). 17% had a proctitis, 31% a left-side colitis and 52% an extended disease. 30% of patients required corticosteroid therapy when comparing both adherent and non-adherent groups. Multivariate analysis reached a predictive capacity of 65% outcomes of adherence. The aim of this study is to quantify the prevalence of adherence to 5-ASA, to identify risk factors to non-adherence and its correlation with the course of the disease. Observational, analytical, retrospective, single tertiary centre, cohort study of all UC patients followed-up in our IBD unit, until January 2016, with 5-ASA maintenance treatment prescribed by an electronic management program. Adherence was considered when 80% of the prescribed 5-ASA was dispensed at pharmacy. The first year (2016), assuming that dispensing of 5-ASA is equivalent to medication intake. The study analysed, according to the existence and degree of 5-ASA adherence, UC phenotypic expression (age, sex, smoking habit, Montreal classification, extraintestinal manifestations, complications), disease course (moderate-severe relapse rate that require corticosteroid therapy), 5-ASA properties (dose, administration regime, formulation), consumption of other UC and non-UC chronic drugs. A multivariable logistic regression model was applied to discriminate the main factors including the risk factors of the univariable analysis. A Spearman’s rank coefficient analysis was performed to correlate percentage of adherence with relapse rate. Results: The study cohort included 433 patients, 55% males with a median age at the first 5-ASA prescription of 49 years (IQR 39-61). 17% had a proctitis, 31% a left-side colitis and 52% an extended disease. 30% of patients suffered from extraintestinal manifestations and 8 from a complication. The mean dose of 5-ASA taken was 2.6 g/day (range 0.7-4.8) distributed in a daily dose regime. Adherence prevalence to 5-ASA was 65%. Adherent group had a higher median age (52 (±11) vs 43 (±13), p = 0.001) and received more non-UC chronic drugs (OR = 2.3, 95CI 1.5-3.4, p = 0.001). The independent variables, age and intake of other non-UC drugs, included in the multivariate analysis reached a predictive capacity of 65% outcomes of adherence. There was no significant reduction in the risk of moderate-severe flares that required corticosteroid therapy when comparing both adherent and non-adherent groups and rank correlation showed no relationship between adherence to 5-ASA and disease activity. Adherent group of patients treated with adjuvant maintenance therapy (bitherapy with thiopurines or anti-TNF or triple therapy with bithapy) both presented a significant reduction of flares (OR = 0.6, 95CI = 0.7-0.9, p = 0.019).

Discourse of Interest: All authors have declared no conflicts of interest.
P1706 DEVELOPMENT AND FEASIBILITY OF A WEB-BASED REGISTRY FOR MULTICENTRE SURVEILLANCE OF EFFECTIVENESS AND SAFETY OF NOVEL IBD-DRUGS IN THE NETHERLANDS

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Introduction: Randomized controlled trials provide efficacy data of novel IBD drugs. The majority of patients included in these trials however, especially for novel biologics, are highly selected patients from referral centres and are included in a variety of countries with very different health care systems. Inclusion criteria and follow-up protocols are strict and do not reflect routine care. Long-term country specific effectiveness and safety data for novel drugs are therefore warranted. Development and implementation of a novel protocol and electronic case reporting registry for every new compound is however time consuming and expensive. Therefore, the Initiative on Crohn and Colitis (ICC) aimed to develop a web-based registry suitable for capturing, managing, and reporting data for all drugs and all IBD phenotypes in everyday practice in all centres. 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 to assess key elements of disease activity, safety and a PROM. Furthermore the ICC decided on a uniform follow-up protocol reflecting everyday practise. A web-based registry for capturing, managing and reporting follow-up data of IBD patients starting a new drug was developed (ICC-case series). The registry automatically reminds the treating physician or nurse prior to novel follow-up visits. Feasibility of the ICC-case series was assessed in 6 centres in the Netherlands in patients who started vedolizumab. To test data extraction and reporting, the baseline characteristics of the first cases were assessed. The characteristics were compared to baseline characteristics of subjects in the vedolizumab registration studies.

Results: A total of 230 IBD (4 IBD-U) patients starting vedolizumab were included. All users found the ICC-case series easy to use and received the reminder mails for follow-up visits. Baseline characteristics were successfully extracted and are reported in table 1.

Table 1: Baseline characteristics of ICC cohort and GEMINI trials

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>ICC cohort CD (N=146)</th>
<th>GEMINI cohort CD (N=1115)</th>
<th>ICC cohort UC (N=80)</th>
<th>GEMINI cohort UC (N=985)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age - yr</td>
<td>39 ± 13.7</td>
<td>36 ± 12.1</td>
<td>43 ± 16.5</td>
<td>40 ± 13.1</td>
</tr>
<tr>
<td>Male, no. (%)</td>
<td>520 (46.6)</td>
<td>50 (62.5)</td>
<td>525 (59.4)</td>
<td>518 (52.8)</td>
</tr>
<tr>
<td>Current smoker - no. (%)</td>
<td>38 (25.9)</td>
<td>206 (26.7)</td>
<td>1 (13.3)</td>
<td>55 (6.1)</td>
</tr>
<tr>
<td>Disease duration-yr</td>
<td>13 ± 12.5</td>
<td>90 ± 7.8</td>
<td>8.6 ± 7.8</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>Disease location CD, no. (%)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Beum 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-marketing data.

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

References

P1707 SIX-YEAR EFFICACY AND SAFETY OF AZATHIOPRINE TREATMENT IN THE MAINTENANCE OF STEROID-FREE REMISSION IN INFLAMMATORY BOWEL DISEASE PATIENTS

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Introduction: Azathioprine (AZA) and thiopurines are widely used for induction and maintenance of remission in patients steroid-resistant or dependent with inflammatory bowel disease (IBD). The treatment must be withdrawn in 5–30% of patients due to the occurrence of adverse events.

Aims & Methods: Aim of this study has been to investigate its efficacy and safety in maintaining steroid-free remission in steroid dependent IBD patients six year after the institution of treatment. Data from consecutive IBD outpatients referred in our Institution, between 1985-2015, were reviewed and all patients treated with AZA were included in this retrospective study. AZA was administered at the recommended dose of 2-2.5 mg/kg. Blood chemistry was analysed before administration of the drug, every 10-15 days for the first 3 months and then every 1-2 months following the institution of treatment.

Results: Out of 2722 consecutive IBD outpatients visited in the index period, AZA was prescribed to 415 patients, 227 (54.3%) were affected by Crohn’s disease (CD) and 188 (45.3%) by ulcerative colitis (UC). One hundred and fifty-eight patients with a follow-up <72 months were excluded from the study. Two hundred and fifty-seven patients were evaluated, 143 (55.6%) with CD and 114 (44.4%) with UC. One hundred and forty-two (55.2%) were male...
and 115 (44.8%) female (average age of 35.68 ± 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 36.5%, respectively, p = 0.0084), 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.

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 and outcome were reviewed from Electronic Patient Records (EPR).

Results: Fourteen patients (F = 6; mean age of 54 years) received Tacrolimus. 8 patients (57%) had evidence of pancolitis and six patients (43%) had distal colitis. All patients had previously received thiopurines and 11 patients (78.6%) had also received anti-TNFs. Three patients declined Anti-TNF treatment. All patients were steroid-dependent prior to commencing Tacrolimus. One patient received ciclosporin before the switch. The remaining 13 patients were initiated on Tacrolimus in the out-patient setting at a starting dose of 0.1mg/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 after 10 months to have an elective subtotal colectomy. Tacrolimus was withdrawn in all 3 non-responders. Of the 11 (78.6%) initial responders, 12-month outcome included withdrawal of Tacrolimus in 7 patients (63.6%). Reasons for withdrawal included: n = 1 renal impairment; n = 1 started on infliximab; n = 3 referred for leucapharesis; n = 1 restarted on Azathioprine and n = 1 referred for proctocolectomy. Three patients (21.4%) remain in steroid-free clinical remission with a good quality of life and immunogenicity than the young.

Disclosure of Interest: All authors have declared no conflicts of interest.

Abstract No: P1708

<table>
<thead>
<tr>
<th>&lt;60 years</th>
<th>≥60 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>58</td>
</tr>
<tr>
<td>Week 14</td>
<td>28/41 (68.3%)</td>
</tr>
<tr>
<td>Week 54</td>
<td>24/40 (60%)</td>
</tr>
<tr>
<td>Remain on anti-TNF at week 54</td>
<td>46/58 (79.3%)</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>
</tr>
<tr>
<td>Remain on anti-TNF at end of follow up (April 2017)</td>
<td>38/58 (65.5%)</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>
</tr>
<tr>
<td>Length of time on anti-TNF if stopped (months)</td>
<td>Range: 3–73 Median: 12</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>
</tr>
<tr>
<td>Adverse events throughout follow up</td>
<td>1 new diagnosis cancer (testicular) 1 infusion reaction 1 infection (dental abscess)</td>
</tr>
</tbody>
</table>
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United European Gastroenterology Journal 5(5S)

no adverse effects on maintenance treatment with Tacrolimus. 11 patients
(78.6%) have avoided a colectomy during 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 cosider a colectomy. With close monitoring
and adherence to protocols, it is safe and effective allowing patients an alternative immunosuppresant 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.

Larger prospective studies with longer follow up are warranted to confirm this
data.
F. Mocciaro: Abbvie, MSD
F.S. Macaluso: MSD, Abbvie, Takeda
A. Orlando: Abbvie, MSD, Takeda
All other authors have declared no conflicts of interest.

References

P1711 REAL-LIFE STUDY (GORE-UC) EVALUATING THE
EFFECTIVENESS OF GOLIMUMAB FOR THE TREATMENT OF
ULCERATIVE COLITIS: AN INTERIM ANALYSIS FROM ITALIAN
GROUP FOR THE STUDY OF INFLAMMATORY BOWEL DISEASE
(IG-IBD)

1.
2.

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(FK506)in management of hospitalized patients with steroid-refractory
ulcerative colitis. Inflamm Bowel Dis 2012.18:803–8

P1710 A REAL LIFE COMPARISON OF THE EFFICACY OF
ADALIMUMAB VERSUS GOLIMUMAB IN MODERATE-TO-SEVERE
ULCERATIVE COLITIS. A MULTICENTER EXPERIENCE FROM
THE SICILIAN NETWORK FOR INFLAMMATORY BOWEL DISEASE
(SN-IBD)
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Introduction: Adalimumab (ADA) and golimumab (GOL) are effective in the
induction and maintenance treatment of moderate-to-severe ulcerative colitis
(UC). No comparable data between the 2 drugs are available up to now.
Aims & Methods: We reported the Sicilian Network experience on the comparative efficacy of ADA and GOL in patients (pts) with moderate-to-severe UC.
From June 2015 until April 2017, 197 consecutive pts with moderate to severe
UC 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 52 without steroids). The
presence of clinical response or clinical remission was defined as ‘‘clinical benefit’’. Endoscopic Mayo Score was evaluated at the end of the follow up in pts who
underwent colonoscopy.
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 ¼ 0.08). Eighty-eight pts were naı̈ve to anti-TNF (59
ADA, 29 GOL, p ¼ 0.09). No difference in Mayo Score value was observed
between the 2 groups at the time of first drug injection (p ¼ 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 ¼ 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 ¼ 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 ¼ 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 ¼ 0.082). No difference was observed in clinical outcomes at 8 weeks
and at the end of the follow up between naive and non naive pts
(p ¼ 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 ¼ 0.025). Univariable analysis revealed that
age 4 40 years at the time of first drug injection and age 5 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 ¼ 0.034 and p ¼ 0.016 respectively). Disease duration 45 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 ¼ 0.017).
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-TNF in the treatment of moderate to severe UC. ADA resulted
to be more effective than GOL in inducing and maintaining clinical benefit.

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Introduction: The efficacy of golimumab for the induction and maintenance of
clinical remission in adult subjects moderately to severely active Ulcerative
Colitis (UC) has been studied in two completed clinical trials.1–2 However,
patients enrolled in clinical trials are not entirely representative of those encountered in the clinical practice setting. In Italy, golimumab is on the market for
treating UC from March 2015. The aim of our study is to evaluate the durability
and safety of golimumab in the context of real-life clinical practice.
Aims & Methods: An observational, multicenter, retrospective-prospective, phase
IV study, enrolling all patients starting golimumab from March to December
2015, from 21 IG-IBG 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-weeks period are reported.
Results: 121 patients (47% female), with mean age of 45.7 years (SD 14.3) and a
median duration of disease of 8 years, (range 0–28) were included. Sixty-seven
patients (55.4%) had severe endoscopic activity (Mayo 3). Clinical activity was
defined as moderate (Partial Mayo Score (PMS) 5–6) in 55 patients (45.5%) and
severe (PMS 7–9) in 66 patients (54.5%) Previous exposure to anti TNF- was
reported in 52% of patients (38 Infiximab, 4 Adalimumab, 21 both). Steroiddependence and refractoriness were reported in 78.5% and 16.5% of patients,
respectively. After 54 weeks, the cumulative persistence on golimumab therapy
was 31%. Seventy-seven patients withdrew from treatment, without significant
difference among anti TNF- naı̈ve vs exposed patients (55.2% vs 71.4%,
p ¼ 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
(39%) withdrew within the first 14 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 therapies. Fifteen patients (12.4) underwent surgery within the first 54 weeks, with
a greater percentage among anti TNF- exposed (20.6% vs 3.4%, p ¼ 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 treatment may be more likely to avoid colorectal cancer.

Disclosure of Interest: D. Pugliese: Lecture fees from AbbVie and Takeda. M. Allocca: Speaker’s fees; Janssen, Pfizer Consultant’s fee: Nikkiso Europe M. Di Girolamo: Speaker for AbbVie and Takeda

All other authors have declared no conflicts of interest.

References

P1712 PREVALENCE OF CIPROFLOXACIN RESISTANCE IN INFLAMMATORY BOWEL DISEASE PATIENTS WITH GUT COLONIZATION WITH EXTENDED SPECTRUM BETA-LACTAMASE PRODUCING ENTEROBACTERIA ACCORDING TO 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) hospitalized in two largest tertiary medical care centres in Riga, Latvia during a 7-year period (2010–2016). Enterobacteriaceae were cultured and subcultured to test 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: 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 (60%) and in CD (20%) of the patients the isolated ESBL producing strains were resistant to ciprofloxacin. In 1 case of the ciprofloxacin resistant 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. 8 cases of ESBL colonization rate with TEM in IBD patients, mostly with E. 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, comparing 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 A 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 azathioprin. After the induction phase, 53% of the patients

Disclosure of Interest: E. Gilles: Travel expenses and fees from Astellas France. F. Coste-Desreux: Travel expenses from AbbVie France.
achieved clinical remission, 31% a partial clinical response and 12% a primary failure. Patients maintained a clinical remission after a year of maintenance 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. Treatment remission after the induction phase was the only independent predictive factor of long-term remission under maintenance treatment after multivariate analysis. However, patients with a previous predictive of a clinical response as well as the presence of a recto-vaginal fistula and young age at diagnosis. Conclusion: According to our results, the type of response obtained after the induction phase seems to be closely related to the subsequent development of our prospective studies assessing early therapeutic adaptative strategies. We could better evaluate this perspective in the event of a partial clinical response. In addition, rectal involvement and recto-vaginal fistulas are factors of poor response for which aggressive and specific treatment is essential.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1715 COMPARISON OF ORIGINAL AND BIOSIMILAR INFliximab in patients with inflammatory bowel disease: A RETROSPECTIVE AND MULTICENTRIC STUDY IN SPAIN
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Introduction: The management of chronic inflammatory bowel disease (IBD) has experienced significant advance with the development of biologic therapy. Infliximab (IFX) was the first monoclonal antibody approved for IBD. The patent expiry of biologics and their relatively high costs result that in a significant economic burden on the healthcare system, 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. However, the role of biosimilar IFX, has not been proven in clinical trials. 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 13 March to 3 December 2016. Inclusion criteria included consecutive cohorts of 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 concomitant azathioprine and systemic steroids were not different among both groups. Patients in biosimilar infliximab group were more likely to experience previous biologic treatment failure (29.2% versus 20.2% in the original IFX, p = 0.0163). There were no significant differences in patients achieving response and remission at weeks 14 and 54. There were no significant differences in rate of withdrawals among the 2 groups (37.1% versus 38.8% for biosimilar IFX, p = 0.811). There were no significant differences in cumulative discontinuation rate due to AEs in original IFX and biosimilar IFX (42.42, (95% CI 39.49–45.34) months versus 44.61 (95% CI 42.66–46.56) months, log-rank test p = 0.292).

Conclusion: All our 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.

P1716 DOES SEVERE ENDOSCOPIC COLITIS PREDICT STEROID REFRACTORY DISEASE IN ACUTE SEVERE COLITIS?
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Introduction: Acute severe Colitis (ASC) is a severe complication of inflammatory bowel disease (IBD), for which there is no consensus definition. Its diagnosis is made based on clinico-biological and endoscopic criteria. Low endoscopy is essentially positive for the diagnostic of ASC as well as for the diagnosis of IBD

Aims & Methods: The objective of this study is to describe the endoscopic aspect of ASC and its interest in therapeutic management in our series of 48 cases it is a descriptive and analytic study of a series of 48 cases of acute severe colitis (ASC) collected during a period of 3 years (2014–2016) in the gastroenterology department.

Results: The average age of our patients was 39.8 years with extremes ranging from 14 to 69 years, a female predominance was found with a sex ratio of 0.77. The ASC was inaugural in 20 (41.66%), while 28 cases (58.33%) were known to have IBD, with 24 cases of UC (85.7%). Initial endoscopy was performed in all patients. The average time to perform endoscopy (from the onset of symptoms) was 37 days (2 to 75 days). Severe endoscopic aspects were present in 30 patients: deep ulcer (29 cases), spontaneous bleeding (4 cases), friability (4 cases). Other endoscopic lesions found were erythema (12 cases), erosions (5 cases), superficial ulcer (25 cases), pseudo polyps (14 cases), contact bleeding (27 cases). Biopsy was performed in all patients, histology was in favor of UC in 64.58% cases. CMV viral inclusions were found in 2.08% of cases. First-line medical treatment was based mainly on parenteral corticosteroid therapy, has been established in all cases. A second-line treatment has been anti-TNF agents used in 5 cases (10.41%) while surgical treatment was indicated in 15 cases (31.25%) of which 12 cases had severe endoscopic colitis. Steroid refractory disease was associated with endoscopic severe colitis (p = 0.04). In mono-varied analysis, endoscopic severe colitis was found in more men than females (53.5 vs 43.3). With a statistically significant difference p = 0.020

Conclusion: Endoscopy in ASC occupies an important place to specify the morphological severity and thus make the positive diagnosis, the severe endoscopic colitis constitutes one of the predictive elements of steroid refractory disease requiring the use of a second therapeutic palliatum.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1717 BASELINE CALPROTECTIN DOES NOT PREDICT RESPONSE TO BIOLOGICAL THERAPY IN ULCERATIVE COLITIS
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Introduction: Response to biological drugs in ulcerative colitis (UC) is variable with induction response rates of 64.5% (vs 29.3% for placebo), 50.4% (vs 34.6% for placebo), 51.0% (vs 30.3% for placebo), 47.1% (vs 25.5% for placebo) for infliximab, adalimumab, golimumab and vedolizumab, respectively. Apart from prior exposure to anti-tumour necrosis factor (anti-TNF) agents and concurrent immunomodulatory therapy, predictors of clinical response and remission to biological drugs have not been well defined. We sought to investigate the utility of baseline faecal calprotectin (FC) and early change in FC in predicting clinical response and remission to biological therapy in UC.

Aims & Methods: Patients who were commenced on any biological therapy for UC and had a baseline FC at the time of commencement were included in this retrospective study. Disease activity was monitored serially by calculation of Simple Clinical Colitis Activity Index (SCCAI) or by Physician global assessment (PGA) or by treatment persistence. Clinical response was defined as decrease in SCCAI by 3 or a decrease in PGA by 1. Remission was defined as FC below 200. The ability of FC and fold change in FC to predict response and remission at 6 months was estimated using Mann-Whitney test.

Results: A total of 94 patients were commenced on biological therapy of who 70 (75%) commenced vedolizumab with a mean age of 41.8 (SD: ±18.2). Fifty-one (72%) and 39 (55%) patients commencing anti-TNF therapy had comparable calprotectin values at baseline, P=0.292. Fifty-one (72%) and non-responders (600 (107, 2100) [n=5]) to anti-TNF agents had comparable calprotectin values at baseline, P=0.039.

Conclusion: In a single-centre series of biologic treated UC patients, baseline FC did not predict clinical response at 6 months.

Disclosure of Interest: S. Subramanian: Advisor report for Abbvie, Janssen and Behringer-ingelheim On speaker bureau for Dr Falk, Abbvie and MSD. All other authors have declared no conflicts of interest.
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. Aims & Methods: The aim of the study was to assess the efficacy and tolerability of different medications in reference to demographic data and disease location and behaviour.

Results: 6030 of patients have been enrolled to the Polish National CD Patient’s Registry, conducted in 95 gastroenterology centers in Poland. Patient’s phenotype according to: Montreal classification, demographics, smoking, alcohol consumption, extraintestinal manifestation and medical treatment have been evaluated. The impact of demographic factors on the use of drugs from different groups (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.

Conclusion: The first study comparing efficacy and tolerability of treatment methods used in ‘real-life’ practice in Poland during last 8 years. Most observations are in compliance with data from clinical trials. Positive effect of casual alcohol consumption on efficacy of medications requires further observation. Interestingly some unexpected relationships, concerning similar efficacy of infliximab in different disease behavior was found. This effect requires also further observations in regards to more frequent use of anti-TNF drugs in last years.

Disclosure of Interest: All authors have declared no conflicts of interest.

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 in patients with Crohn’s disease (CD) and 25 with ulcerative colitis (UC) received VDZ induction therapy between September 2016 and April 2017 in Hungary. Efficacy of induction therapy was assessed based on the changes of activity indices on week 14. Results: 41 enrolled IBD patients were therapeutic failure or intolerant for infliximab and/or adalimumab therapy. The mean age was 38.6 years (range 18–67; median 40) and the average disease duration was 11.7 years (range 1–36; median 10). In 16 cases moderate and in 25 cases severe disease activity was observed. Extraintestinal manifestations occurred in patients, and in cases the IBD was associated with primary sclerosing cholangitis (PSC). Rate of the therapeutic responders for VDZ induction therapy was 80.49% (N = 33). Complete clinical remission was observed in 19 cases (46.34% 8 cases of whom 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.

OUTCOMES OF TREATMENT FOR LATENT TUBERCULOSIS INFECTION IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE RECEIVING BIOLOGIC THERAPY

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Introduction: Tuberculosis (TB) reactivation is of particular concern in patients with inflammatory bowel disease (IBD) treated with biologic therapies. Screening for latent tuberculosis infection (LTBI) is indicated prior to initiating treatment. Despite the reduction of TB reactivation following treatment for LTBI the risk of reactivation still exists. The efficacy of LTBI treatment in IBD patients receiving biologic therapy and the timing of biologic therapy initiation has not been extensively studied.

Aims & Methods: In order to evaluate the effectiveness of LTBI treatment in IBD patients receiving biologic, 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. Patients were excluded including patients with active 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 (4–3653). The mean 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>Diagnosis</th>
<th>Mean Age</th>
<th>Male Sex</th>
<th>Type of Inflammatory Bowel Disease (IBD)</th>
<th>Type of Biologic Therapy</th>
<th>Type of Latent Tuberculosis Therapy</th>
<th>Median time to initiate biologic therapy</th>
<th>Mean duration of follow-up</th>
<th>Mean Pre-treatment Risk of Development of Tuberculosis</th>
<th>Estimated Post-treatment Reactivation Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>RD</td>
<td>38.3 (±14.4)</td>
<td>24/35 patients</td>
<td>Ulcerative Colitis (23%)</td>
<td>Infliximab (40%)</td>
<td>Isoniazid (INH)</td>
<td>43 days</td>
<td>2.9 ± 3.3 years</td>
<td>0.52%/year</td>
<td>0.98 cases per 100 patient-years</td>
</tr>
<tr>
<td>CS</td>
<td>38.3 (±14.4)</td>
<td>24/35 patients</td>
<td>Crohn’s Disease (77%)</td>
<td>Vedakuzumab (20%)</td>
<td>Rifampin for 4-months</td>
<td>43 days</td>
<td>2.9 ± 3.3 years</td>
<td>0.52%/year</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 sometimes 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 ileorectal resection with ileocolonic 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 (19%, 57%) and L3(±L4) in RD (19.70%), 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 (10 (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 receive 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

Table 1: Cohort Characteristics and Estimated Post-treatment Tuberculosis Reactivation Rate

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Mean Age</th>
<th>Male Sex</th>
<th>Type of Inflammatory Bowel Disease (IBD)</th>
<th>Type of Biologic Therapy</th>
<th>Type of Latent Tuberculosis Therapy</th>
<th>Median time to initiate biologic therapy</th>
<th>Mean duration of follow-up</th>
<th>Mean Pre-treatment Risk of Development of Tuberculosis</th>
<th>Estimated Post-treatment Reactivation Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>RD</td>
<td>38.3 (±14.4)</td>
<td>24/35 patients</td>
<td>Ulcerative Colitis (23%)</td>
<td>Infliximab (40%)</td>
<td>Isoniazid (INH)</td>
<td>43 days</td>
<td>2.9 ± 3.3 years</td>
<td>0.52%/year</td>
<td>0.98 cases per 100 patient-years</td>
</tr>
<tr>
<td>CS</td>
<td>38.3 (±14.4)</td>
<td>24/35 patients</td>
<td>Crohn’s Disease (77%)</td>
<td>Vedakuzumab (20%)</td>
<td>Rifampin for 4-months</td>
<td>43 days</td>
<td>2.9 ± 3.3 years</td>
<td>0.52%/year</td>
<td>0.98 cases per 100 patient-years</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 prophylactic 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 prognosis in post-operative CD patients.

Disclosure of Interest: L. Cea-Calvo: MSD employee
C. Romero: msd employee
B. Juliá De Páramo: 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 homotauricholic 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% and 5 (25.2%) 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, Janssen and Behringer-ingelheim On speaker bureau for Dr Falk, Abbvie and MSD.
All other authors have declared no conflicts of interest.
P1723 A MICROBIAL SIGNATURE OF PSYCHOLOGICAL DISTRESS IN IRRTIBLE BOWEL SYNDROME

H. Duboc

Introduction: Irritable Bowel Syndrome (IBS) is associated with alterations along the brain-gut-microbiota axis. Previous studies have suggested a parallel segregation of microbial features with psychological burden in IBS (1,2,3).

Aims & Methods: This increase is currently aimed at examining microbial correlates of psychological distress, anxiety, depression and stress perception. 16s rRNA fceal microbial analyses (illumina MiSeq, V1-2 amplified from total DNA) in 48 IBS patients (Rome-III criteria, mean age 42 years, 35 female subjects, 25 diarhoea-dominant, 5 constipation-dominant and 18 alternating-type IBS). Assessment of psychological and clinical variables with validated questionnaires, microbial analysis via QHIME, Machine learning to predict psychological distress through a composite model of bacterial features. Correlative analysis and comparisons in bacterial abundance among subgroups defined by thresholds in psychological variables.

Results: Thirty-one patients (65%) showed psychological distress, 22 (31%) anxiety, and 10 depression (21%). Psychological distress was uncorrelated with IBS severity (Spearman’s r = 0.05, p = 0.736). Microbial beta diversity was significantly associated with distress and depression (q = 0.044 each). A random forest model using 148 microbial estimators was able to correctly classify patients relative to their psychological distress (AUC = 0.98). Patients exceeding thresholds of distress, anxiety, depression and stress perception showed significantly higher abundances of Proteobacteria (LDA = 2.5). Patients with anxiety were characterized by higher abundances of Bacteroidetes (LDA = 3.0). Differently with Lachnospiraceae with Lachnospiraceae q = 0.013), anxiety positively with AnoBacterium (q = 0.65, q = 0.001).

Conclusion: A microbial signature accurately predicted the presence of psychological distress. Psychological variables significantly segregated gut microbial features, underscoring the role of brain-gut-microbiota interaction in IBS.

Supported by Austrian Society of Gastroenterology and Hepatology (ÖGGH) and funds of the Oesterreichische Nationalbank, Fund project number: 16506

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1724 SACCHAROMYCIES BOULARDII CNCM I-745 LOWERS FECAL CHOLIC ACID CONCENTRATIONS DURING ANTIINFECTION THERAPY IN HEALTHY VOLUNTEERS: A NEW MECHANISMS STUDY IN THE PROTECTION AGAINST CLOSTRIDIUM DIFFICILE INFECTION

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Introduction: Saccharomyces boulardii (SB) CNCM I-745 demonstrated clinical efficacy in the secondary prevention of post-antibiotic Clostridioides 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 SB on CA levels and the quantity of ‘pro-germination’ primary BA including CA in human stools B) Describe whether SB enhances transformation to ‘protective’ secondary BA in human.

Aims & Methods: This work was an ancillary of a previous study conducted in 4 groups of HV at Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, Massachusetts. The previous results of this work showed that SB CNCM I-745 can modulate shifts in the microbiota and reduces diarrhea during an antibiotic therapy. Group 1 (n = 12) received SB CNCM I-745 500 mg twice daily for 14 days. Group 2 (n = 12) received Amoxicillin-Clavulanate (AC) (875/125 mg, t.i.d) daily for 7 days. Group 3 (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 D0-28, 0, 3, 7, 10, 13, 21. Group 4 had stool samples at D0, 7 and 21. The fecal concentrations of 28 BAs were measured by HPLC/MS, and expressed as % of total BAs.

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 AC (71.23 ± 7.4% vs 54.70 ± 9%, p = 0.04), and this difference was prolonged over time. Similarly, the AC + SB group showed a significantly lower (and sustained) increase in CA than in the AC alone group.

Conclusion: Antibiotics alter the transformation of CA by microbial enzymes into secondary BA. SB administration reduces the transformation rate 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 CA inhibition: alteration of the microbiota can encourage germination of C. difficile spores via increased CA concentrations and reduced concentrations of secondary BAs. The effectiveness of SB in preventing recurrent CDI may be explained, in part, through modulation of microbiota changes that influence the balance of pro- and anti-germination BA concentrations.

Disclosure of Interest: H. Duboc: I worked with Biocodex as 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.

References
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 diarrhea is intestinal overgrowth of the pathogenic bacterium, Clostridium difficile.
Aims & Methods: The aim of this study is to investigate, in in vitro models of C. difficile infection, (i) the impact of HMOs on the microbial community and activity (e.g. bacterial metabolites and pH), and (ii) the anti-pathogenic activity of HMOs against C. difficile, with a focus on preventing recurrence of the infection. Two in vitro models, each using human faecal microbiota infected with C. difficile, were used to examine the impact of HMOs on bacterial metabolic production of Clostridium difficile. 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, in some models of beneficial bacterial growth, 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.
References
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4. Langdon et al., 2016, Genome Medicine, 8:39

P1728 CHANGES IN GUT MICROBIOTA ASSOCIATED WITH AGING IN OBSESE 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 underlined frequently because intervention in the microbiota may reduce body fat. In this study, we investigated the relationship between obesity and composition of gut microbiota in healthy Japanese population.
Aims & Methods: Participants were 1,082 healthy Japanese adults (410 males, 672 females) who participated in the Iwaki Health Promotion Project in 2014. Faecal samples were analysed by 16S rRNA gene-targeted sequencing to determine family composition of gut microbiota. They were classified into obese group (BMI ≥ 25) and normal weight group (BMI < 25) according to Japanese standard and were stratified into 7 age groups, 19–29, 30–39, 40–49, 50–59, 60–69, 70–79 and 80–90. The family composition of gut microbiota in each age group was compared between obese and normal group.
Results: There were 235 obese participants, and 847 normal ones. The proportion of Bacteroides decreased substantially, and Ruminococcaceae increasing slightly with aging in obese group. The proportion of Bifidobacteriaceae, Lachnospiraceae and Porphyromonadaceae decreased gradually with aging in both groups.
Conclusion: Changes in composition of gut microbiota with aging were different between obese and normal group. Some previous researches observed differences of gut microbiota between obese and normal group but many of the researches did not take aging into consideration. Our study indicated that different intervention stratified with age could be needed.
Disclosure of Interest: All authors have declared no conflicts of interest.

P1730 CARBOXYLIC AND AMINO ACIDS MIXTURE IDENTICAL TO THE METABOLITES OF THE PROBIOTIC ESCHERICHIA COLI N17 INDUCES BACTERIOCIN SYNTHESIS IN PROBIOTIC LACTOCOCCUS HELVETICUS D75 AND D76 STRAINS AND ENHANCES THEIR ANTIMICROBIAL ACTIVITY AGAINST TEST PATHOGENS
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Introduction: 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 colonscopic 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, 18 women, mean age 68±10) and in the controls (average risk population with normal findings on colonscopic and with negative history of colorectal neoplasia and/or inflammatory bowel disease; 7 men, 13 women, mean age 66±10), all undergoing flexible fibre colonscopy.
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 colonscopic 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, 18 women, mean age 68±10) and in the controls (average risk population with normal findings on colonscopic and with negative history of colorectal neoplasia and/or inflammatory bowel disease; 7 men, 13 women, mean age 66±10), all undergoing flexible fibre colonscopy.
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 colcins was observed in non-a-A, a-A and CRC group when compared to controls, p<0.001. Significantly higher production of colcins was confirmed in patients with CRC compared to patients with a-A, p=0.016. Microcin producing strains were isolated in 23% (14/60) controls, 56% (35/63) non-a-A, 78% (47/60) a-A and in 62% (41/66) CRC. Significantly higher production of microcins was observed in non-a-A compared to controls, p=0.002, in a-A and CRC group when compared to controls, p<0.001. Microcins were produced more frequently in patients with a-A compared to those with non-a-A, p=0.008.
Conclusion: Strains isolated from large bowel mucosa in patients with colorectal neoplasia produce bacteriocins more frequently compared to those with normal findings on colonscopic. We presume, that mucosal large intestinal microbiota with their products including bacteriocins play an important role during the development of colorectal neoplasia.
Disclosure of Interest: All authors have declared no conflicts of interest.
Reference
BMC Infect Dis 2014; 14: 733.
in DNA of both probiotic strains. Sequencing of these fragments showed a difference in their nucleotide sequence when 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 homologies to the helveticin gene of Lactobacillus helveticus DPC 4571 were found in 11.1% similarity to Lactobacillus paracasei, Lactobacillus casei and Lactobacillus crispatus, Lactobacillus gallinarum, Lactobacillus helveticus and Lactobacillus rhamnosus. The addition of the carboxylic and amino acids mixture (Actoflor®-S) results in 2-2.5-fold enhanced antimicrobial activity of both tested probiotics. Lactobacillus plantarum was the best pathogen Lactobacillus helveticus D75 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. Discrimination of gut microbial metabolites mixture and identified probiotic bacteriocins for human health has yet to be realized.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1731 LONG-TERM SAFETY AND EFFECT ON GASTROINTESTINAL SYMPTOMS OF FECAL MICROBIOTA TRANSPLANTATION

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Introduction: Fecal microbiota transplantation (FMT) has been shown to be effective treatment for recurrent Clostridium difficile infection. Concern has been raised about the long-term safety of FMT.

Aims & Methods: The aim of this study was to determine the long-term safety of fecal microbiota transplantation (FMT), and its effect on gastrointestinal symptoms (GI) in Clostridium difficile (CDI) patients. We studied 84 patients of which 45 received an FMT treatment via colonoscopy and 39 served as controls receiving antibiotic treatment (AB) for the recurrent CDI and followed their recovery for a mean period of 3.8 yrs. All together 130 patients (55 patients in the FMT group and 75 patients in the AB group) were sent a 45-item questionnaire collected anonymously. Treatment of recurrent CDI was 2.6 (1.5) vs. 2.0 (0.9) respectively, in the FMT and AB group respectively. 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 occurring and the remaining (18.6%) were recurrences of CDAD. The majority of the patients underwent study under performance of Proton Pump Inhibitors-IBP (52.8%) and antibiotic therapy (74.6%) (28.6% made a single antibiotic, and 23.6% 2 or more distinct antibiotics). Penicillin antibiotic class was the most used, followed by Cephalosporins (21.5%), Fluoroquinolones (11.4%) and Macrolides (10.1%).

Conclusion: A significant increase in the incidence of CDAD was observed in this study. This increase may be related to several factors, such as the improvement of laboratory diagnostic methods, increased antibiotic prescription, hospital contamination with Clostridium difficile spores or with the appearance of new and now virulent Ribotypes.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1733 THE EFFICACY OF SELECTIVE ARTERIAL EMBOLIZATION IN THE MANAGEMENT OF DIVERTICULAR BLEEDING

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Introduction: Colonic diverticular bleeding is the most common cause of lower gastrointestinal bleeding. Persistent bleeding or acute massive bleeding of presenting with hemodynamic disorders requires an interventiontreatment. The question of what is the best treatment for acute diverticular bleeding remains

Disclosure of Interest: All authors have declared no conflicts of interest.

References
The aim of this study is to clarify the efficacy of TAE for colonic diverticular bleeding. Retrospective study of transarterial embolization (TAE) for gastrointestinal bleeding was performed.

Aims & Methods: The aim of this study was 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 the patients were treated with blood transfusion. Those who were extravasation-positive in enhanced CT underwent angiogram from celiac axis 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 0.018inch 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 recently 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 OpenGrey).

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 0.09). 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/Teste</th>
<th>Sensitivity (%)</th>
<th>Specificity (%)</th>
<th>Positive predictive value (%)</th>
<th>Negative predictive value (%)</th>
<th>Likelihood ratio</th>
</tr>
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<tbody>
<tr>
<td>Richards 1990</td>
<td>Retrospective 1981–1990</td>
<td>126</td>
<td>37</td>
<td>100</td>
<td>100</td>
<td>53</td>
<td>0.63</td>
</tr>
<tr>
<td>Aljebreen 2004</td>
<td>Retrospective 1999–2001</td>
<td>520 NGT</td>
<td>68</td>
<td>54</td>
<td>41</td>
<td>78</td>
<td>0.61</td>
</tr>
<tr>
<td>Witting 2006</td>
<td>Retrospective 1997–2002</td>
<td>325</td>
<td>94</td>
<td>91</td>
<td>81</td>
<td>81</td>
<td>0.65</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>
</tr>
</tbody>
</table>

Conclusion: The GBS was superior to the 3 LGB risk scores for predicting the need for transfusion. 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 Antagonist Oral Anticoagulants Compared with Warfarin in Clinical Practice: Characteristics and Clinical Outcome

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Introduction: Acute lower gastrointestinal bleeding (ALGB) occurs in patients taking anticoagulants either warfarin or non Vitamin K oral anticoagulants (NOACs). The use of NOACs has been increasing compared with warfarin in recent years. We investigated patients with ALGIB 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 (range 61–88) and the average of polyp size was 11.6 (range 5–22) mm in diameter. The bleeding site was in the small bowel in 2/43 and 6/68 respectively. Causes of bleeding were not different between the two groups.

Conclusion: ALGB in patients on NOACs although presents some differences it has a similar clinical outcome to patients with ALGB on warfarin.
We conducted subgroup analyses according to the identity of FDRs affected, searched, assessed and extracted data from eligible studies. The relative risks family history of CRC in FDR were included. Two reviewers independently and grey literature were searched from their inception to December 2016, and all Aims & Methods: The present systematic review and meta-analysis examined the CRC risk conferred by family history of CRC in FDRs according to their age of onset. We searched Ovid Medline, EMBASE and grey literature from their inception to December 2016, and included all screening studies that investigated the three family history of CRC and incidence/prevalence of CRC. Two reviewers independently worked on selection, assessment and data extraction of eligible articles. A random effects meta-analysis was employed to pool relative risks (RR) and odds ratios. Subgroup analyses were performed according to the age of onset of CRC in FDRs of asymptomatic subjects (<40 vs. ≥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 = 1.96, 95% CI = 1.57-1.97; p < .001, I² = 97.5%). 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 t = 0.122, p = 0.159).

Conclusion: A family history of CRC in FDRs whose age of onset is earlier than or 40 or 50 years conferred a significantly higher risk of CRC in asymptomatic individuals, implying that age of onset could potentially enhance the discriminatory capability of CRC prediction scores.

Disclosure of Interest: All authors have declared no conflicts of interest.

Disclosure of Interest: N. Arber, J. L. Huang, M. C. Wong, C. Chan, J. Lin, W. W. Cheung, M. Liang, Y. Fang, C. Yu, D. Fung, C. Y. Chinese University of Hong Kong, Hong Kong/Hong Kong Prc Contact E-mail Address: martin_wong@cuhk.edu.hk


text: 3.29, 95% C.I. 1.67–6.49 for <40 years vs. RR

5. Conclusion: 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 examined 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 = 1.92–3.76) had statistically similar risk of CRC. We did not identify any publication bias based on the Begg’s regression test (p = 0.159).

Conclusion: The risk of CRC was similar among subjects whose siblings; parents or ≥2 FDRs were affected by CRC. Information on the identity of the FDRs affected does not seem to be necessary when the risk of CRC in asymptomatic individuals is predicted.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1742 GILBERT SYNDROME IS NOT THAT INNOCENT
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Introduction: Gilbert’s syndrome is considered to be entirely benign. Some studies have shown a reduced risk for cardiovascular disease (CVD). There is conflicting data regarding cancer risk among patients with Gilbert syndrome.

Aims & Methods: We aimed to evaluate the association of Gilbert syndrome with CVD and cancer. Clinical and epidemiological data was obtained from consecutive healthy subjects undergoing annual screening at the Integrated Cancer Prevention Center in Tel Aviv. The annual check-up includes: thorough examination by specialists in internal medicine, surgery, dermatology, plastic surgery, OB/GYN, urology, oncology, oral surgery, gastroenterology. Blood work (smac 24; blood count, TSH, CRP, PSA), vaginal, PSA and mammography (>40ys), LDCT in heavy smokers and all needed imaging when clinically indicated. Peripheral blood DNA was extracted from all subjects. Gilbert syndrome was determined by clinical criteria (normal liver function tests but to mild elevation in unconjugated bilirubin <3 mg/dl without any hemolysis. In the majority of the cases the diagnosis was confirmed genetically by the homozygous mutation (TA)17A in the promoter region of UGT1A1 enzyme. Prevalence of CVD and cancer were compared between subjects with/without Gilbert syndrome. Mortality data was obtained from the Israeli ministry of health and cancer incidence from the Israeli registry.

Results: A total of 6258 (49%) men and 6461 (51%) women, 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 rate of Gilbert syndrome was equal in Sephardic and Ashkenazi Jews. Malignancy and CVD were diagnosed in 678 (5.3%) and 1,837 (14.4%) subjects respectively. The prevalence of any CVD was significantly higher in the Gilbert group (OR 1.23 (95% CI = 1.04-1.46 p = 0.017), and the prevalence of hypertension (OR 1.37 (95% CI = 1.12-1.68 p = 0.003) and CVA (1.1% versus 0.6% p = 0.06). Higher rate of kidney and bladder cancers (OR 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 patients with Gilberts (OR 0.39, 0.22-0.7, 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-medie 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) in the post-polypectomy surveillance, or different polypologic factors that contribute to the development of the polyp (accelerated growth). Thus, quality endoscopic measures and Lynch syndrome were highly investigated for their association with interval cancer. However, most reports came from the Western world and not the Middle East, and differences in ethnicity or environmental factors might potentially have impact on the biology of tumor progression. In addition, patient-related factors were less investigated for their association with interval cancer. The aim of this study was thus to assess tumor and patient characteristics and predictors of interval cancer in a population from Israel.

Aims & Methods: This retrospective cohort study included all patients that were diagnosed with colon cancer in our institution between 2005–2014. Cases were included patients with a previous colonoscopy within 1–10 years before the diagnosis of cancer, with either negative 13 indica or benign polyps. Only full colonoscopies with at fair or good preparation were included. Interval cancer was defined on an individual basis, when cancer occurred within the recommended surveillance interval according to accepted guidelines. Cases were further stratified according to time since index colonoscopy (<3 years, 3-10 years). Positive controls were cancer patients without previous colonoscopy, and "negative" controls were sex- and age-matched patients with two negative colonoscopies within the study period who were randomly selected on a 1:3 ratio. Tumor characteristics (location, staging) and patient-related factors (age, gender, positive family history of colon cancer, aspirin use, diabetes, diverticulosis) were compared between cases and control groups.

