

ePoster

PP-0001 Prospective series of muscle splitting cholecystectomy

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Background and Aim: To evaluate if muscle splitting mini cholecystectomy is a good alternate option for those who are not fit for the laparoscopic procedure and in those institutes where the laparoscopic facilities are not available. It is the muscle division which is supposed to be responsible for postoperative pain and the resultant local and systemic effects. **Methods:** Prospective series in which 20 cases of consecutive open cholecystectomies underwent muscle splitting procedure from June 2016 to May 2018 at Stupa Community Hospital, Jorpati, Kathmandu. **Results:** Less postoperative hospital stay, postoperative pain and discomfort with no increased incidence of intraoperative or postoperative complications and can be safe and effectively performed. **Conclusion:** Muscle splitting cholecystectomy is a good alternative to traditional rectus muscle dividing open cholecystectomy and maybe comparable to laparoscopic cholecystectomy a

Keywords: muscle splitting cholecystectomy

PP-0002 The effect of long-term human albumin administration on the mortality of adult patients with decompensated liver cirrhosis: a meta-analysis and systematic review

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Introduction: Liver disease accounts for approximately 2 million deaths per year worldwide, 1 million due to complications of cirrhosis. Mortality trends in cirrhosis have been increasing in the Philippines; data from 1990 to 2010 showed that there has been an overall increase of mortality by 53.7%. One of the promising treatment options for patients with cirrhosis is the use of human albumin. One postulated mechanism states that the common hallmark in the pathophysiology of complications of advanced cirrhosis is circulatory dysfunction. Based on this pathophysiological basis, targeting circulatory dysfunction appears to be a promising therapeutic approach to decrease the development of complications, which would then lead to a decrease in mortality. Besides its oncotic properties, albumin may exert other biological properties such as antioxidant, improvement of endothelial function and immunomodulatory effects, that may be also useful for the prevention of complications of cirrhosis. **Objective:** To determine the effect of long-term human albumin administration on the mortality rate of adult patients with decompensated liver cirrhosis. **Methods:** We conducted a systematic literature search using PUBMED, MEDLINE, EMBASE, Cochrane Central Register of Controlled Trials, Google Scholar, and Research Gate. Studies fulfilling the inclusion and exclusion

criteria were quality assessed based on the criteria provided in the Cochrane Handbook for Systematic Reviews of Interventions. The number of mortalities reported on follow-up in the included studies were combined and analyzed using the Review Manager (Rev Man) Version 5.3 with 95% confidence interval. **Results:** Five studies were included with a total of 830 patients. Results showed that there is a 32% decrease in mortality rate [RR 0.68 (0.48 to 0.96, 95% CI, Z = 2.22, p 0.03)] after long term human albumin administration with standard medical therapy as compared to those who received standard medical therapy alone. When a subgroup analysis was done to exclude the study which gave Midodrine on top of human albumin, it showed that there was a 36% decrease [RR 0.64 (0.44 to 0.91, 95% CI, Z = 2.48, p = 0.01)] in patients given long term human albumin which was less heterogenous. **Conclusion:** The study suggests that long term human albumin administration might have a beneficial effect in reducing mortality and the incidence of cirrhosis-related complications among adult patients with decompensated liver cirrhosis; although investigators suggest that larger, multi-centered, and double-blinded randomized controlled trials with longer follow-up periods should be done to generate more robust data to validate these claims.

Keywords: ascites, human albumin, liver cirrhosis, meta-analysis, mortality

PP-0003 Preoperative serum CB classifier in colorectal cancer: newfound clinical value of circulating basophils that complement the prognostic role of carcinoembryonic antigen biomarker

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Background and Aim: Despite accumulating evidence demonstrated immune/inflammation-related implications of basophils in affecting tissue microenvironment that surrounds a tumor, few studies investigated the serum basophils count level as a prognostic biomarker related to the oncological outcome of CRC. **Methods:** Between December 2007 and September 2013, patients diagnosed with stage I–III CRC in Fudan University Shanghai Cancer Center meeting the essential criteria were identified. The Kaplan–Meier method was used to construct the survival curves. Several Cox proportional hazard models were constructed to assess the prognostic factors. A simple predictor (CB classifier) was generated by combining serum basophils count and carcinoembryonic antigen (CEA) level. **Results:** The preoperative basophils count < 0.025 * 10⁹/L was strongly associated with higher T stage, higher N stage, venous invasion, perineural invasion, elevated serum CEA level, and thus poor survival ($P < 0.05$). More importantly, the serum CB classifier also presented a good prognostic value of disease-free survival even in the respective American Joint Committee on Cancer (AJCC) stage ($P < 0.05$). **Conclusion:** The preoperative basophils count < 0.025 * 10⁹/L was associated with aggressive biology and indicated evidently poor survival. Moreover, the present study supported the inclusion of preoperative serum CB classifier in the conventional AJCC stage for a more precise prediction of oncological outcome of patients with CRC after radical resection.

Keywords: basophil, carcinoembryonic antigen, colorectal cancer, immune/inflammation

PP-0004 Nicotine promotes activation of human pancreatic stellate cells through inducing autophagy via α 7nAChR-mediated JAK2/STAT3 signaling pathway

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Background and Aim: Pancreatic stellate cells are the main functional cells leading to pancreatic fibrosis. Nicotine is widely considered as an independent risk factor of pancreatic fibrosis, but the mechanism is still unclear. Our study was aimed to explore the effects of nicotine on human pancreatic stellate cells and involved pathways. **Methods:** Primary human pancreatic stellate cells were cultured and treated with nicotine (0.1 and 1 μ M). The proliferation, apoptosis, α -SMA expression, extracellular matrix metabolism, and autophagy of human pancreatic stellate cells were detected by CCK-8 assay flow cytometry real-time PCR and western blotting analysis. The α 7nAChR-mediated JAK2/STAT3 signaling pathway was also examined, and an α 7nAChR antagonist α -bungarotoxin was used to perform inhibition experiments. **Results:** The proliferation α -SMA expression and autophagy of hPSCs were significantly promoted by 1- μ M nicotine. Meanwhile, the apoptosis of human pancreatic stellate cells was significantly reduced. The extracellular matrix metabolism of human pancreatic stellate cells was also regulated by nicotine. Moreover, the α 7nAChR-mediated JAK2/STAT3 signaling pathway was activated by nicotine; this pathway and effects of nicotine can be blocked by α -bungarotoxin. **Conclusion:** Our finding suggests that nicotine can promote activation of human pancreatic stellate cells through inducing autophagy via α 7nAChR-mediated JAK2/STAT3 signaling pathway, providing a new insight into the mechanisms by which nicotine affects pancreatic fibrosis.

PP-0005 5 Day outcome of hepatitis E virus induced acute liver failure in the ICU

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Background and Aim: Hepatitis E is an important cause of acute liver failure especially in pregnancy. Raised ICP is associated with increased mortality in these patients. During an outbreak we studied baseline characteristics and clinical outcome of hepatitis E induced acute liver failure in ICU. **Methods:** All patients were monitored for metabolic derangement. Frequent monitoring of oxygenation, blood glucose level, vital signs, and signs of raised ICP were done. An intravenous bolus of 20% mannitol solution (1 g/kg body weight) was infused for 10 min in patients who developed raised intracranial pressure. Any metabolic derangement if found was corrected before mannitol infusion, and all patients received standard anti-coma and supportive measures. **Results:** Female 15 (75%) and male 5 (25%). 7 (35%) pregnant. Age: median 34.5 years (16–72); Day 1: serum bilirubin: median 10.65 mg/dL (4.20–21), ALT: median 1169 U/L

(310–3282), INR: median 2.405 (1–6.52), and serum creatinine: median 1.45 mg/dL (0.6–6.4). Day 5: INR: median 2 (1.12–6.52), serum creatinine: median 1.55 mg/dL (0.60–6.1). Encephalopathy on Day 1: Grade II: 8 (40%), Grade III: 10 (50%), and Grade IV: 2 (10%). Encephalopathy on Day 5: Grade I: 9 (52.94%), Grade II: 0 (0%), Grade III: 3 (17.65%), and Grade IV: 5 (29. 41%). Encephalopathy deteriorated in 8 (40%). 7 (87.5%) female and 3 (37.5%) pregnant. GCS deteriorated in 6 (30%); all (100%) females and 3 (50%) pregnant. Encephalopathy deterioration was not associated with gender ($p = 0.30$) or pregnancy ($p = 0.85$). Encephalopathy deterioration was not significantly different between patients that received mannitol and not ($p = 0.08$). 6 patients (30%) met criteria for liver transplantation. All (100%) female and 3 (50%) pregnant. 4 (66.67%) developed deterioration of encephalopathy. **Conclusion:** The majority among our patients were female. Many were pregnant. Proper care can save many lives. **Keywords:** acute liver failure, hepatitis E, mannitol, GCS, encephalopathy

PP-0006 Association of feces sign with prognosis of non-strangulated adhesive small bowel obstruction

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Background and Aim: The feces sign has been reported as a possible predictive factor for non-operative treatment of small bowel obstruction. However, its relationship with prognosis of non-strangulated adhesive small bowel obstruction remains unclear. This study aimed to clarify the relationship between the feces sign and prognosis of non-strangulated adhesive small bowel obstruction. **Methods:** Ninety-two patients with non-strangulated adhesive small bowel obstruction with the transitional zone visible on computed tomography were included. Patients were categorized into two groups: feces sign positive ($n = 40$) and negative ($n = 52$). Clinical features and prognosis were compared between the two groups. Cox proportional hazards regression models incorporating the feces sign were used to analyze odds of diet resumption and discharge. **Results:** Patients with feces sign were younger ($p = 0.015$), had a higher body mass index ($p = 0.027$), and had a lower white blood cell count ($p = 0.019$) on admission. More patients with feces sign were successfully treated with fasting and/or nasogastric tube placement ($p < 0.001$), and no patient with feces sign suffered from recurrent obstruction after diet resumption. Kaplan-Meier analysis showed that patients with feces sign took less time for diet resumption ($p = 0.007$) and discharge ($p = 0.004$) than those without it. Using Cox proportional hazards regression model, the feces sign was reported as an independent predictor of diet resumption (hazard ratio 1.685, $p = 0.018$) and discharge (hazard ratio 1.861, $p = 0.007$). **Conclusion:** The feces sign is associated with improved odds for diet resumption and discharge in patients with non-strangulated adhesive small bowel obstruction.