Takuya Inoue, Clinical features of post-polypectomy bleeding associated with hepaticojejunostomy therapy; Digestive Endoscopy 2014;26:243–249

James D. Douketis, M.D., Perioperative Bridging Anticoagulation in Patients with Atrial Fibrillation; New England Journal of medicine. 2015;373:823–33

Multicenter study on hemorrhagic risk of heparin bridging therapy for periendo- scopic thoracopiphrenotomy ; Matsumoto et al. BMC Gastroenterology (2015) 15:89

Disclosure of Interest: All authors have declared no conflicts of interest.
Results: 845 patients were diagnosed with a colon cancer within the study period, and 83 cases (9.8%) were found to have interval cancer. Among them, 51 patients (61.5%) had negative findings at index colonoscopy, while 22 (26.8%) had both non-advanced adenomas (12%) or advanced adenoma (26.5%). Compared to "positive" controls with primary cancer (575 patients with full data), patients with interval cancer were older (84% above 60 vs. 65%, p = 0.03) and had proximal (cecal to splenic flexure) tumor location (57% vs. 34%, p = 0.0001), but gender (47% vs. 53% males) and tumor staging (78% vs. 70% in stage 0–2, p = 0.12) were not different. Compared to "negative" healthy controls (255 participants), interval cancer and negative findings at index colonoscopy (51 patients) had higher prevalence of diabetes (33% vs. 15%, p = 0.002) but the same rate of family history, aspirin use and diverticulosis. There were no significant differences in all these characteristics between patients with interval cancer < or ≥ 65 years.

Conclusion: Patients with interval cancer tend to be older and have proximal tumor location than patients with primary colon cancer, and have higher prevalence of diabetes. A close surveillance or the use of better endoscopic techniques (e.g. use of NBI, longer retrieval time) should be considered for patients with these characteristics.

Disclosures of Interest: All authors have declared no conflicts of interest.

P1746 PREVALENCE OF SERRATED POLYPSYNDROME IN AVERAGE-RISK SCREENING COLORECTAL CANCER SCREENING

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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 polyps syndrome (SPS) is characterised by multiple SPs throughout the colorectum. The current criteria for SPS is based on the presence of colorectal lesions at screening without knowing if colorectal neoplasia.

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 colorectal polyps 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 a family history of CRC (i.e. first-degree relative with colorectal adenoma or CRC), or with other predictors of colorectal neoplasia were excluded. The significantly higher prevalence of both, non-advanced adenomas (51%, 95% CI 46–56%; p = 0.037) and advanced adenomas (22%, 95% CI 18–26%; p = 0.049) comparing to the individuals with isolated DM2. Advanced adenomas were more likely in patients aged 65–75 years.

Conclusion: Colorectal neoplasia is positively associated with metabolic syndrome. Cardiovascular risk factors (SCORE ≥10%) is a stronger risk factor than the presence of diabetes mellitus type 2. Individuals with SCORE ≥10% were considered as a risk group. Individuals with recent colorectal cancer screening program over the past five years. Newfoundland and Labrador selects patients for colonoscopy if one of two FIT values ≥100 ng/mL.

Disclosures of Interest: All authors have declared no conflicts of interest.

P1747 METABOLIC RISK FACTORS AND THEIR IMPACT ON COLORECTAL CANCER SCREENING: MULTICENTER PROSPECTIVE STUDY

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Introduction: 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. The aim of the study was to determine the prevalence of 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. Patients with metabolic syndrome were identified from demographic measurements, current and past medical history and other risk factors, and colorectal pathologic findings were assessed in patients with metabolic syndrome (target group) who underwent preventive colonoscopy (FIT positive or screening colonoscopy). This data was compared with consecutive patients without metabolic syndrome (control group). The prevalence of colorectal neoplasia was estimated using the screening population criteria (asymptomatic, without family or personal history of colorectal neoplasia).

Results: 1,500 individuals were enrolled; 726 persons (494 men, 68%) had the target group (metabolic syndrome) and 774 persons (353 men, 46%) in the control group (without metabolic syndrome). The significantly higher prevalence of advanced adenomas was observed in the target group (18%, 95% CI 15–21%) comparing to the control group (9%, 95% CI 7–11%), OR 1.8, p = 0.02. Similarly, the prevalence of all adenomas was higher in the target group (48%; 95% CI 44–51%) than in the control group (35%, 95% CI 32–38%); however, the difference was not statistically significant (p = 0.179). Individuals with isolated DM2 (target group) and non-advanced adenomas (51%, 95% CI 46–56%; p = 0.037) and advanced adenomas (22%, 95% CI 18–26%; p = 0.049) comparing to the individuals with isolated DM2. Advanced adenomas were more likely in patients aged 65–75 years.

Conclusion: Colorectal neoplasia is positively associated with metabolic syndrome. Cardiovascular risk factors (SCORE ≥10%) is a stronger risk factor than the presence of diabetes mellitus type 2. Individuals with SCORE ≥10% were considered as a risk group. Individuals with recent colorectal cancer screening program over the past five years. Newfoundland and Labrador selects patients for colonoscopy if one of two FIT values ≥100 ng/mL.

Disclosures of Interest: All authors have declared no conflicts of interest.

References:
P1747 CONTRIBUTION OF GERMINE 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 patients had MSH2 and 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 a MSH6 mutation and 2 were negative. In the age group 41–45 (n = 5), 2 MSH6 mutation and 2 VUS were found, alongside 2 negative results.

Among the colorectal cancers, 17% of patients had a de novo mutation of Lynch Syndrome, 25% had a VUS, and 58% were negative.

2 gastric diffuse cancer underwent NGS analysis (40 and 45 yrs, 1M and 1F), both negative.

Among 2 pancreatic cancer patients (< 50 yrs, 2 F), one tested negative 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 the already known susceptibility genes seldom contribute to sporadic early onset cancers. Other genes and mechanisms may explain the early onset phenotype. Our data show that NGS is often non conclusive in early onset GI cancers, and further development is needed to better classify VUS (25%).

Disclosure of Interest: All authors have declared no conflicts of interest.

P1749 INVESTIGATING THE DIRECT INTERACTION BETWEEN CD24 AND β-CATENIN IN INTESTINAL TUMORIGENESIS

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Introduction: CD24 is a glycosylphosphatidylinositol-linked protein that functions as an adhesion molecule and is upexpressed at an early stage of CRC (Sagiv et al., 2006). The Wnt/β-catenin signaling pathway plays an important role in the CRC carcinogenesis process. C57BL/6.J mice carrying the ApmMin mutation develop ~24.3 ± 3.7 adenomas and several carcinomas in the small intestine by the age of 16 weeks compared to the ~7 ± 1.7 polyps that ApmMin/CD24 -/- (Double KO) mice developed. Mice colonoscopy showed a significant reduction in the number and size of polyps upon depletion of CD24 alleles. The ApmMin mice displayed severe splenomegaly (355 ± 68 mg) compared (141 ± 49 mg) in double KO mice similar to WT mice. HB level in the ApmMin was 5.8 ± 2.5, significantly lower than in the double KO mice (8.2 ± 0.9) and their WT littermate.

Aims & Methods: We aimed to study the cellular interactions between CD24 and β-catenin, and effects of their interaction on intestinal tumorigenesis. CD24-inducible 293T-Rex cells previously developed in our lab (Shapira et al., 2011) and SW480 CRC cells stably transduced with CD24 (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 (FWB) analysis was used to confirm this direct interaction by probing the standard WB membrane with the purified CD24 protein.

Results: In vitro: Western blotting analyses showed that expression of CD24 in 293T-Rex cells induced the activation of β-catenin, while down-regulation of CD24 in SW480 cells caused a decrease in the level of active β-catenin. Cytoplasmic/nuclear fractionation showed that more active β-catenin entered the nucleus in cells that expressed compared to control conditions (clone 4). In addition, in both cell lines, TOP/FOP luciferase reporter assay showed a significant increase in Luciferase activity upon CD24 expression induction. Co-immunoprecipitation studies of CD24 and β-catenin indicated that these two proteins might be interacting. In addition, in HEK-293T cells and SW480 cells, immunofluorescent staining of CD24 and β-catenin showed that these two proteins co-localize on the cellular membrane. Furthermore, far western blotting analysis suggests that a direct interaction between the proteins exist.

Conclusion: 1. CD24 plays a major role in intestinal tumorigenesis. 2. CD24 interacts with the Wnt pathway by activating β-catenin. 3. CD24 interacts directly with β-catenin. 4. Down-regulation of CD24 may be an important aim in the therapy of CRC.

Disclosure of Interest: N. Arber: Bio-view Micro-Medic Check-cap Gi-View Bayer All other authors have declared no conflicts of interest.

Reference

Sagiv, E., Memeo, L., Karin, A., Kazanov, D., Jacob-Hirsch, J., Mansukhani, S., Sisakian, G., Rechavi, G., Hibshoosh, H. & Arber, N. 2006. CD24 plays a major role in intestinal tumorigenesis. C57BL/6.J mice carrying the ApcMin mutation develop ~24.3 ± 3.7 adenomas and several carcinomas in the small intestine by the age of 16 weeks compared to the ~7 ± 1.7 polyps that ApmMin/CD24 -/- (Double KO) mice developed. Mice colonoscopy showed a significant reduction in the number and size of polyps upon depletion of CD24 alleles. The ApmMin mice displayed severe splenomegaly (355 ± 68 mg) compared (141 ± 49 mg) in double KO mice similar to WT mice. HB level in the ApmMin was 5.8 ± 2.5, significantly lower than in the double KO mice (8.2 ± 0.9) and their WT littermate.

Conclusion: Here we can observe an increase of lymphoid follicle associated with tumor volume after colibactin-producing E. coli infection. Our first results suggest that neutrophils can be one of the immune cells implicated in this process. This work shows a link between immune microenvironment, pathogenic E. coli and tumor development.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1748 IMPACT OF COLIBACTIN-PRODUCING ESCHERICHIA COLI ON IMMUNE MICROENVIRONMENT 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 colonial scores were histologically analysed. Detection of immune cells was quantified by immunofluorescent labelling using a specific and innovative algorithm created with Image 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 signal in the gut of the infected group suggesting an increase of oxidative stress and inflammation. Histological analyses showed no difference about intra-tumoral immune infiltrate density on 11G5 and K12-infected mice. However, using our specific algorithm, we observed a significant increase of lymphoid follicle size in the gut of infected with the 11G5 strain compared to mice feeding with non-pathogenic K12 strain. Interestingly, follicle size was positively correlated with tumor volume, on the 11G5 infected group suggesting an association between pro-carcinogenic proprieties of this strain and gut immune response. In addition, we observed an increase of neutrophils (Ly6G+ cells) on mucosa and lymphoid follicle of mice infected with 11G5 compared to K12 and non-infected mice. These results can be linked with our in vivo optical imaging observations and our results about the increase of neutrophils chemotactants CXCL1 and CCL20 measured by qRT-PCR after infection. Analyses of T cells, macrophages, B cells and myeloid suppressive cells are in progress.

Conclusion: Here we can observe an increase of lymphoid follicle associated with tumor volume after colibactin-producing E. coli infection. Our first results suggest that neutrophils can be one of the immune cells implicated in this process. This work shows a link between immune microenvironment, pathogenic E. coli and tumor development.

Disclosure of Interest: All authors have declared no conflicts of interest.
Several studies have demonstrated that the colorectal cancer (CRC) tumourspheres 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. We found that higher EGFR autophosphorylation (Y1068) in HCC827-, A549-, and HCT116-derived tumourspheres compared to the parental cells, which induced tumoursphere formation through activating G9α-mediated stemness property. YM155 was demonstrated to inhibit the tumoursphere formation by unexpectedly blocking the autophosphorylation of EGFR and G9α-mediated stemness pathway. The chemical and genetic inhibitions of EGFR and G9α revealed the significant role of EGFR-G9α pathway in maintaining the cancer stemness property.

Conclusion: In conclusion, this study not only revealed that EGFR triggered the formation of tumourspheres through elevating the G9α-mediated stemness, but also demonstrated that YM155 inhibited the formation of tumourspheres 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

Aim & Methods: The aim of this study was to investigate the potential mechanism of YM155 against cancer stemness in EGFR-positive cancers. We have investigated the mechanism of YM155 against cancer stemness in EGFR-positive cancers. YM155 suppressed gastric cancer xenograft growth in mice without affecting normal tissues. Oncotarget 7: 7096-7109.

References

Conclusion: In conclusion, this study not only revealed that EGFR triggered the formation of tumourspheres through elevating the G9α-mediated stemness, but also demonstrated that YM155 inhibited the formation of tumourspheres 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

Aim & Methods: The aim of this study was to investigate the potential mechanism of YM155 against cancer stemness in EGFR-positive cancers. We have investigated the mechanism of YM155 against cancer stemness in EGFR-positive cancers. YM155 suppressed gastric cancer xenograft growth in mice without affecting normal tissues. Oncotarget 7: 7096-7109.
P1755 CHARACTERISTICS OF HYPERMUTATOR IN DIGESTIVE SYSTEM CANCERS
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Introduction: A cancer with a number of somatic mutations is defined as “hypermutator”, and shows therapeutic features, such as high sensitivity to immune checkpoint inhibitor. However, to date, analyses of hypermutator have not been done with a large number of cases.

Aims & Methods: The aim of this study is to analyze the incidences and characteristics of hypermutator in digestive system cancers. We analyzed somatic mutations in digestive system cancers in 1145 cases (age: 67.4±11.3 yrs., M:F = 755:390), those underwent surgery after full informed consent during 2014 to 2015. Genomic-wide sequencing was performed on 47 inherited cancer-associated genes and 411 cancer-associated genes using next generation sequencer (Ion Torrent Proton sequencer and Ion AmpliSeq Exome RDY kit, Thermo Fisher Scientific). Hypermutator was defined when a tumor having > 500 mutations 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 related to hypermutation. Associations with tumor location recognized in 6.2% (26 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 restricted to 33.2% (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, presenting similar characteristics 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.

P1756 UNBIASED ANALYSIS OF REGULATION OF TRANSCRIPTION FACTORS UPON ER STRESS IN THE LS174T COLORECTAL CANCER CELL LINE EXPOSES CTBP2 AS A POTENTIAL REGULATOR OF STEMNESS
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Introduction: In the intestinal epithelium, stem cells are located at the bottom of the crypt and their maintenance and differentiation is essential for sufficient organ function. Accumulation of mis- or unfolded proteins in the endoplasmic reticulum, so-called ER-stress, leads to an unfolded protein response (UPR) with a complex array of transcription factor (TF) responses. In human colorectal cancer cell lines (C-CRC) 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.

Aims & Methods: Our aim is to identify transcription factors important for stem cell maintenance using a transcriptionomics approach. On thapsigargin treated LS174T-cells, a cell line with a transcriptional profile resembling intestinal stem cells, we performed a TF DNA-binding assay (CatTFRE) in which TFs present in the cell are bound to plasmid DNA, co-extracted and quantified using mass-spectrometry. We confirmed downregulation using immuno blot in colorectal cancer cell lines. Additionally, we examined CBT2 expression in mouse intestine using in situ hybridization, epithelial FACS sorting and immuno staining. To study CBT2 function, we transfected a LS174T cell line with shRNA CBT2 and analyzed stemcell and differentiation markers.

Results: By using the CatTFRE assay we quantified the binding activity for > 1000 transcription factors. Forty-three TFs showed significant downregulated binding upon thapsigargin treatment compared to controls compared to control. We confirmed downregulation of eight of these TFs on protein level, suggesting a loss of binding due to translation inhibition upon ER stress. We identified transcriptional corepressor CBT2 as the most significantly downregulated protein. Interestingly, in mouse small intestine, CBT2 is expressed in the proliferative compartment where stem cells reside. Additionally, mRNA expression analysis showed abundance of CBT2 in iECS. We next investigated the effect of CBT2 knockdown on stemness in the LS174T cell line. Three days upon shCBT2 transfection we showed a significant decrease in mRN A levels of stem cell markers Lgr5 and Olfm4 compared to control and an increase in differentiation markers Villin and P21, suggesting induced IESC differentiation.

Conclusion: Using an unbiased transcriptionomics 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 CBT2 contributes to intestinal stem cell differentiation.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
Aims & Methods: We aimed to identify epitogenic alterations associated with the development of TSAs and to clarify the associations between clinical, pathological and molecular characteristics in colorectal lesions. The genome-wide DNA methylation status in TSAs consisting of protruding and flat components were analyzed using an Infinium HumanMethylation450 BeadChip, and changes in DNA methylation 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 etopic expression on CRC cell growth in a panel of colorectal cell lines, and their expression in TSAs were evaluated. Results: Methylation of MINT1 was highly significantly associated with both 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. Methylation of SMOC1 was associated with progression, colony formation and in vivo tumor formation by CRC cells. Analysis of colorectal lesions revealed that SMOC1 is frequently methylated in TSAs and CRCs, and that SMOC1 methylation is strongly associated with KRAS mutation and CIMP-low.

Conclusion: Methylation of SMOC1 is associated with TSA development but is rarely observed in SSA/Ps. Immunohistochemical analysis of SMOC1 may be a useful marker to discriminate between SSA/Ps and TSAs. Our data suggests SMOC1 methylation may play a role in the neoplastic pathways arising in TSAs.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1759 DEVELOPMENT AND VALIDATION OF PREDICTIVE MODEL FOR PARTICIPATION IN COLORECTAL CANCER SCREENING IN KOREA

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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 (LR) analysis and artificial neural network (ANN) were used to develop predictive models. Multilayer perceptron ANN was constructed based on 16 clinical variables. We then validated the models using the KNHANES 2011 and 2012 (n = 9586) datasets and compared them with each other.

Results: Out of 10,527 individuals selected, 57.0% (n = 6005) responded unscreened for CRC. Among various demographic and socioeconomic factors, female gender, low education level, having a chronic disease, health insurance coverage, education level, private health insurance, self-reported depression, self-reported health status, and residence were found to be independently associated with CRC screening participation. LR analysis produced screening score (range 0–10.3), and a cutoff point of ≥5.3 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 approaches should be implemented to encourage partaking in CRC screening in the identified individuals.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1760 CD24 PREDICTIVE LEVELS- A SIMPLE NOVEL BLOOD TEST FOR THE DETECTION OF VARIOUS MALIGNANCIES

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Introduction: Background: CD24, a mucin-like cell surface molecule, highly expressed on solid tumors and hematological malignancies (HM) (Gastro 2006, Clin Can Res 2007, Can Res 2008). mAb to CD24 were used 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 develop a simple, noninvasive blood test that could identify patients at risk for different types of cancer. Blood was taken from patients with various malignancies (CRC, Pancreatic Cancer (PC), gastric cancer (GC), sarcoma and HM), that was confirmed by histology. Age, gender and ethnic match healthy individuals served as controls. Hemoglobin levels were measured. Results: We undertook an extensive workflow at the Integrated Cancer prevention center at Tel Aviv Medical Center (Eur J Intern Med. 2013) All samples were collected and processed identically. An initial template data has been generated using gates within the software to create a hierarchical population tree at the beginning of the screen. All additional analyses were accomplished after data acquisition have been completed. The template file include compensation adjustment which is uniformly applied to all the data collected in order to minimize fluorescence overlap among detection channels.

Results: The novel assay was improved significantly, distinguished healthy from CRC (Fig.1a) (P < 0.013), PC (Fig.1b) (P < 0.018), biliary tract (P = 6.45E-12), breast (Fig.1c) (P = 2.93E-14), prostate (Fig.1d) (P = 0.013), MDS (P < 0.1) 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 for CRC were 79.2% and 74.7%, and for PC 70.6% and 75.9%, respectively.

The positive (PPV) and negative predictive (NPV) values of CD24 for the detection of CRC was 38% and 94.8%, and for PC 17.1% and 97.3%, respectively. Specificity and sensitivity for HM were also statistically significant (data not shown). The CD24 test could not discriminate between patients with cervical, stomach and lung cancers and healthy subjects.

Conclusion: Conclusions: CD24 expression in PBLs is a promising blood test for the early detection of CRC, PC and HM.

Disclosure of Interest: N. Arber: Bayer Bio-view Gi-View Micro-med Check-cap
All other authors have declared no conflicts of interest.

P1761 FACTORS ASSOCIATED WITH OPTIMIZING PREPARATION FOR COLONOSCOPY USING SPLICE 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 outpatients referred for colonoscopy were prospectively assessed by a nurse practitioner filling out a questionnaire. Hemoglobin levels were measured prior to all 10 patients at 3 days before colonoscopy and split dose picolax. Demographics, medical history, Bisacodyl and water consumption, time of total preparation and time between end of prep to colonoscopy were evaluated. Quality was assessed using the Boston Bowel Preparation Score (BBPS). Bowel Prep was considered "good" if BBPS was ≥6 and ≥2 in each segment or "fair" if BBPS was < 6 or < 2 in any colonic segment.

Results: A total of 452 patients were included in the study (M = 54%, mean age 56.5 +/− 16.3 yrs), 366452 (81%) achieved a “good” bowel preparation, and 86 (19%) were classified as “not good.” No significant difference was observed between ethnicities and gender in terms of achieving a good bowel preparation (p = 0.77, p = 0.054). There was a significant difference among diabetics (n = 93, 20.6%) and non-diabetics (n = 359, 79.4%) in quality of the bowel prep. While 69.9% of diabetics achieved a good bowel preparation only 83.8% of non diabetics achieved a good bowel preparation (p = 0.004). In the univariate analysis, Bisacodyl did not have an effect on bowel preparation (p = 0.83) except in the diabetics, where the time who took an average of 2.1.3.1.9 (median 6) vs. 4.31 ± 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 -7% achieved significantly better prep vs >8 hrs (p = 0.002). In the multivariable model for prediction of quality of bowel preparation that included the time between sachets of picolax, number of water cups consumed, diabetes, gender, and age we found that all, excluding age, were good predictors of bowel preparation. Women had a better chance of achieving an adequate bowel preparation (OR1.68, p = 0.045, 95%CI = 1.01–2.79). Patients without diabetes had a better chance of achieving an adequate bowel preparation (OR = 2.05, p = 0.014, 95%CI = 1.16–3.63). Patients who had 5-9 hours between the 2 sachets of picolax had a lower chance of achieving an adequate bowel preparation as compared to those who had 9 to 24 hours between the 2 sachets (OR = 0.375, p = 0.009, 95%CI = 0.180–0.783). Lastly, drinking fewer than 8 cups lowers the chance of achieving an adequate bowel preparation (OR = 0.461, p = 0.003, 95%CI = 0.275–0.775).
Conclusion: Diabetics require a more intense bowel preparation aided by blood glucose control to help others. Time between bowel preparation and 8 hours and preparation should end no later than 8 hours prior to colonoscopy. Patients should be instructed to drink a minimum of 8 glasses of water with each dose of picolax.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1762 IMPROVED ADENOMA DETECTION WITH ELUXEO LINKED COLOR IMAGEING (LCI) AS COMPARED TO CONVENTIONAL WHITE-LIGHT HIGH-DEFINITION COLONOSCOPY– A RANDOMIZED CONTROLLED TRIAL

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Introduction: Colonoscopy is the gold standard method of colorectal cancer and polyp screening, but polyps are missed during a colonoscopic examination at a rate that varies from 6% to 27%. Improved adenoma detection rates can be achieved with optimized endoscopic visualization methods. A recently developed new Fujinon endoscope system, Eluxeo carries a new function of electronic chroendoendoscopy, Linked Color Imaging (LCI), that enhances the coloring algorithm of epithelial membranes and helps to find lesions that are difficult to see with the conventional endoscopes. In our prospective randomized study, we evaluated the effectiveness of LCI, a new endoscopic visualization technique that may enhance image quality to improve colonic adenoma detection.

Aims & Methods: Up till now 247 eligible patients, elder than 45 years, admitted for screening outpatient colonoscopy were randomly enrolled to undergo high-definition white-light colonoscopy (WLC) or LCI colonoscopy during instrument withdrawal. The colonoscopic procedures were performed by three experienced endoscopists (2000 hours) on 205 patients in the conventional high-definition Fujinon EC 590Z or a new EC 760Z VS Eluxeo colonoscope. All of the colonoscopic procedures were made under Propofol deep sedation guided by an anesthesiologist team. The minimum withdrawal time was defined as more than 6 minutes. All colonoscopies were routinely assisted with pure CO2 insufflation. The primary outcome parameter of our study was to assess and compare the polyp and adenoma detection rate with the two endoscopic technology.

Results: A total of 247 patients were randomized (mean age 58.7 years), 101 patients enrolled in the WLC group and 146 patients in the LCI group. No significant differences have been observed in the patient demographics and colonoscopy withdrawal time between the two groups. Patients having both colorectal polyps and adenomas were detected more frequently in the LCI group than in the control group: 60.9% and 43.8% versus 55.4% and 33.6% respectively, however, this was not statistically significant (p = 0.32 and 0.16). In contrast, the total number of adenomas relative to the total number of polyps detected with LCI withdrawal were significantly higher than with conventional WLC: 105 vs. 102, 55 vs. 55 vs. 102, respectively (p < 0.0001).

Conclusion: The LCI enhancement of the Fujinon Eluxeo colonoscopy system was superior to the conventional HD-WLC in detecting patients with colorectal adenomas, which was mainly due to the ability of the more sensitive detection of minute (less than 5 mm) adenomas. Study was supported by ECT grant GINOP-2.1.1.1-15-2015-00128).

Disclosure of Interest: All authors have declared no conflicts of interest.

P1763 COMPREHENSIVE ANALYSIS OF LONG NON-CODING RNAs WITH CHARACTERISTIC EXPRESSION LEVEL ALTERATION IN COLORECTAL ADENOMAS AND CANCERS

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Introduction: Long non-coding RNAs (lncRNAs) play role in colorectal cancer (CRC) development, however, lncRNA expression profile in CRC and its relation to the epigenetic regulatory system still remain incomplete.

Aims & Methods: We aimed the perform whole genome lncRNA expression profiling and the analysis of underlying functional interactions of aberrantly expressed lncRNAs. lncRNA expression levels were analyzed on 60 colonic biopsy samples (60 CRCs, 20 adenomas, 20 normals) by Human miRNA microarray (Affymetrix). Expression alteration of certain candidates was verified by qPCR. Furthermore, in silico validation was performed on HGUC33 Plus 2.0 array data and also on TCGA COAD dataset. mRNA targets of lncRNAs were predicted with the mirCODE algorithm and mRNA expression was analyzed with miRNA microarray. Alternative transcriptional lncRNA-mRNA coexpression pattern analysis was also performed.

Results: According to HTA results in adenomas 12 lncRNAs (e.g. LINC00278) were upregulated and 6 lncRNAs (e.g. RP17_174D18.1) were downregulated compared to normals, while in CRC’s 1 lncRNA (UCA1) was overexpressed and 8 lncRNAs (e.g. LINC00350) were underexpressed compared to adenomas (p < 0.05; ≥2 fold). In CRC samples 8 lncRNAs (e.g. AC120231.1) were overexpressed and 9 lncRNAs (e.g. RP17-49k6.1) were downregulated compared to normals. 42% of lncRNAs upregulated in CRC samples showed moderate-high expression in adenomas (p < 0.05; ≥2 fold) while both downregulated and upregulated lncRNAs were found in adenomas.

Conclusion: The defined lncRNA sets (e.g. CCAT1, UCA1) may have a regulatory role in adenoma and CRC development and may direct tumor cell growth pathways. A subset of CRC-associated lncRNAs showed significant differential expression in the adenoma samples, which may give the possibility to develop biomarkers for colorectal adenoma specific markers and achieve early detection of colon lesions.

Disclosure of Interest: All authors have declared no conflicts of interest.

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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. Kalikrein-related peptides (KLKs) are involved in proteolytic cascades of different tissues. KLK14, acting via PAR-2, represents an autocrine paracrine regulator of colorectal tumorigenesis and alpha-1-antitrypsin is a natural inhibitor of KLK14. Therefore its role in regulating the proteolytic cascade in colorectal tumorigenesis is of great importance.

Aims & Methods: The aim of this study was to analyze Alpha 1-antitrypsin (AAT) expression in tissue samples at different stages in the process of colorectal cancer development. We examined a total of 245 colon samples. Of those, there were 101 colorectal carcinoma tissues, for 70 of which paired normal mucosa was also examined. A total of 74 colorectal adenomas were examined. Quantitative real time PCR was used to measure AAT expression. Clinical evaluation of AAT levels was demonstrated in terms of disease-free survival (DFS) and overall survival (OS).

Results: Alpha-1-antitrypsin expression was found to be significantly associated with longer DFS (p = 0.026) in patients with colorectal cancer. Kaplan-Meier survival curves demonstrated that low alpha1-antitrypsin expression is significantly associated with longer DFS (p = 0.002) as well as OS (p = 0.021).

Conclusion: Our data suggests that alpha1-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.

P1765 DIFFERENTIATION BETWEEN NONNEOPLASTIC AND NONNEOPLASTIC MINIMUMLY COLORECTAL POLYPS WITH FUJINON ELUXEO-BLI VERSUS RICE ELECTRON MAGNIFICATION–A RANDOMIZED PROSPECTIVE STUDY

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Introduction: Real-time differentiation between neoplastic and non-neoplastic colorectal lesions may be crucial during colonoscopy. While adenomas are
neoplastic, and therefore should be resected, hyperplastic polyps never turn malignant and do not require specific endoscopic therapy. The aim of our prospective, randomized study was to distinguish subcentimetric hyperplastic and adenomatous polyps based on Fujinon FICE versus Eluxeo BLI electronic chromoendoscopy technology with and without optical magnification.

Aims & Methods: In order to create a video and digital picture library of polyps, patients undergoing screening or diagnostic colonoscopy were considered for inclusion. Patients with at least one histologically verified <10mm polyp were included as short (20sec) video-clip and at least one still picture of each polyp without and with 50x optical zoom at standard white-light (WLI), and with FICE-light or BLI-light were recorded with Fujinon EC 590Z and EC760Z endoscopes and stored in an anonymized database. Once the video-library was compiled, each of our 5 colonoscopic experts (ML, SZM, OL, DZS, and SZA) independently and randomly reviewed all of the cases with a standardized electronic questionnaire. In each case, all of the observers had to assess the color, the vascularization and the surface of the polyps, and the pit pattern was also assessed by Kudo classification. Finally, with the deficient confidence (low/medium/high on VAS), the histological prediction and the final decision has been clarified on each lesion as neoplastic or non-neoplastic (hyperplasia).

Results: Up till now 115 polyps were enrolled and recorded into our digital web-based library, 59 were assigned into the FICE and 56 into the BLI group. All of the detected 115 polyps were endoscopically removed and histologically analyzed and this was regarded as gold standard. The overall accuracy with WLI versus FICE versus BLI technology of the 5 experts without zoom and with 50x magnification difference to hyperplastic and adenomatous polyps were 77.62% and 84.51%, vs. 74.58% and 83.90%, vs. 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 ratio that was associated with a more precise histologically prediction as compared to non-zoom, WLI or FICE or BLI polyp assessment.

Conclusion: The new electronic chromoendoscopy technology with Eluxeo BLI significantly improved the reliability of the histology prediction as compared to FICE and WLI technology. High-confidence predictions for the differentiation of neoplastic and non-neoplastic polyps with Eluxeo BLI electronic chromoendoscopy provide a potential for real-time endoscopic diagnosis of hyperplastic polyps to support ressect and discharge strategy. (Study was supported by ECT grant GINOP 2.1.1-15-2015-00128)

Disclosure of Interest: All authors have declared no conflicts of interest.

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P1767 ENDOMETRIOID 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 microvascular patterns for colorectal lesions. However, the accuracy of the real-time diagnosis was not as high as ideal. EC (endocytoscopic vascular pattern) is the next generation of EC-V3 for diagnosis and classification of colorectal lesions.

Aims & Methods: The aim of this study was to evaluate the effectiveness of endocytoscopic vascular patterns for differentiating neoplastic lesions from inflammatory or non- neoplastic lesions and predicting the histopathological diagnosis of colorectal lesions. The sixty-eight 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 intransmucosal cancer, 21 slightly invasive submucosal cancer (SMs) and 135 massively invasive submucosal cancer) were retrospectively evaluated. We used the Kudo classification for the diagnosis of submucosal invasion and classified cancers accordingly. SMs cancer without vessel perfusion does not metastasize. In contrast, SMm lesions show a substantial proportion (~10%) of lymph node metastases. We named the ultra-magnified microvascular findings as endocytoscopic vascular pattern (EVP) pattern and classified into the following 3 groups: EVP-I, the surface microvascular structures were very fine and difficult to observe; EVP-II, the surface microvascular structures were very clearly seen and showed a regular vessel network, and their caliber and arrangement were uniform; and EVP-III, the surface microvascular structures were highly variable in caliber, their arrangement was early with to late vessel homogenization.

Results: The specificity, sensitivity and accuracy of EVP-I for diagnosis of hyperplastic polyp were 89.0%, 98.5% and 97.7%, respectively. As regards the sensitivity, specificity and accuracy of EVP-V3 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 TUMOURS IN OUR HOSPITAL
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Introduction: Rectal neuroendocrine tumours (NETs) are recommended to undergo endoscopic therapy, those with a tumour diameter of ≤10mm and up to the deep submucosal layer. However, no clear guideline has been established on the radical criteria and additional treatment for rectal neuroendocrine tumours (NETs). The validity of the diagnosis and treatment recommended in the guideline for rectal NETs will be examined in the cases treated at our hospital.

Aims & Methods: We examined the microscopic features, pathological features, treatment methods, and prognosis of 22 patients diagnosed as having a rectal NET and treated at our hospital between 2007 and May 2016.

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 and/or investigation. While miss rates for endoscopic and imaging modalities were low, 19% of missed cancer diagnosis were due to lack of appropriate investigations following outpatient or inpatient review for colorectal alarm symptoms or IDA; this might be improved by increasing specialist inpatient in-reach services and senior review of outpatient cases.

Disclosure of Interest: All authors have declared no conflicts of interest.

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symptomatic condition (lumbago); lesion site (Rs/Ra/Rb), 1/2/19 cases; mean tumor size: presence of biologically active enzymes: biopsy diagnosis rate, 11/14 (78.5%); presence/absence of endoscopic ulcers, 11/11 cases; and M/SM/MP, 1/19/1 cases. The TNM classification of the cases was as follows: T1a, 16 cases; T1b, 5 cases; T2, 1 case; N1, 1 case; and M1, 1 case. The treatment was successful in 20 cases with mucosal resection/endoscopic submucosal dissection/surgery/drug therapy in 5/7/2/1/1 case. Of 19 endoscopic treatment cases, 15 corresponded to a tumor diameter of ≤10 mm, with negative resection margin and vascular invasion as criteria for curative resection, and 3 cases of unknown stumps were recognised. In the EMRL group, all cases were negative. In all the cases except the case of other-disease death, it elapsed without recurrence. Both surgical cases showed a positive vascular invasion, and one case was a confirmed N1, but neither of the patients survived without a relapse. In the case with hepatic and bone metastases, medication was administered, and the effect was temporarily effective, but the patient died a year and a half later. Conclusion: Endoscopic treatments are considered appropriate for rectal NETs with a tumor diameter ≤10 mm or for depression or apparent metastasis, and not >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 of follow-up.

Disclosure of Interest: All authors have declared no conflicts of interest.

**P1716** SELECTIVE ERADICATION OF KRAS-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 had previously reported that a recombinant adenovirus, carrying a pro-apoptotic gene (PUMA) under the regulation of RAS-responsive elements (PY4) effectively suppressed the growth of human cancer cells harboring hyperactive RAS (Giladi et al, 2007). Furthermore, we had shown, both in vitro and in vivo, that replacing the pro-apoptotic gene with a bacterial toxin can improve the efficacy of this system (Shapira et al, 2015).

Aims & Methods: We aimed to establish a tight regulated dual system by expressing a toxin under PY4 elements in cancer cells, while sparing normal cells by expressing the anti-toxin under p53 responsive elements (RGC) specifically in non-malignant cells. Adenoviral vectors carrying the toxin (PY4-Maf-mcherry) and anti-toxin (PY4-E3) were designed. A specific inhibitor of interleukin enhancer binding factor 3 (ILF3), expressed specifically in cancer cells under the regulation of the IN derived peptides. Massive cell death was induced upon exposure of the infected cells to the IN peptide compared to the control peptide.

Conclusion: The use of IN derived peptides together with the CD242-targeted lentibehaviour of an in vivo, specifically to promote death of CD24-expressing cancer cells.

Disclosure of Interest: N. Arber: Bayer Bio-view Gi-View Micro-med Check-
card. All other authors have declared no conflicts of interest.

**P1711** ILF3 STABILIZES AND ACTIVATES EGF-R-MEDIATED G9A PATHWAY FOR MAINTAINING CANCER STEMNESS PROPERTY IN EGF-R-POSITIVE CANCERS

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Introduction: A specific inhibitor of interleukin enhancer binding factor 3 (ILF3), MYC, suppresses EGF-R phosphorylation and signalling, inhibiting the formation of cancer stemness tumourspheres in vitro, suggesting that ILF3 as an oncogene participates in the maintaining of cancer stem cell property through stabilizing EGF-R-mediated stemness pathway. Since cancer stemness cell is the major driving force for cancer progression and recurrence under the regor of EGF-R, inhibition of ILF3 can potentially induce cell death and formation of double-strand breaks due to the action of the particles inte

Aims & Methods: The tumourspheres derived from EGF-R-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. RAS-mutant cells were utilized to search for putative growth factors involved in the formation of tumourspheres 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 MMU-treated and ILF3-knockdowned A549-derived tumourspheres 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 proliferatio

Results: We found that higher EGF-R autophosphorylation (Y1088) in HCT116- and A549-derived tumourspheres 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 proliferatio

Conclusion: In conclusion, this study demonstrated that ILF3 played an impor

Disclosure of Interest: All authors have declared no conflicts of interest.

References


References


5. Liu S, Ye D, Guo W, Wu Y, He Y, et al. (2015) OA, 0.75 [95%CI, 0.57 to 0.98]. Subgroup analysis showed the highest preventive agents for recurrent colorectal adenomas.

6. Although various pharmacological agents have been trialed for prevention of colorectal adenomas, findings were significantly better for sulindac plus each metformin, ursodeoxycholic acid (UDCA), aspirin plus calcium with vitamin D, and difluoromethylornithine (DMFO) plus sulindac. For recurrent colorectal adenomas, findings were significantly better for sulindac plus difluoromethylornithine than other tested agents. Aspirin/NSAIDs was more effective than placebo in both pairwise (OR, 0.73 [95%CI, 0.59 to 0.90]) and NMA (OR, 0.75 [95%CrI, 0.57 to 0.98]). Subgroup analysis showed the highest probability of aspirin (≤100 mg/L) to be the most efficacious agent among all NSAIDs (SUCRA = 71.7%). For safety profiles, the top three ranked agents were metformin (86.7%), antioxidants (82.0%) and dietary supplements (65.9%), but none reached statistically significant when compared with placebo. Aspirin/NSAIDs performed the worst (16.4%) with significantly more serious adverse events than placebo (pairwise: OR, 1.25 [95%CI 1.14 to 1.38]; NMA (OR, 1.28 [95%CrI, 1.12 to 1.44]). Other regimens were not significantly different to each other in both pairwise and network comparisons, these agents include antioxidants, dietary supplements, calcium as well as folate acid.

Conclusion: For individuals with preserved increased risk of CRC, moderate-to-low dose aspirin among those under surveillance are both effective for recurrent colorectal adenomas. Future studies are required to provide more precise estimates of the optimal NSAIDs with an effective dose and low adverse events. We also suggest the further evaluation of NSAIDs-associated combination regimens and other novel agents (e.g.,melatonin) in the chemoprevention of CRC.

Disclosure of Interest: All authors have declared no conflicts of interest.
Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1775 COST-EFFECTIVENESS OF THE FIRST SURVEILLANCE COLONOSCOPY IN POPULATION WITH ADVANCED COLORECTAL POLYPS OR MULTIPLE POLYPS FROM COLORECTAL CANCER SCREENING PROGRAM

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Introduction: The implementation of the CRC screening program has generated an increase in surveillance colonoscopies. However, the intermediate-high risk group that included advanced lesions (size ≥10 mm, villous component or high grade dysplasia) or the presence of 3 or more polyps, has a low incidence of metachronous risk lesions when performing colonoscopy at 3 years according to the current recommendations. Identifying predictors of metachronous lesions would provide a better risk stratification and improve the efficiency of surveillance programs.

Aims & Methods: We aimed to identify the cost effectiveness of the first surveillance colonoscopy and the predictive factors of metachronous lesions at 3 years in individuals with advanced lesions or ≥3 polyps detected at baseline screening colonoscopy. This was an analysis of all cases with advanced polyps and/or multiplicity from CRC screening program population of Barcelona detected at baseline colonoscopy during the years 2010–2011 and with a performed colonoscopy after 3 years. Epidemiological and clinical data of all individuals were collected as well as the morphological data of all polyps. For the statistical study, a bivariate analysis and logistic regression were performed.

Results: 638 cases were identified, with mean age of 64 years. 342 were men (62.6%). 23.8% required more than one colonoscopy for the complete removal of all the polypos. 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 mg/mL. 51.8% suffered from hypertension, 15% from diabetes mellitus, 46.5% from dyslipidemia 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 polypos in 420 cases (80.1%); and advanced polypos or multiplicity were identified in 98 cases (18.9%) 73 advanced adenoma in 59 cases (11.4%), ≥3 adenomas in 62 cases (11.4%), and others (11%) and/or serrated in 71 cases (13.7%). The presence of ≥3 adenomas and/or serrated polypos was the only variable that was associated with increased risk of the diagnosis of advanced adenomatous or serrated lesions in surveillance colonoscopy (p < 0.001).

Conclusion: In individuals with advanced polyps and/or multiplicity the incidence of metachronous risk lesions at 3 years is low. Assessment a baseline colonoscopy with complete removal of all the polyps could allow to increase the interval of surveillance, maintaining and ensuring the compliance of the surveillance, and thus in 3 years in the cases with multiplicity in the baseline colonoscopy.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1777 POPULATION-BASED COLORECTAL CANCER SCREENING 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 setting has been implemented. Currently, the annual immunochromatographic FOBT (FIT) is offered in the age group 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.

Aims & Methods: 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. We did not find any adenoma recurrence at 3 and 5 years. No cancer recurrence occurred in the follow-up period.

Conclusion: FIT is a feasible strategy to manage superficial colorectal tumors. This study demonstrates favorable technical and short-term clinical outcome of colorectal ESD, but further studies are needed to confirm the long-term efficacy.

Disclosure of Interest: All authors have declared no conflicts of interest.

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 79/107, mean age 67.6 ± 11.5). Lesions were located in the rectum (64.3%), left colon (9.7%), transverse (11.9%) and sigmoid (14%). Mean size of lesions was 39.3 ± 0.9 mm. A total of 140 (75.9%) were low-grade dysplasia (LGD) in 64 (34.6%), high-grade dysplasia (HGD) in 78 (42.2%) and adenocarcinoma in 42 (22.7%) cases. Only 1 NET (0.5%) was found. En bloc resection was achieved in 88% of lesions. Clinical success (R0) was obtained in 84.8% of lesions. No cancer recurrence occurred in the follow-up period.

Conclusion: ESD is a feasible strategy to manage superficial colorectal tumors.
P1778 LONG-TERM OUTCOMES OF ENDOSCOPIC SUBMUCOUS 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 neoplasia, little is known about large consecutive studies evaluating long-term outcomes of early cancer and high grade dysplasia. We aimed to assess the efficacy and safety of ESD for early cancer and high grade dysplasia in colorectum and evaluated the long-term outcomes, including local recurrence and metastasis.

Aims & Methods: We performed a retrospective analysis of data collected from 5 consecutive patients with 520 colorectal early cancer and high-grade dysplasia treated with ESD between January 2007 and December 2013. Histology and patient data were collected during an average follow-up time of more than 5 years to determine tumor stage and type, resection status, complications, tumor recurrence, and distant metastasis.

Results: The overall rates of en bloc resection, complete resection, R0 resection, major complications were 94.4%, 91.5%, 89.2% and 2.1%, respectively. Large tumors and snare-assisted ESD were independent factors of piecemeal resection. ESD of colon tumors increased the risk for complications. During the follow-up period, all patients remained free from metastasis. However, local recurrence occurred in 4 patients (0.8%); large tumors and piecemeal resection were risk factors.

Conclusion: ESD is effective and safe for resection of early cancer and high grade dysplasia in colorectum and long-term outcomes are favorable. ESD is indicated for the treatment of colorectal early cancer and high grade dysplasia to obtain curative resection and prevent the local recurrence.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1779 LOW UPTAKE OF PSYCHOLOGICAL THERAPIES AMONG PATIENTS WITH IRRITABLE BOWEL SYNDROME IN SECONDARY CARE

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Introduction: Patients with irritable bowel syndrome (IBS) often have co-existent mood disorder and psychological illness. Meta-analyses of randomised controlled trials consistently demonstrate that psychological therapies, such as cognitive behavioural therapy (CBT) and hypnotherapy, are effective treatments for IBS. In the UK the National Institute for Health and Care Excellence (NICE) recommends considering the use of these in patients with no response to pharmacological therapies, and for refractory symptoms.

Aims & Methods: We performed a cross-sectional survey to examine willingness of patients with IBS in a specialist clinic were generally reluctant to consider psychological therapies as their first-choice treatment option than those with higher levels of anxiety and depression, somatoform-type behaviour, or severe symptoms were no more willing to consider these therapies than those without.

Conclusion: Qualitative and quantitative data were collected using a modified version of the Hospital Anxiety and Depression Scale (HADS), the Beck Depression Inventory (BDI), and the Beck Anxiety Inventory (BAI). Data were analysed using SPSS 21. A total of 63 patients (27 males) were recruited.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1780 GUT SYMPTOMS AND TRANSIT DISTURBANCE IN PARKINSON’S DISEASE ARE PAN-ENTERIC BUT NOT UBQUITOUS: A WIRELESS MOTILITY CAPSULE STUDY

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Introduction: Symptoms of gastrointestinal dysfunction are among the most common non-motor complaints in Parkinson’s patients. These may involve muscles from the oropharynx to the anorectum, and the autonomic and enteric nervous system are often involved, resulting in secondary bowel 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 scale. GI symptom burden was identified by Wexner constipation score and Gastroparesis Cardinal Symptom Index (GCSI). Acidity, motility and transit data were obtained, 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. The WMC (600 mg) was swallowed and evaluated the long-term outcomes, including severe somatoform behaviour, versus 9.2% of those without (P = 0.10).

Results: One patient could not swallow the capsule, and of the 14 patients completing the study, 8 reported GI symptoms. Compared to non-symptomatic PD patients, those with GI symptoms showed significant delayed transit in the stomach, colon and whole gut (table 1). However, small bowel transit did not significantly differ. GI dysfunction was not correlated with H&Y score in this small study. In the WMC, the use of constipation score correlated, suggesting a pan-enteric problem in symptomatic individuals. There was a significant correlation between the Wexner constipation score and CTT in all patients (p < 0.01) but not GCSI and GET (p > 0.10). The results of Wireless Motility Capsule did not different between non-symptomatic PD and controls.

Conclusion: We have shown that Parkinson’s patients with gut symptoms have both upper and lower complaints. Symptomatic PD patients also have markedly delayed transit times throughout the whole gut compared to asymptomatic PD patients and controls. Whilst severity of constipation is related to delayed colonic transit no such relationship was present between gastroparesis symptoms and gastric emptying. The implication is that treating symptomatic Parkinson’s patients should address the whole gut, whether with prokinetics or dual therapy.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1781 OUTLET DYSFUNCTION IS PREVALENT IN SEVERE FUNCTIONAL BLOATING: PRELIMINARY REPORT FROM A MULTICENTER ITALIAN STUDY

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Introduction: Bloating and abdominal distension are common and bothersome symptoms and a frequent complaint of patients affected by functional gastrointestinal disorders (FGID). Recent studies demonstrated that an impairment in psychological therapies as their first-choice treatment option than those with mild or moderate symptoms (7.7% versus 21.7%, P = 0.10).

Conclusion: Despite high levels of psychological comorbidity and NICE recommendations, patients with IBS in a specialist clinic were generally reluctant to consider psychological therapies such as CBT or hypnotherapy. Those with anxiety, depression, somatoform-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.

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the handling of gas is a relevant underlining mechanism in FGID patients with bowel dysmotility. Identification of patients lacking these in patients are lacking.

**Aims & Methods:** Our aim is to study the relationship between the defecation pattern, the severity of bloating and the abdominal girth measurements in FGID patients consulting for bloating as primary complaint with/without visible abdominal distension. We propose a prospective, multi-center study of patients with severe abdominal bloating (VAS score ≥ 24 on a 0–100 mm scale) as primary complaint with/without visible abdominal distension. Patients were recruited at 4 gastroenterology outpatient clinics in Italy. Consecutive patients aged ≥ 18 years and fulfilling Rome III criteria. All patients were prescribed a lactose-free diet supplemented by dietary advice according to the NICE guidelines for two weeks. A belt around the abdomen at standardized sites provided assessment of abdominal girth measurements. During the 2-week run-in period patients completed a daily diary log including abdominal bloating and pain/discomfort scores (100-mm VAS), Bristol Stool Form and stool frequency. At randomization visit, all patients filled in a questionnaire on adequate relief of bloating on a Likert scale and a further abdominal bloating 100-mm VAS score. ABM patients at standardization visit were provided assessment of abdominal girth two hours after a meal. All patients reporting insufficient adequate relief of abdominal bloating at the end of the run-in period underwent a standardized balloon expulsion test (BET) scored as either successful or failed. A straining questionnaire was also administered.

**Results:** 76 patients (66 female, 39.5±12.2 mean age, 6 IBS-D, 6 IBS-M, 30 IBS-C, 9 IBS-U, 6 FC, 16 FB, 3 FD) completed the 2-week run-in period. A significant negative correlation was found between adequate relief and both bloating and abdominal girth changes (r = -0.53 and -0.52, p < 0.001, respectively). 54/76 (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 the only dependent variable, that was significantly related to bloating severity. No relationship was demonstrated for abdominal girth changes, FGID diagnosis and straining questionnaire.

**Conclusion:** In this prospective, multicenter trial simple diet advise was of benefit in approximately 30% of FGID patients consulting for severe bloating. In the non-responders outcome dysfunction was prevalent and correlated with subjective bloating perception. The study is ongoing, but our data may support bowel retraining as potential treatment option for functional bloating.

**Disclosure of interest:** S. Gallotta received research funding from Fondazione Torsio 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:** Faecal Incontinence (FI) is a common and socially disabling condition, more prevalent among females over 50 years old. Detailed anatomical and physiological assessment of each patient is important to determine the correct cause of FI and selection the most appropriate therapy. Conventional and High Resolution (HR) Anorectal Manometry (ARM) is a useful tool to categorize anal and/or rectal dysfunctions in addition to provide physiological assessment of both anal sphincters and rectum.

**Aims & Methods:** To evaluate symptoms and anorectal function of patients affected by FI, we included 358 patients with FI (77% female) and 23% men (M), mean age 63 range (22–92 year) referring to the outpatient unit of Digestive Pathophysiology of S. Giovanni-Addolorata Hospital, Rome from January 2006 to December 2016. Clinical presentation (history, symptom profile and severity) and anorectal physiological evaluation (digital examination, manometry, rectal sensory testing, balloon evacuation test) were analyzed. The manometric parameters obtained with conventional and HR-ARM were: resting pressure, squeeze pressure, rectal compliance, rectal sensibility and the anorectal pattern during the defeacatory maneuver.

**Results:** 114 out of 358 patients (32%) reported both FI and difficulty evacuating stool with/without incontinence UI (47%). Proctological surgery (n 122, 34%), pelvic surgery (n 77, 21%) and traumatic anal or vaginal injury (n 144, 40%) 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 dysfunction IAS and EAS, 198 (55%); isolated dyssynergic defecation: 100 (28%); rectal hypersensitivity: 130 (36%).
P1784 INTAKE OF FERMENTABLE Oligo-, Di- AND MONO-SACCHARIDES AND POLYOLS (FODMAPS) INCREASES THE RISK OF IRITABLE BOWEL SYNDROME (IBS) IN INDIVIDUALS EXPOSED TO PSYCHOSOCIAL STRESS IN THE COMMUNITY: RESULTS OF A LARGE, PROSPECTIVE, POPULATION BASED STUDY

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Results: 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 etiology 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 population), 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 the study, 1221 (57.8%) had IBS by Rome III criteria. The IBS group ingested less lactose than the "No-IBS" group (P = 0.024). Intake of other FODMAPs was similar in both groups (P = 0.346). Compared to the "No-IBS" group, individuals with IBS had a greater likelihood of depression (OR 1.5 (0.97–2.32), p = 0.05), anxiety (2.48(1.84–4.39), p < 0.001), recent life event stress (1.5(1.03–2.20), P = 0.003) and medical or/and surgical co-morbidity (2.90(1.30–5.45), P < 0.001). The IBS group also had lower quality of life (P < 0.001). Joint risk analysis identified high intake of total FODMAP intake as a risk factors for IBS only in subjects with psychiatric disease and/or life event stress (table). Similar effects were seen for individual symptoms, in particular bloating (OR 2.4(1.25–4.60), p < 0.008). Increased risk of IBS was identified with ingestion of high intake of individual FODMAPs (e.g. fructose, lactose) in combination with psychosocial factors, but not with sucrose (control) in any group.

Conclusion: FODMAP intake was similar in IBS and No-IBS groups in the community (lactose intake was lower in IBS subjects, likely due to avoidance of dairy products (Long 2017)). However, as expected, IBS patients in the community had a greater likelihood of psychiatric disease, life event stress and clinical co-morbidity. Joint effects analysis demonstrated that high FODMAP intake alone was not associated with abdominal symptoms; however, IBS was more common in those with a high FODMAP intake and concomitant psychosocial factors known to increase visceral sensitivity to digestive dysfunction (Zhu 2013). (ClinicalTrials: NCT0126597)

Disclosure of Interest: All authors have declared no conflicts of interest.

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Bohn, L. "Nutrient intake in patients with IBS compared with the general population." Neurogastroenterol Motil 2013.
Bohn, L. "Diet low in FODMAPs reduces symptoms of IBS as well as traditional dietary advice: a randomized controlled trial." Gastroenterology 2015.
Van Oudenhove, L. "Depression and Somatization Are Associated With Increased Postprandial Symptoms in IBS Patients." Gastroenterology 2016.

P1785 CHARACTERIZING IBS PATIENTS WITH ANXIETY OR DEPRESSION

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Introduction: A large proportion of patients with irritable bowel syndrome (IBS) suffer from anxiety or depression, but the associations with pathophysiological findings and overall symptom reporting are not clear.

Aims & Methods: We included 772 patients with IBS (Rome III criteria) who attended a university hospital-based outpatient clinic specialized in functional GI disorders between 2005 and 2015. The patients underwent examinations to investigate oro-anal transit time (OATT) and visceral sensitivity (rectal balloon distension and a lactulose challenge test), and they also completed questionnaires to 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 (≥8), anxiety and depression were present in 55% and 26% of the IBS patients, respectively. More women were anxious (p < 0.001), but for depression no gender differences were detected (p = 0.76). IBS patients with anxiety or depression were younger (p < 0.001), but more commonly reported sexual and/or physical abuse (p < 0.001) than IBS patients without anxiety or depression. The presence of anxiety or depression did not differ between IBS subgroups based on the predominant bowel habit (p = 0.41, p = 0.18). For an overview of comparisons of data from questionnaires and pathophysiological examinations, see table 1. Both the presence of anxiety and of depression were associated with reports of more severe GI and extraintestinal symptoms, GI-specific anxiety, fatigue, and lower sense of coherence. Regarding pathophysiological examinations, the findings were more inconsistent. OATT was similar between groups, as was stool form and frequency. Visceral sensitivity tended to be higher in patients with anxiety, and depressed patients reported more severe pain during the lactulose challenge.

Table: Joint effects of psychiatric disease, life stress & total FODMAP intake on relative risk of IBS in community

<table>
<thead>
<tr>
<th>Psych Disease</th>
<th>FODMAP</th>
<th>Life Stress</th>
<th>IBS</th>
<th>No IBS</th>
<th>Adjusted OR</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>Low</td>
<td>Low</td>
<td>19 (5.1)</td>
<td>356 (94.9)</td>
<td>1.0</td>
<td>-</td>
</tr>
<tr>
<td>&quot;</td>
<td>High</td>
<td>23 (6.8)</td>
<td>315 (93.2)</td>
<td>1.2 (0.6–2.4)</td>
<td>0.530</td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>Low</td>
<td>14 (3.5)</td>
<td>383 (96.5)</td>
<td>0.6 (0.3–1.3)</td>
<td>0.213</td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>High</td>
<td>16 (4.5)</td>
<td>342 (95.5)</td>
<td>0.9 (0.5–1.9)</td>
<td>0.886</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>Low</td>
<td>9 (7.6)</td>
<td>109 (92.4)</td>
<td>1.6 (0.7–3.8)</td>
<td>0.274</td>
<td></td>
</tr>
<tr>
<td>&quot;</td>
<td>High</td>
<td>16 (9.5)</td>
<td>152 (90.5)</td>
<td>1.9 (0.9–3.9)</td>
<td>0.094</td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>Low</td>
<td>5 (4.9)</td>
<td>97 (95.1)</td>
<td>1.0 (0.4–2.9)</td>
<td>0.932</td>
<td></td>
</tr>
<tr>
<td>&quot;</td>
<td>High</td>
<td>15 (10.5)</td>
<td>128 (89.5)</td>
<td>2.3 (1.1–4.8)</td>
<td>0.029</td>
<td></td>
</tr>
</tbody>
</table>

*Adjusted variables: age, sex, marital status, education, job, income, smoking, drinking, and medical history.

Conclusion: FODMAP intake was similar in IBS and No-IBS groups in the community (lactose intake was lower in IBS subjects, likely due to avoidance of dairy products (Long 2017)). However, as expected, IBS patients in the community had a greater likelihood of psychiatric disease, life event stress and clinical co-morbidity. Joint effects analysis demonstrated that high FODMAP intake alone was not associated with abdominal symptoms; however, IBS was more common in those with a high FODMAP intake and concomitant psychosocial factors known to increase visceral sensitivity to digestive dysfunction (Zhu 2013). (ClinicalTrials: NCT0126597)

Disclosure of Interest: All authors have declared no conflicts of interest.
Conclusion: The presence of anxiety and depression seems to clearly potentiate the already substantial disease burden in IBS patients. However, the association with other pathophysiologival 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, Albireo, Glicym and Shire, and as. All other authors have declared no conflicts of interest.

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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 aimed 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 133 females (66.5%), and the mean age was 40.5±12.3 years. Of the total 70 patients (35.0%) with lactose intolerance, 47 (47.0%) were in IBS and 23 (23.0%) were in control groups (p = 0.001). Symptoms related to IBS were more common in participants with 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 lactose intolerance in patients with IBS subtypes of diarrhea-predominant IBS, constipation-predominant IBS, mixed IBS, and unspecified IBS were 27 (57.4%), 7 (4.9%), 10 (21.3%), and 3 (6.4%), respectively, with no significant differences (p = 0.161, p = 0.124, p = 1.000, and p = 0.661 respectively).

Conclusion: A significantly increased frequency of lactose intolerance was found among IBS patients than in controls. In additional, symptoms associated with lactose intake occurred at a higher frequency in IBS patients, although the difference was insignificant.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1786 THE ASSOCIATION BETWEEN IRRIgable BOWEL SYndrome AND LACTOSE INTOLERANCE

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Introduction: Irritable bowel syndrome (IBS) and lactose intolerance may co-exist and readily cause diagnostic confusion due to similar symptomatology (1,2).

Aims & Methods: This study aimed 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.

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Conclusion: A significantly increased frequency of lactose intolerance was found among IBS patients than in controls. In additional, symptoms associated with lactose intake occurred at a higher frequency in IBS patients, although the difference was insignificant.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
**Phases of the Study**

**Phase 1:** Baseline data collection from 2,450 IBS-C patients across three countries (US, UK, Canada) using validated questionnaires. Data collection began in 2014 and continued until 2019.

**Phase 2:** Longitudinal follow-up of 1,000 patients for up to 5 years, focusing on symptom severity and quality of life.

**Phase 3:** Evaluates the impact of symptom severity on healthcare utilization and quality of life.

**Conclusion:** Increased symptom severity is associated with higher healthcare utilization and lower QoL, emphasizing the importance of symptom management in IBS-C patients.

---

**Table: Impact of Symptom Severity on HRQoL**

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Sex</th>
<th>Age</th>
<th>GSS</th>
</tr>
</thead>
<tbody>
<tr>
<td>HRQoL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IBS-QOL</td>
<td>Total</td>
<td>F</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td>n</td>
<td>1595</td>
<td>1437</td>
</tr>
<tr>
<td>Total score, mean</td>
<td>61.1</td>
<td>60.8</td>
<td>63.8</td>
</tr>
<tr>
<td>Dysphoria</td>
<td>62.3</td>
<td>62.2</td>
<td>62.8</td>
</tr>
<tr>
<td>Activity interference</td>
<td>68.0</td>
<td>68.2</td>
<td>66.4</td>
</tr>
<tr>
<td>Body image</td>
<td>48.2</td>
<td>46.8</td>
<td>61.0</td>
</tr>
<tr>
<td>Health worry</td>
<td>44.9</td>
<td>44.4</td>
<td>49.3</td>
</tr>
<tr>
<td>Food avoidance</td>
<td>50.1</td>
<td>49.7</td>
<td>54.1</td>
</tr>
<tr>
<td>Social reaction</td>
<td>67.3</td>
<td>67.4</td>
<td>70.0</td>
</tr>
<tr>
<td>Relationships</td>
<td>73.4</td>
<td>73.6</td>
<td>71.6</td>
</tr>
</tbody>
</table>

**Discussion:** Symptom severity has a significant impact on HRQoL, with higher GSS correlating with lower QoL scores. This underscores the need for targeted interventions to improve symptom management and quality of life.

---

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**References:**

2. **N. Jossan** et al. (2020). The role of symptom severity in IBS-C patients. *Gastroenterology.*

---

**Supporting Information:**

1. **Phase 1:** Baseline data collection from 2,450 IBS-C patients across three countries (US, UK, Canada) using validated questionnaires.
2. **Phase 2:** Longitudinal follow-up of 1,000 patients for up to 5 years, focusing on symptom severity and quality of life.
3. **Phase 3:** Evaluates the impact of symptom severity on healthcare utilization and quality of life.

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**Conclusion:** Increased symptom severity is associated with higher healthcare utilization and lower QoL, emphasizing the importance of symptom management in IBS-C patients.

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**Table: Impact of Symptom Severity on HRQoL**

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Sex</th>
<th>Age</th>
<th>GSS</th>
</tr>
</thead>
<tbody>
<tr>
<td>HRQoL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IBS-QOL</td>
<td>Total</td>
<td>F</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td>n</td>
<td>1598</td>
<td>1440</td>
</tr>
<tr>
<td>Index score, mean</td>
<td>0.68</td>
<td>0.68</td>
<td>0.67</td>
</tr>
</tbody>
</table>

**Conclusion:** Symptom severity may be an important consideration for disease management and emphasise the need for IBS-C treatments that improve both symptom burden and quality of life.

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**Disclosure of Interest:**

A. Marcinik: AN employee of Allergan plc and shareholder in Pfizer, Aegerion, Allen and Allergan plc.
Y. Mo: AN employee of Allergan plc.
J. Ma: AN employee of Allergan plc.
J.L. Abel: AN employee of Allergan plc and shareholder in Pfizer, Aegerion, Allergan plc.
R.T. Carson: Robyn T. Carson is an employee of Allergan plc and shareholder in Allergan plc.

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**References:**

1. **N. Jossan** et al. (2020). The role of symptom severity in IBS-C patients. *Gastroenterology.*

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**Supporting Information:**

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3. **Phase 3:** Evaluates the impact of symptom severity on healthcare utilization and quality of life in IBS-C patients.
Ischaemic colitis (IC) is the most common vascular disease of the colon, although its exact pathophysiological mechanisms remain unclear.1

Aims & Methods: The aim of this study was to evaluate routine coagulation parameters associated with vitamin K in patients with IC and to compare them with a group of controls (individuals with known predisposing factors for IC but without evidence of the disease). This study was carried out in the context of a study evaluating thrombophilia among IC patients. The present study used the same study groups as the latter.2

Disclosure of Interest: Ischaemic colitis (IC) encompasses a number of clinical entities resulting in insufficient blood supply to the colon. The incidence of adverse outcome in patients with IC remains high.

Conclusion: Individuals fulfilling the Rome IV criteria for IBS in the general population have increased GI and non-GI healthcare utilization in primary and secondary care, excess non-GI symptom burden and impaired QOL.

Disclosure of Interest: All authors have declared no conflicts of interest.
P1795 THE RISK PREDICTIVE VALUES OF ACG CLASSIFICATION IN A COHORT OF IRRITABLE BOWEL SYNDROME PATIENTS: DEFINING THE TERMINAL STATE OF DISEASE
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Introduction: Although most cases of colon ischemia (CI) are mild and self-limiting, when severe it implies high mortality rates. We aimed to evaluate the risk patterns or the classification of disease severity proposed by American College of Gastroenterology (ACG) guidelines (2015), 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 CI (clinical, colonoscopy, 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, Hgb < 12 g/dl, LDH > 350 U/l, serum sodium < 136 mEq/l, WBC > 15 x 109/cmm). Patients were then classified as mild (0 risk factors (RF)), moderate (1–3 RF), and severe (3 or more RF) or any of the following: peritonial signs, pneumatoasis or portal venous gas, gangrene on colonoscopy examination and pan-colonic or isolated right colon ischemia involving 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 CI (62.7% females; mean age 72 years (±13). ACG classification of mild, moderate and severe disease was attributed respectively to 21% of patients (0 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 attributed to 3 RF. The univariate analysis revealed a statistical correlation between RF and intra-hospital or 30-day mortality as well as the need for surgery (mean = 4.06, sd = 1.85). ACG classification presented high predictive accuracy for in-hospital and 1-month mortality with an AUROC of 0.82 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
E. D. Shah, E. Andraska, J. Li, S. Zhang, W.D. Chey
Division Of Gastroenterology, University of Michigan, Ann Arbor/United States of America
Contact E-mail Address: ershah@med.umich.edu
Introduction: Drug pricing and third party payer coverage exert a profound effect on access to prescription therapies in patients with irritable bowel syndrome with diarrhea (IBS-D). We performed a cost-effectiveness analysis to assess the trade-offs associated with treating IBS-D patients with a tricyclic agent (TCA) or rifaximin.
Aims & Methods: We constructed a decision analytic model evaluating three treatment strategies for IBS-D in the United States healthcare system: first-line therapy with TCA-only, first-line rifaximin followed by second-line TCA for nonresponders, and first-line TCA followed by second-line rifaximin for nonresponders. This model accounted for direct and indirect costs of therapy (Medicaid NADAC database and Healthcare Blue Book) and work-productivity loss (published literature and US Bureau of Labor) with a 3% per annum discount rate. Rifaximin was administered in 4-month treatment cycles based on published clinical experience. Responder and discontinuation rates were derived from clinical trial data, and validated health utility values were assigned to terminal health states. Base-case analysis was performed to determine incremental cost-effectiveness ratios (ICER) for both rifaximin strategies. Threshold analysis was performed to determine a range of 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 ($US 29.78/pill), second-line rifaximin could be cost-effective from a societal perspective (Table 1). However, at contemporary WTP thresholds neither rifaximin strategy was cost-effective from a payer perspective despite greater effectiveness than TCA alone. On WTP, a 12–62% price reduction ($US 18.46–$26.34/pill) would enable the first-line TCA followed by second-line rifaximin to be more cost-effective than a TCA-only strategy. An 84–88% price reduction ($US 53.53–$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 cost-effective strategy. Our model was robust in tornado analysis and most influenced by rifaximin treatment interval. Sensitivity analysis on rifaximin retreatment interval suggests that current pricing may be based on longer retreatment intervals than those found in clinical literature (Fig 1a). Sensitivity analysis with a lower TCA responder rate could enable first-line rifaximin to be the preferred strategy, albeit at a reduced price (Fig 1b).
Conclusion: Rifaximin is an effective therapy for IBS but is less cost-effective than TCA as currently priced. We propose an evidence-based pricing strategy which would maximize the cost-effectiveness of rifaximin in IBS-D patients.
Disclosure of Interest: W. D. Chey: Dr. Chey is a consultant for Ironwood Pharmaceuticals and Allergan.
All other authors have declared no conflicts of interest.

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>
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</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>
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<td>.000</td>
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<td>Location of perforation</td>
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<tr>
<td>Endoscopic clipping</td>
<td>.007</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>8</td>
<td>23</td>
<td></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 a 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.

Results: 89 participants were screened (42 years [SD 14], 62% female). 35 had FGID (9 excluded). At 6 week follow up: 35/36 FGID respondents had read the feedback survey at study completion.

Conclusion: The discovery of a novel non-specialist-dependent algorithm-based clinical pathway for the diagnosis and management of FGID, in primary care is warranted.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1799 ANNUAL FECAL IMMUNOLOGICAL TESTING IS LESS COSTLY THAN COLONOSCOPY EVERY 5 YEARS AND REDUCES MORTALITY IN FAMILIAL COLONRECTAL CANCER SCREENING


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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 immunochromatographic testing (FIT) might be a valid alternative to colonoscopy in this setting. However, there are scarce data regarding cost-effectiveness of these strategies from the perspective of healthcare services.

Aims & Methods: This study was aimed to compare the cost-effectiveness of annual FIT and colonoscopy every 5 years, to reduce CRC mortality, in FDR of patients with CRC. A Markov model was constructed to simulate the efficacy and cost of annual FIT (cut-off 10 μg Hb/g feces) or colonoscopy every 5 years of
previously unscreened FDR, starting at age 40 years and ending at age 75. A 5% chance of a mutation in each strategy was assumed. The model was adjusted to the incidence of CRC in Spain and real prevalence of advanced adenoma and CRC in the familial-risk population (http://dx.doi.org/10.1371/journal.pmed.1002008.g001). The main outcomes were quality-life-year (QALY) gained comparing colonoscopy, lifetime burden of colonoscopy, lifetime burden 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 EuroQual 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 a reference, FIT 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 associated with a number of complications compared to colonoscopy every 5 years. The results were robust in sensitivity analyses. Conclusion: Assuming a 50% adherence, annual FIT is less costly than colonoscopy every 5 years for CRC screening and reduces mortality in the familial-risk population. These data suggest that FDR of patients with CRC could be included in organized nationwide FIT-based screening programs.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1801 COMBINATION OF FOBT AND FECAL CALPROTECTIN MAY BE USEFUL FOR REDUCING UNNECESSARY COLONOSCOPY IN SYMPTOMATIC PATIENTS

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Introduction: Faecal occult blood test (FOBT) is a non-invasive and easily performed test which has demonstrated to reduce CRC incidence and mortality in many countries. The use of sedation does, however, vary internationally and can present patient safety concerns. It has been questioned whether trials assessing patient safety in endoscopy can be generalized worldwide and how local sedation practices and adverse events rates can be compared. Objective: To investigate how current sedation practices in colonoscopy are related to adverse events and complications.

Aims & Methods: We conducted an international survey to examine procedural sedation practices and the incidence of adverse events (AEs) during procedural sedation in France, Germany, Italy, UK, and USA. Data collection from providers (nurses, physicians, and anesthesiologists) was via online surveys. Respondents were screened to assure that they had the expertise and experience to complete the survey. The survey covered topics such as guidelines, sedation agents, monitoring, patient throughput, and AE incidence, treatment, and outcomes as defined by World SIVA. Data analysis took a global approach with subgroup analysis by location.

Results: 101 providers completed the survey, with 20 responses per country, excepting the USA with 21. More than 62% of respondents were gastroenterologists and 38% were anesthesiologists. The main sedation agents used were midazolam (93 respondents), propofol (90), fentanyl (75), ketamine (57), and meperidine (15). Respondents from France reported higher ketamine and lower fentanyl use than other countries (p<0.003). Standard of care monitoring was generally reported to be comprised of pulse oximetry plus blood pressure and/or heart rate. Capnography use varied by country, and was standard of care for 46% of respondents (ranging from 15% in Italy to 67% in the US). The most desired property of a monitoring modality across all countries was one that “provides an early warning of patient compromise”. “Data displays and alarms relating to clinical events” was ranked second globally and in all countries apart from Italy. All respondents reported experience with patient safety issues in the last year, with hypotension the most common (67), followed by mild desaturation (63), bradycardia (63) and prolonged desaturation (52). AE incidence was influenced by monitoring modalities used. Among German respondents, for example, 7 of 11 who did not use capnography as standard of care reported severe oxygen desaturation events compared with versus 0 of 9 who routinely use it (p=0.005). Providers also differed in their reported adverse event incidence. Gastroenterologists most commonly reported mild oxygen desaturation to occur, while anesthesiologists and nurses reported hypotension to be the most common AE experienced during procedural sedation.

Conclusion: Clinical sedation practices are relatively consistent across countries, as are the occurrence of adverse events. Pulse oximetry monitoring is almost universally used during sedation, while capnography use is more variable. The most desired property of a monitoring modality across all countries was one that “provides an early warning of patient compromise”. “Data displays and alarms relating to clinical events” was ranked second globally and in all countries apart from Italy. All respondents reported experience with patient safety issues in the last year, with hypotension the most common (67), followed by mild desaturation (63), bradycardia (63) and prolonged desaturation (52). AE incidence was influenced by monitoring modalities used. Among German respondents, for example, 7 of 11 who did not use capnography as standard of care reported severe oxygen desaturation events compared with versus 0 of 9 who routinely use it (p=0.005). Providers also differed in their reported adverse event incidence. Gastroenterologists most commonly reported mild oxygen desaturation to occur, while anesthesiologists and nurses reported hypotension to be the most common AE experienced during procedural sedation.

Disclosure of Interest: R. Saunders: Rhodi Saunders is the owner of Coreva Scientific GmbH & Co KG, which has received consultancy fees from Medtronic Inc and Covidien AB.
J. Davis: Jason Davis is an employee of Coreva Scientific GmbH & Co KG, which received consultancy fees for designing and undertaking this research
R. Weissbrod: Rachel Weissbrod is an employee of Medtronic
P. Krake: Peter Krake has advised for multiple pharmaceutical and medical device companies. He did not receive any remuneration for work performed on this research project.

P1800 CLINICAL PRACTICE, MONITORING, AND PATIENT SAFETY DURING PROCEDURAL SEDATION IN FIVE COUNTRIES

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Disclosure of Interest: A. Lanas: Angel Lanas is advisor to Sysmex Spain
All other authors have declared no conflicts of interest.

Disclosure of Interest: As declared in the online version of the paper.
Thirty-two subjects (41% males), aged 31–74 years and with a mean
usability via questionnaire and (4) Patients' satisfaction via questionnaire.

Improvement of colon cleansing level as per the Boston Bowel Preparation
satisfaction and safety. Forty-seven cases were planned to be enrolled at three
System in cleansing a poorly prepared colon, assess the system's usability, patient
Aims & Methods:
FDA cleared device designed to improve visualization in an inadequately pre-

This study aims to evaluate the performance of the Pure-Vu System in cleansing a poorly prepared colon, assess the system's usability, patient satisfaction and safety. Forty-seven cases were planned to be enrolled at three clinical sites, of which 32 had completed the study so far. Pure-Vu was used in subjects with a partially prep colon after 2x10 mg Bisacodyl, diet restrictions (no dried fruit, seeds or nuts) starting 2 days before the procedure and a 24-hour clear liquid diet prior to the colonoscopy. Study endpoints were: (1) Safety, (2) Improvement of colon cleansing level as per the Boston Bowel Preparation Scoring (BBPS) when comparing before and after Pure-Vu use, (3) Pure-Vu usability via questionnaire and (4) Patients' satisfaction via questionnaire.

Results: Thirty-two subjects (41% males), aged 31–74 years and with a mean BMI of 26 ± 3.9, 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 level (BBPS ≥ 2 for all 3 colon segments) from 25%; CI 95% [11%, 43%] at baseline to 100%; CI 95% [89%, 100%] after Pure-Vu and the cocum 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 theirs friends and family members who need a colono-

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.

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 GI Pure-Vu™ System (Tirat Carmel, Israel) is an FDA cleared device designed to improve visualization in an inadequately pre-

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 19.1–31.9%), 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 colono-

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 would improve the overall quality of colonoscopy.
is currently the biggest issue in PCSP and further training is needed to reach minimum standards for this performance indicator.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

PI0105 VALIDATION OF THE “FAILURE TO PROVIDE ADEQUATE RELIEF” (F-PAR) SCALE IN A SPECIALIST CLINIC SETTING
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Introduction: Treatment of chronic idiopathic constipation is somewhat empiric, but based on step-wise approach[1]. If first-line conservative treatment (lifestyle advice and laxatives) do not relieve symptoms sufficiently, secondary approaches with prokinetic or secretagogue drugs are used before considering hospital-based biofeedback, psychosocial support, transanal irrigation (TAI), surgery). Nevertheless, patients are often dissatisfied with care[2] and fail to progress to adequate levels of therapy. The 5-point Failure to Provide Adequate Relief (F-PAR) scale[3] was developed to facilitate the recognition of when to move from one step to the next.

Aims & Methods: The aim of this study was to validate F-PAR in a tertiary clinic setting. We studied 403 consecutive consultations of 331 patients (262 women, mean age 41) in our specialist clinic. All fulfilled Rome III/IV diagnostic criteria for chronic constipation. Immediately prior to each face-to-face clinical assessment by one of 2 experienced physicians, participants completed the F-PAR scale; patients were seen blind to the F-PAR result. Standard clinic assessment was undertaken to identify efficacy of the current management as the gold standard.

Results: Of the 403 consultations, clinical assessment identified inadequate relief with current therapy was identified in 200. Neither duration nor type of treatment were correlated with relief. The table stratifies, by clinical gold standard, each item of the F-PAR and in the lower panel the total number of F-PAR items replied to positively.

Table: Positive F-PAR items correlated to clinical assessment of relief

<table>
<thead>
<tr>
<th>Item</th>
<th>Adequate relief (Clinical) n=203</th>
<th>Inadequate relief (Clinical) n=200</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bowel frequency inadequate</td>
<td>5</td>
<td>71</td>
</tr>
<tr>
<td>Strain most occasions</td>
<td>6</td>
<td>89</td>
</tr>
<tr>
<td>Stool hardness</td>
<td>3</td>
<td>21</td>
</tr>
<tr>
<td>Onset other symptom</td>
<td>2</td>
<td>57</td>
</tr>
<tr>
<td>Current therapy poor tolerable</td>
<td>8</td>
<td>80</td>
</tr>
<tr>
<td>0 FPAR replies</td>
<td>187</td>
<td>1</td>
</tr>
<tr>
<td>1 FPAR replies</td>
<td>10</td>
<td>41</td>
</tr>
<tr>
<td>2 FPAR replies</td>
<td>4</td>
<td>67</td>
</tr>
<tr>
<td>3 FPAR replies</td>
<td>2</td>
<td>22</td>
</tr>
<tr>
<td>4 FPAR replies</td>
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<td>8</td>
</tr>
<tr>
<td>5 FPAR replies</td>
<td>0</td>
<td>9</td>
</tr>
</tbody>
</table>

Conclusion: Our findings showed that the F-PAR with only five questions can be considered sufficient to provide clinical evidence of treatment failure. The use of standardized process to investigate the efficacy of treatment may reduce the time and improve the quality of managing for the chronic constipation patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

PI0106 ADHERENCE WITH TRANSMAL IRIGATION USING THE NAVINATM SYSTEM IS ASSOCIATED WITH PERSONALITY TRAITS EVEN WHEN THERE IS IMPAIRED HAND FUNCTION
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Introduction: Transanal irrigation has become a key therapeutic modality in managing patients with neurological diseases who experience constipation and/ or on going fecal incontinence. Success and adherence to transanal irrigation (TAI) can be complicated 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 [3]. Training of the patient is a key aspect of TAI therapy and requires patients to be willing to manage their health themselves: self-efficacy.

Aims & Methods: We wished to study whether use of a novel TAI system, Navina™ Smart, which has an electronic pump component allows patients with impaired levels of hand function to adhere to TAI therapy. We also wished to identify if there were physiological or psychological correlates of adherence. Twenty-eight chronic constipation patients (19 SCI and 9 MS; mean age 42) were studied. All patients scored greater than 18 on the Ashon Hand Function Questionnaire and were completed to assess anxiety/depression and locus of control respectively. Anorectal physiology (manometry, sensation and rectal compliance) was undertaken at baseline. Training in TAI was undertaken by the same experienced nurse, with weekly follow up until a stable regime was established. Adherence with therapy at 12 weeks was identified.

Results: At 12 weeks, 16/28 (57%) of patients were still using Navina TAI, similar proportions with SCI (11/19) and MS (5/9). There was no difference in baseline scores for HAD-anxiety (6.4; CI 2.9 vs 6.9; CI 2.3; p=0.15) or HAD-depression (8.6; CI 3.9 vs 8.8; CI 4.2; p=0.46) and were similar in both who were and who were not 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<0.0001). There was no difference in any of the anorectal parameters between those who did or did not adhere with TAI.

Conclusion: Navina Smart TAI is an effective therapy in 57% of NBD patients with significant hand dysfunction. Anorectal physiology, anxiety and depression scores did not predict likelihood of treatment adherence. An external locus of control, reflecting a belief that health events occur because of outside forces (such as fate, chance, or powerful others), is associated with reduced treatment success. The results suggest that future studies of TAI should consider locus of control as an important potential predictor of outcome.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

WEDNESDAY, NOVEMBER 01, 201709:00-14:00

OSSEOPHAGEAL, GASTRIC AND DUODENAL DISORDERS III - HALL 7

PI0107 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 mucosa-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 clearance 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 undergoing 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 Calypso.

Results: A diverse microbiota was observed in duodenal mucosal samples from all subjects, following overnight fasting or bowel preparation. Overall the duodenal microbiota was dominated by the genus Streptococcus, followed by Prevotella, Veillonella and 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 Crohn’s disease population.

Conclusion: This study reveals a diverse duodenal MAM is retained following bowel preparation at EGD. The comparison of overnight fasting and bowel preparation indicates these differences in patient preparation do not substantially alter the duodenal MAM. Thus patients undergoing concurrent upper GI endoscopy and colonoscopy can be included in study cohorts investigating the upper GI MAM without risk of a substantial confounding effect.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1808 PERFORMANCE OF GLASGOW-BLATCHFORD, ROCKALL, AND AIMS65 SCORES TO PREDICT OUTCOMES AND TO IDENTIFY THE LOW-RISK GROUP AFTER UPPER GI BLEEDING IN PATIENTS WITH CANCER

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Introduction: Upper gastrointestinal bleeding (UGIB) in patients with cancer presents a unique and difficult challenge as these patients are at higher risk for rebleeding and mortality. Currently available prognostic scoring systems for UGIB for the general population have produced variable accuracy in their validation studies. An effective method of stratification for cancer patients to identify the high-risk group for early hospital-based intervention and death could enhance the outcomes of this specific population.

Aims & Methods: The primary aim of this study was to compare the Glasgow-Blatchford score (GBS), Rockall score (RS) and AIMS65 score for predicting ICU admission, blood transfusion, hemostatic therapy, reblooding, 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 discharged as outpatient. An EBPHAP prospective study was conducted at the Cancer Institute Sao Paulo, Brazil. Consecutive patients with known cancer admitted with UGIB were enrolled. Pre-endoscopic clinical parameters pertinent to the scoring systems, hemostasis techniques, and outcomes were collected into a prospective registry. Patients were followed for at least 30 days or until the day of discharge, whichever was longer. The low-risk group was defined as those without blood transfusion, hemostatic therapy (by endoscopy, radiotherapy, angiographic or surgical intervention), reblooding 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 cancer patients were screened, while 259 patients met the inclusion criteria. A total of 243 patients were considered for the final analysis, after excluding 16 patients due to missing data or lost to follow up (Table 1). Predicting outcomes: The AIMS65 score (area under curve) was significantly better than predicting 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 reblooding. 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 who bled at EGD, there was no difference in 30-day mortality if the etiology of bleeding was tumoral or non-tumoral disease (38.1% vs. 31.9%; p = 0.46). Identifying low-risk group: With GBS score of 0 as the cut-off value, its specificity was 100% with sensitivity of 5.8%. When GBS ≥ 2, its specificity was maintained at 100%, while sensitivity was increased to 23.5%. This change increased the proportion of the patients from 1% to 5% without erroneously discharging high-risk patients. In comparison, when an AIMS65 value of 0 was chosen as definition for low-risk, this tool misclassified 20 patients who needed hospital interventions (specificity of 53% and sensitivity of 89.5%). Finally, head-to-head comparison between GBS vs. RS, and GBS vs. AIMS65 scoring system revealed GBS to be superior to both the clinical RS (p < 0.001) and AIMS65 (p = 0.001) in correctly identifying low-risk patients.

Table 1: Demographic and Clinical Characteristics

<table>
<thead>
<tr>
<th>Factor</th>
<th>Total (n = 243)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>60.6 ± 13.6</td>
</tr>
<tr>
<td>Female/Male</td>
<td>71 (29.2%)</td>
</tr>
<tr>
<td>Outpatient/Inpatient</td>
<td>178 (73.3%)</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>12 (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>Hemostatic Therapy</td>
<td>107 (44.0%)</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 reblooding. The GBS was superior in accurately identifying low-risk patients. Furthermore, the cut-off ≤ 2 in GBS score displays increased sensitivity without compromising specificity, effectively increasing the number of patients who can be safely managed as an outpatient.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1809 THE EFFECTS OF ANTICOAGULANTS ON THE CLINICAL OUTCOME OF ENDOSCOPIC TREATMENT

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Introduction: Endoscopists are more frequently performing endoscopic resection (ER) in patients on antplatelet or anticoagulant therapy and nowadays patients have increasingly started taking direct oral anticoagulant (DOAC) therapies, including direct anti-Xa and thrombin inhibitors. Major guidelines recommend the cessation of anticoagulants before ER and heparin bridging therapy (HBT) for high thrombotic risk cases, although these are still controversial. A recent study has suggested that HBT may be associated with a higher post-endoscopic resection bleeding (PEB) rate in patients on anticoagulants.

Aims & Methods: This study aimed to evaluate the effect of anticoagulants on PEB rate. This was a retrospective study based on medical records from three centers. PEB was defined as bleeding that occurred 6 h to 10 days after ER, which required endoscopic hemostasis. We reviewed 108 gastric tumors including adenoma and early cancer in 97 patients on anticoagulant therapy who underwent endoscopic submucosal dissection (ESD) in our hospitals between June 2008 and February 2016. Further, we reviewed 69 colorectal polyps including adenoma and early cancer in 69 patients on anticoagulant therapy who underwent ER in our hospitals between October 2013 and September 2016. ER included 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
PEB rate. Overall, 57 patients (78%) in the warfarin group underwent HBT, and warfarin patients with PEB rate compared to the patients who did not undergo HBT in the warfarin group (36% vs. 0%, p < 0.05). Although there was no significant difference in the PEB rate between the group that did and did not undergo HBT in the DOAC group, the PEB rate was higher among rivaroxaban recipients (55% vs. 0%, p < 0.05). Multivariate analysis revealed that HBT, rivaroxaban, and anticoagulants plus antiplatelet therapy were associated with PEB (P < 0.05). Warfarin and DOAC were prescribed to 72 (57%) and 54 (35%) patients, respectively. Dagibartan was administered to 16 (13%), rivaroxaban to 18 (14%), apixaban to 18 (14%), edoxaban to 2 (1.6%) patients. Patients underwent polypectomy (n = 50), EMR (n = 62), or ESD (n = 10). PEB occurred in 5 (4.0%) patients (one polypectomy and four EMRs). Among them, warfarin was prescribed to one patient (1.4%) who also underwent polypectomy and apixaban was prescribed to two patients (11%) each. PEB rate was higher in the DOAC group than in the warfarin group (7.4% vs. 1.4%).

Conclusion: Patients on HBT, rivaroxaban, and anticoagulants plus antiplatelet 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 metabolism. Most clinicians have a limited knowledge on PEB during DOAC therapy 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.

Reference

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 bleeding in high-risk patients. High-risk patients are 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. Tween-3 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 (2–5), p = 0.007]. A univariate and multivariate analysis were performed for heparin bridge therapy, antiplatelet therapy, and hemodialysis as a high-risk group for bleeding, and the remainder as a low-risk group. The incidence of delayed bleeding was significantly higher in the high-risk group than in the low-risk group (14.3% vs. 3.6%, p < 0.001). Severe bleeding requiring transfusion and recurrent bleeding were more often in the high-risk group than in the low-risk group. Median onset (range) of delayed bleeding was POD1 (0–16) in the high-risk group and POD6 (0–15) in high-risk group. No thromboembolism occurred in each group.

Conclusion: Bleeding high-risk patients with heparin bridge therapy, antiplatelet therapy, and hemodialysis should be carefully observed after gastric ESD while early hospital discharge is acceptable for bleeding low-risk patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

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 Biomedical, Incheon, South Korea) is a biocompatible and biodegradable powder and the hemostatic effects are accomplished by physical barrier when this powder immediately forms mucadhesive hydrogel after contacting blood or water. It shows high adhesiveness and persistency of gel on ulcer base. In addition, new powder delivering device was developed to reduce catheter clogging during endoscopic application.