Keywords: adhesive small bowel obstruction, diet resumption, feces sign, length of hospital stay, strangulation

PP-0007 Platelet value for predicting the etiologies of upper gastrointestinal bleeding before an emergency endoscopy

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Background and Aim: The upper gastrointestinal bleeding (UGIB) is an emergency condition. Its mortality is still around 10%. There are two main causes of UGIB: UGIB not related to portal hypertension (UGIB-NPHT) and UGIB related to PHT (UGIB-PHT). The drug used in medical management in those patients is different according to UGIB related to PHT or NPHT. Some studies had showed that thrombocytopenia was very specific for predicting UGB-PHT. The aim of this study was to find out the best cut-off value of platelets in order to discriminate the etiologies of upper gastrointestinal bleeding before Esophago-Gastro-Duodenoscopy (EGD) with the purpose of giving an appropriate empirical pre-endoscopic treatment. **Methods:** This was a retrospective, descriptive, and analytic monocentric study which was carried out in the Gastroenterology and Liver Unit, Calmette Hospital, Phnom Penh, Cambodia. This study was conducted during the period of 1 year from January 2014 to January 2015. There were 350 patients with UGIB who were enrolled in this study. A complete result of basic laboratory tests (especially platelet count) was noted in a standardized questionnaire. All data were registered into a data set and then were analyzed by SPSS program version 25, Chicago, USA. **Results:** In this study, patient's age varied between 19 and 92 years old, with the average age of 57.75 ± 14.2 years old. Sex ratio H/F 2:1. There were different symptoms of admission such as hematemesis (18 %), melena (32 %), hematemesis (47.4 %), rectorrhagia (1.4 %) and hematochezia (1.2 %). The Variceal bleeding was more frequently than Non variceal bleeding (54.3% vs. 45.7%). By using receiver operational curve (ROC), the cut-off level of platelet which had high sensitivity and specificity (89% and 84%) was < 150 . $10^9/L$. **Conclusion:** The thrombocytopenia of $< 150.10^9/L$ appeared to be reliable parameter for predicting UGIB-PHT and should be able to help the clinicians to institute an appropriate pre-endoscopic vasoactive treatment in a cost-effective way. Moreover, the combination of other parameters with platelet count might increase the sensitivity and specificity of this approach.

Keywords: upper gastrointestinal bleeding, variceal bleeding, non-variceal bleeding

PP-0008 Biological, epidemiological, and clinical aspects of decompensated cirrhosis and its complications in the Liver and GI Unit at Calmette Hospital

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Background and Aim: Describe the epidemiological, clinical, biological aspects of decompensated cirrhosis and its complications at Calmette

Hospital, Phnom Penh. **Methods:** This is a retrospective study of 464 patients with decompensated cirrhosis. The judgment criteria were demographic, clinical, biological, ultrasound, endoscopic, as well as complications. **Results:** The mean age was 58 ± 11.53 years old with a male predominance (59.3%). The etiologies of cirrhosis were viral hepatitis B (36.6%), hepatitis C (40.3%), 3% HBV-HCV co-infection, and others (6.3%). The most common reasons of hospital admissions are melena (52.2%), hematemesis (38.8%), ascites (26.3%), and abdominal pain (15.3%). Anemia and thrombocytopenia were found in almost 75% of patients. Esophageal varices accounted for the majority of patients (85.7%), and gastric ulcers (12.3%). Nearly three quarters of patients had ascites and splenomegaly on the ultrasound. 80.2% of patients was classified as Child-Pugh B and C. Complications detected during hospitalization were marked by GI bleeding (54.5%), ascites without SBP (41.4%), ascites with SBP (6.9%), HCC (25.9%), hepatic encephalopathy (15.7%), hepatorenal syndrome (3.2%), and other infections (urinary tract infection or pneumonia) (12.5%). **Conclusion:** GI bleeding was the most common complication in our series, for which the regular surveillance of esophageal and/or gastric varices by EGD is very important to prevent it. Viral hepatitis infections are a major cause of cirrhosis in Calmette Hospital. Further investigation needed to done for generalizing to the whole country.

Keywords: cirrhosis, viral hepatitis, alcohol, GI bleeding

PP-0009 Overexpression of S100A16 is a promising diagnosis marker and therapeutic target for pancreatic ductal adenocarcinoma

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Background and Aim: Pancreatic ductal adenocarcinoma (PDAC) is one of the most lethal causes of cancer-related disease. The S100 protein family genes play a crucial role in multiple stages of tumorigenesis and progression. Most of S100 genes are located at chromosome locus 1q21, which is a region frequently rearranged in cancers. The aim of this study is to investigate the potential role and mechanism of S100 genes in PDAC. **Methods:** We examined the expression of the S100 genes in paired pancreatic ductal adenocarcinoma (PDAC) samples and further validated the expression of S100A16 by immunohistochemistry staining. Lentivirus packaging were applied to construct PDAC cells with S100A16 overexpression and knockdown (shRNA) or knockout (sgRNA). The function of S100A16 was investigated by Cell Counting kit-8, colony formation, transwell migration/invasion, flow cytometry, and xenograft models. **Results:** We found that S100A16 is significantly upregulated in clinical PDAC samples. However, its roles in PDAC are still unclear. We next demonstrated that S100A16 promotes PDAC cell proliferation, migration, invasion, and metastasis both in vitro and in vivo. Knockdown of S100A16 induces PDAC cell cycle arrest in the G2/M phase and apoptosis. Furthermore, we also demonstrated that S100A16 promotes PDAC cell proliferation, migration, and invasion via AKT and ERK1/2 signaling. **Conclusion:** Taken together, our results reveal that S100A16 is overexpressed in PDAC and promotes PDAC progression through AKT and ERK1/2 signaling, suggesting that S100A16 may be a promising therapeutic target for PDAC.

Keywords: S100A16, pancreatic cancer, metastasis, AKT, ERK1/2

PP-0010 Hepatitis B, Delta virus dual infection, and HLA-DP polymorphism in Mongolians

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Background and Aim: Genetic variation in the human leukocyte antigen (HLA) is highly polymorphic in different populations and commonly used for disease association studies. As the prevalence of hepatitis B and hepatitis B, Delta dual infection is relatively high in Mongolia, there is a need for the association study for HLA-DP polymorphism that may be linked with the susceptibility in Mongolians. **Methods:** A total of 173 subjects was enrolled in the association study. Study groups were determined as hepatitis B, Delta viral dual infection ($n = 73$), hepatitis B viral (HBV) infection ($n = 40$), and control group ($n = 60$). Laboratory investigations including hematology test, blood coagulation test, liver function tests, and hepatitis B viral markers were performed by Sysmex fully automated analyzer. HLA-DPA1 and HLA-DPB1 polymorphisms were determined by PCR-SSO, and rs3077, rs9277535, and rs9277542 SNPs were determined by TaqMan SNP Genotyping assay. **Results:** Average age of study subjects was 39.1 ± 10.9 (21–70). Level of AST, ALT, WFA+M2BP, and AFP markers was statistically different between groups of hepatitis B, Delta viral superinfection, and HBV-positive patients. According to HLA genotyping results, DPB1*0901 ($p = 0.04$, OR = 0.31) and DPB1*0401 ($p = 0.01$, OR = 0.43) alleles were found to have a protective role against HBV infection. DPB1*05:01 (0.03, OR = 2.51) allele was associated with 2.51 times increased risk of infection. Moreover, DPB1*17:01 ($p = 0.03$, OR = 0.13) and DPA1*02:01 ($p = 0.04$, OR = 0.43) alleles were associated with decreased risk of superinfection of hepatitis Delta viral infection among patients with HBV infection that may suggest a protective effect in HDV infection. SNP analysis indicated that rs3077/TT was associated with protective effect for chronic hepatitis B. **Conclusion:** Chronic hepatitis caused by hepatitis B, Delta superinfection is characterized by severity and progression in a relatively short period as compared with HBV infection alone. DPB1*04:01 allele might act as protective allele from hepatitis B, Delta superinfection and HBV infection while DPB1*05:01 might be a risk allele for Mongolians.

Keywords: hepatitis virus infection, WFA+M2BP, HLA-DP polymorphism, qHBsA

PP-0011 Non-invasively distinguishing progress of liver fibrosis by visualizing hepatic platelet derived growth factor receptor-beta expression with an MRI modality in mice

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Background and Aim: Activated hepatic stellate cells (HSCs) are the most critical cell responsible for liver fibrosis. In liver fibrogenesis, platelet-derived growth factor (PDGF) is the most prominent mitogen for HSCs. This study aims to explore the potential of gadolinium (Gd)-labeled cyclic peptides (pPB) targeted to PDGF receptor-β (PDGFR-β) as an MRI radiotracer to identify the progress of liver fibrosis by imaging hepatic PDGFR-β expression. **Methods:** Mouse models of liver fibrosis caused by bile duct ligation (BDL) and Carbon Tetrachloride (CCl₄) treatment were both used to determine the association of hepatic PDGFR-β

expression and the progress of hepatic fibrosis. The binding activity of FITC-labeled pPB to PDGFR-β was assessed in culture-activated human HSCs (HSC-LX2). MRI was performed to visualize hepatic PDGFR-β expression in mice with different degrees of liver fibrosis after Gd-labeled pPB were injected. **Results:** Hepatic PDGFR-β expression level was found to be paralleled with the severity of liver fibrosis, which was increased with the progression of fibrosis and reduced with the regression. The majority of cells expressing PDGFR-β was determined to be activated HSCs in fibrotic livers. Culture-activated HSC-LX2 expressed abundant PDGFR-β, and FITC-labeled pPB could bind to HSC-LX2 in a concentration and time-dependent manner. **Conclusion:** With Gd-labeled pPB as a tracer, the relative hepatic T1-weighted MR signal value was increased progressively along with the severity of hepatic fibrosis and reduced with the remission, suggesting that hepatic PDGFR-β expression reflects the progress of hepatic fibrosis. MR imaging using Gd-labeled pPB as a tracer may distinguish different stages of liver fibrosis in mice.

Keywords: liver fibrosis, hepatic stellate cells, PDGF-beta, cyclic peptides, MRI modality

PP-0012 Frequency of hypothyroidism in patient with hepatitis C infection attending a tertiary care hospital

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Background and Aim: Association of thyroid dysfunction (TD) with interferon treatment of HCV is well known to clinicians. However, a few studies have highlighted the role of hepatitis C virus per se in the development of TD. The aim of this study was to know the prevalence of TD in HCV-infected patients. **Methods:** All patients who fulfilled the inclusion criteria and visited Gastroenterology Department of Liaquat National Hospital Karachi were included in the study. After ethical approval and informed and written consent. Brief history was taken, clinical examination was done, and blood sample was sent for thyroid stimulating hormone (TSH) and free T4 (FT4) to access the outcome i.e frequency of hypothyroidism in patient with hepatitis C infection. **Results:** 97 patients with hepatitis C infection were included. 46 patients (47.4%) were males and 51 patients (52.6%) were females with the mean age of 33.96 ± 7.247 years. Hypothyroidism was seen in 25 patients (25.8%). **Conclusion:** Prior to treatment, HCV infection itself causes biochemical thyroid dysfunction in 25.8% of patients with HCV infection.