Aims & Methods: The aims of this study were to confirm 1) success rate of hemostasis using NEXPOWDER® in acute GI bleeding from post-endoscopic procedure or various causes; 2) re-bleeding rate on second-endoscopy at 1 or 3 days after the procedure, 3) persistent rate of hydrogel on ulcer base at follow-up endoscopy, and 4) clogging rate of catheter during spraying powder. The NEXPOWDER® was delivered by newly developed spraying device through a catheter catheter and the initial hemostatic success as when the bleeding disappeared within 10 minutes. A second-look endoscopy was performed in one and three days after the procedure.

Results: A total of 57 patients were enrolled. The bleeding developed in 46 patients with post-endoscopic resection ulcers (41 ESUD induced ulcers and 5 EMR induced ulcers), 8 patients with peptic ulcers and 3 patients with other causes. 1) Success rates of hemostasis in acute bleeding were 96.5% (55/57) of NEXPOWDER® group, 2) Re-bleeding rates were 5.3% (3/57) of NEXPOWDER® group, 3) Persistent rate of NEXPODWER® on ulcer base was 70.3% (26/37) 1 day after the procedure, and 38.5% (13/34) 3 days after the procedure. 4) Clogging rate of spraying catheter was 3.5% (2/57).

Conclusion: The endoscopic application of NEXPOWDER® is effective for the several types of acute GI bleeding. This effective hemostatic action of NEXPOWDER® might be achieved by physical barrier of mucadhesive and persistent hydrogel on ulcer base. And new powder delivering device shows low rate of catheter clogging. In addition, a newly developed powder delivering device shows low clogging and targeted spraying properties onto bleeding site.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1812 EFFICACY AND SAFETY OF FERRIC CARBOXYMALTOSE TREATMENT IN PATIENTS HOSPITALIZED FOR ACUTE GASTROINTESTINAL BLEEDING NOT ASSOCIATED WITH PORTAL HYPERTENSION
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Introduction: There are few studies of the efficacy of parenteral ferric carboxymaltose (FCM) treatment in acute gastrointestinal bleeding (GIB) of different origins. Few data are available on its use to treat 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 hemodynamic instability) treated with FCM as part of our hospital’s habitual clinical practice.

Results: Analysis of 84 patients admitted with acute GIB (69.0% male, mean age 68.0 years [SD 6.9]), with a Charlson index ≥ 3 in 67.1% of cases (≥ 5 in 31.6%). 15.5% had previously suffered acute GIB due to peptic ulcer. There were 86 hospital admissions for acute GIB; 93.8% were upper GIB (above the angle of Treitz). The most frequent clinical presentation was melena, in 76.7% of cases. 25.6% presented hemodynamic instability at admission. The mean Glasgow-Blatchford index score was 16.1 (SD 2.7) and the mean Rockall score post-endoscopy was 4.2 (SD 1.7). The most common causes of bleeding were: 36.0% duodenal ulcer, 29% gastric ulcer, 9.3% gastritis/erosions, and 7.3% angiodysplasia of the colon. The mean Hb at admission was 9.0 g/dL (SD 2.2)

United European Gastroenterology Journal 5(5S) A783
with Charlson index 5

Conclusion: The increase in life expectancy and the increased use of antiplatelets, oral anticoagulants and nonsteroidal anti-inflammatory drugs (NSAIDs) while Forrest IIC and III were considered as low risk endoscopic stigmata.

comorbidities, (quantified by Charlson score), endoscopic aspect of ulcer bleeding. In this prospective study we enrolled all patients diagnosed with peptic ulcer bleeding, who were hospitalized in a tertiary medical center over a

2

days (median: 4.0) after treatment with FCM, with an increase of 4.2 g/dL (SD 2.6). A mean Hb increase of 0.8 g/dL (SD 2.3) was observed in a mean period of 5.7 days (median: 4.0) after treatment with FCM, with an increase of 4.2 g/dL (SD 2.6) 30 days after acute GIB. After FCM administration, the mean Hb increased significantly (p = 0.0001) in patients ≥75 years (2.1 g/dL [SD 1.7]), in patients with Charlson index ≥3 (1.9 g/dL [SD 1.6]), and when Hb level during admission was <10 g/dL (2.0 g/dL [SD 1.7]). No adverse reactions were observed.

Disclosure of Interest: M. Cucala-Ramos: Mercedes Cucala is employee of Vifor Pharma.

J.M. Reñé-Espinet: Reñé-Espinet, Josep Maria received research grant from Vifor Pharma.

All other authors have declared no conflicts of interest.

P1813 NOVEL EUS-GUIDED TREATMENT OF GASTRIC VARICES WITH A LIQUID NON-ADHESIVE NEUROVASCULAR EMBOLIZATION AGENT


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Introduction: Endoscopic Injection of adhesive agents such as N-ButyI-2-Chloroethanol (NBC) is often accepted option for the management of gastric varices. Recently the combination of NBC and coils has been used with endoscopic ultrasound (EUS) assistance. Nevertheless adhesive properties of the polymer can cause blockage of instrumentation material and damage to endoscopes. Sometimes the ulcers, vascular wall necrosis, rebleeding and distal embolism. Ethylene-vinyl alcohol (EVOH) has been extensively used in interventional radiology to treat cerebral arteriovenous malformations and has the advantage of being radioopaque.

Aims & Methods: We aimed to demonstrate a novel gastric varices embolization therapy using EUS-guided injection of a composite non-adhesive endovascular liquid agent EVOH combined with Dimethylsulfoxide (DMSO) as a primer. Five cases of EUS-guided Injection under fluoroscopic vision with EVOH is described in 5 men and 2 women, aged 50-65 years with gastric fundus variae, portal hypertension, Child-B hepatic cirrhosis and previous episodes of bleeding. The procedure was well tolerated by EUS. Ceftriaxone was intravenously administered during the procedure. Patients were discharged on the same day. The mean follow-up was 6 months. Endoscopic and radiological control was performed at 1 and 3 months. The average procedure time was 20 min.

Results: All patients presented mild epigastric pain during the first 12 hours effectively managed with oral analgesics. The obliteration of variceal flow was achieved in all patients in a single session. There were no new episodes of bleeding or complications related to the technique.

Conclusion: EUS-guided embolization of gastric varices with EVOH can be considered as an efficient alternative. The procedure promises effective advantages in terms of number of sessions required, local or systemic adverse events and endoscopic contraindication. The technique is less invasive and it is a good alternative to TIPS as first-line treatment.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1814 PREDICTIVE FACTORS FOR IN-HOSPITAL MORTALITY IN PATIENTS WITH PEPTIC 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 and hospitalized in a medical 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), prevalence of comorbidity indicated by Charlson score, Rockall score (overall mortality over 60 days). The type of ulcer (Forrest IA, IB, IIA, IIB were quantified as high risk endoscopic stigmata, while Forrest IIC and III were considered as low risk endoscopic stigmata), number of ulcers, Rockall score, Blatchford score, degree of anemia, coagulation disorders, renal function. We also analyzed comparatively rebleeding, the need of transfusion and need for surgery.

Results: The study included 431 patients. In-hospital mortality rate was 7.9%. 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 ≥ 15.7% vs 5.8% (p = 0.022); creatinine ≥ 1.5 mg/dl 38.2% vs 10.8% (p = 0.001); rebleeding 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 = 0.003). In most cases (88.2%), the cause of death was other than hemorrhagic shock. Using multivariate analysis, three out 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:1.27–4.47, p = 0.048).

Conclusion: The use of oral anticoagulants and antiplatelet was significantly higher in older patients, compared to the younger group. Elderly patients with peptic ulcer bleeding do not have a different rebleeding, need for surgery, need of transfusion or hospitalization mortality compared to younger patients. 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


P1815 PEPTIC ULCER BLEEDING IN THE ELDERLY: CLINICAL OUTCOMES AND IN-HOSPITAL MORTALITY

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Patient data over a period of up to 12 months post discharge was collected to restrict a restrictive approach to blood transfusions as well as the use of iron therapy for anemia [2].

EXPERIENCE

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. The aim of this study was to look at a retrospective analysis of patient admission 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 anemia.

Aims & Methods: Our aim was to monitor the appropriateness of transfusions in Upper GI Bleeding as well as monitoring the response to iron therapy following discharge. All inpatients that had an Upper GI endoscopy for UGIB were analysed. Electronic patient records were obtained from our endoscopy software and hospital database. Patients were selected over a time period of six months from 1/6/2015 to 31/12/2015. A Student’s T-Test was used to compare the average increase in haemoglobin (Hb) for patients discharged with iron therapy against those who were not.

Results: There were 148 patients, 81 male and 67 female. The mean age was 69.3, minimum 20 and maximum 98. The average Hb on admission was 103.6 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 when Hb was below 70 g/L. 30 of 78 (38.5%) were transfused when Hb was below 70 g/L (36.7%, n =11) of those who were transfused with Hb above 70 had cardiac risk factors. The mortality rate in those transfused above Hb of 70 was 13.3% (n = 4) vs 10.4% (n = 5) 41.5% (n = 44) patients who were anemic post-UGIB were discharged with iron therapy. The average rise in Hb was 19.2 g/L with an SD of 9.3 g/L 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 or not reaching an Hb of 70 g/L.

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 for the group discharged on iron compared to those who did not. There was an increase in Hb of 19.2 g/L with a SD of 9.3 g/L for those with anaemia. All the deaths were due to cardiac risk factors.

Reference:

All authors have declared no conflicts of interest.

References


P1817 THE RELATIONS AMONG SERUM GHERLIN, MOTILIN, CIRCULATING ANTIMYENTERIC ANTIBODIES AND GASTRIC EMPTYING IN AUTOIMMUNE NEUROGENIC SYSTEM FUNCTION IN PATIENTS WITH AUTOIMMUNE GASTRITIS

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Introduction: Autoimmune gastritis (AIG) is an organ-specific autoimmune disease of the stomach marked by autoantibodies directed to hydrogen/potassium-ATPase and intrinsic factor. Gastric emptying of solids is delayed and autonomic nervous system dysfunction is detected in patients with autoimmune gastritis. As ghrelin and motilin are putative hormones produced in the stomach, ghrelin and motilin levels in patients with AIG are considered to be lower than in healthy controls. Forty-one patients with AIG were included into this study. Autoimmune gastritis is an organ-specific autoimmune disease of the stomach marked by autoantibodies directed to hydrogen/potassium-ATPase and intrinsic factor. The aim of this study was to investigate the effects of faecal microbiota transplantation (FMT) on the differentiation of the stem cells into enteroendocrine cells in the duodenum of patients with irritable bowel syndrome (IBS).

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, Musashi 1 and enteroendocrine cell densities 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 underwent gastroscopy 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 three enteroendocrine progenitors, but rather by changes in the differentiation progeny as detected by changes in the enteroendocrine cell density. The changes in the enteroendocrine cell density do not appear to be caused by changes in the stem cells or their early progenitors, but rather by changes in the differentiation progeny as detected by changes in neurogenin 3.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

**P1819** THE EFFECT OF ESOPHAGEAL ACID EXPOSURE ON NMDA RECEPTOR SUBUNITs EXPRESSION AND D SERINE IN PREFRONTAL CORTEX AND HIPPOCAMPUS

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2Department Of Gastroenterology, Peking University Third Hospital, Beijing/China

**Aims & Methods:** This study aims to investigate the expression of NMDAR and the alteration of D-serine after neonatal and adult esophageal acid exposure. All rats were exposed to esophageal acid or saline at postnatal days 7–15 (P7–P15), and most rats underwent acute acid or saline exposure again as adult times (P60). All rats were randomly distributed to five groups, including P7S, 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, and D-serine), c-fos, and serine racemase in PFC, dorsal hippocampus (DH) and ventral hippocampus (VH). We also determined the D-serine and L-serine in PFC and hippocampus by LC-MS analysis. Statistical comparisons were performed by General Linear Model and one way ANOVA in SPSS.

**Results:** In PFC, compared with adult saline treatment (AS, including P7H and P7S + P60H group) and without adult treatment (A, including P7H and P7S group), adult acid exposure (AH) increased the expression of NR1 (P = 0.052, P = 0.298), NR2B (P = 0.035, P = 0.045), and serum racemase (P = 0.022, P = 0.017) significantly. In ventral hippocampus, compared with adult treatment absence, adult acid exposure caused increasing expression of NR2B (P = 0.012) and NR1 (P = 0.024) significantly. In PFC, the expression of serum racemase in the P7S + P60H group was obviously higher than that of other groups (P = 0.008). See 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 L-serine (AH vs A-: P = 0.005, AS vs AS: P = 0.082) decreased in the AH and AS group, comparing with A- group.

**Conclusion:** Acute esophageal acid exposure may increase the expression of NMDAR in PFC and ventral hippocampus. We also found the first acid exposure at adult stage may enhance the expression of serine racemase in PFC and c-fos in ventral hippocampus, but this phenomenon may be absent in those rats having the experience of acid exposure in early life. Those long-term and transient molecular alterations may mediate the development of acid exposure related esophageal visceral hypersensitivity.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**Table 1:**

<table>
<thead>
<tr>
<th>Group</th>
<th>PFC Serine Racemase</th>
<th>VH c-fos</th>
</tr>
</thead>
<tbody>
<tr>
<td>(n = 8/group)</td>
<td>(mean ± SD)</td>
<td>(mean ± SD)</td>
</tr>
<tr>
<td><strong>P7S</strong></td>
<td>0.139 ± 0.131</td>
<td>0.011</td>
</tr>
</tbody>
</table>

(continued)

**Abstract No:** P1818

**Table 1:** Densities of stem cells and enterochromafic cells in the duodenum of total IBS group, PI-IBS and idiopathic IBS patients before and after receiving FMT

<table>
<thead>
<tr>
<th>Markers/Hormones</th>
<th>Immunoreactive cells densities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total IBS, before</td>
</tr>
<tr>
<td>------------------</td>
<td>--------------------</td>
</tr>
<tr>
<td>Neurogemin 3</td>
<td>222.3 ± 13.8</td>
</tr>
<tr>
<td>Musashi 1</td>
<td>5.7 ± 0.4</td>
</tr>
<tr>
<td>Chromogranin A</td>
<td>370.3 ± 21</td>
</tr>
<tr>
<td>Serotonin</td>
<td>135.1 ± 14.7</td>
</tr>
<tr>
<td>Somatostatin</td>
<td>58.6 ± 4.4</td>
</tr>
<tr>
<td>Cholecystokinin</td>
<td>122.8 ± 6.7</td>
</tr>
<tr>
<td>Secretin</td>
<td>83.8 ± 4.9</td>
</tr>
<tr>
<td>Gastric inhibitory peptide</td>
<td>65.1 ± 3.8</td>
</tr>
</tbody>
</table>
To the best of our knowledge, our findings are the first to establish an association between SLC6A4 gene polymorphism and globus pharyngeus.

**Aims & Methods:** 84 patients diagnosed with globus according to Rome III and 160 healthy controls were genotyped for 5-HTTLPR polymorphism by PCR amplification and agarose gel electrophoresis. All globus patients were studied with high-resolution manometry pre-therapy. Globus patients were randomized into paroxetine group; amitriptyline group for 6-week treatment, and were asked to complete the following questionnaires pre- and post-therapy: 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/S genotype showed the difference 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**

4. 2011 1.82 (1.49–2.22) 1.82 1.59–2.08 1.82 1.52–2.14
5. 2010 1.82 (1.49–2.16) 1.59 1.52–2.08 1.82 1.49–2.16
6. 2009 1.82 (1.49–2.16) 1.59 1.52–2.08 1.82 1.49–2.16
7. 2008 1.82 (1.49–2.16) 1.59 1.52–2.08 1.82 1.49–2.16
8. 2007 1.82 (1.49–2.16) 1.59 1.52–2.08 1.82 1.49–2.16
9. 2006 1.82 (1.49–2.16) 1.59 1.52–2.08 1.82 1.49–2.16
10. 2005 1.82 (1.49–2.16) 1.59 1.52–2.08 1.82 1.49–2.16
11. 2004 1.82 (1.49–2.16) 1.59 1.52–2.08 1.82 1.49–2.16
12. 2003 1.82 (1.49–2.16) 1.59 1.52–2.08 1.82 1.49–2.16
13. 2002 1.82 (1.49–2.16) 1.59 1.52–2.08 1.82 1.49–2.16
14. 2001 1.82 (1.49–2.16) 1.59 1.52–2.08 1.82 1.49–2.16
15. 2000 1.82 (1.49–2.16) 1.59 1.52–2.08 1.82 1.49–2.16
16. 1999 1.82 (1.49–2.16) 1.59 1.52–2.08 1.82 1.49–2.16
Introduction: The timed barium esophagogram (TBE) is an objective measurement of oesophageal (3 myotomy, 3 myotomy and emptying used in the assessment of achalasia. Post-thrapy 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 surface area (SA) of the barium column may be more accurate than height, firstly, by showing improvement in esophageal width that often occurs post-thrapy, 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-thrapy.

Aims & Methods: Inclusion criteria were achalasia patients who underwent thrapy between August 2015-6 and had TBE and Eckardt score (ES) performed at baseline and 6 months separated by 6 months post-thrapy. With TBE upright single images were acquired at 1:2, 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-thrapy column height <5cm, ii) >50% reduction in column height from pre to post-thrapy and iii) >50% reduction in column SA from pre to post-thrapy. 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 thrapy.

Results: 14 patients (9 male) fulfilled inclusion criteria. 7 were treatment-naive and 7 received (3 myotomy, 3 myotomy and emptying used in the assessment of achalasia. Mean resting LES pressure was 4.6 ± 4.7 mmHg. In all patients, mean and median IRP values for ten 5 mL water swallows were non-raised (mean 9.4 ± 4.3 and 8.7 ± 4.5 mmHg respectively). Of the 7 treatment-naive 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 barium volume in patients with achalasia was 16.5 ± 8.9 mm; 8 patients have (so far) undergone therapy based on these findings; one per-oral endoscopic myotomy and 7 pneumatic dilatations. The median baseline ES was 7.5 (IQR 5-8). The median ES at 3 months (range 3-15 months) following treatment was 1 (IQR 0-3), and 5 patients (36.5%) experienced between 6 months post-thrapy. With TBE upright single images were acquired at 1:2, 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-thrapy column height <5cm, ii) >50% reduction in column height from pre to post-thrapy and iii) >50% reduction in column SA from pre to post-thrapy. 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 thrapy.

Conclusion: TBE performed on achalasia patients post-thrapy, reduction in SA of the residual barium column compared with baseline values parallels symptomatic relief more closely than reduction of column height. All authors have declared no conflicts of interest.

Disclosure of Interest: All authors have declared no conflicts of interest.

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Introduction: During meal intake, large volumes of gas can be ingested together with nutrients, and patients with gas-related abdominal symptoms often refer symptom exacerbation by meals. Previous studies have shown that under fasting conditions, gastric gas is rapidly cleared from the stomach and rarely emptied to the small bowel and colon, or via belching. Nutrients have several effects on gastric and intestinal motor function that could modulate gas transport and symptoms.

Aims & Methods: We aimed to determine the effect of gastric nutrients on transport of gastric gas, and its relationship with abdominal symptoms. In 7 healthy volunteers without gastrointestinal symptoms (4 women and 3 men, age-range 21–25 yrs), a mixture of non-absorbable gases was infused into the stomach, 5 cm caudal to the lower margin of the LES, at 25 mL/min during 60 min (Total gas infused: 1500 mL). In each subject two gas infusion tests were performed on separate days, with simultaneous infusion of nutrients (Nutridrink 1.5 Kcal/ml, total 315 Kcal) or saline. Belching, by an esophageal multimumidine manometry catheter, rectal gas evacuation, via a rectal tube connected to a barostat, and epigastric and abdominal symptoms, by specific questionnaires (from 0–6), were continuously recorded from the start of gas infusion until 30 min after gas infusion stopped. (Total recording time: 90 min).

Results: During saline infusion, participants evacuated via the rectum virtually all the infused gases (1613 ± 87 ml), with exceptional belching (1.1 ± 0.8 belches) and mild epigastric perception (score 1.7 ± 0.6 at the end of infusion), that decreased during the 30 min following infusion stop (score 1.1 ± 0.4; P = 0.051 vs infusion
P1827 MODIFICATIONS OF THE ECKARDT SCORE PARAMETERS AFTER PERORAL ENDSCOPY MOSOTOCY

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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 effective as surgical Heller myotomy, while associated with lower morbidity. Currently, the Eckardt score is the clinical score that is the most widely used to assess the treatment of achalasia, clinical success being defined by a score below 4. However, POEM might not equally improve all four parameters of the Eckardt score.

Aims & Methods: All consecutive patients undergoing POEM for achalasia at our institution, performed by 3 operators with at least 6 months follow-up were prospectively included. Demographic, clinical, procedural, manometric and radiologic data were collected.

Results: Between March 2013 and July 2016, 62 POEM procedures were performed on 59 patients (Male/female 33/26; Median age ± SD range 47 ± 17, range (15–77)). Median (IQR) follow-up time was 8 (3–13) months. Achalasia was diagnosed for a median (IQR) of 24 (13–62) months, and 42% of the patients had received a previous treatment, by botulinum toxin injection (8%), pneumatic dilatation (32%), or Heller myotomy (7%). Achalasia subtypes were type I/III in 37%, IV in 15% of cases. Median Eckardt score and integrated resting pressure were 7 (6–8) and 21 (19–33) mmHg, respectively. An anterior myotomy was done in 60% of cases, and a posterior myotomy in 40% of cases. Median myotomy length (12.0 ± 1.0 cm) and hospital stay was 3 (2–4) days. Severe complications occurred in 5% of cases (1 pleural effusion requiring drainage, 2 pneumonias with more than 10 days of hospital stay). Success rates were similar between patients treated by anterior or posterior myotomy (92% vs 92%, p = 1), or between treatment-naive or pretreated patients (88% vs 96%, p = 0.32). Six treatment failures were treated by redo POEM in 3 cases, pneumodilatation in 2 cases, and esophagectomy in one case. Median Eckardt score varied from 7 (6–8) to 1 (0–0) at 3 months and 2 (0–3) at 12 months (p = 0.0001). Dysphagia score varied from 2 (1–3) to 0 (0–1) and 0 (0–0) (p = 0.0001), while regurgitations varied from 2 (1–3) to 0 (0–1) and 0 (0–0) (p = 0.0001), chest pain varied from 1 (0–2) to 0 (0–0) and 0 (0–0) (p = 0.0006), and weight loss from 2 (1–3) to 0 (0–0) and 0 (0–0) (p = 0.0006). At three months, median (range) drop of the integrated resting pressure was 16 (6–22) mmHg. Long-term follow-up visit, 86% of the patients still had clinical success, and 31% reported gastro-esophageal reflux symptoms.

Conclusion: Our results confirm the efficacy of the POEM as a first line or rescue treatment for achalasia, with a low complication rate. POEM is most effective on dysphagia and weight loss, while chest pain and regurgitations tend to persist after treatment.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1829 THE TREATMENT OF ACHALASIA IN PATIENTS WITH GASTROESOPHAGEAL 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. Conomitant portal hypertension with varices is very rare and achalasia treatment in this context has only been described in single case reports.

Aims & Method: Experience from physicians/surgeons treating these disorders was sought through the International Manometry Working Group.

Results: 13 patients with portal hypertension from 6 international centres have been collected; mean age 61 ± 9 years. The median pre-therapy Eckardt score was 7 (IQR 6–9). 9/13 (69%) patients had a barium swallow and 12/13 (92%) had oesophageal physiology studies performed. There were 3 Type I, 6 Type II, 2 Type III achalasia and 2 with oesophage-gastric outflow obstruction. Varices were identified endoscopically in 7 patients, radiologically in 5 and in 1 patient varices were first noted during surgical myotomy. 2 patients had grade 3 varices, 3 grade 2 and 3 had grade 1 varices (grading not provided for the rest). Cirrhosis was due to alcohol in 7 patients, non-alcoholic steatohepatitis in 3, cryptogenic in 2 and 1 had hepatitis C cirrhosis. 75% were Child-Pugh A and 25% were Child-Pugh B. Patients had diverse treatments for their achalasia. 4 were treated with Botox injections (1 with EUA), 4 had dilation alone, 3 received a POEM, another had POEM then dilation and 1 patient had Botox followed by Heller’s myotomy. 3 patients underwent variceal eradication in advance; all had banding first but in 2 patients superficial eradication was followed by a transjugular intrahepatic portosystemic shunt (TIPS) before endoscopic dilatation. All patients had symptomatic improvement with median Eckardt score post intervention of 1 (IQR 0–2) < 0.0001 compared to baseline. A matched group of 20 patients who underwent treatment for achalasia (all subtypes) but without varices had similar outcomes (p = 0.49) and patients who had received complications of bleeding or perforation; however both patients who had TIPS 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 variceal eradication. Symptom response mirrored those who undergo standard achalasia therapy,
P1830 THE NATURAL HISTORY OF ACHALASIA: EVIDENCE OF A CONTINUUM—THE PATTERN-EVOLUTIVE STAGING THEORY
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Introduction: Esophageal achalasia is classified into three clinically relevant patterns at High Resolution Manometry (HRM) and according to Chicago Classification. Currently, it is unclear whether they represent distinct entities or are part of a disease continuum.

Aims & Methods: The aims of this study were: a) to test the hypothesis that the three manometric patterns represent different stages in the evolution of esophageal achalasia and b) to investigate whether manometric patterns change after Laparoscopic Heller-Dor (LHD). We evaluated the patients who had a diagnosis of achalasia and underwent LHD as first treatment from 1992 to 2015.

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 preoperative 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 preoperatively had the same pattern after LHD, whereas more than 50% of patients with pre-treatment pattern III had patterns I or II after surgery. There were no cases showing the 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 1 pre</th>
<th>Pattern 2 post</th>
<th>Pattern 3 post</th>
</tr>
</thead>
<tbody>
<tr>
<td>159 (100%)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>65 (29.5%)</td>
<td>149 (67.7%)</td>
<td>0</td>
</tr>
<tr>
<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 that the different manometric patterns of achalasia could represent different evolution 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.

P1831 ROLE OF A SERUM BIOMARKERS PANEL (GASTROPEANEL) IN NON-INVASIVE DIAGNOSIS OF UPPER GI DISEASES: A PRIMARY CARE POPULATION OF NORTH-EAST 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 36%, mean age 44.0 yrs, range 6–95) was selected in a primary care population and examined with a panel of biomarkers (Pepinogen-I (PG-I) and -II (PG-II), atidated gastrin-17 (G-17), and HP IgG (Biohit, Finland). A standard questionsnaire, 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, CAG, and PPI therapy.

Conclusion: The combination of the data on the levels of PG-1, PG-2, G-17 and HP IgG allow to diagnose different pathological conditions such as HP- and non HP-related gastritis, the appropriateness of PPI administration, GERD and CAG, a precocious condition.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1832 SUSTAINED TREATMENT EFFECTS OF MENTHACARIN ON SYMPTOMS AND QUALITY OF LIFE IN PATIENTS WITH FUNCTIONAL DYSPESIA: 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 with or 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 randomised placebo-controlled trial was to explore post-treatment effects that occurred after continuation of therapy after a 4-week randomised placebo controlled trial using Menthacarin® with regard to disease-specific symptoms and QoL in FD patients. After the 4-week randomised placebo-controlled treatment period, patients were allowed to continue the treatment. The treatment was given in a double-blind fashion and allocation of treatment followed the initial randomisation. 114 adult FD outpatients were initially treated and received twice a day one enteric-coated Menthacarin capsule or a matched placebo capsule for 4 weeks. Fifty-four of them participated in the optional follow-up phase and received Menthacarin® (34) or placebo (20) for further 8 weeks according to their original randomization. The results of these 54 patients are presented here.

Outcomes were assessed utilising the 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

Abstract No: P1831

<table>
<thead>
<tr>
<th>H</th>
<th>GER</th>
<th>HP</th>
<th>CAG</th>
<th>PPI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients</td>
<td>548 (21.2%)</td>
<td>784 (30.4%)</td>
<td>353 (13.7%)</td>
<td>138 (5.3%)</td>
</tr>
<tr>
<td>Sex (M:F)</td>
<td>162/386</td>
<td>311/473</td>
<td>111/242</td>
<td>43/95</td>
</tr>
<tr>
<td>Age (yrs)</td>
<td>39.6 ± 14.0</td>
<td>40.3 ± 13.0</td>
<td>45.0 ± 13.6</td>
<td>59.1 ± 16.8</td>
</tr>
<tr>
<td>PG1 (ug/L)</td>
<td>79.1 ± 28.5</td>
<td>72.3 ± 23.9</td>
<td>92.2 ± 40.8</td>
<td>12.3 ± 9.7</td>
</tr>
<tr>
<td>PG2 (ug/L)</td>
<td>6.5 ± 3.1</td>
<td>6.3 ± 2.5</td>
<td>11.8 ± 9.9</td>
<td>9.6 ± 10.8</td>
</tr>
<tr>
<td>G17 (pmol/L)</td>
<td>2.8 ± 2.4</td>
<td>0.4 ± 0.3</td>
<td>4.8 ± 8.4</td>
<td>86.6 ± 99.7</td>
</tr>
<tr>
<td>HP IgG (EU/L)</td>
<td>8.9 ± 6.5</td>
<td>9.8 ± 6.8</td>
<td>82.5 ± 34.7</td>
<td>22.5 ± 23.7</td>
</tr>
</tbody>
</table>

H vs GER *p = 0.0001
H vs HP **p = 0.0001
H vs CAG *p = 0.0001
H vs PPI •p = 0.0001
A. Antico2, F. Di Mario4, G. Baldassarre1

Good response G-17

CAG 38 6 (15.8) 31 (68.3) 1 (2.6) 16.6

PUMP INHIBITOR (PPI)–THERAPY PRESCRIPTION WITH USE OF P1833 IMPROVEMENT OF APPROPRIATENESS OF PROTON B1835 DUODENAL ACID PERFUSION INCREASES DUODENAL THERMABILITY AND ACTIVATES THE DUODENOGASTRIC REFLEX, INDEPENDENTLY FROM MAST CELL ACTIVATION H. Vanheel1, R. Farre1, D. Beeckmans1, M. Vicario2, J. Tack1, T. Vanuytsel1

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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 duodenogastrectomy reflux 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. HCl 0.1N or saline was infused in the duodenum during 30 min (5ml/min) in a randomized, double-blind manner.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1835 IMPROVEMENT OF APPROPRIATENESS OF PROTON PUMP INHIBITOR (PPI)-THERAPY PRESCRIPTION WITH USE OF SEROLOGICAL MARKERS (GASTRANOL) IN A PRIMARY CARE POPULATION M. Franceschi1, M.P. Panozo2, A. Feronato1, F. Tomba1, D. Sellà1, S. Landì1, A. Anici2, F. Di Mario3, G. Baldassarre4

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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 Gastranol 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 and II (PG-I and II) and Acid Permeability Testing (APT).

Results: 1015/2584 (39.3%) received PPI therapy up to three months before serum sampling and were included in the study. Among 1015 patients under PPI therapy, 294 (29.0%) received half-dose PPIs, 709 (69.8%) full-dose PPIs and 12 (1.2%) an exceeding-dose PPIs. Additionally, patients under PPI therapy (37.8%) showed a serological status compatible with body CAG (the definitive diagnosis was histologically confirmed). 68 (6.7%) presented HP infection. Table 1 shows the values of PG-I and G-I and G-I values according to the response to PPI therapy.

Conclusion: An appropriate prescription of PPI should be preceded by the assessment of gastric functional status. In particular, patients with HP infection should be eradicated before PPI therapy, while CAG patients should not receive PPI therapy. Additionally, patients with HP infection should be further investigated (compliance, diagnosis).

Disclosure of Interest: All authors have declared no conflicts of interest.

P1835 APPROPRIATE USE OF PPI IN THE ELDERLY: EVALUATION OF ACID SECRETION AND ATROPHIC GASTRITIS ON DUODENAL MUCOSA IN A RANDOMIZED, DOSE-RESPONSE TEST M. Franceschi1, S. Speroni2, R. De Bastiani3, A. Antico4, M.P. Panozo4, G. Baldassarre4, S. Scida1, C. Miraglia1, L. Franzoni, V. Corrente1, M. Rugge4, F. Di Mario5, C. Scarpiogna6, A. Pilotto7

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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 significantly higher.

Abstract No: P1833

<table>
<thead>
<tr>
<th>N</th>
<th>Therapy</th>
<th>PPI n. %</th>
<th>Full PPI n. %</th>
<th>Excess PPI n. %</th>
<th>Gastric Function status PG-I ( ug/mL)</th>
<th>Gastric Function status G-17 (pmol/L)</th>
</tr>
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<tbody>
<tr>
<td>All</td>
<td>1015</td>
<td>394</td>
<td>709</td>
<td>12</td>
<td>137.0+/−84.7</td>
<td>71.7+/−21.1</td>
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<tr>
<td>Good response G-17 7</td>
<td>351</td>
<td>83 (23.6)</td>
<td>259 (73.8)</td>
<td>9 (2.6)</td>
<td>194.5+/−121.1</td>
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<td>Low response G-17 1 7</td>
<td>421</td>
<td>141 (33.5)</td>
<td>279 (66.3)</td>
<td>1 (0.2)</td>
<td>127.1+/−8.3</td>
<td>3.1+/−1.76</td>
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<td>No response G17 &lt;1</td>
<td>205</td>
<td>64 (31.2)</td>
<td>140 (68.3)</td>
<td>1 (0.5)</td>
<td>91.7+/−49.9</td>
<td>0.38+/−0.29</td>
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<tr>
<td>CAG</td>
<td>38</td>
<td>6 (15.8)</td>
<td>31 (68.3)</td>
<td>1 (2.6)</td>
<td>16.6+/−14.8</td>
<td>70.3+/−55.2</td>
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</table>
P1836 THE PSYCHOLOGICAL CHARACTERISTICS OF REFUX HYPERSENSITIVITY:A PILOT STUDY BASED ON SCL-90 QUESTIONNAIRE AND 24 HOUR PH-IMPEDANCE MONITORING

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Introduction: Reflux hypersensitivity (RH) was lately defined as a functional esophageal disorder by the Rome IV workshop. The clinical and psychological characteristics are still unknown.

Aims & Methods: The aim of this study was to assess the reflux and psychological characteristics of RH. Patients who underwent 24 h pH-impedance monitoring were screened from Jan 1st 2011 to Nov 31st 2015. The patients with heartburn or chest pain ≥2 days/week for more than 6 months were enrolled. Healthy volunteers (HV) were enrolled too. All subjects fulfilled the SCL-90 questionnaire, underwent gastroscopy to exclude upper gastrointestinal diseases and underwent HRM test to exclude manotility disorders. The patients for esophageal mucosal but overload acid, weakly acid or non-acid reflux were diagnosed as non-erosive reflux disease (NERD). The patients with normal esophageal mucosal and normal reflux but positive symptom index (SI) or symptom association probability (SAP) were diagnosed as RH. The patients with normal mucosal, normal reflux, normal SI or SAP and negative PPI test results were enrolled in functional heartburn (FH) group.

Results: Total 231 patients were enrolled. 107 were NERD (48.25±3.18 yrs, M/F = 55:52), 92 were FH (48.30±1.27yrs, M/F = 98:83), 32 were RH (48.41±2.36yrs, M/F = 48:28). 28 HVs (47.21±2.27yrs, M/F = 82:20) 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, 1.25±0.12, 1.90±0.33, 2.95±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 < 0.001). The total scores of SCL-90 of RH group of patients were significantly higher than that of NERD, 133±5 ± 3.68 vs. 108.61 ± 4.51, p = 0.004. FH: pHHV, 133.15±3±0.68 vs. 108.61 ± 4.51, p = 0.003. RH: HVHV, 142.67±8.91 vs. 108.61 ± 4.51, p = 0.002.

Conclusions: The differences found with the two systems in the duration of the esophageal contractions and in the new contractile parameters (i.e.: DCI and DL) introduced by the Chicago Classification, probably due to different analysis used by the two systems (the lowest residual pressure vs IRP). Furthermore, the differences found in the measurement of the LES resting pressure and abdominal length may rely either on the different technology (3-D vs linear transducers) or on the different algorithms and thresholds used. The latter may probably also apply to the differences found with the two systems in the duration of the esophageal contractions and in the new contractile parameters (i.e.: DICI and DILI) introduced by the Chicago Classification. This study emphasizes the need for a careful validation of any new system or methodology of 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 (7 m, 8 f; median age 27) underwent two consecutive Esophageal HRM studies by using two different solid state systems (ManoScan, Medtronic, Minneapolis, USA and Medica SpA, Italy with Unisensor AG, Atikon, Switzerland catheter). The studies were performed in a random order using the standard protocol. Moreover, 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).

Conclusions: 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.: DICI and DILI) introduced by the Chicago Classification. This study emphasizes the need for a careful validation of any new system or methodology of 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 PERISTALIS 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 hypotensive esophagogastric junction (EGJ). Data on the effect of PPIs in improving these motor abnormalities are lacking.

Aims & Methods: Aimed to prospectively compare HRM features of patients with PPI-REE before and after a course of PPI therapy, consecutive patients with symptoms suggestive of EsE underwent upper endoscopy to assess the presence of at least 15 eos/hpf on esophageal biopsies at mid/proximal esophagus and, therefore, enabled PPI treatment 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 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 years) reporting dysphagia (93%), bolus impaction (68%) and chest pain (25%) were diagnosed with PPI-REE. After a course of PPIs, the majority of the patients reported complete resolution of esophageal symptoms directly linked to esophageal infiltration (p < 0.001), mainly 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 (3–34) vs. post-PPI 17 (3–34); 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 mean distal peristaltic velocity (p > ns). 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 > ns).

Conclusion: In most PPI-REE patients, PPI therapy restores the impairment of esophageal motility assessed by ineffective or fragmented peristalsis, thus favouring the return to a normal motility pattern. This finding, paralleled with symptoms improvement in the same subjects, seems to emphasize the important role of inflammation linked to the eosinophilic infiltration of the esophageal wall in inducing motor dysfunction and related symptoms.

Disclosure of Interest: V. Savarino: Consulting fee from Malesci, Reckitt, AlfaWasserman, Abbvie
E. Savarino: Consulting fee from Medtronic, Sofar, Takeda, Abbvie, MSD
All other authors have declared no conflicts of interest.

References


P1840 IGG4 EXPRESSION IS ELEVATED IN PATIENTS WITH EOSINOPHILIC ESOPHAGITIS COMPARED TO PATIENTS WITH GASTROESOPHAGEAL REFLUX DISEASE

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Introduction: Esophageal Eosinophilia (EoE) is a chronic immune disease of the esophageal wall causing localized inhomogeneous infiltration with histologically characterized by a predominant eosinophilic inflammation. EoE is mainly found in patients with atopic conditions. However, recently an association with IgG4 but not with IgE has been reported. Gastroesophageal reflux disease (GERD) is the most important diagnostic differential diagnosis of EoE. In this study we measured systemic serum IgG4 and IgE levels of EoE patients before and after a topic steroid therapy, correlated them to esophageal IgG4-positive plasma cells and compared them to GERD patients.

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 both (10.1%). A follow-up upper endoscopy was performed in 40.3% of patients. During follow-up, treatment included PPIs (76.0%), topical corticosteroids (59.6%) or a combination of both (45.4%).

Conclusion: Diagnostic and therapeutic discrepancies between daily clinical practice and recommendations for children and adults. Moreover, varying therapeutic strategies were 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.

References


Aims & Methods: Serum levels of IgG4 and IgE of 19 EoE patients were measured 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 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 eosinophils in histology was decreased at a significant level after topic steroid therapy (mean: 51.9 eosinophils/high power field (hpf) vs. 6.4 eosinophils/hpf 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 = 0.042). A significant difference could also be identified for IgE levels showing a significant decrease after therapy (mean: 13.9 kU/L vs. 8.8 kU/L p = 0.022).

Conclusions: EoE patients show higher systemic IgG4- but not IgE-immunological levels compared to GERD patients. These elevated levels normalize under effective topic steroid therapy. Additionally high local expression of IgG4-positive plasma cells can be seen in EoE patients. These findings might be further evidence for a possible IgG4-association of EoE.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1841 SYSTEMATIC REVIEW: HEALTH-RELATED QUALITY OF LIFE IN CHILDREN AND ADULTS WITH EOSINOPHILIC ESOPHAGITIS: MEASURE INSTRUMENTS AND DETERMINANT FACTORS

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Introduction: Measurement of Health-related quality of life (HRQoL) with generic or specific instruments has been increasingly used in patients suffering from EoE to support both research and clinical care. Generic instruments aim at measuring the overall HRQoL of patients across several conditions, being useful for comparing across different health states and evaluating health economics outcomes. Disease-specific instruments assess domains specific to a given disease and are considered more sensitive to changes in the patient’s health state. An up-to-date systematic review will provide a useful resource for researchers and EoE specialists to ensure they can select an appropriate HRQoL measure for patients in their practice in order to identify correctable factors determining an impaired perception and to improve treatment outcomes.

Aims & Methods: We aim to systematically review the current HRQoL measures for patients with EoE and to appraise their measurement properties using a robust evaluation methodology checklist. We also sought to identify disease-specific determinant factors for HRQoL in children and adults with EoE, and the effect of investigations and interventions on EoE on HRQoL. A search strategy was used to identify and retrieve all documents dealing with the relationship between HRQoL and EoE in children and adults. This systematic literature search was performed in 5 major databases (PubMed, EMBASE, Scopus, PsycINFO and Web of Science) for the period up to March 2017. The measurement properties of each specific EoE instrument identified and their performance properties were assessed using the quality properties checklist proposed by Terwee et al. Levels of the HRQoL measure establishment or use in literature: we used Cohen’s criteria. Cohort studies, case series and case reports were evaluated for the risk of bias with the aid of the Joanna Briggs Institute critical appraisal checklist. A descriptive summary with data tables was produced to summarize the literature. Quantitative pooling of data was not meaningful so a narrative synthesis with data tables was undertaken.

Results: Of the 596 references identified, data was collected from 34 studies including 1,142 individual patients. Three disease-specific HRQoL measures in EoE covering different aspects of patients’ lives and developed in EoE were scored positive regarding measurement properties. Respectively, the PedsQL inventory (including parent and child report forms) and the Peds-QoLÆ Esophageal module were the generic and specific instruments respectively used in children, while the SF-36 and EoE-QoL-A were the most used questionnaires in adults. Of the 596 references identified, data was collected from 34 studies (Table 1).

Disclosure of Interest: All authors have declared no conflicts of interest.
GERD and Barrett’s esophagus were included in the study. Macrophage phenotype in systemic circulation in GERD patients. 68 patients with different forms of immune response M1/M2 macrophage phenotype imbalance is one of the main adaptive immune response cells - macrophages. Considering the concept of due to the recurrent exposure to acidic and nonacidic refluxate of gastric con-
esophagus mucosal inflammation and Th1/Th2 immune response imbalance (GERD) pathogenesis includes cell and molecular mechanisms of associated The modern understanding of gastroesophageal reflux disease

### P1844 GASTROESOPHAGEAL REFUX DISEASE PATIENTS REFUXATE TYPE INFLUENCE ON MACROPHAGE PHENOTYPE

S. Lyamina1, S. Kalish1, A. Parasekov2, O. Storonova2, S. Pirogov2, A. Ponomarev3, D. Rumyantseva2, A.S. Troukhmanov2, V. T. Ivashkin5, 1,3,4,5

**Introduction:** The modern understanding of gastroesophageal reflux disease (GERD) pathogenesis includes identification of 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 eosinophils subepithelium in 62%, 75%, and 30.5% of patients, respectively. Subepithelial histologic activity correlated with epithelial histologic activity (rho 0.331, p < 0.0001), endoscopic severity (rho 0.208, p = 0.003), and symptom severity (rho 0.179, p = 0.011). Forty percent (21/52) of patients with <15 intraepithelial eosinophils/hpf had subepithelial peak counts of <15/hpf.

**Conclusion:** In one third of patients subepithelial peak eosinophil counts are higher than epithelial eosinophil counts. Systematic assessment of subepithelial eosinophil counts can aid in diagnosing EoE in additional 40% of all patients with epithelial eosinophils <15/hpf.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

### P1845 THE LOCATION OF OESOPHAGEAL MUCOSAL AFFERENT NERVES ARE MORE SUPERFICIAL IN PATIENTS WITH NERD THAN IN HEALTHY VOLUNTEERS AND PATIENTS WITH BARRETT’S OESOPHAGUS

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**Introduction:** The pathophysiology of heartburn perception in gastro-esophageal reflux disease (GERD) remains unclear. The degree of reflux-induced epithelial change seldom predicts symptom severity, as evidenced by the greater symptom burden seen in non-erosive reflux disease (NERD) compared to patients with Barrett’s oesophagus (BE). Existing models of acid hypersensitivity are inadequate to explain this discordance.

**Aims & Methods:** To test the hypothesis that differences in peripheral esophageal nerve innervation may be relevant, we studied the distribution of mucosal nerve fibers in patients with NERD and BE and compared the results with that of healthy subjects. 13 patients with NERD undergoing reflux testing and 16 patients with BE undergoing endoscopic surveillance were prospectively recruited. Biopsies were obtained from the proximal and distal esophageal mucosa in NERD patients and the distalmost squamous epithelium in BE patients, then examined immunohistochemically for location and density of calcitonin gene-related peptide (CGRP)-immunoreactive nerve fibers. The results were compared with those from 10 healthy volunteers (HV) previously studied by our group.

**Results:** The distribution of mucosal CGRP-immunoreactive nerves is equidistant from the distal esophageal mucosa in HV and BE (median 25.5 cell layers to surface [IQR 21.4–28.8] vs 21.5 [16.1–27.5] respectively, p = 0.015). Mucosal innervation is significantly more superficial in NERD both distally (9.5 cell layers [1.5–13.3], p < 0.0001 vs both BE and HV) and proximally (5.0 [2.5–9.3], p = 0.0008 vs HV).

**Conclusion:** The acid hypersensitivity seen in NERD may be partially explained by the increased proximity of mucosal afferents to the esophageal lumen, and therefore greater exposure to noxious substances in refluxate. Conversely, the higher acid hypersensitivity in BE may be attributed to the deeper location of mucosal afferents.

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**Table 1: TSQM scales scores for PPI, STC (in powder form), and different diets in adult EoE patients.**

<table>
<thead>
<tr>
<th>TSQM scales</th>
<th>PPI (n = 27; median treatment duration 6 years [3–9])</th>
<th>STC (n = 54; median treatment duration 5 years [2–6])</th>
<th>STC only (n = 17; once daily; median treatment duration 5 years [3–6])</th>
<th>STC only (n = 22; twice daily; median treatment duration 3.5 years [1–6])</th>
<th>Diet (n = 21; median treatment duration 2 years [1–4])</th>
</tr>
</thead>
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<td><strong>Effectiveness</strong></td>
<td>66.7 [38.9–77.8]</td>
<td>100</td>
<td>77.8 [61.1–94.4]</td>
<td>100</td>
<td>77.8 [50–88.9]</td>
</tr>
<tr>
<td><strong>Side-effects</strong></td>
<td>100 [100–100]</td>
<td>88.9 [77.8–100]</td>
<td>100 [100–100]</td>
<td>83.4 [66.7–100]</td>
<td>100 [33.3–66.7]</td>
</tr>
<tr>
<td><strong>Convenience</strong></td>
<td>100 [100–100]</td>
<td>71.4 [50–85.7]</td>
<td>100 [100–100]</td>
<td>78.6 [64.3–92.9]</td>
<td>100 [33.3–66.7]</td>
</tr>
<tr>
<td><strong>Overall satisfaction</strong></td>
<td>[69.4–85.5]</td>
<td>[78.4–92.8]</td>
<td>[71.3–89.4]</td>
<td>[64.3–92.9]</td>
<td>[69.4–92.8]</td>
</tr>
<tr>
<td><strong>Average score</strong></td>
<td>83.3 [66.7–94.4]</td>
<td>100</td>
<td>83.3 [66.7–100]</td>
<td>100</td>
<td>83.3 [66.7–100]</td>
</tr>
</tbody>
</table>

**Abstract No:** P1842

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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.
Disclosure of Interest: P. Woodland: Research grant Reckitt Benckiser (Hull UK).

D. Sifrim: research grant Sandhill Scientific (Denver USA) research grant Reckitt Benckiser (Hull UK).

All other authors have declared no conflicts of interest.

P1846 BELCHING PATTERNS IN PATIENTS WITH ISOLATED PATHOLOGICAL UPRIGHT REFLUX AND PATHOLOGICAL BIPOSIONAL REFLUX
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Introduction: Belching is a commonly occurring symptom in patients with gastrointestinal reflux disease (GERD). Belching may reflect reflux. It is unknown whether GERD patients with isolated pathological upright reflux (UP) have belching patterns that are different from GERD patients with pathological bipositional reflux (BIP).

Aims & Methods: Aim of this study was to examine the belching patterns of UP reflux patients as compared with BIP reflux patients. We included 50 consecutive patients with pathological reflux and typical symptoms who underwent 24-h pH-impedance monitoring at the Maastricht University Medical Centre from 2015 to 2017. Patients referred for excessive belching were excluded. A group of 25 UP reflux patients (10 male, mean age 52.9 years (range 22–77)) and 25 BIP reflux patients (11 male, mean age 47.9 years (range 18–77)) were enrolled. 24-h pH-impedance tracings were analysed manually. We classified belches according to: a) physiological mechanism: supragastric vs. gastric; and b) their temporal relationship with a liquid reflux episode: isolated belch, preceding or during a liquid reflux episode. Symptom-assessment analysis was performed to assess a relationship between reported symptoms and reflux episodes.

Results: BIP patients showed higher acid reflux time (17.8 ± 2.4% vs. 7.3 ± 0.6%, p < 0.001) and higher number of total reflux episodes (121 ± 9 vs. 97 ± 8, p = 0.05) than UP patients. Notably, both the proportion of reflux episodes with belches of any type and the proportion of belches preceding liquid reflux were higher in UP patients than in BIP patients (51.7 ± 3.6% vs. 32.1 ± 3.7%, p < 0.001 and 27.3 ± 3.1% vs. 17.8 ± 2.9%, p = 0.03, respectively). No difference was found in the proportion of both supragastric and gastric belches between groups. During 24-h pH-impedance monitoring UP patients reported more symptoms (21 ± 6 vs. 12 ± 3, p = 0.16) and had more positive symptoms with belches (60.2 ± 7.1% vs. 39.0 ± 6.6%, p = 0.03) than BIP patients. Of the total number of belches that were detected using 24-h pH-impedance, more belches were recorded in UP patients than in BIP patients (24.8 ± 6.4% vs. 11.1 ± 2.5%, p = 0.06).

Conclusion: In our study, GERD patients with isolated pathological upright reflux had more often (symptomatic) belches than GERD patients with pathological bipositional reflux. Therefore, examination of belching patterns can assist diagnostic and therapeutic strategic planning in GERD patients who are refractory to medical therapy.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1847 IS REFLUX DURING NAPS WORSE THAN DURING NIGHT-TIME SLEEP?
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Introduction: Gastroesophageal reflux in the recumbent period is related to a higher risk of developing oesophageal lesions (severe esophagitis or Barrett oesophagus). The only study to date that analysed reflux during daytime naps suggests that it is worse than that which occurs during the night-time sleep. Our objective was to determine if reflux during naps is more severe than during night-time sleep.

Aims & Methods: Between February 2015 and November 2016 patients that underwent ambulatory 24-hour oesophageal pH monitoring at our motility unit were screened. Those who slept an afternoon nap in the recumbent position in the right-night-time sleep pattern and pathological acid exposure (deMeester score >14.72) were included. We excluded those patients with previous foregut surgery or sleep apnea, those taking sleeping medication and those who were in recumbent position more than twice during the study. All studies were analysed. Number of refluxes, number of refluxes per hour, reflux duration and oesophageal acid exposure (AET) time were compared between the two recumbent periods. Correlation between AET and meal-to-bed time was analysed, both for naps and night-time sleep.

Results: A total of 32 patients were selected (59.4% women, mean age 51.31 ± 14.59, median BMI 26.48 (range 21.63–38.71)). Indication was typical GERD symptoms in 68.8% and atypical symptoms in 32.3%. Oesophageal manometry revealed normal oesophageal body motility in 65.6%, inefficient peristalsis in 28.1%, and a median lower oesophageal sphincter pressure of 8 mmHg (range 1–24). Median nap duration was shorter than that of the night-time sleep: 108 mins (range 30–375) vs 454 mins (range 240–593) (p = 0.00). Median meal-to-bed time was also shorter for naps: 30.5 mins (range 4–185) vs 110.5 mins (range 9–247) (p = 0.00). Median number of refluxes per hour and median recumbent AET were similar in both periods: 1.71 (range 0–26.5) vs 1.85 (range 0–12.8) (p = 0.45) and 1.55 (range 0–61) vs 5.9 (range 36.1–36.1) (p = 0.57), respectively. 87% of total reflux recurrence took place during the night. Correlation between AET and meal-to-bed time trended to be significant for Spearman ρr = 0.33, p = 0.065), and was not significant for night-time sleep (Spearman ρr = 0.2, p = 0.94). All 5 patients who waited more than an hour after lunch to lay down had an AET during the nap of less than 1%.

Conclusion: Naps are not associated with a more severe acid reflux than night-time sleep, what does not support a specific recommendation against taking daytime naps for GERD patients. Avoiding short meal-to-bed time specifically for naps could be advisable.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1848 TREATMENT WITH PROTON PUMP INHIBITORS (PPI) DOES NOT REDUCE ACID LARYNGOPHARYNGEAL REFLUX (LPR) DESPITE REDUCING DISTAL ACIDIC \nGASTROESOPHAGEAL REFLUX AND IMPROVING SYMPTOMS IN PATIENTS WITH LPR
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Introduction: PPI improve LPR symptoms in many patients. It is implicitly assumed that this effect is due to reduction of acidic LPR by PPI. Here we tested this assumption. We evaluated LPR and distal gastroesophageal reflux by using simultaneous pH/impedance monitoring in laryngopharyngeal segment and in distal esophagus before and after PPI treatment.

Aims & Methods: Patients referred for suspected LPR were screened and those with positive reflux finding score (RFS > 7, determined by ENT physician) and/ or positive reflux symptom index (RSI > 13) at least one acidic LPR episode during 24-h pH-impedance study were enrolled. The RSI, RFS and dual pH/ impedance study of LPR and distal reflux were performed before and after 3 months therapy with PPI twice a day. Appropriate distance between pH sensors was chosen based on manometrically determined LES and UES so that the proximal pH sensor was positioned 1 cm above UES and distal sensor was positioned 4–6 cm above LES. By definition each LPR event was preceded by reflux detection in the distal esophagus.

Results: 18 patients (11M/7F, 31 ± 10yrs) completed the study. In this group the PPI treatment substantially reduced the symptoms of LPR. Reflux finding score (RFS) was decreased by 40% from 9 ± 1 ± 3 ± 1 (P < 0.01). The number of distal acidic reflux episodes was reduced from 17 ± 2 to 3 ± 3 (P < 0.01). Surprisingly, acidic LPR was not decreased by PPI treatment. The number of LPR with pH < 5.0 was 2 ± 0.5 vs. 3 ± 1, P = NS, and the number of LPR episodes with pH < 4.0 was 0.7 ± 0.1 vs. 0.6 ± 0.2, P = NS.

Surprisingly, the number of acidic LPR episodes with pH = 5.0–6.0 was even increased (14 ± 2 vs. 21 ± 3, P < 0.05) leading to an increase in the overall number of LPR episodes by approximately 50% from 16 ± 2 to 24 ± 3 (p < 0.05). PPI treatment did not decrease laryngopharyngeal time the pH was <2 (P = NS) and did not alter the composition of acidic LPR reflux (RFS = NS).

Conclusion: Proton pump inhibitor treatment does not reduce acidic laryngopharyngeal reflux despite substantially improving symptoms in patients with objectively established LPR. This suggests that PPI treatment influences some aspects of pathogenesis of LPR symptoms that are not readily detected by laryngopharyngeal pH/impedance monitoring.

Disclosure of Interest: All authors have declared no conflicts of interest.
Before and after menthol infusion was 7.5/C6. Classification v3.0. Few volunteers reported only mild cold sensation during menthol 8 ml/min. was carried out and subsequently the water swallows in order to follow: after the baseline recording 10 water swallows of 15 ml and 3 water swallows of 10 and 15 ml. After that a 20 min. infusion challenge with 3 mM menthol on the esophageal peristalsis and LES tone.

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 was placed transnasally so that the distal end of the tube was 5 cm above the LES. After a 5 min. adaptation period the measurement was performed in the supine position according to the protocol as follows: recording 10 with 5 ml swallows of 5 ml and 3 with 3 water swallows of 10 and 15 ml after. At that a 20 min. infusion challenge with 3 mM menthol 8 ml/min. was carried out and subsequently the water swallows in order described above were repeated. HRM tracings were manually analyzed using Medical software and Parameters used into the Chicago classification (v3.0) were evaluated. Integrated relaxation pressure (IRP), nadir LES pressure and distal contractile integral (DCI) values from 5 ml, 10 ml and 15 ml swallows were obtained. These were compared before and after the menthol infusion. Paired test was used for statistical analysis.

Results: None of the subjects had any motility disorder defined by the Chicago Classification v3.0. Few volunteers reported only mild cold sensation during infusion presumed to be of the esophageal origin. The nadir LES pressure before and after menthol infusion was 7.5 ± 0.5 mmHg vs. 7.3 ± 0.7 mmHg, respectively (p < 0.7). IRP of 5 ml swallows was 2.8 ± 0.6 mmHg vs.2.1 ± 0.5 mmHg showed significance (p = 0.01). However, difference of IRP of 10 ml and 15 ml swallows was not significant (p > 0.1, p > 0.5, respectively). Average DCI of 5 ml swallows was 737.8 ± 126.3 mmHg and 814.2 ± 116.2 mmHg before and after menthol infusion, respectively (p > 0.5). We found no difference in DCI in 10 ml and 15 ml swallows before and after menthol infusion. Menthol seemed to have had only a marginal insignificant effect on IRP and DCI in rapid swallow wave.

Conclusion: We quantified the effect of menthol on the esophageal function and LES pressure in healthy volunteers using high-resolution manometry. The analysis of HRM tracings revealed that menthol has no effect on particular parameters of the peristalsis and esophageal motility.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

**P1850** ANALYSIS OF THE RELATIONSHIP BETWEEN GLOBUS PERCEPTION AND ACIDIC LARYNGOPHARYNGEAL REFUX BY DUAL PHARYNGEAL AND ESOPHAGEAL 24-HOUR PH/ IMPEDANCE MONITORING

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Introduction: Globus is considered to be related to the gastroesophageal reflux disease/laryngopharyngeal reflux (LPR). However, a substantial part of subjectiveness and self-perception of globic sensation which is impossible to measure objectively makes this symptom difficult to study. Visceral hypersensitivity and/or altered functional state of the afferent nerve endings in the hypopharynx resulting from reflux have been suggested responsible for the development of globus. We hypothesized differences in the reflux burden and esophageal/pharyngeal symptoms between the patients with globus symptoms with globus compared to the patients with LPR symptoms without globus.

Aims & Methods: Patients referred for suspected LPR were screened and those with positive reflux symptom index (RSI > 15) and at least one acidic LPR episode during 24 h pH/impeance study were enrolled. We recruited patients that were at least 30 days without PPI treatment. Appropriate distance between pH sensors was chosen based on manometrically determined LES and UES so that the proximal pH sensor was positioned 1 cm above UES and distal sensor was positioned 4-6 cm above LES. For each LPR event we determined the maximum drop of pH on the pH levels resulting from reflux below that pH level during 24h. According to the question 8 (sensations of sticking/lump in the throat) of self-evaluated RSI questionnaire the patients were divided into globus positive (tick 4-5 in the RSI) or globus negative (tick 0-1 in the RSI).

Results: 19 (13M/6F) completed the study. The number of globus positive and negative patients was 11 and 8, respectively. There were no major differences between groups. Disregarding the question about globus in the RSI, there was a significant difference of the RSI between the globus positive and negative group (25 ± 2 vs. 21 ± 2, respectively, p = NS). As for the reflux in distal esophagus, we observed no difference in the acid exposure time between the globus positive and negative patients (IRP 21.7% vs. 22.1%, respectively, p = NS). Therefore we assumed differences in the results from the hypopharyngeal pH sensor. However, the number of LPR events with pH drop to < 5.5 showed no significant difference between the globus positive and negative patients, either for the number of events (92 ± 6.5 vs. 93 ± 4.6, respectively, p = NS). We therefore speculated that more acidic LPR events (pH drop to < 5.5) might be of greater relevance. However, no significant difference was found between the globus positive and negative patients either in terms of the number of these LPR events (10 [2] vs. [1]–1, respectively, p = NS), or the pharyngeal acid exposure time (16 ± 6 s vs. 42 ± 3 s, respectively, p = NS).

Conclusion: We found no significant difference in the reflux burden in the distal esophagus/hypopharynx between the groups of symptomatic LPR patients with and without globus using 24 h dual channel pH/impedance. Other factors, e.g. visceral hypersensitivity might play a role in the development of globus symptoms, even in patients with objectively established LPR.

Disclosure of Interest: All authors have declared no conflicts of interest.

**P1851** GASTRIN-17 AS A NON-INVASIVE MARKER FOR GERD: A PROSPECTIVE STUDY ON SAMPLE OF 777 CONSECUTIVE PATIENTS

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Introduction: Due to a negative feedback mechanism, gastrin-17 (G17) can be considered a mirror of acid secretion: the lower G17 values, the higher gastric acid secretion. Some studies suggest serum G17 low levels as a marker of acid-related conditions, like Gastroesophageal Reflux Disease (GERD). Aim of the study was to evaluate the properties of low levels of G17 in GERD diagnosis, compared with clinical and instrumental GERD gold-standards (typical symptoms, esophagitis at endoscopy, a positive Demester score at pH-metry).

Aims & Methods: We evaluated the demographic and clinical profile of patients with GERD diagnosed with low serum G17 levels; we determined the G17 levels in normal healthy controls. The study was a prospective study on sample of 777 consecutive patients.

Results: Out of 777 patients with non erosive reflux disease, 40 (5.1%) were found to have serum G17 levels lower than 20 pg/mL, the mean of this group was 10.8± 3.1 pg/mL, compared to the mean of 36.9± 14.6 pg/mL of normal healthy subjects. We therefore considered serum G17 low levels as a marker of acid-related conditions. By using low levels of G17 as a non-invasive marker of GERD, in clinical, endoscopical or functional accepted to support the diagnosis of functional dyspepsia. Only when severe symptoms are lacking or a NERD picture is find, GERD almost when typical symptoms are lacking or a NERD picture is found.

Conclusion: By using low levels of G17 as a non-invasive marker of GERD, in more than 90% (700 out of 777 pts) the diagnosis of reflux disease was confirmed, according with the current clinical or instrumental gold standard criteria, supporting the use of this simple method to identify subjects with suspected GERD almost when typical symptoms are lacking or a NERD picture is find.

Disclosure of Interest: All authors have declared no conflicts of interest.
Hiatal hernia (HRM) 33 (97.1%) 34 (70.8%) 16 (37.2%) 0

Hiatal hernia (X-ray) 34 (100%) 36 (75%) 17 (39.5%) 1 (3.8%)

Table I:

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Introduction: Sliding hiatal hernia (HH) is a frequent diagnosis during upper endoscopy in patients with GERD-related symptoms. Recently, high resolution manometry (HRM) allowed an accurate evaluation of the esophagogastric 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 (ERD) was diagnosed according to the Los Angeles Classification, and HH was diagnosed when the separation between the squamo-columnar junction and the diaphragmatic impression was greater than 2 cm. Patients with achalasia or major disorders of peristalsis or previous surgery were excluded. MII-pH monitoring allowed to sub-classify patients with non-erosive GERD in: NERD (abnormal AET), reflux events but positive symptom-reflux association, HE) and functional heartburn (FH), classified by means of upper GI endoscopy and reflux symptoms association analysis using both symptom association probability (SAP+ if ≥95%) and symptom index (SI+ if ≥50%).

Conclusion: HRM can be useful in detecting GERD, with a particular the role of the EGJ-CI in GERD pathophysiology has been recently acknowledged, the antireflux barrier function of EGJ can now be assessed evaluating the antireflux barrier in patients with non-erosive GERD in: NERD (abnormal AET), reflux events but positive symptom-reflux association, HE) and functional heartburn (FH). All patients underwent barium X-ray to measure HH. Recognition of two rings larger than 2 cm (re-occur position between EGJ and diaphragmatic hiatus was necessary to detect HH.

Results: We evaluated 151 patients (94 females) with mean age of 56.2 ± 15.4 yrs. ERD was diagnosed in 34 patients (22.5%). MII-pH allowed to subgroup patients in: 48 (31.8%) NERD, 43 (28.3%) HE, and 36 (27.2%) HH. As expected, HH showed a higher AET in ERD and NERD group (p < 0.001). HH was normal in 131/151 (86.8%) and 20/151 (13.2%) had ineffective motility. HH was confirmed in 83/151 patients (HRM 55% vs. UE 100%; p < 0.05) with barium X-ray and in 88/151 patients (barium 58.3% vs. UE 100%; p < 0.05) with barium X-ray. The mean length of HH during endoscopy (5.4 ± 2.6) was reported greater than that during HRM (3.9 ± 2.2) and Barium X-ray (4 ± 2.5) (p < 0.05). All details are reported in Table 1.

Table 1: Characteristic of the enrolled population stratified for GERD diagnosis

Conclusion: HRM and barium X-ray showed similar diagnostic accuracy to detect HH. Thus, HRM might be considered the test of choise during pre-surgical evaluation for laparoscopic antireflux surgery.

Disclosure of Interest: All authors have declared no conflicts of interest.

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Introduction: In patients with symptoms suggestive of gastroesophageal reflux disease (GERD) candidate to anti-reflux surgery, in order to objectively diagnose GERD, 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 EGJ-CI in GERD pathophysiology has been recently acknowledged, the antireflux barrier function of EGJ can now be assessed evaluating the antireflux barrier function of EGJ in patients with non-erosive GERD in: NERD (abnormal AET), reflux events but positive symptom-reflux association, HE) and functional heartburn (FH). All patients underwent barium X-ray to measure HH. Recognition of two rings larger than 2 cm (re-occur position between EGJ and diaphragmatic hiatus was necessary to detect HH.

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 HH 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 HH function. Recognition of two rings larger than 2 cm (re-occur position between EGJ and diaphragmatic hiatus was necessary to detect HH.

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Results: Overall, 68 patients (39 F/29 M, median age 42.3) underwent HRM and MII-pH. HH findings stratified according to MII-pH positivity for GERD are provided in Table 1. At univariate analysis, statistical parameters of cut-off were found in EGJ pressure, EGJ-CI, mean DCl, DCI, mean DCI ratio between GERD and FH. Based on logistic regression analysis and according to Hosmer’s purposeful selection of covariates, an optimal 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 resampling method was used to evaluate the internal validity of the model and to correct for over-fitting.

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* A798 United European Gastroenterology Journal 5(5S)

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P1854 GORD PATIENTS ARE FREQUENTLY DISSATISFIED ON LONG-TERM ACID SUPPRESSION TREATMENT: DATA FROM THE LOPA II STUDY

J. Labenz1, G. Labenz7, M. Müller1, D. Stephan1, E. Wickle4

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 about their PPI therapy satisfaction with their current condition, frequency of symptoms in the last week, whether they had previously received diagnostic evaluation or surgical consultation related to GORD, whether they plan to consult a reflux specialist for further diagnostics, and reasons for dissatisfaction with their current medication treatment. “Lost Patients” were defined as those with a satisfaction score of 1 or 2 on a 5-point Likert scale (1: very dissatisfied; 2: dissatisfied). GerdQ score at least 8, and have not previously received specialized GORD diagnostics.

Results: 510 consecutive patient responses were collected within one year. Patients suffered from GORD an average of 9.6 years and prescribed PPI therapy for an average duration of 7.9 years. 70% were dissatisfied or very dissatisfied on their current therapy (score of 1 or 2), 83% reported 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: Our study was aimed to define the prevalence of reflux symptoms in mild GERD patients suffering from mild GERD. We considered 500 consecutive patients referred to the Division of Allergy and Clinical Immunology of Azienda-IST IRCCS San Martino di Genova for gastrointestinatal 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 calories need of patients was assessed by means of Harry-Benedict equation corrected for their physical activity. Patients were asked to take antacids for one month. Subsequently patients discontinued medication consumption and followed an elimination diet of 1 month. Efficacy of the two treatments was evaluated by means of a validated symptomatic questionnaire (RDQ administered at baseline, after antacids course (1 month) and after diet (1 month)). A treatment was considered effective if a 50% improvement in the symptomatic score was recorded.

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Disclosure of Interest: All authors have declared no conflicts of interest.

P1855 PREVALENCE AND PATHOPHYSIOLOGY OF GASTROESOPHAGEAL REFUX DISEASE IN PATIENTS WITH AUTOIMMUNE GASTRITIS

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Introduction: Autoimmune gastritis (AIG) is characterized by corpus-predominant atrophy with consequent hypo-achlorhydria. In AIG patients dyspepsia is frequent but acid reflux symptoms not uncommon, with few data available regarding gastroesophageal reflux disease (GERD) in AIG.

Aims & Methods: We studied in order to define the prevalence of reflux symptoms in AIG patients, to evaluate the serological, histological and clinical differences in AIG patients with or without reflux symptoms and to investigate the pathophysiology behind these symptoms. One hundred and fifty AIG cases, with exclusion criteria are defined in the study: 29 AIG patients with reflux symptoms (AIG-R) and 58 without (controls), selected with similar age and gender distribution. AIG-R underwent pH-impedance (pH/I) and high resolution manometry (HRM), Serum biomarkers, EGDS, histology and anamnestic data were evaluated in both groups. Statistics was performed as indicated.

Results: AIG-R were 19% overall and 28% of them showed endoscopic esophageal lesions, with frequent hiatal hernia than in controls (p < 0.02). pH/I diagnosed acid reflux, esophageal hypersensitivity and a normal pattern in 7%, 28% and 66% patients, respectively. The number of non-acid reflux (NAR) was higher when compared with acid ones (p < 0.0001), moreover NAR and NAR proximal extension were associated with endoscopic lesions (p < 0.03 and p < 0.05, respectively). HRM revealed normal pattern in 62% of patients, minor periatal disorders in 24%, and outflow obstruction in 14%. According to the new Rome IV criteria, 55% of patients presented “functional esophageal disorders” (Rome IV-IN). No differences were detected in serological marker and clinical presentation. AIG-R presented lower antrum gastritis (p < 0.02) and a trend towards higher atrophy stages (p = 0.07) when compared with controls. The two patient with acid GERD were an OLGA 0 with mild gastrin increase and an OLGA I with short segment Barrett’s esophagus. Lower OLGA stages, lower corpus atrophy (p < 0.02) and more frequent response to PPI (p < 0.05) were associated with Rome IV-OUT status.

Conclusion: AIG-R patients are not uncommon despite the hypo-achlorhydria. Acid reflux is rare in AIG, while motility and “functional” disorders are frequent. Lower corpus atrophy and OLGA stage in Rome IV-OUT patients, with an intact corpus is likely relevant in the pathogenesis of symptoms. Treatment should consider use of proton pump inhibitor drugs only in specific patients.

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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-IST IRCCS San Martino di Genova for gastrointestinatal 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 calories need of patients was assessed by means of Harry-Benedict equation corrected for their physical activity. Patients were asked to take antacids for one month. Subsequently patients discontinued medication consumption and followed an elimination diet of 1 month. Efficacy of the two treatments was evaluated by means of a validated symptomatic questionnaire (RDQ administered at baseline, after antacids course (1 month) and after diet (1 month)). A treatment was considered effective if a 50% improvement in the symptomatic score was recorded.

Results: After investigations 261 patients out of 500 (52.2%) were excluded because of IBS (140), celiac disease (6), nickel allergy (25), lactose intolerance (60), SIBO (10), and allergy to other foods (20). The remaining 239 patients were diagnosed as affected by mild GERD (median age 47; BMI 24; 132F/107M; no erosive reflux disease) and were included in our interventional prospective study. After 1 month of elimination diet diet, there were noted a significantly associated in patients suffering from food related symptoms, based on their calories need. Efficacy of the two treatments was evaluated by means of a validated symptomatic questionnaire (RDQ administered at baseline, after antacids course (1 month) and after diet (1 month)). A treatment was considered effective if a 50% improvement in the symptomatic score was recorded.

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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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Disclosure of Interest: All authors have declared no conflicts of interest.
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Introduction: Safety and efficacy of electrical stimulation of the lower esophageal sphincter (LES) using the EndoStim® LOS Stimulation System (Nijmegen, The Netherlands) has been demonstrated in clinical trials up to >5 years. Data on outcomes in routine clinical practice is growing.

Aims & Methods: An ongoing, prospective international multicenter web-based registry is collecting data in patients with refractory GORD symptoms, treated with ES-LOS in clinical practice. Data is collected at baseline and at routine follow-ups for 5 years. Demographics, adverse events, GORD symptoms, GORD health related quality of life (GORD-HRQL) scores, use of proton pump inhibitor (PPI), and psychological and physiopathological data (oesophageal pH, manometry) are collected when available.

Results: 180 patients at 31 sites in Europe and Latin America have been enrolled. Follow-up data up to 2 years is available. Median (IQR) age at the time of implant was 51 (41–60), 57% were male. All patients were taking prescription PPI at baseline. At their last follow-up between 6 and 24 months post op, 70% (84/121) were completely off PPI (p < 0.001). Median (IQR) composite GORD-HRQL score improved from 23 (17–29) preoperatively to 3 (4–15) at 6 months, 7 (2–12) at 12 months, and 8 (4–15) at 24 months (p < 0.001 at all time points. n = 154, 121, 66, 33 at baseline, M6, M12, M24, respectively). Oesophageal pH testing post-op was performed by a few sites either as standard of care or in in-person consultations. Median (IQR) 9-hour post-prandial oesophageal acid exposure improved from 8.2% (4.6–18.4) at baseline to 4.7% (1.4–14.5) at 6 months (p = 0.026) and 3.6% (1.0–5.8) at 12 months (p = 0.04) (n = 120, 39, 10 at baseline, M6, M12, respectively). The proportion of patients with moderate to severe regurgitation decreased from 64% at baseline to 22.5% after 6 and 13.4% after 12 months. Extra-oesophageal symptoms (recurrent cough, pneumonitis, shortness of breath) and sleep disturbances also decreased substantially. Overall, dysphagia and gas were less common at 12 months than preoperatively. Four severe adverse events were reported in the first year. One myocardial infarction related sudden death at 11-month post-op, not related to the device or procedure; 1 event of asymptomatic electrode erosion into the oesophagus detected during routine endoscopy and the device safely removed during laparoscopic fundoplication; and 2 events of gas leak were in 1 patient requiring hospitalization, possibly related to the device, were reported.

Conclusion: ES-LOS is safe and effective in treating patients with refractory GORD symptoms despite PPI in routine clinical practice. ES-LOS should be considered an appropriate treatment option for very difficult to treat patient cases.

Disclosure of Interest: J. Laben: Consulting fees - EndoStim BV All other authors have declared no conflicts of interest.

Disclosure of Interest: A. Bapaye: Speaker - Boston scientific corporation, Cook medical, Taewoong medical, Kyosho/Germany. All other authors have declared no conflicts of interest.

Disclosure of Interest: A. Bapaye: Speaker- Boston scientific corporation, Cook medical, Taewoong medical, Kyosho/Germany. All other authors have declared no conflicts of interest.

P1859 EFFECTIVENESS OF SELECTIVE SEROTONIN REUPTAKE INHIBITORS IN THE TREATMENT OF NON-EROSSIVE REFLUX DISEASE: A RANDOMIZED TRIAL

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Introduction: To date a large quantity of 5-HT3 receptors were found in esophageal mucosa that indicates on an important role of this neuromediator in pathogenesis of non-erosive reflux disease (NERD) and gastroesophageal reflux disease (GERD). Antidepressants seems to be effective, as they have central and psychologically. Psychological testing was done using validated short-form version of the depression anxiety stress scales (DASS-21) and Toronto alexithymia scale (TAS). 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 alexithymia between two arms on the 8th week after the initiation of treatment we found that alexithymic 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.

Disclosure of Interest: A. Bapaye: Speaker- Boston scientific corporation, Cook medical, Taewoong medical, Kyosho/Germany. All other authors have declared no conflicts of interest.

P1860 QUALITY OF ESOPHAGEAL MUCOSAL HEALING IN EROSIIVE REFLUX DISEASE: A RANDOMIZED COMPARATIVE TRIAL WITH LANSOPRAZOLE ALONE OR COMBINED WITH REBAMIPIDE

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Introduction: The quality of histologic healing or inflammatory cytokine-related change in erosive reflux disease (ERD) had been verified in few studies. The aim of this study was to evaluate the healing rate of endoscopic erosions.

Aims & Methods: We conducted double-blinded comparative study to assess endoscopic, histologic quality of mucosal healing in ERD, following 4-week medical treatment with lansoprazole combined with rebamipide or not. The patients with ERD in modified LA classification grade A-D were enrolled via four referral institutes, regardless of GERD related symptoms. The enrolled subjects were randomly allocated to ingest 30 mg lansoprazole alone or ingest lansoprazole 30 mg with rebamipide 100 mg three times in a day for 4 weeks. The 4-weeks follow up endoscopic biopsies were performed to assess endoscopic healing (regressed into minimal change or normal), and to obtain esophageal biopsy specimens (at 3 o’clock direction, 3 cm proximal area from squamocolumnar junction). Additional tissue samples were obtained to measure tissue inflammatory cytokines (IL-8, PAF, at 9 o’clock direction, 3 cm proximal area from squamocolumnar junction).

Results: Overall 109 patients were enrolled and randomly allocated to lansoprazole group (N = 54) or combination group (N = 55). Demographic data, smoking or drinking habits were not significantly different between both groups. The endoscopic healing rate at 4-week was not different significantly (75.0% vs 87.9%; P = 0.686. Difference 3.95%, 95%CI [-15.24, 23.13]). The histologic changes of basal layer thickness, intraepithelial infiltration of inflammatory cells (eosinophils, neutrophils) were normalized in subsets of patients regardless of the fate of endoscopic healing, and were not different in both groups. In contrast, papillary length, intraepithelial infiltration of T lymphocyte and the dilated intercellular space (DIS) was normalized significantly in endoscopically
healed combination group. When both group were pooled in a group (proton pump inhibitor + endoscopic ablation), the papillary length and DIS was significantly improved in endoscopically healed patients. Tissue level of IL-8, but not Lyso-PAF, was significantly decreased in lansoprazole alone group.

Conclusion: Adjuvant therapy of rehampidine 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.

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P1861 LONG-TERM RESULTS OF RADIOFREQUENCY ABLATION (RFA) IN PATIENTS WITH BARRETT’S ESOPHAGUS RELATED NEOPLASIA

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Introduction: Radiofrequency ablation (RFA) with or without endoscopic resection (ER) is an established endoscopic treatment of early Barrett’s esophagus (BE) related neoplasia (BORN). After successful treatment, follow-up is still required as recurrences may occur. The aim of this prospective single-center case series was to assess the long-term efficacy of endoscopic treatment (RFA with or without ER) for BORN. Main outcomes were complete remission of neoplasia (CR-N) and recurrent length (R-IM) and neoplasia (R-N).

Aims & Methods: A total of 99 consecutive patients with BORN have been treated from 2009 to 2013. 89 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 (38%), 24 patients with high-grade dysplasia (28%) and 30 patients with low-grade dysplasia (34%). Prior to RFA, ER for visible lesions was performed in 57 patients (66%). Mean length of the Barrett’s esophagus (BE) was 4.6 cm (range 1–13 cm). After treatment, the patients have undergone regular endoscopic surveillance with multiple biopsies. Recurrence: Complete remission of IM (CR-IM) and complete remission of neoplasia (CR-N) were achieved in 54 patients (54/3 pts, 65.1%; 95% CI 54.3–74.5) and 82 patients (98.8%; 95% CI 92.8–99.9), respectively. All patients who did not achieve CR-IM had macroscopically normal neo-Z-line without visible abnormality for at least one patient where macroscopic eradication of BE was not achieved due to giant hiatal hernia and who was referred for anti-reflux surgery. During the follow-up, 18 patients (13.3%, 18/54 pts) experienced a recurrence of IM and 3 patients (2.6%, 3/117 pts) had a recurrence of neoplasia (LGD 2x, HGD 1x). We did not encounter any patient with a submucosal 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 escape argon 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%): 12x chest pain and 10x stricture. Two patients with a stricture had to undergo surgical resection - first patient due to perforation during balloon dilatation of a post-RFA stricture, the second because of refractory post-RFA stricture after 20 sessions of dilatation.

Conclusion: RFA combined with ER for patients with BORN achieves a high success rate of CR-N with durable results. Recurrence of IM occurs in approxi- mately one-third of patients and supports continuing 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

P1862 METHODS OF MEASURING BARRETT’S MACOSCOPIC THICKNESS WITH VOLUMETRIC LASER ENDOMICROSCOPY (VLE), AS A BIOMARKER TO GUIDE TO TREATMENT CHOICE

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Introduction: Barrett’s Esophagus (BE) is a premalignant condition, in which prolonged gastroesophageal reflux results in intestinal metaplasia, leading to an annual risk of adenocarcinoma 0.12%/year.1 The current standard of treatment is Endoscopic Resection (ER) of visible nodular lesions and Radiofrequency Ablation (RFA) of Barrett’s, which has a success rate of 92%2. For refractory cases, wide field ER, cryotherapy and other methods are used, but may have higher adverse events. We hypothesize that thicker Barrett’s tissue is less likely to respond to RFA and have developed methods to precisely measure the thickness with Volumetric Laser Endomicroscopy (VLE). These methods may facilitate future studies, correlating tissue thickness with response to therapy and prediction of optimal treatment.

Aims & Methods: We performed a nested cohort study from the U.S. VLE Registry (which comprises 1000 patients) of patients with BE, who had a baseline VLE scan, followed by RFA ablation and had at least one follow up exam. We excluded patients who had any ablative therapy prior to baseline VLE. The primary outcome was the percentage reduction of Prague length after the first treatment. Secondary outcomes were: 1. complete remission of intestinal metaplasia (CRIM) during 12 months after baseline procedure, 2. complete remission of dysplasia (CRD) during 12 months after baseline procedure, and 3. number of RFA treatments necessary for complete response of intestinal metaplasia. We estimated the thickness of BE mucosal layers, by measuring the distance between the esophageal surface to the deepest edge of the lamina propria. In order to do so, we developed an algorithm (ImageJ software; image.nih.gov/ji/) that automatically adjusts every clockwise image into a high-resolution vertical scan with enhanced contrast. We used two measurement protocols: subjective, by drawing a line from the surface to the edge of the lamina propria (LP) and by plotting a grayscale density plot at the same location, using the sharp drop off in density to indicate the boundary between the lamina propria and the esophageal surface. Results: We included 92 patients with BE (at least COM1), who had a baseline VLE scan, followed by RFA, and had no prior ablative therapy. These patients were divided in three patient groups: without prior EMR and treated with only RFA (n = 53, mean Prague length(M) = 5.399, SEM = 0.220), without prior EMR treated with combined EMR and RFA at baseline(n = 3, mean Prague length(M) = 6.67, SEM = 1.67), with prior EMR and RFA at baseline (n = 19, mean Prague length (M) = 3.816, SEM = 0.616). After determination of gastroesophageal junction (GEJ) location on VLE, we measured mucosal thickness in 8 segments at 0.5 cm intervals from GEJ to the top of the Barrett’s tissue. The mean amount of selected crossing sections as seen in the first 40 patients was 6.33 (SEM = 0.50; n = 40). The measurements of thickness, using the subjective and objective protocol in one patient is shown in Table 1.

Conclusion: We developed an algorithm, that automatically adjusts raw VLE images in order to recognize superficial layers of the esophageal wall and measure the thickness of these different layers in Barrett’s tissue. We performed both subjective and objective methods for thickness calculation. This is the first step to the production of a biomarker for the prediction of treatment response in patients with Barrett’s Esophagus. Further research is needed to demonstrate which of these two measurement protocols can predict the response to RFA and ER.

Disclosure of Interest: G. Tearney; Tearney G is the co-inventor of the VLE scan; he contributed VLE expertise to be able to do the measurements. The measurements itself were done by Iris Levink.

S. Schlachter: Schlachter, S is an employee at Ninepoint Medical and manages the data of the Ninepoint registry. Schlachter, S had no influence on the outcomes of the measurements. The measurements were done by Levink, I. All other authors have declared no conflicts of interest.

References

Table 1: The measurements of Barrett’s thickness in one patient, using the two different measurement protocols.

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<th>Pt.</th>
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<th>BMI</th>
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<th>Prior Treatment</th>
<th>Prague Length, circumferential and maximum extend in cm</th>
<th>Thickness subjective measured, pixels [SEM, number of measurements]</th>
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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 neoplastic tissue (CE-neo) in 93–100% and 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 who were previously enrolled in 5 consecutive cohort studies in a tertiary referral center in the Netherlands. All patients who had reached endoscopic and histologically confirmed CE-neo and CE-IM after RFA were included for evaluation of long-term follow-up (FU). Primary outcome: recurrence of HGD EC; recurrence of endoscopically visible Barrett’s mucosa. Secondary outcomes: Buried Barrett’s glands; IM in biopsies obtained distal to a normal appearing neop squamocolumnar 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 CSM6). In 53/68 patients ER was performed (worst pathology: low-grade dysplasia (LGD) (n=28), high-grade dysplasia (HGD) (n=27), or early cancer (EC) (n=2)). Worst pathology pre-RFA (after ER) was: non-dysplastic IM (n=9), LGD (n=27), HGD (n=32). Median FU was 85 months (IQR 50–96) 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 (n=1), 34 months (IQR 58–96) with a median of 7 FU endoscopies per patient. Recurrence of HGD/EC was rare (3%). Recurrence of endoscopically visible Barrett’s mucosa was seen in 12 patients (17%), however it was not reproduced in 84%. In 2 patients LGD without IM was found in the neo-SCJ. Eleven patients required retreatment: APC for small areas of visible Barrett’s mucosa (n=5), six patients had additional ER (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 endoscopy were found in 32% of patients, however it was confined to small islands or tongues <1 cm in the vast majority of patients.

Conclusion: With 7-years of follow-up, this study presents the longest published follow-up data on RFA for BE with HGD/EC to date. Our long-term outcomes show that after successful RFA recurrence of HGD/EC is rare (3%). Recurrence of endoscopically visible BE was found in 32% of patients, however it was confined to small islands or tongues <1 cm in the vast majority of patients.


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 dearth of evidence to suggest that a diagnosis of BE has a negative impact on the quality of life of patients. To our knowledge, no guidance exists on the counselling of patients about their diagnosis of BE and associated anxiety levels at a district general hospital.

Aims & Methods: An in-house database was used to identify patients with BE over a 10-year period (2006–17). A simple, 10-point based questionnaire was devised and answers obtained via a telephone consultation (Table 1).

Results: Of 618 patients BE were identified (417 male, 201 female) were recruited (13 deceased, 38 did not answer, 8 declined). 2 patients had previously undergone therapy for BE (1 RFA, 1 fundoplication). Results are displayed in Table 1. Less than a third of patients remembered meeting a clinician to discuss their diagnosis and the rationale for follow-up. Consequently, only 41% of patients understood their diagnosis and 44% the rationale for surveillance. Although almost all patients (92%) were on a regular proton pump inhibitor, less than half (48%) understood why. Only 11% of patients were aware of the overall cancer progression risk and even fewer (7%) of the treatment options that are currently available. Interestingly, half of all patients admitted feeling anxious about their diagnosis with the majority (82%) admitting that further counselling would benefit in this regard.

Table 1: A 10-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>78(53)</td>
</tr>
<tr>
<td>3. Briefly speaking, do you understand what BE is?</td>
<td>43(45)</td>
<td>51(69)</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(49)</td>
<td>54(51)</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></td>
<td></td>
</tr>
<tr>
<td>8. Do you understand what the rationale for endoscopic surveillance in BE is?</td>
<td>46(54)</td>
<td>58(46)</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>4(57)</td>
<td>3(43)</td>
</tr>
<tr>
<td>11. If yes, do you know when this indicated?</td>
<td>36(35)</td>
<td>68(65)</td>
</tr>
<tr>
<td>12. Does or has anyone in your family suffered with BE or OAC?</td>
<td>53(51)</td>
<td>51(49)</td>
</tr>
<tr>
<td>13. Do you feel or have you ever felt anxious about your diagnosis of BE?</td>
<td>82(79)</td>
<td>22(21)</td>
</tr>
</tbody>
</table>

Conclusion: We have demonstrated that patients with BE have a relatively poor understanding of their diagnosis and the treatment options that are available to them. Further efforts need to be made to address this and help empower a group of patients who are understandably anxious about their diagnosis.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1865 BARRETT’S ESOPHAGUS IS ASSOCIATED WITH TOTAL SERUM ADIPONECTIN IN WOMEN, BUT NOT WITH OTHER INFLAMMATORY OR METABOLIC BIOMARKERS

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Introduction: Data on the association between inflammatory and metabolic biomarkers and Barrett’s oesophagus (BE) are scant and conflicting.