Keywords: hepatitis C virus, hypothyroid, chronic hepatitis C

PP-0013 Validation of the AIMS65 score in variceal upper gastrointestinal hemorrhage because of portal hypertension

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Background and Aim: Validation of the AIMS65 score to predict 30-day mortality and 30-day rebleeding in variceal upper gastrointestinal hemorrhage. **Methods:** Descriptive and prospective study of 247 patients diagnosed with variceal upper gastrointestinal hemorrhage because of portal hypertension at Bach Mai Hospital and Hanoi Medical University Hospital from 12/2018 to 6/2019. AIMS65 scores are evaluated to determine the predicted value. AIMS65 scores were calculated by allotting 1 point each for albumin (A) levels < 30 g/L, INR (I) > 1.5, alteration in mental status (M), systolic blood pressure (S) < 90 mm Hg, and age > 65 years. **Results:** A total of 247 patients (mean age 52.86) **Conclusion:** Although not reliable in predicting 30-day rebleeding, the AIMS65 score seems to

be useful in predicting 30-day mortality in patients with variceal bleeding. Therefore, we suggest that assessment of AIMS65 score should be performed early in the management of all the patients with suspected variceal bleeding.

Keywords: gastrointestinal bleeding, portal hypertension, AIMS65 score, recurrent gastrointestinal bleed, recurrent hemorrhage

PP-0014 Prevalence and resistance of *H. pylori* in children and adults in Vietnam

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Background and Aim: In this article, we update the rate of *H. pylori* infection and drug resistance of *H. pylori* status between children and adults in Vietnam.

Methods: A systematic review of the literature (time period: 2008–2018) was performed. The data were summarized in an extraction table and analyzed manually. Finally, Excel 2007 software was used to create charts. **Results:** Prevalence of *H. pylori* increases in the city compared to the high mountains, Central Highlands and Mekong Delta (74.6% vs with 44.7%; 45.2% and 42.6%; respectively) ($p < 0.001$). Prevalence of *H. pylori* in adults has been higher in adults than children in all regions. Antibiotics resistance of *H. pylori* in adults: Overall, the primary resistance rates of amoxicillin, clarithromycin, metronidazole, levofloxacin, tetracycline, and multidrug resistance were 15.0%, 34.1%, 69.4%, 27.9%, 17.9%, and 48.8%, respectively. Secondary resistance rates of amoxicillin, clarithromycin, metronidazole, levofloxacin, tetracycline, and multidrug resistance were 9.5%, 74.9%, 61.5%, 45.7%, 23.5%, and 62.3%, respectively. Antibiotic resistance of *H. pylori* in children: The first study (2008) showed that the overall resistance to clarithromycin, metronidazole, and amoxicillin was 113/222 (50.9%), 145/222 (65.3%), and 1/222 (0.5%), respectively. The second study (2016) showed that the overall resistance to clarithromycin, azithromycin, metronidazole, amoxicillin, cefixime, ciprofloxacin, and levofloxacin was 56.9%, 64.1%, 30.3%, 21.5%, 11.3%, 2.1%, and 0.5%, respectively. **Conclusion:** The rates of clarithromycin and metronidazole resistance are high in both adults and Vietnamese children.

Keywords: *Helicobacter pylori*

PP-0015 Cap-assisted endoscopic sclerotherapy versus ligation in the long-term management of medium esophageal varices: a double-blinded randomized controlled trial

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Background and Aim: Endoscopic variceal ligation (EVL) is recommended for prevention of esophageal variceal bleeding but accompanied with a high recurrence rate of esophageal varices (EVs). Cap-assisted endoscopic sclerotherapy (CAES) improves the efficacy in the treatment of small EVs but has not been evaluated in the management of medium EVs. The aim of this study was to compare CAES with EVL in the long-term management of patients with

medium EVs regarding variceal eradication and recurrence, adverse events, cost, rebleeding, and survival. **Methods:** A total of 240 cirrhotic patients with medium EVs were divided randomly into 2 groups of 120 patients each: EVL group and CAES group. EVL or CAES was repeated each month until eradication. **Results:** The recurrence rate after 1-year eradication was much lower in the CAES group than in the EVL group (13.0% vs. 30.7%, $P = 0.001$). The independent predictors for recurrence were EVL for eradication (HR: 2.37, $P = 0.04$), achievement of complete eradication (HR: 0.27, $P < 0.001$), and NSBB responders (HR: 0.32, $P = 0.003$). The total cost of repeated endoscopic treatments for eradication was lower (**Conclusion:** CAES appears to reduce the recurrence rate of EVs and the total cost of endoscopic treatments for eradication with comparable safety with EVL in the long-term management of medium EVs.

Keywords: esophageal varices, endoscopic variceal ligation, Cap-assisted endoscopic sclerotherapy, recurrence, cirrhosis

PP-0016 On the comparison of clinical features of colonic diverticulitis: differences by location

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Background and Aim: Diverticulitis in Asian populations is located predominantly to right-sided colon, while left-sided colonic diverticulitis are more frequently observed in Western populations. The purpose of this study was to evaluate the clinical differences of acute colonic diverticulitis based on the location. **Methods:** We retrospectively reviewed medical records of admitted patients who had been diagnosed with acute diverticulitis from January 2011 to December 2018 in Seoul Paik Hospital. They were grouped as right-sided colonic diverticulitis (RCD) group and left-sided colonic diverticulitis (LCD) group based on abdomino-pelvic computed tomography. Clinical characteristics and outcomes were compared between two groups. **Results:** A total of 144 subjects (male:female = 87:57, age: 19–94 years old, median age: 47 years old) were enrolled in the study. One hundred nineteen patients (82.6%) were in the RCD group, and 25 patients (17.4%) were in the LCD group. LCD patients were older (63.2 years vs 45.9 years, $p = 0.037$) and had longer hospital stay (15.7 days vs 6.3 days, $p < 0.001$) than RCD patients. LCD patients were recurred more than RCD patients but with no statistical significance (13.4% vs 28%, $p = 0.052$). In multivariate analysis, LCD was occurred in the elderly (OR 1.10, 95% CI 1.05–1.15, $p < 0.001$) and developed severe complications (OR 7.10, 95% CI 1.60–31.47, $p = 0.01$). **Conclusion:** In Korea, colonic diverticulitis still occurs predominantly in the right-sided colon and showed mild clinical outcomes. However, elderly patients with LCD developed more recurred and developed perforations.

Keywords: clinical feature, diverticulitis, Korea, location

PP-0017 Relation of serum uric acid concentrations with etiology and severity in patients with cirrhosis of liver

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Background and Aim: Hyperuricemia is now an established factor to cause oxidative stress, insulin resistance, and systemic inflammation. So it is likely that hyperuricemia might be involved in hepatic necroinflammation and destruction which are the common underlying pathophysiology of cirrhosis. On the other hand, as uric acid is the end product of cellular degradation, increased hepatocyte destruction due to

any etiology increases the level of serum uric acid which might further aggravate hepatic necroinflammation, cirrhosis, and complications. **Methods:** This cross-sectional observational study was carried out in the Department of Gastroenterology, BSMMU, Bangladesh, during the period of September 2015 to October 2016. A total of 220 diagnosed cases of cirrhosis of liver due to any cause from inpatient and outpatient Department of Gastroenterology were enrolled as the study population. Serum uric acid level was measured in each patient, and its relationship with different etiologies of cirrhosis, severity of cirrhosis, and liver enzymes was assessed. **Results:** The mean age was found to be 47.8 ± 14.6 years, and male:female ratio was 1.9:1. The majority of patients (52.3%) belonged to CTP Class C. The mean ($\pm SD$) value of serum uric acid was $6.19 (\pm 3.25)$ mg/dl, and hyperuricemia (> 7 mg/dl) was detected in 27.73% patients. Among all etiologies of CLD, the higher mean ($\pm SD$) level of serum uric acid was found in NAFLD (19.54 ± 2.20 mg/dl). There was positive correlation of serum uric acid with liver enzymes. **Conclusion:** Mean serum uric acid level increased gradually as the cirrhotic patients progressed to higher CTP classes, and there was positive correlation of serum uric acid with liver enzymes. It requires further large-scale multicenter studies with increased sample size and prolong follow-up to establish serum uric acid as a risk factor of CLD.

PP-0018 Aorto-mesenteric compression syndrome: A case report of three patients

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Introduction: Wilkie's syndrome (Superior mesenteric artery syndrome) is caused by the compression of the third portion of the duodenum by the superior mesenteric artery on the aorta. **Case report 1:** A 17-year-old woman with a history of chronic late postprandial vomiting was admitted to the hospital for bilious vomiting and epigastric pain. The diagnosis of Wilkie's syndrome was established by an abdominal angiogram (aorta/SMA angle: 15° , aorta/SMA distance: 3.5mm). A latero-lateral gastro-jejunostomy was performed by laparoscopy. The patient was no longer symptomatic after this procedure. **Case report 2:** a 24-year-old woman, with a history of chronic nausea, was admitted to the hospital for an acute episode of vomiting, perigastric pain and significant weight loss. The diagnosis of Wilkie's syndrome was established by an angiogram: (abd aorta/SMA angle: 20° , Aorta/SMA distance: 7mm); a gastro-jejunostomy was performed; the postoperative course was marked by an episode of hematemesis; esogastrroduodenal fibroscopy revealed an adherent clot at the gastrojejunostomy; a proton pump inhibitor (PPI) + Sandostatin treatment was administered with good clinical response. **Case report 3:** a 17-year-old man, with a history of staturo-ponderal delay (-3SD), chronic abdominal pain, and chronic postprandial vomiting. The etiological workup was negative; the angiogram revealed the diagnosis of Wilkie's syndrome with (aorta/SMA angle: 15° , aorta/SMA distance: 3mm); a gastro-jejunostomy was performed, and a regular follow-up of the weight gain will be scheduled. **Conclusion:** Wilkie's syndrome is an under-recognized diagnosis by most clinicians; its diagnosis is founded on clinical and morphological findings, especially angiogram data. Its treatment is primarily medical but surgical intervention is frequently required.

Keywords: aorto-mesenteric compression, upper gastrointestinal occlusion

PP-0019 Peroral endoscopic myotomy (POEM) versus pneumatic dilation (PD) for achalasia: A systematic review and meta-analysis

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Background and Aim: Presently, the primary endoscopic options for the treatment of achalasia are peroral endoscopic myotomy (POEM) and pneumatic dilation (PD). But the clinical outcomes of POEM and PD for achalasia have not yet to be fully evaluated. So we aimed to compare the clinical outcomes between the two treatment modalities. **Methods:** We searched all the relevant studies published up to September 2019 examining the comparative efficacy between POEM and PD. Outcomes included success rate, Eckardt score, lower esophageal sphincter pressure, and adverse events. Outcomes were documented by pooled risk ratios (RR) and mean difference (MD) with 95% confidence interval (CI) using Review Manager 5.3. **Results:** Seven studies with a total of 619 patients were identified. There were 298 patients underwent POEM treatment and 321 patients underwent PD treatment. The clinical success rate was higher in POEM group than that in PD group at 6, 12, and 24 months. **Conclusion:** The long-term efficacy of POEM was superior to that of PD but accompanied by higher complications.