Aims & Methods: We aimed to study the association between circulating inflammatory biomarkers (interleukin-6 [IL-6], high-resolution C-reactive protein [hrCRP], intra-cellular adhesion molecule [ICAM], tumor necrosis factor recep-
tor-2 [TNF-R2]) and metabolic biomarkers (leptin, adiponectin, C-peptide, insulin-like growth factor 1 [IGF-I], and insulin-like grow factor binding proteins -1, -2 and -3 [IGFBP-1, -2 and -3]) with BE. This was a case-control study, nested within two female-only prospective cohort studies (Nurses’ Health Study 1 and 2) and one male-only prospective cohort (Health Professional Follow-up Study). Participants of provided biennial detailed information on demographic, lifestyle, dietary and medical factors, including endoscopy use. Overall, 80,437 participants enrolled in these cohorts provided a prediagnostic blood specimen between 1989 and 1995. Among these participants, through 2012, we identified 283 cases of BE (163 females and 120 males). Two study physicians, blinded to biomarkers results, reviewed the medical records of patients reporting BE. We matched BE participants to participants without BE that underwent upper endoscopy during the same time period and did not have BE (361 females and 265 males) on year of birth, year of blood collection, month of blood collection, fasting status and “am or pm” blood draw. We used multivariable conditional logistic regression models, adjusted for known and putative risk factors for BE, to assess the association between each biomarker and the risk of BE. We used the lowest quintile as reference, and assessed linear trend across exposure categories using the median of each quintile as a continuous variable.

Results: In women, plasma adiponectin was significantly associated with BE (p-trend = 0.01). When compared to the lowest quintile (Q1), the 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
Endoscopic mucosal resection (EMR) is an established diagnostic and treatment tool in the management of Barrett’s oesophagus (BO) with early adenocarcinoma and related diseases. In this process, we diagnosed 10 superficial esophageal cancers. But there are few reports of endoscopic resection for superficial esophageal cancer. This is a case series study at our hospital. Between August 2010 and March 2017, forty-four patients were included in the study. EGD with narrow band imaging and endoscopocystoscopy were performed in these patients. During the procedure, the esophageal mucosa was stained with 0.5% methylene blue and then with crystal violet. The endoscopocystoscopy findings were graded from 1 to 5 according to the Inoue et al’s classification. The esophageal mucosa was also evaluated with narrow band imaging (NBI) and the findings were classified according to the Intrapapillary capillary loop (IPLC) pattern classification. These findings were compared against the gold standard of histopathological classification which was based on the Vienna classification.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**Reference**


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**P1866 OUTCOMES OF TREATMENT OF PATIENTS WITH EARLY-STAGE ADENOCARCINOMA OF THE ESOPHAGUS WITH INCIPIENT SUBMUCOSAL INVASION, RETROSPECTIVE ANALYSIS OF 19 CASES FROM A TERTIARY REFERRAL CENTER IN THE UK**

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**Introduction:** Endoscopic mucosal resection (EMR) is an established diagnostic and treatment tool in the management of Barrett’s oesophagus (BO) with early adenocarcinoma and related diseases. This study aimed to improve the understanding on the outcomes of the EMR in patients, in whom the EMR’s histologic assessment identifies early-stage adenocarcinoma of the oesophagus with incipient submucosal invasion (pT1b sm1).

**Aims & Methods:** We have conducted a retrospective analysis using our electronic database for endoscopic procedures for patients with BO, who underwent EMR from October 2010 to December 2016. We investigated the size of the EMRs, the complication rates of the EMRs, the histological features and the resection margins of the EMR specimens and also the outcomes with the mortality.

**Results:** A total of 99 patients underwent 134 EMR procedures, and the histology identified early adenocarcinoma with incipient invasion of the submucosa in 25 patients. 23 (92%) were male, the mean age at the EMR was 71 years (SD: 8.1). In all 25 EMR’s 7 (28%) patients had a single piece, 7 (28%) patients 3 piece and 4 (16%) patients 4 piece EMR. The median length of the circumferential and maximum extent of the BO segments were 2 and 5 cm respectively (interquartile range (IQR) 2-4). We observed 6 (24%) intra-procedural bleedings and 2 (8%) patient needed admissions with post procedural bleeding and 1 (4%) of them required transfusion. Stricture was endoscopically detectable but not causing any symptoms in 1 (4%) patient and another patient (4%) had slight dysphagia post EMR, but did not need dilation. Histology showed lymphovascular invasion in 6 (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 in 9 (36%) 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 10 (40%) patients with cancer infiltration 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 patient 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 have 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 incipient invasion of the submucosa. Clinical decision making remains very challenging and has to be individualised for all patient, until further in depth studies gives us more useful prognostic factors.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**Reference**

67 months. Ectopic lesions were detected in 2 cases, and these patients underwent endoscopic treatment and survived. The patient treated with TAE for a nodule 1.5 cm. Conclusion: Endoscopic resection for achalasia-associated superficial esophageal cancer invasive to the MM on histopathology is safe and effective, and relatively long-term outcome is good.

Disclosure of Interest: All authors have declared no conflicts of interest.

PI869 USEFULNESS OF TRIAMCINOLONE INJECTION TO PREVENT STRicture AFTER SEMICIRCUMFERENTIAL ESOPHAGEAL ENDOSCOPIC SUBMUCOSAL DISSECTION: A PRACTICAL STUDY

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Introduction: ESD is a standard treatment for superficial esophageal cancer in Japan. Stricture is one of important complication of esophageal ESD, and it makes quality of life of the patient worse. Usefulness of Triamcinolone (TA) injection to prevent stricture after semi-circumferential ESD has been reported. However, usefulness of TA injection after circumferential esophageal ESD is still unclear.

Aims & Methods: The aim of this study is to clarify the usefulness of triamcinolone injection to prevent stricture after circumferential ESD. A total of forty-four patients treated by circumferential esophageal ESD from 2004 to 2016 in Saku Central Hospital Advanced Care Center were enrolled to this retrospective study. The patients treated from 2004 to 2009 were followed up without TA injection (Non-TA group). 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 75 (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 esophageal 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). 2. Duration from ESD to ulcer healing were 10 (3–24) and 3 (1–24) months, respectively. (p = 0.47). 3. Complications (perforation 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 2.4 (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.
Introduction: While definitive chemoradiotherapy (CRT) showed high efficacy for esophageal squamous cell carcinoma (ESCC), approximately 40% of patients develop local failure, resulting in poor long-term survival. However, there is no definitive biomarker which is useful to predict survival outcome after CRT for ESCC. Several studies have investigated the correlation of expression of CD24, cytokeratin 4 (CK4), podoplanin (PDPN) with prognosis of patients with various malignant tumours who underwent surgical resection. However, it remains unclear whether the expression of these proteins can predict the outcome of CRT for patients with ESCC. The aim of this study was to analyze the predictive values of expression of CD24, CK4, and PDPN for ESCC patients who received CRT. Among patients with ESCC who received CRT or curative esophagectomy with extended lymph node dissection (OPE) as an initial treatment between 2005 and 2018, 75 patients were selected for analysis on the following criteria: clinical stage II, III (UICC-TNM classification 6th edition), age of 75 years old or younger, ECOG Performance Status 0–1, and no prior or concurrent other cancers. The method of immunohistochemistry (IHC) was utilized to examine the protein expression of CD24, CK4, and PDPN in pretreatment biopsy specimens of ESCC. The cut-off values for CD24, CK4, and PDPN expression were used hazard ratio for overall survival (OS). The prognostic factor of CD24, CK4, and PDPN expression were statistically analyzed. OS was calculated from the date of CRT or OPE to the date of death or last follow-up, using the Kaplan-Meier method. The survival predictors identified by univariate analysis was assessed by multivariate analysis using a Cox’s proportional hazards model.

Results: 148 ESCC patients (CRT group, n = 83; OPE group, n = 65) were analyzed. In the CRT group, 40 patients had stage II and 43 patients had stage III, and the 5-year OS was 52%. In the OPE group, 32 patients had stage II and 33 patients had stage III, and the 5-year OS was 66%. By univariate analysis, there were significant variables for OS in differences between the CRT and OPE group. The cut-off value for CD24, CK4, and PDPN expression were 20%, 10%, and 20%, respectively. While the expression equal to the cut off value or more was defined as strong, the expression less than the cut off value was defined as weak. The frequency of strong protein expression was 50% for CD24, 12% for CK4, 65% for PDPN, respectively. In the CRT group, the OS of patients with strong CD24 expression was significantly better than that of patients with weak CD24 expression (P = 0.015; strong/weak 5-year OS: 65%/43%). On the other hand, for CK4, the strong CD24 expression was poorer OS comparing with patients with weak expression in the OPE group, however there was no significant difference (P = 0.286; strong/weak 5-year OS: 77%/74%). As for patients with strong CD24 expression, there was no significant difference between CRT group (P = 0.448), however there was significant difference between CRT and OPE group in patients with weak CD24 expression (P = 0.009). There were also no significant differences of the OS based on expression of CK4 or PDPN between the CRT and OPE group, respectively. Moreover, the strong CD24 expression in CRT group (P = 0.012; HR = 2.787; 95%CI: 1.253–6.200) as an independent variable for favorable outcome.

Conclusion: CD24 expression was significantly associated with the survival outcome in ESCC patients with CRC when they were treated with CRT. Strong weak CD24 expression might be a useful predictive biomarker of poor outcome for CRT in ESCC patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P8174 DIAGNOSTIC ACCURACY OF ENDOSCOPIC ULTRASONOGRAPHY FOR ESOPHAGEAL SUBMUCOSAL GLAND DUCT INVOLVEMENT ACCOMPANIED BY EARLY ESOPHAGEAL CANCER

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Introduction: Normally, restituted within the submucosal layer of esophagus, each submucosal gland duct will culminate in a single duct. The esophageal submucosal gland ducts (ESMGDs) can traverse the subepithelial connective tissue and muscula mucosa, and deliver the acinar secretions to the esophageal lumen. However, the clinicopathological features of the esophageal submucosal gland duct involvement (ESMDI) 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. Since the 1990s, the esophageal lesions presumed to originate from ESMGDs had been described consistently in various case reports. Currently, in addition to the gold standard of histology, almost no useful modality could be up-to-date to this lesion. In our study, we considered that the ESMGD had a correlation with early esophageal cancer, and we noted that the ESMGD may have special features under the endoscopic ultrasonography (EUS). The typical ultrasonic images of EUS could help diagnosis ESMGD.

Aims & Methods: In order to investigate the clinical value of EUS for diagnosing ESMGD accompanied by early esophageal cancer, which were suggested by conventional endoscopy or not, this study retrospectively reviewed 48 consecutive patients with early esophageal cancer diagnosed in the Endoscopy Center at the Affiliated Drum Tower Hospital, Nanjing, China from September 2009 to November 2016. The clinical data of 519 patients were included in this study, and of them all had already underwent EUS combined with Endoscopic Submucosal Dissection(ESED). The EUS preoperative diagnosis were compared with the results of postoperative pathology from ESD.

Results: According to the pathological results, all patients (371 males and 148 females, with a mean age of 67.5 ± 4.5 years) had been diagnosed with early esophageal cancer with different invasive depth. Out of 519 patients, about 478 patients were not found ESMGD by both examinations. Besides, postoperative pathology confirmed that 40 patients were identified with ESMGD, 34 patients of which were completely consistent with the preoperative diagnosis of EUS. Approximately 98.7% (512/519) of ESMGD were diagnosed exactly by EUS. Another six cases were estimated as false negative inaccurately, including two squamous cell carcinoma and four high-grade intraepithelial neoplasia. One case was regarded as ESMGD by EUS while confirmed not by pathology. Therefore, the EUS values for sensitivity and specificity for the diagnosis of ESMGD were 85.0% (34/40) and 99.8% (478/478) respectively. Furthermore, the positive predictive value was 97.1% (34/35), and the negative predictive value was 98.8% (474/475).

Conclusion: The esophageal submucosal gland duct involvement is a kind of lesion performed as a hypoechoic sonographic pattern located in the thickened mucosa. EUS has a satisfactory diagnostic accuracy for ESMGD as well as high sensitivity and specificity.

Disclosure of Interest: All authors have declared no conflicts of interest.
P1876 CAN THE USE OF A COMPUTER DECISION SUPPORT SYSTEM IMPROVE PRESCRIPTION PATTERN IN A PRIMARY CARE SETTING? A Randomised Cluster Trial in General Practice

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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 case-control study of 60 patients showed the prognostic relevance of NLR as a predictor of response in esophageal cancer patients treated with chemoradiotherapy. The aim of this study is to assess the NLR prognostic strength in a retrospective series of two high-volume centers.

Aims & Methods: A retrospective review of two prospective esophageal cancer database was conducted. Neutrophil to lymphocyte ratio was defined as the pre-chemoradiotherapy 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 pathological complete response (pCR) showed a OR of 0.93 (95% CI 0.531–1.746, p = 0.901) and 1.161 (95% CI 0.647–2.081, p = 0.671) considering as cut-off values 2.5 and 3 respectively. In our large series, NLR did not result as a predictive marker either 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 post-treatment marker. The heterogeneity of treatments, the complexity of the disease, the absence of a validated and pre-defined NLR cut-off value in the available literature are the main limits to our analysis. Further studies are needed to assess the clinical relevance of NLR as a predictive marker of response to neoadjuvant treatment.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1877 ACCELERATION OF HEALING OF PREEXISTING GASTRIC ULCERS BY CARBON MONOXIDE RELEASING MOLECULE -2 (CORM-2), INVOLVEMENT OF HEME OXYGENASE, OXIDATIVE STRESS AND PROFLAVIN

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Introduction: Carbon monoxide (CO) is produced endogenously in the body as a by-product of heme degradation via activity of the enzyme heme oxygenase (HO-1). This gaseous mediator with multidirectional biological activity exerts anti-inflammatory, anti-fibrotic and immunomodulatory properties. Carbon monoxide recently gained consideration as a newly discovered class of compounds, named CO-releasing molecules (CORMs), is capable of releasing CO gaseous molecule that can be useful as a novel experimental tool to assess the physiological role of CO under experimental conditions. CORM-2 was implicated in gastroprotection against formation of acute gastric lesions but the contribution of CO to the mechanism of gastric ulcer healing has not been fully elucidated.

Aims & Methods: We determined the effect of daily treatment with vehicle or CORM-2, on healing of preexisting gastric ulcers induced by serosal application of acetic acid (ulcer area = 28 mm²) in rats. Our second goal was to examine the mechanism of CO released from its donor by the determination of the CORM-2-induced alterations in gastric blood flow (GBF) at ulcer margin, the parameters of oxidative stress and the gastric mucosal expression of pro-inflammatory and anti-inflammatory factors. Groups of seven 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 inhibitor, hemin (5 mg/kg i.p.), D) the HO-1 activity inhibitor, zinc protoporphyrin 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 TNF-α and IL-1β levels were measured by ELISA and NF-κB, HO-1, TNF-α, HO-2, COX-1, COX-2, iNOS cDNA were analyzed by RT-PCR and Western blot.

Results: Treatment with CORM-2 significantly reduced the area of gastric ulcers and significantly raised GBF at ulcer margin. The dose accelerating ulcer healing by 50% (ID50) and significantly raising GBF was 5 mg/kg as compared with vehicle and ZnPPIX. None of the groups showed any significant difference in area of gastric ulcers and raised GBF at ulcer margin but the treatment with ZnPPIX significantly increased the area of gastric ulcers and significantly decreased the GBF at ulcer margin. There was no difference in gastric ulcer healing by CO alone compared to CO donors.

Conclusion: CORM-2 based on its anti-inflammatory properties has a potential to be developed as a new therapeutic approach for acute gastrointestinal hemorrhage.

Disclosure of Interest: All authors have declared no conflicts of interest.

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P1878 PROTON PUMP INHIBITORS INAPPROPRIATE USE IN PATIENTS ADMITTED IN A TERTIARY GREEK HOSPITAL CREATES SIGNIFICANT DIRECT COSTS BURDEN AND EXPOSURE OF PATIENTS TO THE RISK OF UPPER GASTROINTESTINAL COMPLICATIONS


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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 inpatients 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 the direct hospital costs of PPIs overuse and the number of patients at risk of UGI complications due to PPIs underuse for 1 year period, using a simulation model.

Results: We included data from 470 patients aged 67 ± 19 yrs; 32.5% were previously admitted, 65.9% during hospitalization and 72.8% at discharge. PPIs overutilization was detected in 15.7%, 41.3% and 12.6% of the patients before, during and after the admission, while medications underutilization was detected in 10.2%, 8.1% and 9.5% of them, respectively. Admission at internal medicine and orthopedics clinics was associated with the highest unadjusted ORs (1.68 [95%CI 1.63–1.72] and 1.68 [1.59–1.78]) for PPIs misuse. 80% of the 193 over treated patients received PPIs (80% of them od, 20% bid) while the rest were treated with PPIs per os (80% of them od, 10% bid) during hospitalization. This accounts for 1460 PPI iv and 344 PPI per os doses inappropriately given during the observation period. Taking into account in our simulation model that there are 90 on-call days of our hospital in a year, we concluded that in case of PPI iv and per os preparations and assuming a similar to that of our sample case distribution for the next 12 months, we calculated the direct hospital costs burden of inappropriate PPIs use at 154940 euros per year. Using the same model, 1200 patients would be at risk of UGI complications annually, due to under prescription of PPIs at discharge.

Conclusion: Hospitalization does not represent an opportunity for optimization of PPIs utilization. On the contrary, the frequency of PPIs inappropriate use during hospitalization is higher than that during admission, causing significant direct costs for the hospital and exposing patients to the risks of UGI complications.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1880 ENDOSCOPIC RESECTION OF ADVANCED AMPULLARY ADENOMAS: A SINGLE-CENTER 14-YEAR RETROSPECTIVE COHORT STUDY

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Introduction: Adenomas of the ampulla of Vater are rare. Endoscopic ampullctomy 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 ampullctomy are limited. Fifty-five percent of the patients were men and the median age was 65.4 years (range 32–89). The median lesion size was 24.6mm (range 5–80) for patients with ACA, 34.8mm (range 23–50) for LSA and 16.3mm (range 10–20) 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 AIE (P = 0.136). Endoscopic resection was curative in 87.5% of patients with a localized adenoma, 82.3% in patients with a lateral spreading adenoma and in only 9.1% of patients with an intraductal extended tumor (P < 0.000). Recurrence occurred in 9 patients (10.7%), 5 of them had a localized adenoma, 3 patients with a lateral spreading adenoma and 1 patient with an intraductal extended adenoma (P = 0.875).

Conclusion: Endoscopic ampullctomy is a safe and successful treatment in patients with an adenoma with or without a lateral spreading growth pattern. For an intraductal extended adenoma endoscopic success rates are significantly lower.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
P1881 FACTORS ASSOCIATED WITH TECHNICAL DIFFICULTY OF ENDOSCOPIC SUBMUCOSAL DISSECTION FOR EARLY GASTRIC CANCER WHICH MET EXPANDED INDICATION CRITERIA; POST HOC ANALYSIS USING DATA OF MULTIMONSTITUTIONAL PROSPECTIVE CONFIRMATORY TRIAL (JCOCG0067)

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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 JCOCG0067. The major inclusion criteria of this study were as follows: 1) histologically proven intestinal-type 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 ≥70. ESD were performed by certified endoscopists or under the supervision of certified endoscopists. 130 cases were defined as difficult ESD cases. The aim of this study was to evaluate the factors associated with technical difficulty of ESD.

Results: From 1st of January 2007 to 30th of June 2010, a total of 470 patients (pts) (male/female: 385/85, median age 65-yo (range: 40–75)) were enrolled from 29 institutions. Tumor location was upper (U) of stomach in 71, middle in 255, and lower in 144 pts, respectively. The median tumor size was 2.5 cm (range: 0.5–13), and 207 lesions were judged as UL positive whereas the other 263 were assessed as UL negative. And, 152 of 263 UL negative lesions were 3 cm or less in size, and the other 111 of them were larger than 3 cm. Median procedure time was 79 min (range: 14–462), and it took 120 min or longer in 127 pts. 12 pts developed perforation during the procedure. Male: 385/85, median age 65y-o (range: 40–75)) were enrolled from 29 institutions.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
Hasuike N, et a. A non-randomized confirmatory trial of an expanded indication for endoscopic submucosal resection (ESD) which was investigated through the prospective trial.

P1883 A COMPARISON OF SUBMUCOSAL TUNNELING ENDOSCOPIC RESECTION AND ENDOSCOPIC FULL-THICKNESS RESECTION FOR GASTRIC FUNDUS SUBMUCOSAL TUMORS

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Introduction: During the study period 1487 EUS procedures were performed in our clinic. Thirty patients with gastric submucosal lesions were enrolled to participate in this study. The ratio of male to female was 66% to 34%, 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% [4/9], P = 0.04). Among these 25 patients, 2 leakages were defined. The difference of the different passes, the diagnostic yield was: 61%, 67% and 78% with the first, second, and third FNB pass, respectively. In evaluation of tissue quantity and quality of FNB samples, the median tissue length was 7.3 ± 5.2 mm, with a median endoscopic tissue proportion between 10% and 25% 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 slide). No complications occurred during the study period.

Conclusions: FNB using a novel core needle system is safe and 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. Berzin: Consultant for Medtronic
D. Pleskow: Consultant for Medtronic
All other authors have declared no conflicts of interest.

Comparison of clinical characteristics and therapeutic outcomes between STER and EFTR

STER (n = 15) EFTR (n = 28) P
Sex, M/F 5/10 13/15 0.407
Age, year 48.4 ± 11.2 53.4 ± 9.7 0.136
Concomitant disease, % 20% (3/15) 21.4% (6/28) 1.000
Tumor size, mm 19.0 ± 8.3 15.3 ± 7.0 0.126
Operation time, min 76.7 ± 38.0 63.3 ± 24.4 0.200
Suture time, sec 296.7 ± 97.0 383.4 ± 104.0 0.011

(continued)
Comparison of clinical characteristics and therapeutic outcomes between STER and EFTF
STER (n = 15) EFTF (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/Liomyoma/Schwannoma 11/4/0 25/2/1 0.173
Length of stay, d 6.1 ± 1.5 6.2 ± 2.0 0.856
Cross USD 3209.6 ± 618.3 3237.5 ± 615.8 0.906
Follow-up time, mon 12.1 ± 12.2 22.8 ± 18.4 0.052

Conclusion: The treatment efficacy between submucosal tunneling endoscopic resection and endoscopic full-thickness resection for treating gastric fundus submucosal tumors was comparable, but submucosal tunneling endoscopic resection offers advantages over endoscopic full-thickness resection in terms of shorter 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

P1885 SHORT-TERM OUTCOME OF ENDOSCOPIC SUBMUCOSAL DISSECTION FOR EARLY GASTRIC CANCER IN ELDERLY PATIENTS AND LONG-TERM OUTCOME AFTER NON-CURATIVE RESECTION
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Introduction: Endoscopic submucosal dissection (ESD) is widely used as a standard treatment for superficial tumors in the GI tract and its safety has been established. Opportunities for elderly patients to undergo ESD for gastric cancer is increasing due to the continued improvement in life expectancy. However, short-term and long-term outcome of ESD for elderly patients is still unclear due to the higher prevalence of comorbidities and possible increased risk of complications related to ESD in this population.
Methods: Therefore, we investigated the safety, efficacy and short-term outcome of gastric ESD for patients over 80 years old. Additionally, we evaluated the long-term outcome of non-curative resections according to both age groups. 1056 lesions in 886 patients treated with ESD between January 2011 and December 2015 in our hospital were retrospectively reviewed. They were classified into two groups; elderly group > 80 years old (n = 246 lesions in 201 patients) and non-elderly group - 79 years old and younger (810 lesions in 685 patients). The patient demographics, lesion characteristics, short-term ESD outcome, complications (perforation, postoperative bleeding, postoperative delirium, etc.), which were classified into two groups. Concerning the long-term outcome of non-curative ESD, cases performed between 2011 and 2013 were assessed.
Results: The median age was 83 years old (range: 80–92) in the elderly group and 63 years old (range: 36–78) in the non-elderly group. The rate of female patients was significantly higher in the elderly group (30.9% vs. 17.0%: p < 0.0001). Comorbidities were significantly higher in the elderly group including heart disease (24.8% vs. 10.5%: p < 0.0001), lung disease (13.6% vs. 7.4%: p = 0.002) and dementia (3.3% vs. 1.0%: p = 0.04). Tumor location was not significantly different between the two groups. Median specimen and tumor size were the same in both groups with no significant difference: 43 mm and 15 mm, respectively. The en bloc resection rates (96.3% and 97.8%) and the curative resection rates (82.5% and 84.6%) were not significantly different. The perforation rates were not statistically different (2.44% and 3.21%). However, the postoperative bleeding rate (5.28% vs. 2.72%: p = 0.05), postoperative delirium (2.0% vs. 0.25%: p = 0.009) and pneumonia (2.0% vs. 0.25%: p = 0.009) were significantly higher in the elderly group. In multivariate analysis, age over 80 was not an independent risk factor for postoperative bleeding, however it was the independent risk factor for postoperative delirium and postoperative pneumonia. Nineteen elderly patients and 54 non-elderly patients with non-curative resections were followed-up for 3 years after ESD for the long-term outcome analysis. The percentage of patients who underwent additional surgery after ESD was 26.3% (5/19) and 51.85% (28/54) respectively (p = 0.05). Neither disease specific death nor progression to gastric cancer was observed in each age group. Overall ESD recurrence rate was 14.4% and 87.2% respectively (p < 0.001).
Conclusion: ESD is a safe and effective treatment for early gastric neoplasia even in patients over 80 years old. However, because postoperative delirium and postoperative pneumonia were observed more often in the elderly patients, more careful attention to these conditions during postoperative care may be necessary. Elderly patients over 80 years, with non-curative resections, underwent less frequent additional surgery without any impact on the disease specific death and global mortality.
Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1886 GASTRIC INTESTINAL METAPLASIA OUTCOMES: RESULTS FROM A 17 YEAR TERTIARY CENTRE UPPER GI SURVEILLANCE PROGRAMME IN IRELAND
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Introduction: Adenocarcinoma of the stomach is the second leading cause of cancer related death in the world. Gastric intestinal metaplasia (GIM) is an important intermediate stage in the gastric cancer cascade through a series of well-defined precursor lesions including nonatrophic gastritis, multifocal atrophic gastritis, intestinal metaplasia, and dysplasia. The prevalence of GIM is unclear in many parts of the world and few studies have evaluated the rate of progression to gastric cancer in patients with GIM. There is a lack of clarity in

Continued
published guidelines regarding appropriate surveillance of patients with GIM and how 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, endoscopic 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 1 to 17.3 years. 27 patients had had previous 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.

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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 (GDC) as a risk factor of gastric cancer is correlated with genetic polymorphisms of TGFBI (transforming growth factor-β1) which 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), endoscopy (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-509 was measured by the polymerase chain reaction restriction fragment length polymorphism. Relationship between TGFBI polymorphism and stage or GC issue type 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-509 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-509 could be underlying mechanism in case of male. Survival analysis is undergoing.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1888 GASTRIC ADENOCARCINOMA AND PROXIMAL POLYPYSIS OF THE STOMACH: A GENETIC STUDY OF A NEWLY DIAGNOSED FAMILY
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Introduction: Gastric adenocarcinoma and proximal polyposis of the stomach (GAPPS) has 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 causals (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 underwent genetic testing and bi-directional Sanger sequencing of promoter 1B of the TGFB1-509 could be underlying mechanism in case of male. Survival analysis is undergoing. This study aimed to analyze surveillance practice and character-ize 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, endoscopic 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 1 to 17.3 years. 27 patients had had previous 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


P1889 ENDOSCOPIC TREATMENT FOR LATERN SPREADING SUPERFICIAL ESOPHAGEAL SQUAMOUS CELL CARCINOMA H. Kawkabu1, T. Omoni2, K. Suda3, R. Nakamura4, N. Wada5, N. Yahagi6, Y. Kitagawa3

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Introduction: ESD is the one of the options of treatment even for lateral spreading (LS) esophageal squamous cell carcino (ESCC). Endoscopic diagnosis is developed by magnified endoscopy, however accuracy of diagnosis for lateral spreading ESCC is not high. Some patients have to undergo additional treatment because tumor is invaded to submucosal layer or lymphvascular invasion is observed. On the other hand, wide resection by ESD could cause the delay of additive treatment because of the treatment for esophageal stricture after ESD. Thus, treatment strategy for lateral spreading ESCC has to include additional treatment after ESD. Aim of this study is to evaluate our treatment strategy for lateral spreading superficial ESCC.

Aims & Methods: From January 2010 to December 2014, 49 cases of lateral spreading superficial ESCC were resected by surgery or ESD. Diagnosis, treatment methods and outcomes are evaluated. Our indications for additional treatment after ESD are the cases of over pT2 (SM2) or lymphvascular invasion.

Results: In 49 cases of lateral spreading superficial ESCC, 32 cases were treated by ESD and 17 case were treated by surgery. All lesions of 32 cases are completely resected by ESD. Average size of tumor treated by ESD is 59.4 mm (50-83 mm). Accuracy of estimated depth of invasion by ESD for ESCC cases is 65.7%. Four of 32 cases of ESD underwent additional therapy (3 for surgery and 1 for CRT) because of pT2 (SM2) or lymphvascular invasion, and one case has lymph-node metastasis. Rate of stricture after ESD is 20.0% for sub-circumferential endoscopy and 77.3% for circumferential one instead of steroid injection. Average time and duration for control of esophageal stricture by Baloon Bougie is 13.5 times and 18 weeks. In 17 surgical cases, all cases are treated by thoracoscopic esophagectomy. Average size of tumor treated by surgery is 76.5 mm (50-130 mm). Accuracy of estimated depth of invasion by esophagectomy for surgical cases is 47.1%. Seven cases in 17 (41.2%) have lymph node metastasis. Rate of lymph node metastasis is 42.9% for pT1a-MM, 100% for pT1b-SM1 and 42.9% for pT1b-SM2. One case died by recurrence after surgery and 48 cases are survived without any recurrences.

Conclusion: Accuracy of estimated depth of invasion by endoscopy for lateral spreading superficial ESCC is cute low compared to normal superficial ESCC. Most of circumferential lesion could be prevented from being injection. However control of strictures after circumferential esophagectomy is difficult. Thus, diagnostic ESD should not be performed for circumferential lesions of lateral spreading superficial ESCC for the patients who will select CRT for additional treatment, and CRT should be selected for first treatment of these cases. Long survival could be obtained by ESD or surgery for the patients of lateral spreading ESCC by our treatment strategy.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1891 PEPsinogENS AND GASTRin-17 FOR IDENTIFICATION OF GASTRIC CANCER PRECURSOR LESIONS: THE RESULTS FROM THE GISTAR PILOT STUDY C. Robles1, D. Rudzite2, I. Polaka2, L. Tzivan2, I. Kikust3, A. Vanagas4, S. Isajews2, L. Liepiene-Karele6, S. Parshutin1, J. Young Park5, R. Murillo6, R. Herrero6, M. Leja1

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Introduction: Few major international guidelines consider pepsinogen tests as the best available non-invasive tests to detect precancerous lesions in particular, - corpus atrophy in the stomach mucosa. Gastrin-17 (G-17) has been suggested as an alternative marker for atrophic gastritis at European 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 compared with the results of postoperative pathology from ESD. Good sensitivity and specificity. Few major international guidelines consider pepsinogen tests as the best available non-invasive tests to detect precancerous lesions in particular, - corpus atrophy in the stomach mucosa. Gastrin-17 (G-17) has been suggested as an alternative marker for atrophic gastritis at European 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.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1890 DIAGNOSTIC ACCURACY OF ENDOSCOPIC ULTRASOngROGRAPHY FOR ESOPHAGEAL SUBMUCOSAL GLAND Duct INVOLVEMENT ACCOMPANYED BY EARLHY ESOPHAGEAL CARCINOMA Y. Jie, L. Ying

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Introduction: Normally, resided within the submucosal layer of esophagus, each esophageal submucosal gland will culminate in a single duct. The esophageal submucosal gland ducts (ESMGD) can traverse the subepithelial connective tissue from the muscularis mucosa, and deliver the secretions to the esophageal lumen. However, the clinicopathological features of the esophageal submucosal gland duct involvement (ESMGGD) and its precursor lesion have not been comprehensively evaluated so far, and the series focusing on endoscopic features of this lesion has not been reported widely. While since the 1990s, the esophageal lesions presumed to originate from ESMGDD had been described constantly in various case reports. Currently, in addition to the gold standard of histopathology, almost no more useful modality could be applied to this lesion. In our study, we considered that the ESMGDD had a correlation with esophageal cancer, and we noted that the ESMGGDD had special features under the endoscopic ultrasonography (EUS). The typical ultrasonic images of EUS could help diagnose ESMGDG.

Aims & Methods: In order to investigate the clinical value of EUS for diagnosing Gastroesophageal cancer, we performed a retrospective analysis of 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 2010. The clinical data of 519 patients were included in this study, and all of them had already underwent EUS combined with Endoscopic Submucosal Dissection (ESD). The EUS preoperative diagnosis were compared with the results of postoperative pathology from ESD.

Results: According to the pathological results, 48 cases (371 patients, 286 males and 148 females, with a mean age of 67.5±4.5years) had been diagnosed with early esophageal cancer with different invasive depth. Out of 519 patients, about 478 patients were not found ESMGD by both examinations. Besides, postoperative pathology confirmed that 40 patients were identified with ESMGDG, 34 patients of which were completely consistent with the preoperative diagnosis of EUS. Approximately 98.7% (512/519) of ESMGDG were diagnosed exactly by EUS. Another six cases were estimated as false negative inaccurately, including two squamous cell carcinoma and four high-grade intrapithelial neoplasia. One case was regarded as ESMGDD by EUS while confirmed not by pathology. Therefore, the EUS values for sensitivity and specificity for the diagnosis of ESMGDG was 85.0% (34/40) and 99.8% (478/478) respectively. Furthermore, the positive predictive value was 97.1% (34/35), and the negative predictive value was 98.8% (478/478).

Conclusion: The esophageal submucosal gland duct involvement is a kind of special esophageal sonographic pattern located in the thickened mucosa. EUS has a satisfactory diagnostic accuracy for ESMGDG as well as good sensitivity and specificity.

Disclosure of Interest: All authors have declared no conflicts of interest.
miR-211-5p in proliferation, apoptosis, migration of gastric cancer cell lines by RT-PCR. Furthermore, we investigate 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. We found that miR-211-5p was upregulated in gastric cancer tissues compared to adjacent non-cancerous tissues. Bioinformatics and quantitative analysis revealed that FoxC1 might be a target of miR-211-5p. Downregulation of FoxC1 inhibited proliferation and migration of gastric cancer cells and Overexpression of FoxC1 partly abrogated the inhibitory effects of miR-211-5p on gastric cancer cell proliferation and motility.

Aims & Methods: We aimed to investigate and characterize the biological roles of miR-211 in the development of gastric cancer. The expression level of miR-211-5p was measured in paired primary gastric cancer with corresponding adjacent gastric 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.

Results: The expression levels of miR-211-5p were significantly decreased in gastric cancer and low expression of miR-211-5p correlates with poor prognosis in gastric cancer patients. Ectopic expression of miR-211-5p suppressed proliferation, migration and induced apoptosis in gastric cancer cell lines in vitro. Bioinformatics and quantitative analysis revealed that FoxC1 might be a target of miR-211-5p. Downregulation of FoxC1 inhibited proliferation and migration of gastric cancer cells and Overexpression of FoxC1 partly abrogated the inhibitory effects of miR-211-5p on gastric cancer cell proliferation and motility.

Conclusion: We suggest that miR-211-5p acts as a tumor suppressor by targeting FoxC1 in gastric cancer and miR-211-5p might be a potential target for the treatment of gastric cancer.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
associated in our series, with a higher incidence of residual/recurrent adenoma, when compared to other reports. 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 39 months (range 1-147).

Disclosure of Interest: All authors have declared no conflicts of interest.

Introduction: NSAIDs have demonstrated chemopreventive activity against gastroduodenal/colorectal cancers but their role on GC remains unexplored. Recently, we have now been postulated as possible adjuvants to surgery or 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 inducing autophagy, which is responsible for the clearance of cytoplasmic organelles 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 oxaloplatin-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 Acidine 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 autophagy drug oxaplatin and indomethacin. Cell viability was measured by 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 produces an acute reduction in lysosome-derived fluorescence of acidic 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, there was an altered distribution of LAMP2-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 autophagy process at the level of the lysosomal acidic enzymes by increasing lysosomal pH. On the other hand, oxaloplatin 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 oxaloplatin. Finally, indomethacin blocked the autophagic degradation of p62 protein induced by oxaloplatin.

Conclusion: Indomethacin inhibits lysosomal function in gastric cancer cells. This could explain an inhibitory action on autophagy and the resultant increase in susceptibility to cytotoxic drugs.

Disclosure of Interest: All authors have declared no conflicts of interest.
**P1898** ACETYLCOLINE INDUCES CANCER STEM CELL-LIKE PHENOTYPE IN GASTRIC CANCER CELLS OF DIFFUSE TYPE.

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**Introduction:** The mechanisms of gastric carcinogenesis, especially of diffuse type of gastric cancer (GC) are poorly understood. The cancer stem cells (CSC) represent a particular fraction of cancer cells, considered at the origin of cancer and responsible for tumor development. The endogenous nervous system (ENS) is a newly recognized component of tumor microenvironment and its role in carcinogenesis has been recently suggested. In particular, the role of acetylcholine (ACh), a major neuromediator released by enteric nerves, has been suggested in gastric carcinogenesis but its effect on gastric CSC remains to be established.

**Aims & Methods:** Our aim was to study the effect of ACh on gastric cancer cells, and in particular its capacity to induce the stem cell phenotype, and to study the mechanisms involved. Adenocarcinoma gastric epithelial cells MKN-45 were first cultured in adherent conditions in the presence of ACh (0.1-10^(-8)M), before being cultured in non-adherent condition in order to favor expansion of CSC and formation of tumorspheres (T). The effect of ACh on T formation was studied over 7 days 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. This protocol was used to study SNP (NO donor) and L-Name (nitric oxide synthesis inhibitor). Finally, the effect of ACh on the expression of CSC markers (CD44, ALDH) and EMT markers (Snail, Zeb1) was monitored by immunofluorescence, RT-qPCR and flow cytometry. Statistical analysis was performed using two-tailed t-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 size of T, while hexamethonium (nitric oxide synthesis inhibitor) significantly inhibited stimulatory effect of ACh on T (p < 0.001 as compared to ACh-stimulated cells). Interestingly, L-Name, significantly inhibited the effects of ACh on the number of T. Conversely, SNP, 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.

**P1899** SYSTEMATIC REVIEW AND META-ANALYSIS OF THE PROGNOSTIC SIGNIFICANCE OF CPG ISLAND METHYLATOR PHENOTYPE IN GASTRIC CANCER.

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**Introduction:** The BreathID® urea breath test (UBT) system provides several advantages over other 13C breath analyzers for the detection of Helicobacter pylori (H. pylori), including: higher accuracy, operator independence and immediate results. However, there are occasional cases when mailing or transporting saved breath samples may be preferable to real time analysis, especially in centers requiring a large quantity of automated analyses where continuous sampling from a single patient can provide a bottle neck preventing multiple other users from accessing the device.

**Aims & Methods:** To evaluate the sensitivity and specificity of a new BreathID® lab system using breath sample bags, for the diagnosis of H. pylori in a multicenter international clinical study. A total of 257 subjects with evaluable results for UBT and biopsy [rapid urease testing (RUT) and histology] were enrolled into two study groups: 189 naïve subjects with unknown H. pylori status were included in the pre-therapy group, and 68 subjects who had completed eradication therapy comprised the post-therapy group. To assess the stability of the breath samples in the breath sample bags, each pair of breath sample bags was analyzed at a different time point up to 14 days after collection. Analytical studies were conducted to evaluate the reproducibility and repeatability of the 13C-UBT results using a cut-off of 5 Delta Over Baseline (DOB).

**Results:** Among the pre-therapy subjects evaluated with the composite results from the two biopsy based methods (RUT and histology/immunohistochsmics), 162 (86.3%) positive and 37 (19.6%) matched those of the UBT resulting in an overall agreement of 98.3% (95% CI: 95.2%; 99.7%) with a sensitivity of 100% (95% CI: 90.6%; 100.00%) and specificity of 97.9% (95% CI: 94.0%; 99.3%). The overall agreement between the UBT and the biopsy diagnosis in the post-eradication therapy cohort was 98.5% (95% CI: 92.1%; 100.00%). The sensitivity of the UBT in this cohort was 92.3% (95% CI: 66.7%; 98.6%) and its specificity was 100.0% (95% CI: 93.5%; 100.0%). The overall sensitivity evaluated in samples of 191 (45 positive, 146 negative) subjects from the pre-therapy cohort was excellent, with positive agreement in 97.8% (95% CI: 89.8%; 99.3%) and negative agreement in 100.0% (95% CI: 97.44, 100.0). Similarly there was uniformly high overall reproducibility of the test results over different batches, when analyzed on different days and under different storage conditions.

**Conclusion:** The validation studies of the BreathID® lab system described above show it is a highly accurate and dependable method for the diagnosis of H. pylori infection. Based on the current study, BreathID® lab System received on November 2016 U.S. Food and Drug Administration (FDA) marketing clearance for H. pylori bacterium detection.

**Disclosure of Interest:** H. SHIRIN: Haim Shirin received grants and stock options from Exalenz

All other authors have declared no conflicts of interest.

**References**

Aims and Methods: In this study, we investigated whether activation of gGlut-HMRG fluorescence detected 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 gGlut-HMRG fluorescence was suppressed in H. pylori culture solution which was co-incubated with an inhibitor of GGT (GGsTop). Furthermore, we applied gGlut-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)27.

Results: Activation of gGlut-HMRG fluorescence was detected in WT strain, but was not in ggt mutant strain. Activation of gGlut-HMRG fluorescence was inhibited by GGsTop. There was significant difference of the increase of fluorescence intensity between H. pylori positive and negative both in antrum corpus of stomach (antrum p = 0.0008, corpus p = 0.047).

Conclusion: GGT-activated fluorescent probe can be useful for H. pylori infection diagnosis.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1901 MACHINE-LEARNING-BASED AUTOMATIC DIAGNOSIS SYSTEM FOR HELICOBACTER PYLORI INFECTION USING LINKED COLOR IMAGING

Introduction: Linking color imaging (LCI), a recently developed endoscopic technic, 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 and 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 value of hue in low 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

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 (gGlut-HMRG), which iscoupled to fluorescein under acid pH and normal cellular environment, but turns to be highly fluorescent upon reaction with GGT28. Aim of this study is to consider if gGlut-HMRG can be useful for diagnosing infection H. pylori.

Aims and Methods: In this study, we investigated whether activation of gGlut-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 gGlut-HMRG fluorescence was suppressed in H. pylori culture solution which was co-incubated with an inhibitor of GGT (GGsTop). Furthermore, we applied gGlut-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)27.

Results: Activation of gGlut-HMRG fluorescence was detected in WT strain, but was not in ggt mutant strain. Activation of gGlut-HMRG fluorescence was inhibited by GGsTop. There was significant difference of the increase of fluorescence intensity between H. pylori positive and negative both in antrum corpus of stomach (antrum p = 0.0008, corpus p = 0.047).

Conclusion: GGT-activated fluorescent probe can be useful for H. pylori infection diagnosis.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1903 SEROLOGICAL CHANGES AFTER EQUIVOCAL HELICOBACTER PYLORI-SEROLOGY TEST FINDINGS DEPEND ON THE GASTRIC SECRETING ABILITY

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 assay and UGI endoscopy on the same day, 274 (3.8%) subjects showed an equivocal H. pylori serology test finding. Of the 98 followed-up subjects, 58 (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 considered 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 (WHALE SHARK SIGN: WSS)

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Introduction: Several H. pylori (Hp) infection related cardiac findings (mucosal atrophy, metaplastic change, diffuse redness, spotty redness and nodular change of the antrum etc.) are so important sign of Hp infection on endoscopic examination. On the other hand, we have confused with various newly endoscopic findings (patchy redness and map-like redness etc.) were seen on all Hp-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 cardiac is the first gastric view through the esophagus on each endoscopic examination.

Aims & Methods: Our aim of this study is to elucidate possibility of judgement with only this cardiac endoscopic view about presence or absence with Hp infection. We have found out so useful and specific cardiac image (We call Whale Shark Sign: WSS) closely related to Hp infection. We have examined the presence of WSS on 4, 268 cases that have been able to overviewed on their endoscopic 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 titer were measured were from Jan. 2012 to Oct. 2016. A total of 2,810 patients (Hp positive) were enrolled. Fisher's exact test was used in all statistical analyses. The judgement of Hp present or past infection was done more than serum Hp antibody 3 U/ml to avoid false negative results.