Keywords: peroral endoscopic myotomy, pneumatic dilation, achalasia, systematic review, meta-analysis

PP-0020 Peroral endoscopic myotomy is effective and safe in the management of esophageal achalasia regardless of age

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Background and Aim: We aimed to assess the effect of age on clinical outcomes for patients receiving peroral endoscopic myotomy (POEM) treatment. **Methods:** Demographic characteristics and clinical data were prospectively collected on patients undergoing POEM from 2010 to 2019. Patients were classified in three age groups: group A (< 40 years), group B (40–70 years), and group C (> 70 years). Clinical outcomes and post-operative gastroesophageal reflux (GER) were compared and analyzed between the three groups. **Results:** A total of 1129 consecutive achalasia patients underwent POEM in our department, 461 (40.8%) in group A, 628 (55.6%) in group B, and 40 (3.5%) in group C. There were no significant differences of procedure time (56.3 **Conclusion:** POEM can be performed in patients with different age safely, providing significant symptom relief. Advanced age should not to be considered as a contraindication to POEM.

Keywords: peroral endoscopic myotomy, achalasia, age, follow-up

PP-0021 Safety and efficacy of endoscopic submucosal dissection for superficial esophageal squamous cell cancer in patients with prior gastrectomy

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Background and Aim: The surgery for esophageal cancer arising after prior gastrectomy is technically difficult with high morbidity and

mortality. ESD is a minimally invasive endoscopic treatment for superficial SCC with high curative resection rate. But few studies are concerned about ESD under these circumstances. The aim of this study was to evaluate the safety and efficacy of endoscopic submucosal dissection (ESD) for superficial esophageal squamous cell cancer (SCC) in patients with prior gastrectomy. **Methods:** From January 2009 to January 2019, 37 patients with prior gastrectomy who underwent ESD for superficial esophageal SCC were retrospectively enrolled at the Zhongshan Hospital, Fudan University in Shanghai, China. Rates of en bloc resection, complete resection, curative resection, incidence of postoperative bleeding, perforation and postoperative stricture, overall survival, and local recurrence free survival were evaluated. **Results:** The rates of en bloc resection, complete resection, and curative resection were 94.6%, 86.5%, and 78.4%, respectively. No perforation was observed. 1 (2.7%) patient experienced postoperative bleeding. During the median observation of 43 months, 3 (8.6%) patients experienced esophageal stricture, successfully managed by balloon dilation for a median of 5 sessions (range 1–7). 3 (8.6%) patients had local recurrence after ESD with 5-year local recurrence free survival rate of 91.4%. During the observation period, 4 patients died of other reasons. The 1, 3, and 5-year overall survival rates were 97.1%, 97.1%, and 91.4%. **Conclusion:** This long-term follow-up study revealed that ESD is an efficient and safe method for superficial esophageal SCC in patients with prior gastrectomy.

Keywords: superficial esophageal SCC, prior gastrectomy, endoscopic submucosal dissection

PP-0022 Efficacy of pegylated interferon-alpha-2a in chronic hepatitis D-infected patients.

Experience from the tertiary care hospital in Karachi

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Background and Aim: To evaluate the efficacy of pegylated interferon-alpha-2a in chronic hepatitis D-infected patients presenting at tertiary care hospital, Karachi. **Methods:** We have enrolled a total of 165 chronic hepatitis Delta patients at Gastroenterology Section of Medical Unit IV, Jinnah Postgraduate Medical Centre, Karachi, Pakistan, from 2018 to January 2021 who were treated for 48 weeks (12 months) with pegylated interferon-alpha-2a. Evaluation of HDV infection through polymerase chain reaction (PCR) was done at 6- and 12-month intervals. All laboratory values were repeated on regular intervals to assess the efficacy and side effects of therapy. **Results:** Final analysis was performed on 148 patients, among all, more than 50% of the patients had treatment failure response ($n = 76$, 50.66%). While, around 28% ($n = 42$) of the patients had partial treatment response and only 21.33% ($n = 32$) had treatment success rate. There is an insignificant difference observed when treatment response was compared among patients who received treatment at 24 and 48 weeks ($p < 0.05$). ALT and total bilirubin levels were significantly improved in patients received treatment for up to 48 weeks with a mean difference of 18.29 ± 71.28 and 0.49 ± 0.73 , ($p < 0.05$), respectively. **Conclusion:** Pegylated interferon-alpha-2a therapy in patients with CHD shows suboptimal outcome; only 21.33% of patients achieved negative HDV RNA PCR. Patients with treatment failure or null response should urgently be given an effective alternative option.

Keywords: efficacy of PEG-alpha-2a, chronic hepatitis Delta virus

PP-0023 Eligible cases of stent-in-stent placement for malignant hilar biliary obstructions in consideration of endoscopic reintervention

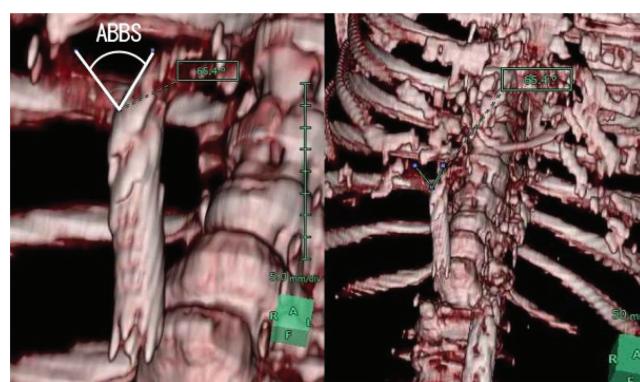
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Background and Aim: Bilateral SEMSs placement is effective for long-term management of unresectable malignant hilar biliary obstruction (UMHBO). However, endoscopic reintervention (ERI) for bilateral SEMSs is sometimes difficult. This study aimed to evaluate the risk factors for ERI failure after stent-in-stent (SIS) placement. **Methods:** Data of 34 patients who underwent ERI from May 2000 to March 2020 were analyzed. **Results:** The technical success rate of ERI was 82% (28/34), and the functional success rate was 100% (28/28). To evaluate the risk factors for ERI failure, the patients were divided into successful and failure groups. There were no significant differences between the etiology, Bismuth classification, and type of initial SEMS (laser-cut and large cell-width). The number of patients with multiple liver metastases ($p = 0.03$) and overgrowth ($p = 0.01$) was significantly higher in the failure group. The angle between the bilateral SEMSs (ABBS) was also larger in the failure group ($p = 0.03$). In the ROC analysis, the cutoff was calculated to be 104° for ABBS. In a multivariate analysis, ABBS over 104° (OR = 56.5, 95% CI = 3.74–2392, $p = 0.01$) and overgrowth (OR = 28.7, 95% CI = 1.23–1386, $p = 0.04$) were risk factors for ERI failure. **Conclusion:** ABBS over 104° and overgrowth were risk factors for ERI failure after SIS placement. In the decision-making process for initial SEMS placement for UMHBO, patient condition should be considered, including the angle between bilateral bile ducts and multiple liver metastases which cause the overgrowth.

Keywords: SEMS, stent-in-stent placement, endoscopic reintervention, hilar biliary obstructions



PP-0024 Influence of meteorological factors in the incidence of upper gastrointestinal bleeding in Beijing

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Background and Aim: The relationship between onset rhythms of upper gastrointestinal bleeding (UGIB) and climatic factors remains contradictory. We aimed to determine the onset rhythms of UGIB caused by different etiologies and to assess their correlations with climatic factors. **Methods:** We retrospectively reviewed patients admitted to Beijing Chaoyang Hospital from 2014 to 2018. Patients whose UGIB was caused by non-steroidal anti-inflammatory drugs (NSAIDs)-related peptic ulcer, non-NSAIDs-related peptic ulcer, or gastroesophageal varices (EGV) were included. The frequency of UGIB was evaluated based on seasons, months, and solar terms. Circular distribution test was performed to investigate the central trend of onset. Generalized additive models (GAMs) were applied to analyze the correlations between UGIB onset and climatic factors. **Results:** Six hundred and sixty-four patients were finally included. The presentation of non-NSAIDs-related peptic ulcer bleeding showed significant difference in seasons ($P = 0.014$), months ($P = 0.004$), and solar terms ($P = 0.013$) with peak onsets at the Great Snow and Waking of Insects. EGV bleeding had significant onset fluctuations in solar terms ($P = 0.008$) and showed a peak period from the Great Heat last year to the Spring Equinox this year. According to GAMs, the risk of UGIB was highest at 10. **Conclusion:** UGIB caused by different etiologies had different onset regularities. A better understanding of these patterns would allow us to improve disease prevention and management strategies.

Keywords: upper gastrointestinal bleeding, seasonal variation, meteorological factors

PP-0025 ELTD1 promotes the invasion and metastasis of colorectal cancer through MMP2

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Background and Aim: ELTD1 was reported to be upregulated in colitis-associated cancer. However, the role ELTD1 in the invasion and metastasis of colorectal cancer (CRC) was unclear. **Methods:** Using the data extracted from TCGA, GEPIA, the expression of ELTD1 was correlated with TNM staging and clinical prognosis of CRC patients. The effect of ELTD1 on the migration and invasion of CRC cells (HT29 and RKO) was evaluated by transwell and wound-healing assays. ELTD1 siRNA and MMP2 plasmid were co-transfected to assess whether MMP2 was involved in this process. Dual-luciferase reporter assay system was applied to identify the underlying regulatory mechanisms of MMP2 by ELTD1. **Results:** The expression of ELTD1 was positively correlated with lymph node

metastasis (N) and distant metastasis (M) of CRC patients and negatively correlated with the prognosis. Knocking down the expression of ELTD1 could inhibit the migration and invasion of CRC cells, while overexpression of ELTD1 could promote them. Overexpression of MMP2 rescued the impaired migration and invasion caused by ELTD1 siRNA. Besides, the luciferase activity of MMP2 promoter reporter gene was decreased significantly after silencing ELTD1. **Conclusion:** ELTD1 could induce the invasion and metastasis of CRC, probably through promoting the transcriptional activity of MMP2.

Keywords: colorectal cancer, ELTD1, MMP2, invasion

PP-0027 Utility of endoscopic features in making diagnosis of *H. pylori* infection: a single-center experience in Cambodia

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Background and Aim: Management of chronic dyspepsia depend on the presence of gastritis and *H. pylori* status, which rely ideally on pathological examination from endoscopic biopsies. Some endoscopic features were reported to be useful for diagnosis of *H. pylori* infection, particularly the Regular Arrangement of Collecting venules (RAC). We aim to investigate their performance in a country where the number of pathologists is very limited and broad use of antibiotic and PPI is present.