Results: Mean age of patients was 52.4 years old. In case of WSS positive, all their serum Hp antibody titer showed more than cut-off level (3 U/ml). This means that the presence of WSS closely related to Hp related gastritis. The positive predictive value (PPV) of WSS was surprisingly high (98%). According to this high PPV, we can think WSS positive cases are high risk of gastric carcinoma. This WSS mean that the presence of irregular gastric mucosal surface pattern and the presence of lymphoid hyperplasia, that showing Hp infection's stomach. Especially presence of lymphoid hyperplasia at gastric cardiac is most important specific sign of Hp related gastritis. This lymphoid hyperplasia at gastric cardia were recognized small round whitish nodules on white light endoscopy. And this was more emphasized with image-enhanced endoscopy (Narrow Band Imaging; NBI), it looks like Whale Shark. This WSS sign is very simple and easy for every gastroenterologist. It is so useful to know gastric cancer risk at gastric entrance (cardia) with the presence of very easy simple sign.

Conclusion: We have been able to judge the presence of Hp infection with only cardiac endoscopic images (WSS), we should take care of seeing the presence of WSS sign. Since this sign is very easy and simple, everyone will be able to judge the presence of Hp infection as gastric cancer risk.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1905 SERUM PEPSPINOGEN II AS A NON-INVASIVE MARKER FOR DIAGNOSIS OF H. PYLORI INFECTION: A PROSPECTIVE STUDY IN A COHORT OF DYSPHAGIC PATIENTS

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Introduction: The diagnosis of Helicobacter pylori (Hp) infection is currently made by means of non-invasive (Urea Breath Test or HpSA) or invasive (gastric biopsy or culture) methods. Serological assessment of Hp infection by using levels of IgG is not recommended. Pepsinogen II (PGII) is validated in the literature as a non-invasive marker of gastric inflammation. Aim of the study was to assess in a population of dyspeptic patients the clinical availability of PGII determination in singling out subjects infected by Hp in comparison with non-infected ones.

Aims & Methods: A cohort of 880 consecutive dyspeptic patients (F 439; mean age 55.5 ys; range 29.83 ys) were enrolled in the study. Exclusion criteria: previous surgery, previous Hp eradication therapy, comitant PPI. In all patients the diagnosis of Hp infection was made by means of upper GI endoscopy and at least one of these two methods: UBT, HpSA. All patients underwent blood sample for determination of serum levels of PGII (Biohit Oyj; Finland; normal values: 2-15µg/l). In a group of 670 pts a course of antibiotics (triple, concomitant or sequential therapy) to cure Hp infection was performed and PGII levels determined at baseline (T0) and after two months (T1) from the end of the antibiotic therapy. The search for the most appropriate cut-off of PGII in diagnosis of Hp infection was assessed by using the ROC curve method.

Results: 430 out of 660 dyspeptic patients (F 245;mean age 52.3 ys; range 32-69 ys) showed an Hp-related gastritis (group1) in comparison with 430 (F 261; mean age 57.3 ys; range 38-74 ys) resulting negative for Hp infection (group 2). The mean value of PGII in group 1 was 20.9 ± 6.1 opposite to 7.2 ± 1.7 in group 2; p<0.0001. 415 out of 670 patients treated with antibiotics schedules were cured from Hp infection, opposite with 255 non-eradicated ones. In the group of cured patients, the PGII values at T0 were 16.5. in comparison with 8.6 at T1; p<0.001. The cut-off for PGII in the diagnosis of Hp infection, by comparing the 430 Hp positive pts and the 430 negative ones with method of ROC curve identified the mean value of 10.6 µg/l; youden index J =0.997.

Conclusion: serum PGII levels seem able to perform diagnosis of Hp infection in dyspeptic patients, as well as the efficacy of antibiotics treatment for Hp eradication, being 10.6µg/l the best cut-off in singling out infected from non-infected subjects.

Disclosure of Interest: All authors have declared no conflicts of interest.

Abstract No: P1903. Table: Different characteristics of the subjects with an equivocal H. pylori test finding according to the repeated H. pylori serology test findings

<table>
<thead>
<tr>
<th>Variables</th>
<th>Seropositive on the follow-up test (n = 38)</th>
<th>Seronegative or equivocal on the follow-up test (n = 40)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years-old)</td>
<td>52.1 ± 9.8</td>
<td>54.0 ± 11.2</td>
<td>0.386</td>
</tr>
<tr>
<td>Gender (male)</td>
<td>43 (74.1%)</td>
<td>23 (57.5%)</td>
<td>0.084</td>
</tr>
<tr>
<td>Follow-up period (months)</td>
<td>32.1 ± 13.0</td>
<td>28.6 ± 11.3</td>
<td>0.165</td>
</tr>
<tr>
<td>Past H. pylori eradication</td>
<td>6 (10.3%)</td>
<td>10 (25.0%)</td>
<td>0.054</td>
</tr>
<tr>
<td>Initial serum pepsinogen I level (ng/ml)</td>
<td>61.2 ± 32.0</td>
<td>48.5 ± 15.6</td>
<td>0.023</td>
</tr>
<tr>
<td>Initial serum pepsinogen I 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>Cigarettes smoking Current smoker Past smoker Non-smoker</td>
<td>16 (27.6%) 24 (41.4%)</td>
<td>15 (25.0%) 33 (52.5%) 22 (55.0%)</td>
<td>0.101</td>
</tr>
<tr>
<td>Alcohol drinking Heavy drinker* Social drinker Non-drinker</td>
<td>5 (8.0%) 40 (69.0%) 13 (22.4%)</td>
<td>6 (14.3%) 23 (39.5%) 11 (26.2%)</td>
<td>0.451</td>
</tr>
<tr>
<td>Upper gastrointestinal symptom</td>
<td>18 (31.0%)</td>
<td>10 (25.0%)</td>
<td>0.516</td>
</tr>
<tr>
<td>Recent intake of drugs</td>
<td>14 (24.1%)</td>
<td>8 (20.0%)</td>
<td>0.629</td>
</tr>
<tr>
<td>Comorbidity Hypertension Diabetes mellitus Others</td>
<td>17 (29.3%) 5 (8.6%) 19 (32.8%)</td>
<td>13 (32.5%) 4 (10.0%) 13 (32.5%)</td>
<td>0.736 0.816 0.979</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. *Criteiria 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 naïve adult patients undergoing UBT were included. Patients were deemed to be H. pylori positive if a Delta Over Baseline (DOB) value of >2.4% 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 1-3 weeks post-treatment to confirm eradication of H. pylori in all patients. The three DOB groups were compared with respect to age, gender and eradication rates.

Results: Out of 860 of UBTs assessed (mean age 43.5±14.9 years, 39% male), 22.0% were positive (mean age 43.1±14.9 years, 41.9% male) of the total positive patients, 91 (31.5%) returned for a follow-up UBT to confirm eradication of H. pylori. When patients were categorised into low, intermediate and high UBT groups, there was no significant difference in age and gender between groups (p=0.06 for age and 0.3 for gender). Eradication rates in the low, intermediate and high UBT groups were 70.5%, 63.0% and 50.0% respectively (p=0.3). Patients were then categorised according to eradication status. When eradication was successful, the average DOB value was significantly lower (DOB value was 29.8% compared to 29.8% when eradication was unsuccessful (p=0.03, 95% CI 0.69 to 17.5). 46 (50.5%) patients were patients clarithromycin-based triple therapy for 7 days. When this subset of patients was categorised into low, intermediate and high UBT groups, eradication rates were 75.0%, 75.0% and 50.0% respectively. When these rates were compared to respective rates in those whose treatment was not known, no difference was observed. The subset was also categorised according to eradication status. When eradication was successful, the average DOB value was lower, at 22.0% compared to 30.2%. When eradication was unsuccessful (p=0.6). Similarly, when these DOB values were compared to respective values in those whose treatment was not known, no difference was observed.

Conclusion: As the DOB value increases in the UBT, the eradication rate of H. pylori infections, regardless of treatment regimen. When categorised according to eradication status, the DOB value was significantly lower when eradication was successful (20.6% vs 29.8%, p=0.03). The DOB value could be a useful value in stratifying patients with H. pylori infection; especially as histology and antimicrobial resistance information is unavailable in patients undergoing non-invasive testing for H. pylori infection.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1908 COMPARISON OF THE EFFICACY BETWEEN BISMUTH AND ALTERNATING RIFAXIMIN ON SECOND-LINE QUADRUPLE REGIMES OF HELICOBACTER PYLORI ERADICATION


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Introduction: Bismuth is a heavy metal which has antimicrobial activity through regulating iron uptake profile of bacteria. Helicobacter pylori (H. pylori) is also highly susceptible to bismuth. So the Korean guideline preferably recommends the regimen contains bismuth for the patients who failed on H. pylori eradication with the primary regimen consists of proton pump inhibitors, amoxicillin, and clarithromycin. Rifaximin is one of derivatives of rifamycin with antimicrobial activity against H. pylori. It can achieve high concentrations within the gastrointestinal tract and remains active in acidic environment. So rifaximim has been studied as a treatment for persistent H. pylori infection. Rifaximin has been prescribed for replacing the bismuth of the regimen concurrently uses PPI, metronidazole, and tetracycline in Soonchunhyang University Hospital, Seoul for a while. So we reviewed the clinical outcomes of the 2 different regimens.

Aims & Methods: From May 1st 2003 to October 31st 2015, six thousand and five hundred ninety-five patients were treated their H. pylori infection in Soonchunhyang University Hospital, Seoul. And their prescriptions and result of eradication were retrospectively reviewed on the medical records. The patients had clarified pre-and post-eradication result, which can be assured by the rapid urease test. So we reviewed the clinical outcomes of the 2 different regimens.

Results: During the periods over 12 years, two thousand and seven hundred patients were treated the rifaximin-containing regimen and 34 (97.14%) of them showed successful eradication result. Other 91 patients were treated with the rifaximin-containing regimen and showed 92.31% of eradication rate. The treatment success rates are not different significantly in statistics. (Fisher’s exact test, p-value=0.442)

Conclusion: Alternative rifaximin containing regimen of second-line H. pylori treatment didn’t showed inferiority on standard bismuth-containing one. This suggested that the use of rifaximim is possible in the patients who are not suitable to bismuth use and failed with primary eradication.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1909 COMPARISON OF 10-DAY STANDARD TRIPLE THERAPY AND LEVOFLOXACIN BASED THERAPY FOR HELICOBACTER PYLORI ERADICATION: RANDOMIZED CONTROLLED TRIAL

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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 STT group and LBT group for Koreans. Between April 2014 and April 2016, 49 patients in the STT group (amoxicillin 1 g bid, clarithromycin 500 mg bid and esomeprazole 20 mg bid for 10 days) and 48 in the LBT group(levofloxacin 500 mg bid, amoxicillin 1 g

Disclosure of Interest: All authors have declared no conflicts of interest.
**P1910 TREATMENT OF HELICOBACTER PYLORI INFECION: WILL TAILORING THERAPY FIRST TIME OVERCOME INCREASING FAILURE OF STANDARD TRIPE 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:** Aims of this study were 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 HelicoDR 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% (104/112) of samples and primary clarithromycin resistance was 47% (30/64) by E-test. Genotypic resistance data was available for 93% (104/112) patients and 55% (61/114) strains were clarithromycin resistant. Thus far, 99 (85%) treatment naïve patients have been enrolled in the study. 92 (93%) have completed the study. Of these, 45 (46%) have received standard triple therapy and 54 (54%) have received tailored therapy. In the tailored arm, 25 (46%) patients received standard triple therapy, 14 (26%) received levofloxacin-based triple therapy, 13 (22%) received a PPI and combination of antibiotics based on their sensitivities (e.g. levofloxacin, clarithromycin, rifampicin, tetracycline or metronidazole), and 3 (6%) bismuth quadruple therapy. H. pylori eradication efficacy of tailored therapy by intention-to-treat analysis was higher at 74% (40/54) compared to 67% (n = 30/45) for standard therapy (p = 0.03). The eradication efficacy by per-protocol analysis was also higher, at 82% (40/49) for tailored versus 70% (30/43) for standard therapy (p = 0.02). Patients in each arm were further categorised by clarithromycin resistance status, phenotypically by E-test or genotypically by GenoType HelicoDR 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.

**Conclusion:** In those who are sensitive to clarithromycin, standard clarithromycin-based triple therapy achieves an acceptable eradication rate of approximately 81%. However, a high primary clarithromycin resistant rate was observed in this study (47%). In those who are resistant to clarithromycin, prescribing a regimen based antibiotic susceptibilities increases eradication rates to 83%, compared to those treated with standard triple therapy (57%, p = 0.09).
were assigned to one of the following groups: a control group receiving the... 14-day of quadruple therapy with PPI + amoxicillin + metronidazole + levofloxacin with success.

Conclusion: Co-adjuvant sequential therapy with probiotic Lactobacillus reuteri protectis, within previous two weeks to final of treatment, is associated with higher HpET rate, initially or after sequential failure therapy, and lower rate of diarrheal side effect.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1913 THE IMPACT OF CLOSTRIDIUM BUTYRICUM MIYAI-588 ON HELICOBACTER PYLORI ERADICATION THERAPY
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Introduction: As a country with high incidence of gastric cancer, the elimination of Helicobacter pylori (HP) is useful strategy for the prevention of gastric cancer in Japan. And the eradication therapy for HP-infected gastritis was approved as an insurance indication since 2013, and virtually all HP-infected patients are started eradication therapy using proton pump inhibitor (PPI)/amoxicillin (AMPC)/clarithromycin (CAM) has been used as a regimen for the primary eradication therapy. Since HP has rapidly acquired the resistant character against CAM, the eradication rate has gradually been decreasing. Recently (2013), a novel potential competitive acid blocker, has been approved for HP eradication therapy. Recently, higher HP-eradication ratio by VPZ + AMPC + CAM than PPI based triple therapy has been reported. However, there might be some concern for the use of VPZ; higher serum gastrin, decrease in the diversity of intestinal microbiota and increase in colitis.

Therefore, PPI-based triple therapy is still used, and additive effect of probiotics has been reported in these therapy.

Aims & Methods: The aim of this study is to investigate the effect of probiotics, Clostridium butyricum Miyai-588 (MBM) on PPI-based triple therapy comparing the eradication rate and side effect with VPZ-based triple therapy. From January 2015 to December 2016, patients who received HP primary eradication therapy in our hospital were retrospectively evaluated. They were divided into 2 groups: 1) patients who received PPI + AMPC + CAM therapy (PPI group), and 2) patients who received VPZ + AMPC + CAM therapy (VPZ group), 3) patients who received PPI + AMPC + CAM + MBM therapy (PPI + MBM group), and the eradication rate and side effects were evaluated.

Results: The number of patients enrolled in this study were 468; 150 cases in the PPI group, 271 cases in the VPZ group and 47 cases in the PPI + MBM group. Successful rate of HP eradication was 81.7% in the PPI group, 89.8% in the VPZ group and 89.1% in the PPI + MBM group. The eradication rate in VPZ group was significantly higher than that of PPI + MBM group. The rate of side effect was 14.7% in the PPI group, 10.0% in the VPZ group and 19.1% in the PPI + MBM group, and there was no significant difference between 3 groups.

Conclusion: Clostridium butyricum Miyai-588 can have additive effects in PPI-based triple therapy for HP.

Disclosure of Interest: O. Handa: Lecture fee from AstraZeneca K.K. and DAICHI SANKYO COMPANY Y. Naito: Lecture fee and scholarship donations from EA Pharma Co. Lecture fee from Takeda Pharmaceutical Company All other authors have declared no conflicts of interest.

P1914 THE EFFECTS OF SACCHAROMYCES BOULARDI SUPPLEMENTATION ON HELICOBACTER PYLORI ERADICATION RATE AND SIDE EFFECTS DURING SEQUENTIAL THERAPY: A PROSPECTIVE RANDOMISED CONTROLLED STUDY
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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 standard sequential therapy, and an experimental group receiving in addition to the standard sequential therapy, probiotics at 10 billions of living cells per day concomitantly during the eradication therapy. 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), comparing 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 with a reduction of the antibiotic-associated diarrhea (RR = 0.97, IC95% [0.58-2.08], p < 0.0001). The incidence of nausea and vomiting, dizziness, asthenia and metallic taste was also lower in the experimental group, although the differences were not statistically significant. In the multivariate analysis, the Saccharomyces boulardii supplementation is associated with an optimization of the eradication rate (RR = 2.4, IC95% = [0.19-1.09], p = 0.02), and with a reduction of the antibiotic-associated diarrhea AAD (RR = 0.07, IC95% = [0.02-0.26], p < 0.001).

Conclusion: Our study shows that the Saccharomyces boulardii treatment during sequential therapy in Helicobacter pylori regimen is associated with a significant reduction of side effects and particularly the antibiotic-associated diarrhea, and allows an optimization of the eradication rate of Helicobacter pylori.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1915 “CONCOMITANT” OR “SEQUENTIAL” THERAPY FOR THE ERADICATION OF HELICOBACTER PYLORI: WHICH REGIMEN COMES FIRST IN MOROCCO?
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Introduction: As a country with high incidence of gastric cancer, the elimination of Helicobacter pylori (HP) infection markedly reduces relapse of peptic ulcers, bleeding, and gastric cancer. The destruction of Helicobacter pylori (H. pylori) eradication rates with standard triple therapy resulted in a search for novel therapies for first-line therapy of H pylori infection.

Aims & Methods: 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 13C-urea breath test at least 4 weeks after therapy. Intention to treat (ITT) and per protocol (PP) analysis of the eradication rates were performed. Secondary end points included patient compliance and safety.

Results: The concomitant therapy group achieved statistically significant higher eradication rates when compared with the sequential treatment group, both in the ITT and in the PP analysis (86.6% versus 79.9%, p=0.002, and 90.6% versus 72.1%, p=0.001, respectively), after adjusting for age, gender, smoking status, and the presence or not of ulcer and/or non-ulcer dyspepsia. Both groups displayed excellent compliance rates (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 regimes were few, with no statistical difference between the two groups (6.2% for the concomitant therapy group and 3.1% for the sequential therapy group).

Conclusion: Concomitant therapy led to statistically significant higher eradication rates over sequential therapy. Both therapies showed excellent compliance and an acceptable safety profile. The concomitant quadruple therapy scheme should be the adopted for first-line H pylori eradication in Morocco.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1916 PROSPECTIVE COMPARATIVE STUDY OF TWO FIRST-LINE REGIMENS FOR HELICOBACTER PYLORI ERADICATION: 14-DAYS NON-BISMUTH QUADRUPLE OPTIMIZED CONCOMITANT THERAPY VERSUS 10-DAYS BISMUTH-CONTAINING QUADRUPLE THERAPY USING A THYME-CAPSULE
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Introduction: The Maastricht V/Florence 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
area, and in clinical practice. A prospective study was performed in a Spanish center recruiting consecutive naïve adult patients, candidates to Helicobacter pylori eradication. Omeprazole 40mg, Clarithromycin 500mg, Amoxicillin 1g and Metronidazole 500mg, all drugs b.i.d, for 14 days (OCAM); or Omeprazole 20mg b.i.d and 3-in-1 capsule with Bismuth 140mg + Tetracycline 125mg + Metronidazole 125mg, 3 capsules q.i.d, for 10 days (3–1-OBMT) were prescribed according to physician criteria. Compliance was assessed by striking the consumed doses in a patient filled template, and adverse effects using a specific questionnaire with a 1–3 intensity scale. Efficacy was determined by 13C-urea breath test. A descriptive study and analysis of efficacy by intention to treat (ITT) were performed. Cases with poor therapeutic compliance (<80%) or no available data were excluded in per-protocol (PP) analysis. Chi2, Student’s t, and Mann-Whitney U tests with significance level p < 0.05 were applied. The protocol was approved by the Ethics Committee.

Results: 216 patients (63.43% women; mean age 51.33-range: 19–84 years) were included. OCAM was prescribed in 103 and 3–1-OBMT in 113. No differences in age, sex and functional dyspepsia as indication to eradicate were observed between groups. Main indications for treatment were functional dyspepsia (39.35%), gastroduodenal ulcer (19.44%) and non-investigated dyspepsia (13.89%). Compliance was <80% in 11 patients and unknown in 7. The efficacy outcome was unavailable in 9 subjects. Compliance >80% was observed in 89% with OCAM and in 93.53% with 3–1-OBMT (p=0.06). The ITT rates were 82.52% vs 85.84% (p=0.63), and PP 89.47% vs 96.04% (p=0.13), for OCAM and 3–1-OBMT respectively. The outcomes of adverse effects (frequency, number, duration and intensity) are shown in the Table.

<table>
<thead>
<tr>
<th>Drug</th>
<th>Frequency</th>
<th>Days</th>
<th>Maximum</th>
<th>Intensity [%]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>[Mean (SD)]</td>
<td>[Mean (SD)]</td>
<td>None</td>
</tr>
<tr>
<td>OCAM</td>
<td>96.97</td>
<td>4.08 (2.49)</td>
<td>10.07 (4.6)</td>
<td>3.41</td>
</tr>
<tr>
<td>OBMT</td>
<td>91.51</td>
<td>3.92 (2.6)</td>
<td>6.02 (3.43)</td>
<td>7.14</td>
</tr>
<tr>
<td>p-value</td>
<td>0.17</td>
<td>0.70</td>
<td>&lt;0.0001</td>
<td>0.0149</td>
</tr>
</tbody>
</table>

Conclusion: In a high clarithromycin resistance area, 14-days OCAM and 10-days 3–1-OBMT regimens achieve high and similar compliance and efficacy rates, but 3–1-OBMT provides a superior safety profile.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

**P1917 MANAGEMENT OF HELICOBACTER PYLORI INFECTION AT PRIMARY CARE LEVEL. THE IMPLEMENTATION OF SPECIFIC COUNSELLING TO PCP IMPROVES THE ERADICATION RATES**

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Introduction: We have detected a large increase of Hp breath test (UBT) requests for Helicobacter pylori (Hp) diagnosis by primary care physicians (PCP). In this way, most Hp-infected patients are now being managed at primary care level. However, little is known about outcomes of Hp infection by PCP.

Aims & Methods: 1. To evaluate and compare the eligibility of UBT indications, treatment regimens and eradication rates between PCP and gastroenterologist specialist (GS). 2. To evaluate the effect of introduction of specific counselling to PCP in the management profile of Hp infection. First, we prospectively included 500 consecutive UBT indicated by PCP (250) and GS. Appropriate UBT indications were considered those included in the 3rd Spanish Consensus Conference on Helicobacter pylori infection (1). Hp treatment prescribed and eradication rates were collected retrospectively. Finally, we analyzed another 216 patients (63.43% women; mean age 51.53-range: 19–84 years-) were included for the implementation of specific counselling based on national guidelines.

Conclusion: Hp infection management at primary care level is inappropriate with significant increase in the adherence to appropriate treatment regimens (71% vs 35%; p < 0.0001) and eradication rates (78% vs 57%; p < 0.0001) were observed in the PCP group after the implementation of specific counselling based on national guidelines. The introduction of a specific counselling to PCP has significantly improved these outcomes. These data should encourage the implementation of interventional strategies in order to reduce the actual increase in antibiotic resistance.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

**WEDNESDAY, NOVEMBER 01, 201709:00–14:30 SMALL INTESTINAL III - HALL 7_**

**P1918 VALPROATE AND CHIR 99021 AMELIORATES RADIATION-INDUCED INTESTINAL EPITHELIAL INJURY IN MOUSE MODEL**

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Introduction: Radiation-induced gastrointestinal syndrome (RIGS) stems from the clonogenic loss of crypt cells and vill depopulation and results in mucosal barrier disruption, bacterial inflammation, infiltration and sepsis. Valproate (VPA) is the one of the popular anti-convulsants, recently its Notch signal modulatory effect has been reported. Notch signal pathway is the essential to maintain intestinal stem cells and to differentiate to secretory cells such as goblet cell. Moreover, it has been reported that combination of VPA and CHIR 99021 (GSK3β inhibitor) has powerful proliferatory effect for intestinal stem cells, such as Lgr5+ cells. One of the major difficulties for RIGS studies is the fact that crypts are not easily accessed and cultured with traditional means. Ex vivo culture techniques for single crypt or a stem cell derived enteroid, with essential features of the in vivo tissue architecture, have been recently developed. Thus, we have adopted the 3D-cultured enteroids for RIGS ex-vivo model, and proved the effect of VPA and SCFAs for RIGS.

Aims & Methods: We have adopted the 3D-cultured enteroids for RIGS ex-vivo model, and proved the effect of VPA and SCFAs for RIGS. To culture enteroid, ten centimeters segments of jejunum were procured from 9–13 week-old C57BL6 mice. Crypts were isolated by EDTA chelation, suspended in Matrigel and grown in culture media containing epidermal growth factor, noggin, R-spondin 1. After 1 day in culture, the enteroids were treated (or not) 3 mM CHIR 99021 (GSK3β inhibitor) and 1mM VPA. On day 3, the enteroids were irradiated as a dose dependent manner. The evaluation of irradiated enteroids was performed by measuring MTT assay, budding efficiency of enteroid, and EdU staining. On post-irradiation Day 2 and Day 7, RT-PCR was performed.

Results: Enteroid from mouse had multiple crypts (‘budding’) with well-differentiated goblet, Paneth cells, + stem cells (quiescence stem cells, BMI1 is expressed), Lgr5+ stem cells. In the response of radiation, irradiated enteroid decreased proliferation rate in a dose dependent manner, as measured by MTT assay. budding efficiency of enteroid. Irradiated enteroids with VPA+CHIR 99021 could maintain their + stem cells even in 10 Gy of irradiation, lethal dose of mouse intestinal epithelium, and they were able to proliferation. Combination of VPA + CHIR 99021 did not have an effect on paneth cells, enteroid, 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
7. Gastroenterology 2012;143:1266–1276 Crypt Base Columnar Stem Cells in Small Intestines of Mice Are Radiosensitive
P1919 PREVALENCE OF CELIAC DISEASE AMONG RELATIVES OF CD PATIENTS
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Introduction: Celiac disease (CD) is an important health problem worldwide. It is characterized by 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 particular in 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 antitransglutaminase (tTG) antibodies in the serum. Upper digestive endoscopy and duodenal biopsy are performed in all sero-positive relatives and graded as per Marsh modified by Oberhuber classification to confirm the diagnosis. The four first degree relatives of 107 families are included in our study.

Results: Among the 546 first-degree relatives, we have 18.5% of parents, 57.3% of brothers and 27.1% of sisters. The main parameters for the prevalence of CD among first-degree relatives is 8.1% with Confident Interval (CI) at 95% [5.8–10.4]. 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 average 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, there was an incidence of 1.4% asymptomatic, 88.6% 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 the 546 first-degree relatives, it shows that 44 patients present positive serology which corresponds to the prevalence of CD in first degree relatives of 8.1% with CI at 95% [5.8–10.4]. Our investigation supports the idea that the development of an extensive screening approach is needed to promote early diagnosis and 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: Celiac disease affects 1–2% of the population, but due to diverse presentation most patients remain unrecognized. Diagnostic efficiency could be improved by screening of at-risk groups, but long-term benefits of this approach are unclear. To shed light to this issue, we compared a variety of celiac disease-related and other parameters in large cohorts of adult patients diagnosed in childhood either because of clinical suspicion or by screening.

Aims & Methods: A questionnaire about current health and lifestyle, adherence to gluten-free diet (GFD) and follow-up of celiac disease was sent to 564 adults with a primary diagnosis. Further, the participants fulfilled validated Gastrointestinal Symptom Rating Scale (GSRS) and Psychological General Well-Being (PGWB) surveys for symptoms and quality of life. Clinical and histological presentation at diagnosis and other relevant medical data were confirmed from patient records. All variables were compared between screen-detected and clinically detected patients.

Results: Altogether 235 (42%) adults completed the questionnaires. At diagnosis, screen-detected patients (n = 49) were older (11.3 vs 8.8 yr, p = 0.016) and had lower gluten challenge prevalence (15%, p < 0.001) compared to clinically diagnosed 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 23.8 yr, p = 0.2), or recorded symptoms at diagnosis from the GSRS and PGWB. In addition, screen-detected patients were less symptomatic (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 FOR 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 positive coeliac serology from April 2016 to September 2018. For each patient, we recorded year of referral, value of tissue 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: Total of 95 cases were examined. The General Practitioner was the main source of referral for tTG antibody (76%) test followed by gastroenterology outpatients (OP) (13%), 2% each was shared by surgical OP and inpatient gastroenterology services. Other referrals contributed 3% each. 88% (84 out of 95) of patients had tTG results; the results were more than 20 U/ml. 53 out of 95 (56%) were new referrals, 30 (31%) were follow-up and 12 (13%) referrals had no further record on system. 11 of 53 (21%) new patients had OGD in less than 6 weeks; 30 of 53 (56%) had OGD in more than 6 weeks, 22 of 95 (23%) had no record of OGD on system. 56 of 95 (59%) patients had dietician review. 26 of 95 (27%) were offered or had annual review. 42 of 95 (44%) had DEXA scan to assess bone density.

Conclusion: The incidence and prevalence of coeliac disease in our study are 30.28 per 100,000 persons-years and 0.072). The groups did not differ in gender, current age (median 26.5 vs 23.8 yr, p = 0.2), or recorded symptoms at diagnosis from the GSRS and PGWB. In addition, screen-detected patients were less symptomatic (4% vs 15%, p = 0.037) and had more often celiac disease in relatives (78% vs 58%, p = 0.011).

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 histopathology persist despite gluten-free diet (GFD). It is not known whether a persistent growth of microorganisms, in particular yeast (Saccharomyces cerevisiae), bacteria (Pseudomonas fluorescens) or fungi (Aspergillus fumigatus), may be associated with the development of local referral and management pathways to ensure that all coelicians are captured, investigated, and followed up appropriately.

Aims & Methods: Serum microbial markers in nonresponsive celiac disease.

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Reference
NICE Quality Standards (QS134) for Coeliac Disease (October 2016) NICE guidelines NG20 (September 2015)
### 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 pathologic systemic processes. Recent studies have demonstrated an increased number of circulating EVs in a variety of conditions characterized by multi-organ impairment and/or damage such as insulin-resistance, atherosclerosis and obesity. Celiac disease (CD) is an immune-mediated inflammatory enteropathy, chiefly 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 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 CD patients (mean age 42.4 ± 19.1 vs. 40.8 ± 15.9 years, F/M = 4:1) at diagnosis and 12 age- and sex-matched healthy controls. Histology was considered positive for lesions of grade ≥B1 according to the Corazza-Villanacci classification. Mean anti-tTG levels at diagnosis were 6.9 ± 4.1 times ULN. 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 CD41 + 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). In the contrary, CD45 + EVs, of leucocyte origin, showed a significantly higher number in CD patients vs. controls (60 ± 492 vs. 119 ± 150 p = 0.026).

### Table 1: 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 dietary treatment.

<table>
<thead>
<tr>
<th></th>
<th>N-CD</th>
<th>NRCD</th>
<th>CD-GFD</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROS production (µmol/min−1)</td>
<td>0.21 ± 0.03*</td>
<td>0.22 ± 0.04</td>
<td>0.17 ± 0.03*</td>
<td>* &lt; 0.05</td>
</tr>
<tr>
<td>TAC levels (mM)</td>
<td>1.07 ± 0.30</td>
<td>1.16 ± 0.47</td>
<td>1.68 ± 0.54*</td>
<td>&lt; 0.01, ^ &lt; 0.05</td>
</tr>
<tr>
<td>GSH levels (µmol.L−1)</td>
<td>534.40 ± 37.46*</td>
<td>507.80 ± 81.73*</td>
<td>634.00 ± 187.80*</td>
<td>&lt; 0.001, ^ &lt; 0.0001</td>
</tr>
<tr>
<td>Peroxidized lipid levels (µM)</td>
<td>3.59 ± 0.67*</td>
<td>3.46 ± 0.87</td>
<td>2.82 ± 0.47*</td>
<td>&lt; 0.01, ^ &lt; 0.05</td>
</tr>
<tr>
<td>Oxidized proteins levels (nmol.mg−1 protein)</td>
<td>1.42 ± 0.43*</td>
<td>1.23 ± 0.53*</td>
<td>0.91 ± 0.20*</td>
<td>&lt; 0.001, ^ &lt; 0.05</td>
</tr>
<tr>
<td>Plasma nitrates concentrations (µmol.L−1)</td>
<td>99.74 ± 30.76*</td>
<td>81.73 ± 634.00*</td>
<td>22.21 ± 0.62*</td>
<td>&lt; 0.001, ^ &lt; 0.01</td>
</tr>
</tbody>
</table>

* Significant compared to controls (p < 0.05)
Conclusion: Celiac disease patients at diagnosis show higher numbers of circulating inflammatory factors when compared to matched controls. Phenotypical assessment suggests that this increase is not primarily driven by epithelial or endothelial damage. On the contrary, the increased numbers of leucocyte-derived EVs, suggest their potential implication in systemic signaling.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1925 COELIAC DISEASE AND REPRODUCTIVE DISORDERS: IS THERE ANY CORRELATION

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Introduction: The coeliac disease is an autoimmune enteropathy induced by the ingestion of gluten in genetically predisposed individuals. It occurs in people who are genetically predisposed primarily affecting the small intestine inducing atrophic lesions, which are regressive with a gluten-free diet. The classic form is actually a minority of patients. The extradiagnostic forms are currently the most found, with varied manifestations including reproductive disorders. The aim of our study is to evaluate the frequency of these disorders in the coeliac disease and their evolution under gluten-free diet.

Aims & Methods: It's a single-center, retrospective and descriptive study including 241 patients with coeliac disease enrolled within period of 17 years from 1995 to 2016 in the department of Gastroenterology «Medecine C» in Ibn Sina University Hospital.

Results: About 241 patients suffering from coeliac disease, 58 patients presented reproductive disorders, either 28.9%. Recruiting 53 women and 5 men, with a sex ratio M/F of 10/6. The mean age was 32.25years ranging from 13 to 59years old. The diagnosis of coeliac disease was based on: Histology (severe or partial Villous atrophy with intraepithelial lymphocytosis exceeding 30%), the antienzyme antibodies and/or anti-transglutaminase antibodies positive. The reproductive disorders were never isolated but always associated with digestive or extradiagnostic signs at the time of the diagnosis of coeliac disease. These disorders were more frequent during puberty in 11 cases (19%), secondary amenorrhea in 13 cases (22.4%), Metrorrhagia in 12 cases (20.6%), absence of development of secondary sexual characters in 8 cases (12.5%), spontaneous abortion in 7 cases (10.9%), menometrorrhagia in 4 cases (13.8%), primary sterility in 3 cases (5%), premature labour and/or IUGR in 3 cases (5%), primary amenorrhea in 2 cases (3.4%), and intrauterine Fetal death IUFD in one case (1.7%). All our patients benefited from a gluten-free diet. 15 patients were excluded from the study, 2 patients died, and 12 patients were lost to follow-up. Of the remaining patients, 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. One patient leveled her cycle after primary amenorrhea, and one case was delivered a baby in term after a repeated premature deliveries. The evolution was good in 3 cases as regard missed abortion four years after the gluten-free diet in 1 patient, and amenorrhea continued in 2 cases.

Conclusion: Reproductive disorders related to the coeliac disease were frequent and variable. In our study, these disorders well responded to the gluten-free diet. The classic form is actually a minority of patients. The extradigestive forms are currently the most found, with varied manifestations including reproductive disorders. The aim of our study is to evaluate the frequency of these disorders in the coeliac disease and their evolution under gluten-free diet.

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 range from classical gastrointestinal manifestations to only atypical signs, thus making the clinical diagnosis a challenge. The aim of our study was to investigate the relationship between duodenal histology, specific antibody levels and clinical presentation in adult CD Romanian patients.

Aims & Methods: Twenty-nine patients were enrolled. Fourteen patients (46%) were female, mean age 40.02 ± 12.14 years. A total of 48.1% 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). Marb-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-tTG) antibody (61.45 ± 76.45 u/mL vs 162.02 ± 106.179 u/mL, P = 0.001) and IgA anti-gliadin antibodies (IgA-AGA) levels (61.83 ± 69.41u/mL vs 77.15 ± 71.02 u/mL, P = 0.001) correlated with intestinal villous atrophy (Marsh 3b 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 = 0.004). Among biological markers included in the statistical analysis, low iron levels (cut off 30mg/dl), hypocholesterolemia and low protein levels were associated with Marsh 3b lesions (P = 0.008) and elevated IG-IgA titers (r = -0.384, P = 0.001).

Conclusion: IgA-tTG and AGA levels correlate with duodenal villous atrophy in adult CD patients. An IgA-tTG level >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 FORMS WITH OVALE: IS THERE ANY CORRELATION

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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. Extraintestinal findings are observed in many systems. The prevalence of extraintestinal findings in CD is 5% in children, and in adults, the prevalence is twofold. Extraintestinal findings are observed in many systems. Extraintestinal manifestations include reproductive disorders. The aim of our study is to evaluate the frequency of patent foramen ovale in celiac disease patients.

Aims & Methods: Between May-June 2015, 65 patients who applied to the gastroenterology clinic of Derince Education and Research Hospital and followed up with celiac disease were identified. The sociodemographic characteristics, celiac disease diagnosis duration, symptoms and complaints, accompanying diseases, drug use histories, histogram 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 of the study group was 41.5 ± 14.1 years. PFO was detected in 39 (60%) of the patients. There was no difference in the incidence of PFO in between female and male patients. (61.9% and 59.1% respectively, p=0.829). Compared with the frequency of PFO in the general population, the incidence of PFO in celiac patients was not statistically significant. (25% and 60% in general population and celiac patients respectively).

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 cardiovascular disease become crucial in the clinical follow-up of these patients. 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 EFFECTIVENESS OF BULB BIOPSY SAMPLES IN CELIAC DISEASE DIAGNOSIS IN ADULTS

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Introduction: The bulb biopsy (BB) guidelines recommended sampling of both the bulb and distal duodenum for diagnostics. This has been reinforced by the recent data on ultra-short CD [1]. However, it has been previously shown in pediatric CD that bulb specimens are frequently of poor quality with low diagnostic yield [2]. In the absence of duodenal biopsies, non-celiac patients also, and it can lead to false-positive diagnoses [2]. Our aim was to address the same issue in adult CD, using the same validated morphometric methods [3].

Aims & Methods: We prospectively recruited cases of clinically recommended upper GI endoscopy; all patients also had signs and symptoms of CD and were checked for CD serology (serum tissue transglutaminase 2 antibodies and endomysial antibodies) and biopsy sampled according with current
recommendations. Paraffin embedded biopsy samples were assessed for villous height-to-width (CD) and VH:VH ratio. The corre-
sponding frozen duodenal samples were assessed for duodenal IgA deposits target-
ing transglutaminase 2 (TG-2-IgA), density of CD3 (cut-off 37 cells/mm² epithelium) and γδ T cell receptor bearing intraepithelial lymphocytes/IELs (cut-off 4.3 γδ T cells/mm² epithelium). The study was approved by the Local Ethical Committee.

Results: Altogether 41 patients, mean age 45.4 ± 14.6 years, 61% female, were recruited. Among these, 21 were finally diagnosed as adult CD (mean TG-156 U/L, mean CD3 ratio 81.87, and crypt hyperplastic mucosal lesion in distal duode-
num) and the rest 20 were non-CD controls (serum negative and normal on distal duodenal biopsy). All patients were on a gluten-containing diet. Quality of bulk biopsy samples was unsatisfactory and unreadable in 67% of CD cases and 50% of controls, even after reorientations and recuttings. All CD patients had, when measurable, VH:CrD < 2 in the anatomical bulb (average 0.31, range 0.02-0.61). On the other hand also non-CD controls had a crypt hyperplastic diseased bulk mucosa in 80% of patients (average VH:CrD 1.65, range 0.7-4.1), but the injury was much higher in CD patients (CD 0.7:00.006). The discrimination was significantly higher in CD compared to controls (CD3 1.87 vs. 34.05, p < 0.01; γδ IELs 29.12 vs. 6.44, p < 0.01). Bulk IgA deposits were positive in all CD patients and were able to discriminate CD cases from disease controls.

Conclusions: As reported in previous literature, bulk biopsy samples in adults are frequently of poor quality and not reliable for accurate histomorphological measurements. Also, interpretation of results from bulk samples should be done with caution, as non-
CD patients may have mild injury in the bulk lining and could be misinterpreted as CD. Assessment of bulb TG-2-IgA subepithelial deposits is a powerful tool to confirm CD.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

PI929 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 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 improve the diagnosis are currently explored. In this setting, we evaluate Simtomax™, a POCT detecting deamidated gliadin peptide anti-
bodies, 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 endos-
copy 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 positive CD was collected 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; Simtomax™ 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 at n = 721 adult patients (average age: 48 yrs) and n = 108 pediatric patients (average age: 11 yrs). In the adult cohort 45 POCT-

POCTs 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% (95%CI 92-96%), the sensitivity was 100% (95%


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 POCT. However, the CD prevalence in this group was low. In the pediatric group we reported a positive sensitivity, either due to a sensitivity problem with this serology in the pediatric population or secondary to a suboptimal IgA band expression of the POCT.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
bleeding rate with or without treatment, the rate of anaemia exacerbation (hemoglobin decreased by 0.5 g/dL), 5 year overall survival rate (DSS), Occult OGB was defined as recurrent or persistent iron deficiency anaemia with or without a positive faecal occult blood test and no bleeding findings by esophagogastroduodenoscopy and colonoscopy. Results: Results: The positive CE findings rate was 44% (157/357) and the detection rate of bleeding source lesions was 27% (98/357). All of the treated overt bleeding source lesions (Group A) were as follows: angioectasia 61 patients (Yano-Yamamoto classification Type 1a 37 patients, Type Ib 24 patients), non-specific ulcers 15 patients, duodenal anti-inflammatory drugs-induced ulcer 1 patient, hemangomas 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: angiectasia 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 was not a bleeding source lesion, OGB in both Group A and Group B was 90%. DSS in Group A was 99% and in Group B was 100%. One patient in Group A died of a primary small-bowel cancer.

Conclusion: Conclusion: Long-term outcomes with occult 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 INVESTIGATING THE VALUE OF FAEAL 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 detect the causes of anaemia or bleeding, such as angiodysplasia, small bowel Crohn’s disease, polypos, 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 immunochromical 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 relevant disease, transfusion requirements and use of anti-coagulants/anti-platelet agents. 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 this the standard cut-off used, in the Irish National Bowel Cancer Screening programme.

Results: A total of 40 patients were enrolled, mean age 55.4 years (range 18–77), 64% were female. A total of 27.6% of patients were on anti-platelet agents or anti-coagulants. 34% of patients had a blood transfusion within the last year. Mean Hb for the cohort was 12.8 g/dL (range 7.8–15.9 g/dL). The average FIT reading was 459 ng/ml (range 0–4426 ng/ml). 30% of patients had a FIT level >50 ng/ml. 46% of patients, had positive findings at SBCE. 9/12 (75%) of patients with a FIT level >50 ng/ml had positive findings at capsule endoscopy, compared to 5/28 (17.8%) for FIT <50 ng/ml, p value = 0.002, 95% C.I 0.29–0.86 O.R. 0.16. These included 4/12 (33%) new cases of Crohns, 3/12 (25%) angiodysplasia, 3/12 (33%) non-BHD enteritis, 1/12 (16.7%) small bowel tumours 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 >90 ng/ml were anaemic (Hb <11.5 g/dL), compared to 17% with FIT <50 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 0.22–0.3 O.R 0.05. Overall the sensitivity for a FIT >50 ng/ml for detecting small bowel pathology was 83% with a specificity of 92%, giving a positive predictive value of 83.3% (95% C.I. 56%-95%). Antiplatelet uptake was not predictive of a positive FIT, as 16.7% of patients with a FIT >50 ng/ml were on anti-platelet agents, compared to 83.3% who weren’t.

Conclusion: FIT is useful at predicting clinically significant small bowel pathology at the time of capsule endoscopy. It may help better identify and prioritise patients who would benefit from referral.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1933 VIDEO CAPSULE ENDOSCOPY IN THE ASSESSMENT OF PORTAL HYPERTENSIVE ENTEROPATHY

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Introduction: The features of the portal hypertension enteropathy (PHE) vary from mild mucosal changes to varices with or without bleeding. The prevalence and the correlation of factors that predict the development of PHE are not fully understood.

Aims & Methods: Our aim in this study is to examine the prevalence of the different manifestations portal hypertensive enteropathy and it’s correlation with the Child-Pugh score (CTP) in cirrhosis using video capsule endoscopy (CCE). At a single center, we performed a retrospective chart review study of patients between the age of 18 and 80 with cirrhosis, who had VCE study between January 2010 and January 2016. Based on the published literature we divided the portal hypertensive enteropathy lesions in our study into vascular lesions (arteriovenous malformation (AVM), red spots, bleeding or varices) and mucosal lesions (mild inflammatory changes or severe inflammatory changes which are a mosaic, congested and friable mucosa).