Methods: We prospectively included 264 patients received gastroscopy consecutively in a private setting in Phnom Penh, Cambodia, from August 2019 to March 2020. The reference standard of gastritis and *H. pylori* status was histological result from Sydney biopsy protocol. Association between endoscopic finding (non-magnifying HD-WLI and NBI only for intestinal metaplasia and atrophy) and *H. pylori* status was evaluated. **Results:** Patients were divided into 3 groups based on histology: normal gastric mucosa (Hp−), inactive gastritis (Hp−), and active gastritis (Hp+), 33 (12.5%), 172 (65.2%), and 59 (22.3%), respectively. Patient with normal mucosa were more likely to have endoscopic features of RAC positive, absence of redness, atrophy, and intestinal metaplasia ($P < 0.05$). Of 205 patients with Hp negative, 135 (65.9%) had RAC positive, resulting a sensitivity, specificity, PPV, and NPV of 65.9%, 66.1%, 87.1%, and 35.8%, respectively, for excluding Hp infection. Among 70 patients with Hp negative and RAC negative, 66 (94.3%) had inactive gastritis. **Conclusion:** Some endoscopic features were useful to rule out the presence gastritis, while their performance characteristics were modest for predicting Hp status in our setting. The high prevalence of inactive gastritis possibly caused by broad use of antibiotic and PPIs appeared to compromise this finding, compared to the literature. Hence, random biopsy seems to be ineligible in our practice. Nevertheless, multicenter studies with Kyoto classification score are needed for further evaluation.

Keywords: RAC, *H. pylori*, chronic gastritis

PP-0028 Association between cecal insertion to withdrawal time ratio and adenoma detection rate: the longer insertion time, the longer withdrawal time

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Background and Aim: The adenoma detection rate (ADR) is one of the most important quality parameters for colonoscopy. It is well established that a longer withdrawal time (> 6 minutes) is associated with higher ADR. However, the association of cecal insertion time and ADR is unclear. This study aimed to determine the association between cecal insertion to withdrawal time ratio and ADR during colonoscopy. **Methods:** In this retrospective observational study, the patients had undergone a colonoscopy at a single center from July 2019 to December 2019. The primary outcome was the association of cecal insertion to withdrawal time ratio with ADR. Cecal insertion time and cecal insertion to withdrawal time ratio were categorized by quartiles, and analysis of variance was used to access the association of these with ADR. **Results:** Among 264 patients (female 109), the mean age was 55.34 ± 10.58 years. The median cecal insertion time was 214 seconds (interquartile range, 159.25–293.50). Total ADR was 37.5%, and ADR in males (47.10%) was significantly higher than in females (23.85%) ($P < 0.001$). There was no difference in ADR according to insertion time ($P = 0.108$). The size of adenoma ($P = 0.116$) and advanced adenoma ($P = 0.474$) did not correlate with cecal insertion to withdrawal time ratio. ADR ($P < 0.001$) and the number of APC ($P < 0.001$) were found to increase when cecal insertion to withdrawal time ratio was less than 0.59. **Conclusion:** Cecal insertion time was not associated with an increase in ADR. When withdrawal time was about two times longer than cecal insertion time, ADR and the number of APC increased significantly. Endoscopists should note that with a longer insertion time, a longer withdrawal time is required, thereby increasing ADR and the number of APC.

Keywords: cecal insertion time, withdrawal time, adenoma detection, colonoscopy

PP-0029 Compositional distinctions of gut microbiota between Han and Tibetan Chinese populations with liver cirrhosis

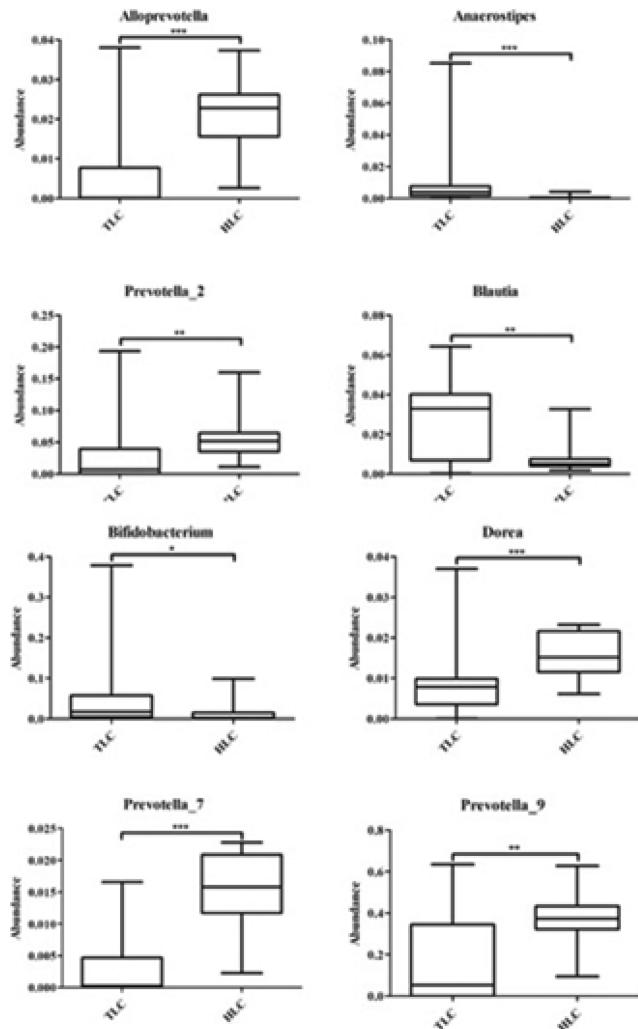
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Background and Aim: Liver cirrhosis acts as a consequence of numerous chronic liver diseases, and its complications are associated with qualitative and quantitative alterations in the gut microbiome. Previous studies have revealed the characteristics of gut microbiota in Han Chinese patients with liver cirrhosis. However, different microbiota compositions have been reported between Tibetan and Chinese Han populations. **Methods:** Therefore, to characterize the unique features of gut microbiome in Tibetan patients with liver cirrhosis and to compare the distinctions of intestinal microbiota between Han and Tibetan Chinese patients with liver cirrhosis, we recruited 36 patients with liver cirrhosis and 19 healthy controls (including Han and Tibetan Chinese populations) and performed 16S rDNA sequencing. **Results:** The changes of gut microbiota in Tibetan patients compared

with Tibetan control were almost consistent with that in Han Chinese population. Besides, when compared those with Chinese Han cirrhosis group, the proportion of phylum Bacteroidetes was significantly reduced ($P = 0.0004$), whereas Firmicutes and Actinobacteria were highly enriched in Tibetan cirrhosis group ($P = 0.01$ and 0.03, respectively); Anaerostipes ($P = 4.6E-5$), Bifidobacterium ($P = 0.03$), and Blautia ($P = 0.004$) were prevalent, while relative abundances of Alloprevotella, Dorea, Prevotella_2, Prevotella_7, and Prevotella_9 decreased in Tibetan patients with cirrhosis at the genus level ($P = 0.0002$, 0.0007, 0.002, 4.5E-6, and 0.003, respectively). **Conclusion:** Collectively, these findings demonstrated the shift of the intestinal bacterial community in Tibetan patients with liver cirrhosis and a personalized therapeutic strategy for liver cirrhosis in different ethnic groups in the future should be concerned.

Keywords: Tibetan population, gut microbiota, liver cirrhosis, 16S rDNA sequencing



PP-0030 Evaluating pre-procedure of simethicone and n-acetylcysteine in analysis of gastric mucosal visibility: a randomized clinical trial from Vietnam

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Background and Aim: Gastroendoscopy plays an important role for early diagnosis of gastric cancer. This study evaluates whether a drink containing simethicone and N-acetylcysteine (NAC) 30 minutes pre-gastroendoscopy improves visualization. **Methods:** 161 patients are categorized into four groups, A: 100 ml of water, B: water plus 100-mg simethicone, C: water plus 100-mg simethicone and 200-mg NAC, and D: water plus 100-mg simethicone and 400-mg NAC. Patients underwent gastroendoscopy with Olympus NBI magnifying endoscopic system. Grades of mucosal visibility categorize from 1 to 4: 1, no adherent mucus/bubbles; 2, mild adherent mucus/bubbles without obscuring vision; 3, moderate adherent mucus/bubbles obscuring vision but easily to clear; and 4, heavy adherent mucus/bubbles obscuring vision and difficult to clear. Grades of surface pattern visibility are as follows: 1, no adherent mucus; 2, mild adherent mucus not obscuring vision; and 3, heavy adherent mucus obscuring vision. **Results:** About mucosal visibility, prevalence of grade 4 in group A is higher than that in groups B, C, and D, $p < 0.05$. Prevalence of grade 1 in group D is higher than that in group A (25.6% vs. 7.3%, $p < 0.05$). Prevalence of grade 3 in group A is higher than that in group D (39% vs. 15.4%, $p < 0.05$). Further analysis of surface pattern, prevalence of grade 1 in group D is higher than that in group A, B in all parts of assessment: upper-lower part of gastric body and antrum (61.5%, 56.4%, 59% vs. 14.6%, 12.2%, 9.8% and 7.5%, 5%, 10%; $p < 0.01$). In all three regions, prevalence of grade 3 in groups B and A (60%, 60%, 52.5% and 51.2%, 48.8%, 46.3%) is higher than that in group D (12.8%, 12.8%, 10.3%), $p < 0.01$. **Conclusion:** Pre-medication of simethicone and NAC significantly improves gastric mucosal visibility and microvascular-microsurface analysis.

Keywords: Simethicone, N-acetylcysteine, Gastroendoscopy, Vietnam

PP-0031 A study on analyzing *Helicobacter pylori* associated pre-cancerous lesions in Vietnamese patients with chronic gastritis

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Background and Aim: *Helicobacter pylori* (*H. pylori*) infection and gastric cancer are common in Vietnam. The study discovers whether *H. pylori* infection associated with atrophic gastritis, gastric intestinal metaplasia (GIM), and dysplasia (GD). **Methods:** 245 patients (157 males and 88 females) are divided into three aged groups: A (21–40 years), B (41–60 years), and C (> 60 years). Gastric biopsies were taken according to update Sydney system. Chronic gastritis was confirmed with histopathology analysis; *H. pylori* infection was examined with breath test or

combination of urea test with Giemsa staining. **Results:** 149 patients (60.8%) are infected with *H. pylori*, no difference between males and females (60.5% vs. 61.3%), or between groups A, B, and C (67.3% vs. 57.2% vs. 64.5%). About 44.08% (108/245) of patients is with pan-atrophic gastritis (PAG), no difference between males and females, but it in *H. pylori* infected patients significantly higher than that in non-*H. pylori* infection (53.69% vs. 29.16%, $p < 0.0001$). No different PAG between groups A and B, or between groups B and C, however between groups A and C is significant difference (36.5% vs. 58.3%, $p < 0.05$). GIM is observed in 132/245 (58.87%) patients; prevalence of GIM in *H. pylori* positive patients is significantly higher than that in non-*H. pylori* infection (63.08% vs. 39.58%, $p < 0.01$). Further analysis in every groups, prevalence of GIM in group A is significantly lower than in groups B and C in both *H. pylori* positive (31.42% vs. 67.46% and 83.87%, $p < 0.01$) and negative patients (11.76% vs. 40.32% and 58.82%, $p < 0.05$). GD is significantly higher in *H. pylori* positive patients (14.09%) in comparison to negative patients (5.20%), $p < 0.05$. **Conclusion:** In chronic gastritis Vietnamese, *H. pylori* infected patients with older age can categorize as high-risk group of gastric cancer.

Keywords: *H. pylori*, chronic gastritis, Vietnam

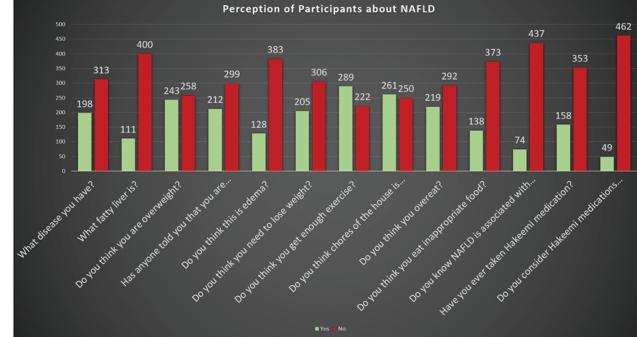
PP-0032 A survey on perceptions of non-alcoholic fatty liver disease: a real-life experience from Pakistan

Authors: N BUTT, L RAI, R HUSSAIN, H KHEMANI, S ALI

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Background and Aim: Non-alcoholic fatty liver disease (NAFLD) is associated with metabolic syndrome; an overall prevalence of 47% was found in a previous study from Pakistan; however, there is no community-based study from Pakistan about perception and awareness of NAFLD in patients who are actually suffering from it. Here, we aim to explore the awareness and perceptions of patients with NAFLD. **Methods:** A cross-sectional study was undertaken at the Department of Gastroenterology, Jinnah Postgraduate Medical Centre, Karachi, Pakistan. All patients >18 years with a suspected diagnosis of NAFLD were included. Patients with hepatitis, hepatic malignancies, hepatobiliary infections, and biliary tract disease were excluded from the study. Perceptions of NAFLD were assessed using a self-administered survey questionnaire. **Results:** A total of 162 patients with NAFLD were enrolled in the study with a mean age of 39.60. **Conclusion:** According to our results, the majority of subjects had no idea about NAFLD. Enhanced public education is warranted to improve understanding and knowledge about common disorders, especially in our country. Moreover, further exploration into the awareness and attitudes of NAFLD is needed to develop strategies for combating this disease.

Keywords: NAFLD, perceptions, Pakistan



PP-0033 Fulminant hepatic failure etiology, clinical manifestations, and outcome: an experience of tertiary care hospital of Karachi, Pakistan

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Background and Aim: Fulminant hepatic failure (FHF) is a term given to the acute liver injury causing sudden deterioration of hepatic function and encephalopathy within eight weeks of appearance of first symptom in a patient having no prior liver disease. It may be caused by toxins, drugs, viruses, or metabolic diseases, with viral hepatitis being the cause in 40–60% cases. In Pakistan, all types of hepatitis viruses are endemic, raising the prevalence up to 70–80%. **Methods:** A cross-sectional study was conducted at the Department of Gastroenterology, Jinnah Postgraduate Medical Centre, Karachi, Pakistan, from January 2018 till to date. All patients of both gender \geq 16 years were recruited and investigated for acute viral serology, complete blood count, liver function tests, renal function tests, serum creatinine, MELD score parameters, and King **Results:** A total of 40 patients were enrolled, out of which 25 (63%) were males and 15 (37%) were females with a mean age of 26.03. **Conclusion:** The mortality rate of FHF is very high which can be reduced to some extent in a non-liver transplant area by controlling the risk factors associated with poor outcome.

Keywords: fulminant hepatic failure, etiology, clinical features, outcome, Pakistan

PP-0034 Long-term renal and bone safety of tenofovir disoproxil fumarate in chronic hepatitis B patients

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Background and Aim: Tenofovir disoproxil fumarate (TDF) is one of the approved drugs for chronic hepatitis B (CHB) management. Although not curative, it inhibits viral replication, requiring long-term administration. It is generally considered safe, but there is a strong risk of loss of bone mineral density and renal function. **Methods:** This cross-sectional study was started in January 2019 at the Department of Gastroenterology, Jinnah Postgraduate Medical Centre, Karachi, Pakistan. A total of 120 patients with CHB started on TDF therapy, having age more than 18 to 60 years, were recruited till date. Bone mineral density and renal functions were assessed on the basis of pre- and post-dual-energy X-ray absorptiometry (DEXA) scan and eGFR, respectively. DEXA score (*T*-score) of less than -1.0 of left hip and spine and eGFR of less than 90 ml/min were considered abnormal. Patients were assessed at the time of recruitment then after three and six months for comparison. **Results:** Out of 120 patients, 61% were males and 39% were females, with a mean age of 32.50. **Conclusion:** The results of this study conclude that the use of TDF is associated with reductions in renal function and bone density in patients with CHB having no prior renal or bone disease.

Keywords: tenofovir, chronic hepatitis B, renal, bone, safety

PP-0035 A retrospective study on the adenoma detection rate in patients undergoing a comprehensive colonoscopy screening in a tertiary hospital from January 2018 to April 2018

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Background and Aim: It is now widely accepted that most colorectal cancers develop from adenomas and detection and removal of adenomas will lead to a reduction in the incidence of colorectal cancer. This study aims to establish the incidence of adenoma detection in patients undergoing routine screening colonoscopy. **Methods:** This was a retrospective descriptive study of adult patients in a tertiary hospital who underwent screening colonoscopy between January 2018 and April 2018. Inclusion criteria included patients who underwent screening colonoscopy. The exclusion criteria included patients diagnosed with inflammatory bowel disease, previous colon surgery, presence of colorectal cancer at baseline, resection at or before baseline, and history of hereditary non-polyposis colorectal cancer or family history of adenomatous polyposis. **Results:** A total of 519 colonoscopies were performed from January 01 to April 30, 2018. 198 were excluded. A total of 321 patients with detected polyps with demographic data and histopathology results reviewed. 174 (54.2%) had histology of adenomatous polyp. The characteristics of the polyps diagnosed were also reviewed. Majority of polyps were described as sessile (68.54%); others described were pedunculated, nodular, and broad-based (4.05% vs. 4.05% vs. 3.43%). The adenoma detection was 54.21%. Adenomatous polyp was the most common histopathologic description (41.12%). Adenomatous polyps with high-grade dysplasia was seen in 5 patients (1.56%); serrated lesions were detected in 9 patients (2.80%). 121 were hyperplastic polyps (37.69%). The adenoma detection rate was 33.53% overall in patients who underwent colonoscopy. **Conclusion:** In summary, the study reports a 33.53% adenoma detection rate in patients who underwent screening colonoscopy. Currently, societies recommend adenoma detection rates of >15% in females and >25% in males as indicators for quality screening. In the private hospital setting, these findings support the validity of the adenoma detection rate as a quality measure for polyp detection.

Keywords: adenoma detection rate, screening colonoscopy, colonic polyp

PP-0036 Clinical, endoscopic, histological features and treatment outcomes of patients with solitary rectal ulcer syndrome presented to a tertiary care hospital in Mumbai, India: A prospective case-control study

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Background and Aim: Solitary rectal ulcer syndrome (SRUS) is a benign chronic rectal disorder that is a great masquerader. Our aim was to study prospectively the patients with SRUS and to see treatment outcomes.

Methods: All patients diagnosed with SRUS were included in the study. 260 patients underwent anorectal manometry including 100 age-matched controls. All confirmed patients of SRUS (254) were treated with either sucralfate enema or sucralfate plus Biofeedback combination. **Results:** The most common symptom was constipation/straining on the stool in 118 (46.45%), mucus passage in 69 (27.16%), and bleeding per rectum in 59 (23.22%) of patients. Manual digital evacuation, perianal pain/Tenesmus and incomplete evacuations were reported in 103 (40.55%), 44 (17.32%) and 00 (37.79%) of patients, respectively. 165 (64.9%) of the lesions were ulcerative, and 47 (18.50%) had the erythematous appearance; 27 (10.62%) were polypoidal, and 15 (5.9%) patients

had polyps. Histology revealed fibromuscular obliteration in 100% of patients, surface ulceration in 169 (66.53%), crypt distortion in 73 (28.7%) patients. Dyssynergic defecation was present in 166 (65.35%) of cases and 23 (23.0%) of controls <0.001 . 61 (53.50%) and 82 (67.76%) completely responded to the treatment among sucralfate and sucralfate plus Biofeedback groups, respectively ($p < 0.003$). 34 (13.38%) required (APC) and 12 (4.72%) patients surgery. **Conclusion:** Constipation and rectal bleeding were the most common presentations of SRUS. Ulcerative lesions were the most frequent endoscopic findings. Functional evacuation disorder was more common in patients with SRUS on ARM. Sucralfate enema and Biofeedback are treatments of choice besides laxatives.

Keywords: clinical features, endoscopic features, histology, solitary rectal ulcer syndrome, treatment

PP-0037 Safely prevent colonic diverticular bleeding by Kyukikyogaito

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Background and Aim: Colonic diverticular bleeding (CDB) is commonly encountered in daily clinical practice. Although rarely severe, CDB frequently requires hospitalization. It also often recurs and requires re-hospitalization. There is currently no reliable method to prevent recurrence. Kyukikyogaito, which consists of jio (rehmannia root), shakuyaku, toki, gaiyo, kanzo (licorice), senkyu, and akyo, is indicated for the treatment of hemorrhoidal bleeding and hemorrhagic stool and considered effective for persistent hemorrhagic diseases. This study aimed to investigate the efficacy and safety of kyukikyogaito for preventing CDB recurrence. Of 12 patients with a history of CDB from January 2012 to December 2020 who were confirmed to have no organic diseases of the large intestine and were prescribed kyukikyogaito to prevent CDB recurrence, we studied 5 who could continue to take kyukikyogaito for ≥ 1 year and had an accurate record of the number and course of CDB episodes before and after its use. **Methods:** We examined age, sex, presence/absence of anticoagulant therapy/anticoagulants, presence/absence of non-steroidal anti-inflammatory drug (NSAIDs), and presence/absence of the treatment of hemorrhoids. To evaluate the ability of kyukikyogaito to prevent CDB recurrence, we examined the period from the first CDB episode to the use of kyukikyogaito and the period after its use and compared the numbers of episodes and hospitalizations. We also examined adverse reactions after its use. **Results:** Shown in Table 1. **Conclusion:** Kyukikyogaito was prescribed to prevent CDB recurrence. Our results suggest that it might safely prevent CDB recurrence.