Results: 100 patients with cirrhosis had a VCE study. The mean age was 62.82 years. Male gender was predominant with a 64%, while the Caucasians represented 82% of the cohort. The most common etiologies of the cirrhosis were chronic alcohol abuse followed by chronic hepatitis C virus (HCV) and non-alcoholic steatohepatitis (NASH)Table 1A. The average MELD score was 13.86(±0.66). VCE detected small bowel lesions in 71% of the patients while the features of portal hypertensive enteropathy were found in 5% from the total cohort. AVMs and Inflammatory changes were the most common findings, followed by bleeding. 13 patients found to have two or more lesions by VCE. More than 50% of the lesions were vascular in nature (table1A). The percentage of the CTP A, CTP B and CTP C was 46%, 21% and 13% respectively. The odds of finding portal hypertensive enteropathy in decompensated cirrhosis is twice that in compensated cirrhosis (odd ratio of 2.0) table 1B. 45 patients had negative EGD exam for any active bleeding, esophageal varices (EV), portal hypertensive gastropathy(PHG) or gastric varices(GV). 31 of them (68%) had features of portal hypertensive enteropathy in their VCE. table 1B.

Table 1A

<table>
<thead>
<tr>
<th>Number (%)</th>
</tr>
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<tbody>
<tr>
<td>Total number of patients</td>
</tr>
<tr>
<td>Causes of cirrhosis:</td>
</tr>
<tr>
<td>Congestive Hepatopathy</td>
</tr>
<tr>
<td>Cryptogenic</td>
</tr>
<tr>
<td>HCV</td>
</tr>
<tr>
<td>Alcohol</td>
</tr>
<tr>
<td>Hemochromatosis</td>
</tr>
<tr>
<td>NASH</td>
</tr>
<tr>
<td>PSC</td>
</tr>
<tr>
<td>PBC</td>
</tr>
<tr>
<td>AIH</td>
</tr>
<tr>
<td>Age</td>
</tr>
<tr>
<td>MELD score</td>
</tr>
<tr>
<td>Demographic: Male</td>
</tr>
<tr>
<td>Female</td>
</tr>
<tr>
<td>Whites</td>
</tr>
<tr>
<td>Asian</td>
</tr>
<tr>
<td>African-American</td>
</tr>
<tr>
<td>Others</td>
</tr>
<tr>
<td>Small intestine lesions</td>
</tr>
<tr>
<td>Portal hypertensive enteropathy (PHE)</td>
</tr>
<tr>
<td>Vascular lesions: AVMS</td>
</tr>
<tr>
<td>Varices</td>
</tr>
<tr>
<td>Bleeding</td>
</tr>
<tr>
<td>Red spot</td>
</tr>
<tr>
<td>Inflammatory changes: Mild</td>
</tr>
<tr>
<td>Severe</td>
</tr>
<tr>
<td>No Portal hypertension enteropathy</td>
</tr>
</tbody>
</table>

Table 1B

<table>
<thead>
<tr>
<th>Number PHE</th>
<th>No PHE</th>
<th>O.R</th>
<th>P-value</th>
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<tbody>
<tr>
<td>CTP-A</td>
<td>46</td>
<td>26</td>
<td>0.5</td>
</tr>
<tr>
<td>CTP-B + C</td>
<td>54</td>
<td>39</td>
<td>15</td>
</tr>
</tbody>
</table>

(continued)
OFGIB (male/female: 678/374, age of onset: median of 51 years). We retrieved the database from 1997 to 2007 and estimated ORs using Mantel-Haenszel estimator in discordant cases. Drug adherence was classified into 4 groups: 1) 100%, 2) 50% or higher, 3) lower than 50%, and 4) 0%. Using a case-crossover design, we investigated patients with persistent overt SBB after negative DBE and the presence of enteric-coated aspirin (n = 148, 33%), drug injuries (n = 48, 11%: malignant 32, benign 16), diverticula (n = 13, 3%), etc. Data from 133 patients included 346 drugs which could be identified 24 weeks before overt SBB. ORs (95% CIs) of enteric-coated aspirin (n = 51), warfarin (n = 27), clopidogrel (n = 24), and loxoprofen (a propionic acid derivative, n = 21) were 5.1(1.3–24.3), 3.7(0.8–16.6), 3.1(0.2–45.3), and 15.8(2.3–139.6). Aspirin-associated SBB was caused by aspirin-induced injuries, angioedema, Meckel’s diverticula, and polyps. Laxoprofen-associated SBB was caused by mostly loxoprofen-induced injuries.

Conclusion: Enteric-coated aspirin, clopidogrel, and loxoprofen were identified as drug injuries causing overt SBB during a relatively short period after administration.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1936 META-ANALYSIS REVEALS SIMILAR REBLEEDING RATES AMONG EASTERN AND WESTERN Populations UP TO FIVE YEARS AFTER INDEX VIDEO CAPSULE ENDOSCOPY

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Introduction: Video capsule endoscopy (VCE) is the first-line diagnostic modality for obscure gastrointestinal bleeding (OGBB). Investigation and different re-bleeding rates have been published among Western and Eastern studies.

Aims & Methods: Aim of this meta-analysis was to examine the differences in re-bleeding rates in patients with OGBB 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 OGBBB. Meta-analysis assessed the pooled proportion of re-bleeding events after VCE for OGBB according to study’s origin (Western vs. Eastern) as the primary endpoint. Point estimates and their 95% CI were calculated using the fixed and random effect model. Heterogeneity was measured using the I² statistic.

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 25.2(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 rates after positive compared to negative VCE index examination was higher [1.89(1.10–3.24), I² = 72%] in Eastern populations, 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 VCE was detected either in the East [2.03(0.96–4.29), I² = 71%] or in the West [2.42(1.27–4.62), I² = 0%].

Conclusion: Our analysis shows that patients undergoing VCE for OGBB 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 not noted only in studies originating from the East.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1934 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-associated small-bowel bleeding (SBB) has not been well characterized.

Aims & Methods: The aim of this study is to determine the risk of drugs associated with overt SBB using a case-crossover design. The Japanese Association for Capsule Endoscopy developed a prospectively recorded database of outpatients and inpatients who underwent SBCE at 18 medical centers in Japan, and data were collected from 1052 patients with obscure gastrointestinal bleeding (OGIB) between December 2010 and June 2016. This database includes patient characteristics, drugs used, SBCE findings, and final diagnosis. Drugs used were identified during a “case period” 4 weeks before the overt SBB, and a “control period” 24-5 weeks before the overt SBB. Drug adherence was classified into 4 groups: 1) 100%, 2) 50% or higher, 3) lower than 50%, and 4) 0%. Using conditional logistic regression, odds ratios (ORs) and 95% confidential intervals (CIs) were estimated using Mantel-Haenszel estimator in discordant cases.

Results: Of 1052 patients with OGIB (male/female: 678/374, age of onset: median of 51 years), 485 with SBB (male/female: 291/194, age of onset: median of 51 years) were enrolled. Final diagnoses were vascular lesions (n = 169, 37%), followed by inflammatory lesions (n = 148, 33%), drug injuries (n = 64, 14%: NSAID 47, aspirin 15, both 1, anticancer drug 1), tumors (n = 48, 11%: malignant 32, benign 16), diverticula (n = 13, 3%), etc. Data from 133 patients included 346 drugs which could be identified 24 weeks before overt SBB were analyzed. ORs (95% CIs) of enteric-coated aspirin (n = 51), warfarin (n = 27), clopidogrel (n = 24), and loxoprofen (a propionic acid derivative, n = 21) were 5.1(1.3–24.3), 3.7(0.8–16.6), 3.1(0.2–45.3), and 15.8(2.3–139.6). Aspirin-associated SBB was caused by aspirin-induced injuries, angioedema, Meckel’s diverticula, and polyps. Laxoprofen-associated SBB was caused by mostly loxoprofen-induced injuries.

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


P1937 DOES DISCONTINUATION OF ANTITHROMBOTIC AGENTS AFFECT DIAGNOSTIC YIELD OF SMALL BOWEL CAPSULE ENDOSCOPY IN PATIENTS WITH OBSCURE GASTROINTESTINAL BLEEDING?

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Disclosure of Interest: All authors have declared no conflicts of interest.

Aims & Methods: To examine the effect of discontinuation of antithrombotic agents on the diagnostic yield of capsule endoscopy in patients with obscure gastrointestinal bleeding. Use of antithrombotic agents including platelet anti-aggregants is associated with gastrointestinal bleeding. Antithrombotic users account for a large portion of patients with obscure GI bleeding, and those with the use of antithrombotics are often excluded CE. It should be noted that some patients with over antithrombotics could be referred for CE, which may affect the diagnostic yield. Aims & Methods: To examine the effect of discontinuation of antithrombotic agents on the diagnostic yield of CE in patients using antithrombotics who develop overt GI bleeding. Between March 2004 and December 2015, 130 consecutive patients (75 male; mean age 71.9 years) were referred for CE (for overt GI bleeding) and of these patients with antithrombotics were underwent for CE for overt GI bleeding, whereas patients who underwent double-balloon enteroscopy before CE were excluded. Findings were noted in the presence of observed lesions could explain the bleeding, while findings including isolated red spots and a single small polyp were considered false-negative. The primary endpoint was the rate of positive CE findings between patients who continued continued antithrombotic agents. Furthermore, a propensity score analysis was performed to reduce the effects of selection bias and potential confounding factors. The secondary endpoint was to assess the predictive factors for the positive CE findings by using multiple logistic regression.

Results: Of the 73 patients who discontinued antithrombotic agents, 36 (49.3%) patients had positive findings in the small intestine (ulcer/erosion [n = 24], angioectasia [n = 7], tumor [n = 4], and blood pooling [n = 1]), while of the 57 patients who discontinued these agents, 35 (61.4%) patients had positive findings (ulcer/erosion [n = 17], angioectasia [n = 11], tumor [n = 3], and blood pooling [n = 4]). The rates of positive CE findings did not differ between the two groups. Even after propensity score matching, discontinuation of antithrombotic agents did not increase the rate of positive CE findings. In multivariate analysis, the lowest hemoglobin level before CE examination was an independent predictive factor associated with positive CE findings. The odds ratio per 1 g/dL increase in the lowest hemoglobin level was 0.91 (95% confidence interval, 0.87-0.98). However, other factors, including sex, age, and discontinuation of antithrombotic agents, were not associated with positive CE findings.

Conclusion: Discontinuation of antithrombotic agents did not affect the diagnostic yield of CE with overt GI bleeding, and lowest hemoglobin level was associated with positive CE findings.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1939 CAPSOCAM SV-1 VERSUS PILLCAM SB 3 IN THE DETECTION OF OBSCURE GASTROINTESTINAL BLEEDING: RESULTS OF A PROSPECTIVE RANDOMIZED COMPARATIVE MULTI-CENTER STUDY

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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 or Pillcam SB 3. Different views of the bleeding lesions (interaction with blood and visualization of lesions; transit and evaluation time and adverse events were evaluated. Physicians were interviewed about their experience with both capsules and the evaluation software. A detailed subject questionnaire analyzed acceptance of each capsule system. Three months after initial capsule endoscopy follow-up procedures were documented.

Results: One hundred eighty-one patients with obscure gastrointestinal bleeding were recruited into the study. After exclusion of 28 patients 153 patients were randomized and Capsocam SV-1 (n=78) or PillCam SB 3 (n=75) was administered. Capsocam SV-1 detected more cases of bleeding (31/79, diagnostic yield 39.7%) compared to PillCam SB 3 (26/75, diagnostic yield 34.6%, n.s.). Transit time of both capsules was not different. Evaluation time with PillCam SB
P1940 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 arcuate ligament syndrome or non-occlusive ischemia (NOIIM) due to decreased cardiac output or hypoxia-oxygenation. The diagnosis of CMI remains challenging as chronic abdominal pain is common and mesenteric artery stenoses are frequently observed in the general population but not necessarily related. Harki et al.1 designed a score chart to predict the risk of CMI based on a cohort of CMI suspected patients. This score chart consists of patient characteristics (female 1 pt, weight loss 1 pt, cardio-vascular disease 1 pt) and radiologic evaluation (50–70% celiac artery (CA) stenosis 1 pt, >70% CA stenosis 4 pts, 50–70% superior mesenteric artery (SMA) stenosis 1 pt and >70% SMA stenosis 3 pts). A total score of 0–2 pts predicts an absolute risk of CMI of 0–21%, 3–6 pts a 22–46% risk and ≥7 pts a risk of ≥79%. We aimed to validate this prediction model in a prospective large multicenter patient cohort.

Aims & Methods: Patients suspected of CMI referred to two Dutch specialized CMI referral centers were included consecutively from January 2014 to August 2016. After diagnostic work-up of medical history taking, mesenteric CT-angiography or MR-angiography, and a mucosal ischemia test (visible light spectroscopy or tonometry), all patients were discussed in a specialized CMI multidisciplinary meeting resulting in an expert based consensus diagnosis. All patients with a CMI consensus diagnosis were planned for treatment (revascularization for occlusive disease and medication for NOMI). A definitive diagnosis of CMI was made if successful treatment resulted in durable symptom relief. The primary outcome was clinical response to revascularization, defined as relief of presenting symptoms as experienced by the patient.

Results: A total of 246 patients were included and consensus diagnosis of CMI was made in 108 (44%) patients, which resulted in 96 (39%) patients with a definitive diagnosis of CMI after a positive response therapy. A definite diagnosis of CMI was made in 9% of the patients with low risk, in 40% of the patients with intermediate risk and in 94% of the patients with high risk of CMI according to the score chart, respectively. Etiology and vascular lesions are summarized in the table. The discriminative ability of the score chart was strong (C-Statistic 0.87).

Conclusion: The score chart for CMI based on patient characteristics and anatomy is a reliable tool to discriminate the risk of CMI and useful for clinical decision-making, for example to adopt a wait-and-see policy in patients with a low risk and immediate vascular intervention in patients with high risk of CMI.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1941 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 detected in patients with abdominal complaints. These patients may suffer from chronic mesenteric ischemia (CMI) causing nonspecific abdominal complaints as postprandial pain, nausea or diarrhea. However, the existence of single artery 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, interventionalist 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 symptomatic 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.

Continued

<table>
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<tr>
<th>Diagnosis</th>
<th>Low risk (0–2 pts)</th>
<th>Intermediate risk (3–6 pts)</th>
<th>High risk (≥7 pts)</th>
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</thead>
<tbody>
<tr>
<td>Consensus diagnosis CMI</td>
<td>9 (9.9%)</td>
<td>53 (49.5%)</td>
<td>46 (95.8%)</td>
</tr>
<tr>
<td>Definitive diagnosis CMI</td>
<td>8 (8.8%)</td>
<td>43 (40.2%)</td>
<td>45 (93.8%)</td>
</tr>
<tr>
<td>Vascular lesion</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No significant vascular lesion</td>
<td>73 (80.2%)</td>
<td>20 (18.7%)</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td>Single vessel*</td>
<td>17 (18.7%)</td>
<td>69 (64.5%)</td>
<td>5 (10.4%)</td>
</tr>
<tr>
<td>CA stenosis</td>
<td>11 (64.7%)</td>
<td>50 (72.5%)</td>
<td>5 (100.0%)</td>
</tr>
<tr>
<td>SMA stenosis</td>
<td>0 (0.0%)</td>
<td>18 (26.1%)</td>
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</tr>
<tr>
<td>IMA stenosis</td>
<td>6 (35.3%)</td>
<td>1 (1.4%)</td>
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<tr>
<td>Multi vessel</td>
<td>1 (1.1%)</td>
<td>18 (26.1%)</td>
<td>43 (69.6%)</td>
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<tr>
<td>CA and SMA stenosis</td>
<td>0 (0.0%)</td>
<td>7 (38.9%)</td>
<td>19 (42.2%)</td>
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</tbody>
</table>

(continued)
CA = celiac artery; SMA = superior mesenteric artery; MALS = median arcuate ligament syndrome

### P1942 UNDERUTILIZATION OF ENDOSCOPIC 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 angiodysplasias. In the minority of patients active bleeding angiodysplasias are seen during endoscopy, but in contrast non-bleeding angiodysplasias can be an incidental finding. This can make the decision whether to treat endoscopically detected angiodysplasias with APC difficult.

**Aims & Methods:** The aim of this study is to investigate the need for repeat endoscopies with APC in patients with angiodysplasias who were left untreated during the index endoscopy performed for iron deficiency anaemia or overt bleeding. We initiated an international, multicentre cohort study to collect clinical, laboratory and endoscopic data from angiodysplasia patients.

**Results:** Patients and methods: We included 39 patients. Thirty-two were females (82.1%) and the mean age was 43.6 ± 11.3 years. The mean BMI before surgery was 41.6 kg/m². There was a significant decrease in BMI after surgery and, on average, the mean total body weight loss was 34% and the mean excess BMI loss was 90%. Before intervention, vitamin D deficiency was present in 77.7% of patients. Patients with severe vitamin D deficiency (<20 ng/mL of serum 25(OH)D) were considered for vitamin D3 treatment (15 μg/day).

**Conclusion:** A substantial proportion of patients with clinical symptomatic angiodysplasia 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.

**NUTRITION III - HALL 7**

### P1944 CHANGES IN LEVELS OF VITAMIN D IN OBSESE PATIENTS SUBMITTED TO BARIATRIC SURGERY

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**Introduction:** An association between obesity and vitamin D deficiency has been reported in several studies. This may be explained, among other things by the sequestration of the fat-soluble vitamin D in the adipose tissue. Bariatric surgery, including Roux-en-Y gastric bypass (RYGB) is an effective treatment for more extreme cases of obesity, promoting significant weight loss and consequently reduction in some obesity-related health problems. However, the problem of vitamin D deficiency doesn’t seem to be solved after RYGB and can even be exacerbated by the changes in digestion and absorption of this nutrient after the surgery.

**Aims & Methods:** The aim of this study was to analyze the prevalence of vitamin D deficiency (VDD) and vitamin D insufficiency (VDI) in a population of obese patients, before and after being submitted to RYGB. We included patients patients selected to undergo RYGB for obesity. We measured anthropometric values and the levels of 25-hydroxy-vitamin D (25(OH)D) before and 1 year after the procedure. VDD was defined as serum 25(OH)D ≤ 20ng/mL and VDI as serum 25(OH)D concentrations between 20–30ng/mL. Levels of 25(OH)D > 30ng/mL were considered normal.

**Results:** We included 39 patients. Thirty-two were females (82.1%) and the mean age was 43.6 ± 11.3 years. The mean BMI before surgery was 41.6 kg/m². There was a significant decrease in BMI after surgery and, on average, the mean total body weight loss was 34% and the mean excess BMI loss was 90%. Before

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**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**Conclusion:** Vitamin D status after obesity surgery cannot be considered in a population of obese patients undergoing RYGB.

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**NUTRITION III - HALL 7**

### 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 considering 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 erythematosus 49 (10.36%)
- Systemic sclerosis 27 (8.33%)
- Behcet’s disease 27 (4.39%)
- Celiac syndrome 14 (7.37%)
- Wegener’s granulomatosis 2 (21.60%)
- Antiphospholipid Anti body Syndrome 3 (22.58%)
- Amyloidosis 1 (4.56%)
- Churg-Strauss syndrome 2 (20.96%)
- Dermatomyositis 2 (25.80%)
- Microscopic Polyangiitis 1 (0%)
- Horton’s disease 2 (8.06%)
- Takayasu arteritis 3 (3.22%)
- Cryoglobulinaemic vasculitis 2 (0%)
- Henoch-Schönlein purpura 3 (30.10%)
- Leucocytoclastic vasculitis 2 (12.9%)

**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.
bariatric surgery, 52.3% of patients had VDD and 36.8% had VDI. After sur-
gery, the number of VDD increased to 71.1% (p = 0.0079). The mean levels of 25(OH)D decreased significantly from 19.8 ng/mL before surgery to 16.6 ng/mL after surgery (p < 0.05). There was no correlation between the amount of weight loss and the changes in the levels of 25(OH)D in our study.

**Conclusion:** There is a high prevalence of vitamin D deficiency in obese patients eligible for bariatric surgery. The level of deficiency tends to increase after RYGB. This population of patients should, therefore, be offered an adequate level of vitamin D supplementation, especially after the procedure.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

### A830

#### P1946 INTRAGASTRIC BALLOON: A CRITICAL VIEW IN NON ELECTIVE BARIATRIC SURGERY PATIENTS

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**Introduction:** Bariatric surgery is established as an excellent therapy for obesity. However, lower degrees of overweight without surgical indication also impact on patients’ health and quality of life, and the intragastric balloon (IGB) may be a treatment option.

**Aims & Methods:** We aimed to assess the efficacy of excess weight treatment with an IGB in patients with overweight and grade I obesity at EndogastroRio Clinic. A total of 717 patients were analyzed. A liquid filled IGB was used. The patients had initial body mass index (BMI) between 27 and 34.9 kg/m². The level of significance was set at p < 0.05.

**Results:** Results 615 patients were women. 131 patients had overweight and 586 had grade I obesity. Mean age was 37.97 years (17-75). Weight loss results and treatment success rates are shown on table 1. Percent excess weight loss (%EWL) was higher in overweight group (p < 0.0001) and percent total body weight loss (%TBWL) was higher in the grade I obesity group (p = 0.0009). 96 (73.28%) overweight patients and 132 (22.52%) grade I obesity patients reached a normal BMI (≤25 kg/m²).

**Conclusion:** Endoscopic treatment of obesity with an IGB shows to be an 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 FRACTYL LABS, GI WINDOWS, APOLLO ENDO SURGERY, GI DYNAMICS, ETHICON ENDO SURGERY, not related to the present study.

All other authors have declared no conflicts of interest.

<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>
</tr>
<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></td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>32.05 ± 2.04</td>
<td>28.73 ± 0.94</td>
</tr>
<tr>
<td>Final</td>
<td>26.46 ± 2.43</td>
<td>24.26 ± 1.85</td>
</tr>
<tr>
<td>Reduction</td>
<td>5.59 ± 2.36</td>
<td>4.46 ± 1.86</td>
</tr>
<tr>
<td>Excess weight (kg)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>19.77 ± 6.04</td>
<td>10.52 ± 2.7</td>
</tr>
<tr>
<td>Final</td>
<td>4.42 ± 7.44</td>
<td>–1.65 ± 5.09</td>
</tr>
<tr>
<td>%EWL</td>
<td>83.97 ± 41.89</td>
<td>122.77 ± 57.89</td>
</tr>
<tr>
<td>%TBWL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;10%</td>
<td>106 (14.78%)</td>
<td>22 (15.27%)</td>
</tr>
<tr>
<td>≥10%</td>
<td>611 (85.22%)</td>
<td>109 (83.21%)</td>
</tr>
<tr>
<td>%EWL(m;%)</td>
<td>324.46%</td>
<td>21 (1.52%)</td>
</tr>
<tr>
<td>≥25%</td>
<td>868/95.54%</td>
<td>129 (98.48%)</td>
</tr>
<tr>
<td>BMI(m;%)</td>
<td>231 (29.71%)</td>
<td>90 (73.28%)</td>
</tr>
</tbody>
</table>

*p < 0.0001 for all comparisons between values at baseline and at the end of the study. IGB = intragastric balloon; BMI = body mass index; 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 FRACTYL LABS, GI WINDOWS, APOLLO ENDO SURGERY, GI DYNAMICS, ETHICON ENDO SURGERY, not related to the present study.

All other authors have declared no conflicts of interest.

### A830

#### 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 adjust-ment. The adjustment resulted in a further mean weight loss of 4.2 kg (>9 to 20 kg), the range of upward volume was 281.73 to 66.58 ml (100-420 ml) and the moment of the procedure was 7.06 ± 1.64 months. The group of patients that did the upward adjustment 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 seems to be effective in preventing the early balloon removal. Although the upward adjustment does not show to be able in providing a greater weight loss.

**Disclosure of Interest:** M. Galvao Neto: I declare that I have received personal fees from FRACTYL LABS, GI WINDOWS, APOLLO 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.

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Introduction: Endoscopic methods, especially the intragastric balloon (IGB), have been shown to be effective for the treatment of excess weight.

Aims & Methods: We aimed to assess the efficacy and complications of excess weight treatment with a non-adjustable IGB.

A liquid-filled IGB with a volume of 600 to 700 ml was used. The patients had a minimum initial body mass index (BMI) of 27 kg/m² and were followed up by a multidisciplinary team consisting of a nutritionist, a doctor and a psychologist.

For statistical analysis, the patients were divided into groups according to sex and degree of excess weight (overweight and grade I, II and III obesity). Data were analyzed using descriptive statistical methods, the Student t-test, and analysis of variance followed by the Tukey post-test. The level of significance was set at p < 0.05.

Results: A total of 5874 patients were analyzed. The incidence of complications was 7.32% (n = 430), as listed below: 299 (5.09%) early IGB removal, 58 (0.98%) absence of weight loss or weight gain. The incidence of gas production inside the balloon was 0.20% (n = 54), and the incidence of leakage was 0.54% (n = 12) and the incidence of pancreatitis and esophagus perforation was 0.01% each (n = 1). Of the 5444 remaining patients, 4081 (74.9%) were women and 1363 (25.1%) were men. Mean age was approximately 38.8 years. The patients showed a significantly lower final BMI (mean: 30.08 ± 5.06 kg/m²) than the initial BMI (mean: 36.94 ± 5.67 kg/m²) (p < 0.0001). Mean BMI reduction was 6.85 ± 3.06 kg/m² (range: 0.25-29.79). Mean percent total body weight loss (TBWL) was 18.42 ± 7.25% and mean percent excess weight loss (EWL) was 65.66 ± 36.24% (range: 3.99-336.14). The weight loss in kilograms was 19.13 ± 8.86. The treatment success rate (%EWL > 25) was 93.0%, as follow: overweight was 99.0%, grade I obesity was 95.83%, grade II obesity 93.65% and grade III obesity was 86.09%. Percent EWL was higher in the overweight group (OW) (131.54% EWL), followed by grade I obesity (G1O) (76.67%), grade II obesity (G2O) (56.01%) and grade III obesity (G3O) (45.45%) sequentially (p < 0.000). Percent EWL was also higher in women (69.71% EWL) than in men (53.39% EWL) (p < 0.000). Results are better shown in table 01.
Disclosure of Interest: M. Galvao Neto: I received personal fees from FRACTYL Ltd. L.G. Baker: 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: Mechanisms contributing 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 mechanisms 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 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/10 days) or sham stress (basal condition; 1 h/day for 10 days) with an oral gavage of saline or gut solution containing FOS (8 g/kg) for 2 weeks. Then visceral sensitivity was measured by abdominal withdrawal reflex (AWR) in response to colorectal distension (CRD) and histologic analyses were used to evaluate mucosal inflammation. Immunohistochemistry, reverse transcription, and qPCR were used to assess mucosal mast cell, levels of cytokines (IL-6, IL-23, TNF-α, IL-10, IL-1β) and SCFA, respectively.

Results: Changes in visceral hyperalgesia and low-grade inflammation in WAS mice as a model of IBS. In WAS condition, increased visceral sensitivity and mucosal mast cell (12.3±2.61 vs. 8.33±3.55, P<0.01) were observed in FOS-administered mice compared with saline-administered mice. In WAS condition, cytokine expression 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±0.0 P<0.01), butyrate (0.70±0.09 vs. 0.19±0.003, P<0.05) and total SCFA (3.61±0.89 vs. 1.79±0.17, P<0.01) significantly increased in FOS administered mice compared with saline administered mice in WAS condition. In basal condition, no differences of visceral sensitivity, intestinal inflammation and SCFA were observed between mice treated with FOS or saline.

Conclusion: Oral gavage of FOS leads to both an increase in visceral sensitivity and gut inflammation in stress induced IBS mice. These effects are linked with the production of SCFA in the gut which involved in the regulation of sensitivity and intestinal immune activation. These findings support the hypothesis that visceral hypersensitivity and intestinal inflammation aggravated by certain FODMAPs may be responsible for IBS symptom generation, and indicate an alternative mechanism of the efficacy of the low-FODMAP diet for IBS patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1952 GENOMIC ANALYSIS OF THE MULTISPECIES PROBIOTIC PRODUCT VSL#3
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Introduction: Several formulations consisting of live lactic acid bacteria, including bifidobacteria, are marketed as probiotic products. However, these products are often heterogeneous with respect to the composition of gastrointestinal diseases (e.g. bacteria, yeast, fungi). Hence, it is important for manufacturers to know the exact species content of their products in order to control the growth of harmful bacteria. In addition, to ensure the effectiveness of the probiotic product, the DNA was extracted from the superstrains that are members of the multispecies probiotic product VSL#3. VSL#3 is marketed globally for treating colitis ulcerosa, pouchitis, and ulcerative colitis. However, the exact species composition of this product was not yet 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 probiotic VSL#3. Detailed phylogenetic and genomic analysis confirmed the species composition to be as indicated in the VSL#3 product specification and showed the 8 strains of this multispecies product to be closely related to the species Lactobacillus acidophilus, Lactobacillus plantarum, Lactobacillus helveticus, Bifidobacterium breve and B. animalis subsp. lactis (this species included two strains). The species L. paracasei and L. casei were highly related and in need for further official taxonomic resolution. The annotated genes of the assembled genomes were used to identify genes involved in potential probiotic functions. Full sets of genes for the production of tight adherence pili were observed in the Bifidobacterium spp. and are known to produce adherence factor that is involved in adherence to mucosal surfaces and ornmote 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; Tytgat et al 2016).

Conclusion: The genomic analysis of the VSL#3 strains confirmed the product specifications, defined the baseline genetic coding capacity, and predicted a number of probiotic mechanisms that could explain the efficacy of this multispecies product.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1953 RAISING PUBLIC AWARENESS OF GASTROINTESTINAL DISEASES: AN INNOVATIVE STRATEGY FOR A NATIONAL CAMPAIGN
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Introduction: Disease prevention and public health awareness are fundamental to reduce morbidity, mortality and health-related costs. Extensive research led to identification of causes of gastrointestinal (GI) diseases, but health problems are 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) 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 up and exhibited both inside and outside the model; (c) videos illustrating endoscopy exams and histopathology examinations were projected and discussed; (d) clinical cases, also mimicking patient encounter, were simulated.

Results: We started an innovative strategy focused on the keywords: multidisciplinary team, scientific rigor but simple words, people attraction, curiosity inducing communication, in Parma and neighbouring Cities. Specialists in Gastroenterology, Anatomic Pathology, Radiology, Surgery, Biochemistry, Nutrition, together with pre- and post-graduate Students, discussed various aspects of gastrointestinal diseases. Selected people were examined by ultrasound, computed tomography. Municipality and civil society were also involved to ensure organizational efficiency. The most discussed topics regarded dyspepsia, gastritis, helicobacter pylori infection, gastroesophageal reflux disease, alcohol abuse, cirrhosis, hepatitis, intestinal bowel syndrome, thyroid diseases, colorectal cancer, food allergy and intolerance, optimal nutrition in health and disease. The event performed in the main square of Parma lasted two full consecutive days and was attended by about 3,000 people, most of which also filled a questionnaire. A total of 120 ultrasound examinations were performed. In neighbouring Civic 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

Introduction: Amino acids are essential metabolites which play a role as protein constituents. Moreover, amino acids and their metabolites feature in regulation of anabolic and catabolic metabolism, detoxification processes, and act as neurotransmitters. Concentration of circulating amino acids reflects about dietary protein intake and can be an indicative of malnutrition. Changes in the amino acid homeostasis are observed in coeliac disease (CD) [1] due to malabsorption caused by enteropathy but also because of the treatment with gluten-free diet (GFD) shown to be low in the important nutrients.

Aim & Methods: A randomized, placebo-controlled interventional trial was designed to assess the influence of an oligofructose-enriched inulin (OEI) as a supplement of GFD on plasma profile and urine excretion of amino acids in CD children strictly following GFD at least 1 year. We randomized 34 children diagnosed with CD into a group receiving 10 g of OEI daily and a placebo (maltodextrin) group during a 12-week nutritional intervention. Amino acid profiles in urine and plasma was analysed via EZ.Faas [2,3] derivatisation method followed by gas chromatography/mass spectrometry detection.

Results: At the baseline and after supplementation, 22 and 27 amino acids were identified in plasma and urine, respectively in both groups of children. Significantly higher levels (p < 0.05) of alanine, serine, asparagine, glutamine, threonine, proline, histidine, lysine, and ornithine were observed in the OEI group. The changes of glutamic acid, hydroxylysine and cystine were detected in urine of OEI group after intervention as compared to the baseline and placebo group. Analysis of amino acid profiles in plasma samples showed a significant increase (p < 0.05) of many amino acids in both OEI and placebo groups after intervention. However, the concentrations of glutamin and glutamic acid were significantly higher (p < 0.05) in the OEI supplemented group.

Conclusion: Our study showed that supplementation of GFD with OEI impacts the amino acid homeostasis in CD children. OEI in GFD increased a total concentration of amino acids in both urine and plasma. Higher excretion of amino acids in urine accompanied with increased amino acid content in plasma may indicate the improved absorption or/and stimulated de novo synthesis of proteins. Increase in the concentration of glutamic acid can stimulate recovery of the intestinal mucosa by itself or by the involvement in the synthesis of cytokine known as negatively correlated with intestinal mucosal damage [1], therefore we can suspect that OEI added to GFD can help in restoring of the intestinal barrier integrity.

Disclosure of Interest: All authors have declared no conflicts of interest.

The research was supported by statutory funds of the Department of Chemistry and Biodynamics of Food in the IAR/FR PAS and by the National Science Centre, Poland (project number: 2016/21/N/NZ0/01510).

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References

Introduction: The quality of life and nutritional management after gastrectomy are major issues for gastric cancer patients, as is oncological surveillance. Weight loss usually follows gastric resection, with reported losses ranging from 10% to 30% of the preoperative weight. This loss has been attributed to inadequate oral intake, malabsorption, rapid intestinal transit time, and bacterial overgrowth. Timely, appropriate nutritional intervention can minimize diet intolerance, weight loss, and micronutrient deficiencies that often follow surgery.

Aim & 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 hemoglobin, ferritin, vitamin B12, total protein, albumin, total cholesterol, triglyceride, and calcium. The patients were followed up for 6 months postoperatively and then annually until death, cancer recurrence, or follow-up loss.

Results: In the long term, ferritin and triglyceride gradually decreased after gastrectomy, while the other parameters decreased slightly or were stable. In the comparisons according to reconstruction type, the Roux-en-Y group had the lowest levels of hemoglobin, ferritin, vitamin B12, total protein, albumin, and total cholesterol beginning 6 months postoperatively compared with the Billroth I and II groups. However, only ferritin and vitamin B12 had significant differences in the 5-year cumulative incidences of deficiency according to the reconstruction type, whereas albumin, triglyceride, total cholesterol and calcium did not.

Conclusion: Although malabsorption and malnutrition are common in patients after a gastrectomy, most nutritional parameters were stable or decreased slightly in the long-term and were not markedly influenced by the reconstruction type or extent of gastrectomy. Therefore, for more accurate nutritional assessment after gastrectomy, multivariate analysis and further study should be considered rather than simply measuring biochemical parameters.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

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Introduction: The quality of life and nutritional management after gastrectomy are major issues for gastric cancer patients, as is oncological surveillance. Weight loss usually follows gastric resection, with reported losses ranging from 10% to 30% of the preoperative weight. This loss has been attributed to inadequate oral intake, malabsorption, rapid intestinal transit time, and bacterial overgrowth. Timely, appropriate nutritional intervention can minimize diet intolerance, weight loss, and micronutrient deficiencies that often follow surgery.

Aim & 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 hemoglobin, ferritin, vitamin B12, total protein, albumin, total cholesterol, triglyceride, and calcium. The patients were followed up for 6 months postoperatively and then annually until death, cancer recurrence, or follow-up loss.

Results: In the long term, ferritin and triglyceride gradually decreased after gastrectomy, while the other parameters decreased slightly or were stable. In the comparisons according to reconstruction type, the Roux-en-Y group had the lowest levels of hemoglobin, ferritin, vitamin B12, total protein, albumin, and total cholesterol beginning 6 months postoperatively compared with the Billroth I and II groups. However, only ferritin and vitamin B12 had significant differences in the 5-year cumulative incidences of deficiency according to the reconstruction type, whereas albumin, triglyceride, total cholesterol and calcium did not.

Conclusion: Although malabsorption and malnutrition are common in patients after a gastrectomy, most nutritional parameters were stable or decreased slightly in the long-term and were not markedly influenced by the reconstruction type or extent of gastrectomy. Therefore, for more accurate nutritional assessment after gastrectomy, multivariate analysis and further study should be considered rather than simply measuring biochemical parameters.

Disclosure of Interest: All authors have declared no conflicts of interest.
P1958 OPTIMAL NUTRITIONAL ROUTE FOLLOWING TOTAL GASTRECTOMY: A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS
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Introduction: Total gastrectomy can profoundly influence patients’ nutritional status and wound healing. The optimal route of nutrition is controversial and vaccination guidelines vary. The objective of this systematic review and meta-analysis is to determine if the optimal nutritional route after total gastrectomy can be identified.

Aims & Methods: Studies were identified via a systematic review of randomized controlled trials comparing various nutritional routes after total gastrectomy. The primary outcome measure was overall morbidity.

Results: Six studies involving 353 patients (median age 62 years, 217 males, 170 TPN, 96 NJ, 87 JEJ) who underwent total gastrectomy were analysed. Overall morbidity was significantly greater in patients after TPN compared with EN (p = 0.04). HFD rats were more anxious in OFT (p = 0.001) and showed increased faeces weight (p = 0.01), whereas VAD compromised spatial learning (p = 0.04). HFD rats were more anxious in OFT (p = 0.001) and showed increased faeces weight (p = 0.01), whereas VAD compromised spatial learning (p = 0.04).

Conclusion: HFD-induced alterations in memory and anxiety were not affected by VAD but impaired 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.


P1959 TAUROLIDINE PREVENTS CATHETER-RELATED BLOODSTREAM INFECTIONS IN PATIENTS ON HOME PARENTERAL NUTRITION – A RANDOMIZED CONTROLLED TRIAL
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Introduction: Patients on home parenteral nutrition (HPN) are exposed to a life-long 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.

Aims & Methods: We hypothesized that taurolidine 2% as CLS is superior to saline 0.9% in preventing CRBSI in HPN patients. This multicenter double blinded trial randomly assigned HPN patients to use either the CLS taurolidine 2% or saline 0.9% for one year. Primary outcome was the number of CRBSI/1000 catheter days. Secondary outcomes included time to CRBSI or catheter removal due to CRBSI, number of catheter removals due to CRBSI, exit-site infections, catheter occlusions, and serious adverse events.

Results: Of 102 randomized patients were enrolled as modified intention-to-treat population. With taurolidine, 5 CRBSI occurred during 15318 catheter days. In the saline arm 18 CRBSI occurred over 12493 catheter days. CRBSI/1000 catheter days were 0.33 in the taurolidine group and saline groups, respectively. Relative risk, 0.25; 95% CI, 0.07 to 0.73; P = 0.003. The cumulative proportion of CRBSI-free patients after one year was 88% in the taurolidine group and 49% in the saline group (P = 0.002). The number of catheter removals due to CRBSI was two (4%) in the taurolidine group and eight (16%) in the saline arm (P = 0.049). The cumulative proportion of patients without a catheter removal due to CRBSI was higher in the taurolidine group (P = 0.025). Exit-site infection and catheter occlusion rates were similar in both groups. Except for occurrence of CRBSI (P = 0.002), there was no difference in (serious) adverse events between groups. Drug-related adverse events were rare and generally mild to moderate.

Conclusion: Taurolidine 2% decreased the risk for CRBSI by more than four fold in HPN patients compared to saline 0.9%. Given its favorable safety profile and lack of evidence for altering microbial susceptibility, taurolidine lock solution therefore seems a key strategy to prevent CRBSI.

P1960 REPAIR OF DAMAGED CENTRAL VENOUS CATHETERS SUBSTANTIALLY LONGS DELAY IN SURVIVAL IN PATIENTS ON HOME PARENTERAL NUTRITION

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Introduction: Patients with severe intestinal failure depend on life-long home parenteral nutrition (HPN) support. Repeated central venous catheter (CVC) loss due to complications, including mechanical damage, compromises vascular access. It remains unclear whether repair of damaged CVCs is an effective strategy to extend catheter life, avoid surgical replacement and maintain venous access.

Aims & Methods: The objective of this study was to characterize patients who underwent catheter repair and to evaluate effects on catheter survival and describe complications. This study concerns a retrospective analysis of all catheter repairs that were performed in HPN patients in the Radboud 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 flexible part of the catheter. The mean time to catheter repair after placement was 2.2 years (95% CI = 1.5–2.89). The mean catheter survival after repair was extended by 1.4 years to 3.6 years (95% CI = 2.69–4.46; p = 0.01). No repair-related complications occurred within 1 month after catheter repair.

Conclusion: Repair of damaged CVCs significantly extends catheter life in HPN patients who maintain venous access. Catheter repair is a safe procedure.


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 parental 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). Aim & 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 HPN support were included in this study. CRC incidence rates/1000 catheter days were described. Kaplan-Meier analysis was used to determine the time until a first CRC. Cox proportional hazard analysis was performed to identify risk factors for a first CRC.

Results: In 221 HPN patients, 658 CVCs (418 Hickmans, 172 PACs, and 28 non-tunneled CVCs) were inserted, comprising 261252 catheter days. Median survival for Hickmans, PACs and non-tunneled catheters was 175 (43–544), 310 (61–827) and 246 (54–817) catheter days (5–2070). Numerically, but not significantly, CRBSI and CRO rates decreased over time. The sole use of intra-venous nutrition (IV) in PAC patients was placed as the only factor that could influence the CVC repair rate. Data obtained were filtered by quality and length and processed for alpha and beta diversity analyses using QIIME software package. SCFA profile was measured using solid phase microextraction (SPME) coupled to gas chromatography and high resolution mass spectrometry employing time of flight mass analyser (Pegasus GC-HRT; LECO, USA). D-lactate content was determined using Megazyme kit.

Conclusion: Weighted UniFrac analysis revealed significant differences between control and TPN subjects. In healthy controls, most abundant phylum was Firmicutes (64.2 ± 7.5%), followed by Bacteroidetes (22.5 ± 9.1%) and Actinobacteria (8.9 ± 4.5%). Proteobacteria were found in only one control sample. In TPN group, Firmicutes dominated 64–29% of microbiota but Bacteroidetes were absent and Actinobacteria significantly reduced (1.6–5.4%). Proteobacteria were found in all samples (23.6 ± 15%). The most abundant metabolites in control stool samples were short chain fatty acids (SCFA): acetate, propionate and butyrate. In the TPN group, lactate predominated significantly, while SCFA were absent in the intestinal content of these patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

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P1962 INTESTINAL DYSBIOSIS IN PATIENTS WITH SHORT BOWEL SYNDROME DEPENDENT ON TOTAL PARENTERAL NUTRITION IS REFLECTED BY ALTERED METABOLOME IN FAECEES

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Introduction: Patients with short bowel syndrome (SBS) exhibit substantial disturbances in gut microbiota composition, which implicates significant alterations of intestinal metabolism.

Aims & Methods: The aim of this study was to perform genetic and metabolomic analysis of stool samples collected from SBS patients totally dependent on parenteral nutrition (TPN). We included 10 healthy individuals and 8 healthy individuals and 8 healthy individuals and 8 healthy individuals.

Results: Weighted UniFrac analysis revealed significant differences between control

Disclosure of Interest: All authors have declared no conflicts of interest.

P1963 COMPARING RISKS OF ADVERSE EVENTS ASSOCIATED WITH PERCUTANEOUS ENDOSCOPIC GASTROSTOMY (PEG) PLACEMENT BETWEEN THE MODIFIED INTRODUCER TECHNIQUE AND THE OVERTUBE ASSISTED PULL TECHNIQUE

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Introduction: Techniques of percutaneous endoscopic gastrostomy (PEG) placement can be divided into two techniques, the pull technique or the introducer technique. Although the development of the pull technique has improved procedural safety for the gastrostomy placement, the pull technique, in which the PEG catheter is delivered through the oral cavity and the hypopharynx, inevitably contaminates the peristomal site. A series of studies directly comparing the newly developed modified introducer technique using a blunt cannula compared with the conventional pull technique demonstrated that the modified introducer technique was more preferable regarding procedure related adverse events. Meanwhile, use of an overtube while guiding the catheter into the stomach is performed in the reduction of the bacteria 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 nutrition the PEG was placed aiming 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) and the PNI 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>

Conclusion: There was no significant difference in overall risks of adverse events between the modified introducer technique group and the overtube assisted pull technique group. However, the modified introducer technique may be associated with higher risks of severer adverse events. Especially, special care should be taken in patients with lower serum platelet level.

Disclosure of Interest: All authors have declared no conflicts of interest.

References