Keywords: colonic diverticular bleeding, prevent recurrence, kyukikyogaito

Table 1					
case	1	2	3	4	5
age	84	78	61	85	69
sex	M	F	M	M	M
treatment of hemorrhoids :					
yes/no	no	no	no	no	yes
anticoagulant therapy/anticoagulants :					
yes/no	no	no	no	yes	yes
target disease of the anticoagulants	no	no	no	angina pectoris	lumbar spinal stenosis
anticoagulants	no	no	no	Bayaspirin	ProRenal
period from the first CDB episode to the use of Kyukikyogaito (month)	53	1	123	0	36
numbers of episodes before Kyukikyogaito use	3	1	6	1	2
numbers of hospitalizations before Kyukikyogaito use	3	1	5	0	2
administration period(month)	45	68	81	64	55
numbers of episodes after Kyukikyogaito use	1	0	2	0	0
numbers of hospitalizations after Kyukikyogaito use	1	0	1	0	0
adverse reactions : yes/no	no	no	no	no	no

PP-0038 Clinical outcome of endoscopic treatment for residual cancer or metachronous multiple cancers after radiotherapy for head and neck cancer

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Background and Aim: Recently, endoscopic treatment for early head and neck squamous cell carcinoma (HNSCC) has made remarkable progress and its indications have expanded. The use of endoscopic treatment for residual cancer or metachronous multiple cancers after radiotherapy is also expected to increase; however, there has been no study on its effectiveness or safety. **Methods:** We evaluated a total of 24 patients including 11 patients with residual cancer after radiotherapy for HNSCC and 13 patients with metachronous HNSCCs in the mucosa after radiotherapy. The male–female ratio was 23:1, and the average age of the patients was 67.7. **Results:** The median follow-up period was 44.5 months. Complete local control was obtained in all patients. Only 2 patients died from the primary disease (because of distant metastasis). The median length of hospital stay was 11 days; however, 3 patients required hospitalization for 1 month or longer due to serious complications. The complications were cervical abscess in 2 patients (including 1 patient who underwent total laryngectomy) and aspiration pneumonia due to dysphagia in 1 patient. **Conclusion:** It is considered that the mucosa after radiotherapy has delayed wound healing and also has worse movement after scar formation due to microcirculatory disorders. However, if local treatment is not selected, total laryngectomy is required in many cases. Although careful consideration of treatment procedures and strict informed consent are indispensable, it is considered that endoscopic treatment for residual cancer or metachronous cancers after radiotherapy is extremely useful.

Keywords: head and neck cancer, endoscopic treatment, after radiotherapy

PP-0039 A comparative study of vonoprazan and esomeprazole for early symptom relief in patients with reflux esophagitis

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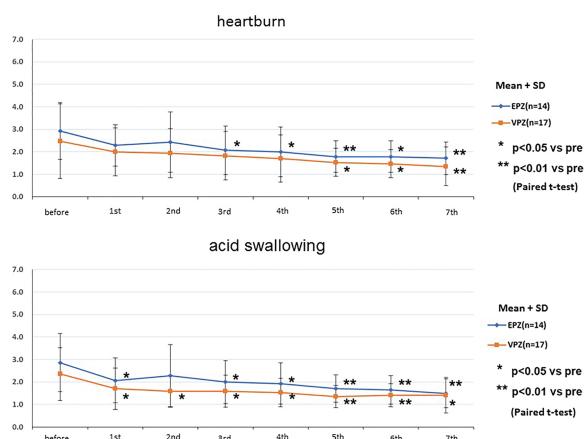
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Background and Aim: Proton pump inhibitors and vonoprazan, a potassium-competing acid blocker, effectively treat reflux esophagitis. However, their abilities to provide early symptom relief have not been compared. Thus, this study compared the abilities of esomeprazole and vonoprazan to relieve symptoms during the first week of treatment.

Methods: This open randomized parallel-comparison study included 31 patients with symptomatic reflux esophagitis who visited our clinic and Dongo Hospital between June and September 2017. The patients were randomly assigned to an esomeprazole 20 mg/day group or a vonoprazan 20 mg/day group using a random number table. Acid reflux **Results:** Fourteen patients were assigned to the esomeprazole 20 mg/day group, and 17 patients were assigned to the vonoprazan 20 mg/day group (Figure 1). The effects on early symptom relief were similar between the groups. **Conclusion:** This study demonstrated the non-inferiority of esomeprazole to vonoprazan at relieving acid reflux symptoms in patients with symptomatic reflux esophagitis.

Keywords: vonoprazan, esomeprazole, reflux esophagitis

Figure1



PP-0040 Feasibility of a modified search, coagulation, and clipping method with and without the use of polyglycolic acid sheets and fibrin glue for preventing delayed bleeding after gastric endoscopic submucosal dissection

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Background and Aim: Methods have been developed for preventing delayed bleeding (DB) after gastric endoscopic submucosal dissection (GESD). However, none of the methods can completely prevent DB. We hypothesized that DB could be prevented by a modified search, coagulation, and clipping (MSCC) method for patients at low risk for DB and by combining the use of polyglycolic acid sheets and fibrin glue with the MSCC method (PMSCC method) for patients at high risk for DB (antibleeding [ABI] strategy). This study assessed the technical feasibility of this novel strategy. **Methods:** We investigated 123 lesions in 121 consecutive patients who underwent GESD in Kushiro Rosai Hospital between April 2018 and January 2020. The decision for continuation or cessation of antithrombotic agents was based on the Guidelines for Gastroenterological Endoscopy in Patients Undergoing Antithrombotic Treatment. **Results:** Oral antithrombotic agents were administered to 28 patients (22.8%). The en bloc R0 resection rate was 98.4%. The MSCC method and the PMSCC method for preventing DB were performed in 114 and 9 lesions, respectively. The median time of the MSCC method was 16 min, and the median speed (the resection area divided by the time of method used) was $3.6 \text{ cm}^2/10 \text{ min}$. The median time of the PMSCC method was 59 min, and the median speed was $1.3 \text{ cm}^2/10 \text{ min}$. The only delayed procedural adverse event was DB in 1 (0.8%) of the 123 lesions. **Conclusion:** The ABI strategy is feasible for preventing DB both in patients at low risk and in those at high risk for DB after GESD, whereas the PMSCC method may be necessary for reduction of time.

Keywords: delayed bleeding, endoscopic submucosal dissection, polyglycolic acid sheets

PP-0041 The clinical impact of the COVID-19 pandemic on gastroenterology practices within Southeast Asia

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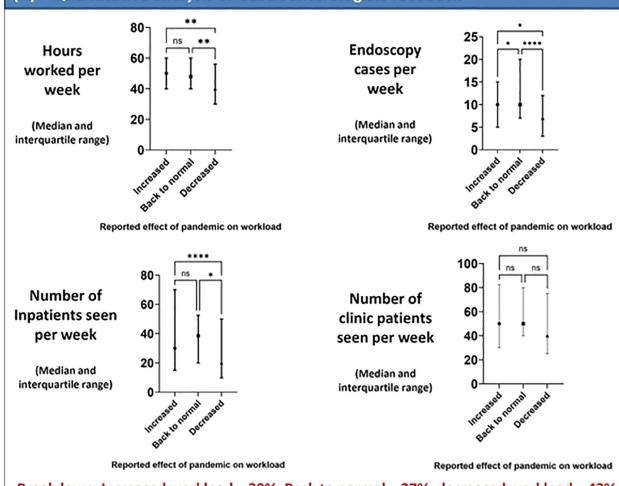
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Background and Aim: The effects of the protracted coronavirus disease-2019 (COVID-19) pandemic within Southeast Asia are unknown. A mixed methods, multinational study was conducted to elucidate the clinical workload in the “new normal.” **Methods:** An electronic survey was disseminated to 1761 gastroenterologists via the gastroenterology and endoscopy societies of Brunei, Philippines, Indonesia, Malaysia, Singapore, and Thailand from September to December 2020. Quantitative and qualitative data were collected. Quantitative data were nonparametric. These were analyzed by chi-square tests (categorical variables) and Mann–Whitney tests (continuous variables) with $\alpha = 0.05$. Qualitative data were analyzed by the content analysis method. Ethical approval was obtained. **Results:** The response rate was 38.8%. A total of 73.0% continued to be affected by the pandemic. Of these, 40.5% reported an increased workload and 59.5% decreased workload. Differences in weekly working hours, endoscopy, and inpatient volumes were observed between those reporting a decreased workload and those reporting the return of normal practice, however, not between those reporting normal and increased workloads (Figure 1A). No differences were observed in outpatient volumes; this was attributed to telemedicine. An increased workload was frequently reported in the public sector and attributed to more general medical and COVID-19 patients, and a backlog of cases that saturated institutional systems because of infection control measures. Decreased workload occurred mainly in private practice where routine practices were curtailed by local policies and decreased patient demand (Figure 1B). **Conclusion:** Inpatient volumes and endoscopy services in the public sector have been saturated by the COVID-19 pandemic. Opportunities to optimize workflow in the “new normal” should be explored.

Keywords: COVID-19, pandemic, coronavirus disease 2019, gastroenterology, endoscopy

Figure 1 – Effect of the protracted COVID-19 pandemic on gastroenterology practice in Southeast Asia

(A) Quantitative analysis of Gastroenterologists feedback



(B) Qualitative (Content) Analysis – Excerpts of feedback received

Increased workload	"Having to look after more general medical and COVID patients" - Malaysia "There is a large backlog of endoscopy referrals we are struggling to get through. Donning/Doffing procedures and room decontamination restricts the number of cases we can do per day." - Singapore
Decreased workload:	"Work hours are reduced, the number of patients is reduced, work stress increases" - Indonesia "Patient number is less, endoscopic cases are much fewer, health workers are more worried also about getting infected, and cases that have come in are more severe, owing to the procrastination of consulting out of fear of Hospitals." - Philippines

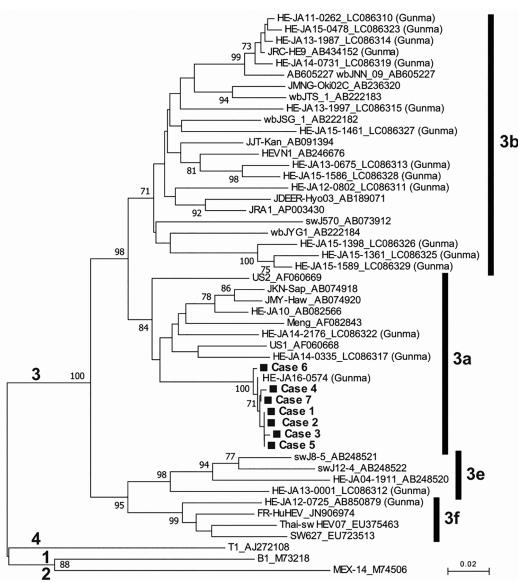
PP-0042 Characteristics of cases of hepatitis E in Gunma prefecture: Small epidemics caused by the same subgenotype 3a strains

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Background and Aim: In 2019, the number of reported cases of hepatitis E in Gunma prefecture was 1.44 per 100 000 people, which was the highest in Japan. **Methods:** We examined the clinical characteristics of 20 cases of hepatitis E in 2019 and analyzed hepatitis E virus (HEV) genomes of 7

Fig.1 a



sporadic cases. **Results:** All HEV strains isolated from these cases belonged to subgenotype 3a, which were 99.7–100% identical to each other within the 412-nucleotide ORF2 sequences. Of these 7 cases, 6 cases had eaten raw or undercooked pig liver/intestine within 3 months, suggesting that they had been infected with a swine-derived HEV strain. **Conclusion:** When a small epidemic is suspected, HEV genome analysis should be performed to identify the cause of infection even in sporadic cases.

PP-0043 Local barriers to prescribing anti-tumor necrosis factor (TNF) therapy in inflammatory bowel disease (IBD) in China: subgroup analysis of the EXPLORE study physician survey

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Background and Aim: Owing to limited available data, we aimed to assess physician-perceived barriers on prescribing anti-TNF therapy to patients with ulcerative colitis (UC) or Crohn's disease (CD) in real-world clinical practice in China. **Methods:** The EXPLORE study was a chart review of IBD patients describing indicators and predictors of suboptimal response to anti-TNF therapy. It comprised a cross-sectional survey (June 2017–June 2018) of IBD specialists to identify local barriers to prescribing anti-TNF therapy in clinical practice in newly industrialized countries. This was a post-hoc, China subgroup analysis based on 11 questions around physician clinical experience; IBD specialist perceived barriers for IBD specialists, non-IBD GI specialists, and patients. **Results:** Ten investigators with a median (range) experience of 15.5 (4–30) and 6.5 (4–20) years in treating IBD patients and using anti-TNF therapy, respectively, completed the survey. The median (range) number of biologic-naïve UC and CD patients referred to local centers was 190 (3–500) and 150 (4–1000), respectively. Among patients eligible for anti-TNF therapy, a greater proportion

Table 1: The most common barriers to prescribing or receiving anti-TNF therapy perceived by IBD specialists

IBD specialists	%	Non-IBD GI specialists	%	Patients	%
Patient affordability	90%	Patient affordability	80%	Increased commute to infusion centers	67%
Physician perceived safety risk	60%	Physician perceived safety risk	70%	Inadequate infusion chairs in centers	44%
Patient fear of side effects	50%	Patient fear of side effects	70%	Insufficient staff at infusion centers	33%
Age	40%	Physician lack of experience	50%	Insufficient number of infusion centers	33%

(median [range]) of CD (50% [5–80%]) than UC 10% [2–95%]) patients did not receive treatment. The most common barriers to prescribing anti-TNF therapy perceived by IBD specialists were patient affordability, physician perceived safety risk, and patient fear of side effects (Table 1). **Conclusion:** A large proportion of eligible IBD patients do not receive biological therapy. Improved biologic reimbursement coverage, availability of safer biologic therapies and greater infusion capacity, may be required to improve IBD patient management in China.

Keywords: anti-tumor necrosis factor, Crohn's disease, inflammatory bowel disease, ulcerative colitis, physician-perceived barriers

PP-0044 ERCP with a rotary papillotome was facilitated by adjusting monitor position in a patient with situs inversus totalis

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Background and Aim: All internal organs are inverted in *situs inversus totalis* (SIT). Thus, endoscopic retrograde cholangiopancreatography (ERCP) is challenging in case of SIT compared to the usual cases. A recent

(ERCP) is challenging in case of SIT compared to the usual cases. A recent study has showed the usefulness of a rotary papillotome in biliary cannulation in SIT patients. We changed the monitor positions from the patient's head side to foot side, and the arrangement allowed us to perform ERCP in the normal patient and operator positions. **Methods:** An 87-year-old man with SIT received ERCP for biliary drainage because he suffered from cholangitis due to stones in the common bile duct. We arranged endoscopic and fluoroscopic monitors on the patient's foot side as an unusual position. **Results:** By rotating the endoscope clockwise, the endoscope was passed through the esophagogastric junction. Then, we performed the insertion usually until going through the pyloric ring. To insert into the upper duodenal angle, we directed the endoscope upward to the left but not right that is a usual direction. We could observe the duodenal papilla in front by stretching while rotating counterclockwise under fluoroscopic guidance. It makes sense to arrange the monitors on the patient's foot side from the first and maintain the usual operator position as the operator faced the patient's foot side when the duodenal papilla was observed in front. A TRUE tome (Boston Scientific, Marlborough, Massachusetts, USA) was used from the beginning for the cannulation in a way that allows us to adjust the direction. We could adjust the direction of the tip by rotating the handle and succeed in wire-guided cannulation. Subsequently, we placed a bile duct stent following cholangiography and endoscopic sphincterotomy.

Conclusion: A rotary papillotome with well-conceived monitor position may be helpful for ERCP procedures in SIT patients.

Keywords: ERCP, situs inversus totalis

PP-0045 The success rate of nucleos(t)ide analogues and Peginterferon alpha-2a as treatment for chronic hepatitis B patients at Sardjito Hospital, Yogyakarta, Indonesia

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Background and Aim: Chronic hepatitis B (CHB) viral infection is a global public health problem. Two types of treatment, nucleos(t)ide analogues (NAs) and interferons, have been approved. The aim of this study is to determine the success rate of NAs and Peginterferon alpha-2a as treatment for CHB patients based on viral load (VL). **Methods:** A retrospective cohort study with statistical analysis using the Wilcoxon test. Data were collected from June 2019 to December 2020. **Results:** There were 160 CHB patients. The mean age was 46.84 ± 12.61 years and showed male predominance (63.1%). There was a significant decrease (160 patients) VL 1.6×10^7 IU/ml to 1.3×10^6 IU/ml ($p = 0.000$). The second and third VL tests (78 patients) decreased from 1.4×10^6 IU/ml to 1.6×10^4 IU/ml ($p = 0.02$). The third and fourth VL tests (12 patients) increased from 6.4×10^4 IU/ml to 3.2×10^6 IU/ml ($p = 0.515$). At first the patient was given Tenofovir (41.88%), Telbivudine (34.37%), Lamivudine (14.37%), Peginterferon alpha-2a (5%), Entecavir (3.13%), and Peginterferon alpha-2a combination with NA (1.25%). Then, alternations of two to five times were carried out, wherein successively Tenofovir was used in 80.23%, 57.14%, 16.67% patients; Entecavir 9.31%, 7.14%, 66.66% patients; Lamivudine 3.49%, 21.43% patients; Peginterferon alpha-2a 3.49% patients; Peginterferon alpha-2a combination with NA 2.32%, 14.29%, 16.67%, 100% patients; and Telbivudine 1.16% patients. **Conclusion:** NAs and Peginterferon alpha-2a treatment significantly reduced the VL; however, the VL tests were not examined routinely.

Keywords: chronic hepatitis B treatment, nucleos(t)ide analogues, Peginterferon

PP-0046 The therapeutic outcome of modified sequential regimen RA-RLT in patients with chronic gastritis

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Background and Aim: *Helicobacter pylori* (*H. pylori*) causes of peptic ulcer disease and stomach cancer. Eradication of *H. pylori* is extremely important because of antibiotic resistance. Levofloxacin sequential therapy has shown high efficacy and good tolerability. Aims: Evaluation of *H. pylori* eradication in patients with chronic gastritis in general and in patients with clarithromycin-resistant mutations with 10-day modified sequential regimen RA-RLT (Rabeprazol Amoxicillin-Rabeprazol Levofloxacin Tinidazole). **Methods:** Patients with chronic gastritis at the Cam Khe 103 Clinic from June 2016 to October 2018 were diagnosed based on clinical symptoms, lesions of gastritis on the endoscope, and

histopathology through hematoxylin–eosin staining of a biopsy specimen. These patients were identified with *H. pylori* infection by 2 methods Rapid urease test for *H. pylori*: Positive. Confirmed *H. pylori* in histopathology by Giemsa staining. Detection of clarithromycin resistance by PCR-RFLP. These patients were treated of *H. pylori* following RA-RLT regimen. The regimen includes: First 5 days (Amoxicillin 1000 mg, twice daily after meals. Rabeprazol 20 mg twice a day, before meals 30 minutes. 5 days later (Levofloxacin 500 mg twice daily after meals. Tinidazole 500 mg twice daily, after meals. Rabeprazol 20 mg, twice daily before meals 30 minutes). Second data recording after *H. pylori* treatment (4–6 weeks). **Results:** The rates of *H. pylori* eradication of RA-RLT regimen in all patients with chronic gastritis in PP and ITT analysis were 86.3% and 82.7%, respectively; in patients with clarithromycin-resistant mutation were 83.1% and 78.2%, respectively; and in patients without clarithromycin-resistant mutation were 95.1% and 91.1%, respectively. There was no statistically significant difference in the eradication between the group with and without the clarithromycin-resistant mutation. The adherence rate is 100%; the rate of side effects is 34.2%, the rate of side effects is 32.8%. **Conclusion:** Levofloxacin sequential therapy is a novel regimen, high efficacy, and good tolerability.

Keywords: RA-RLT (Rabeprazol Amoxicillin-Rabeprazol Levofloxacin Tinidazole), chronic gastritis

PP-0047 CASR as an important protective factor combined to the regulation of hepatic stellate cell activation

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Background and Aim: Clinical literature shows that patients from chronic hepatitis to cirrhosis show a gradual decrease in blood calcium concentration as the disease worsens. Therefore, calcium-sensitive receptors (CASR), which can sense changes in calcium in the blood, are particularly critical in liver fibrosis. Our previous experiments showed that as the index of liver fibrosis (α -SMA) was up-regulated in liver fibrotic tissue, the expression of CASR was down-regulated. Apoptosis increased significantly during the activation of HSCs stimulated by Cac12. CASR may be a new protective factor to inhibit the occurrence of liver fibrosis. **Methods:** Immunohistochemistry, Western blot, high-speed calcium imaging, and CCK8 were used to reveal the role of CASR in liver fibrosis. **Results:** (1) In clinical data, the blood calcium concentration of patients with liver cirrhosis is significantly lower than normal. (2) In human tissue specimens, with the up-regulation of liver fibrosis index (α -SMA) in liver fibrosis tissue, the expression of CASR is down-regulated, and the two are negatively correlated. (3) Before and after the activated HSCs, pre-treatment with the CASR agonist Cac12, it was found that the protein expression of α -SMA decreased. (4) After adding Cac12 stimulation to activated HSCs, it was found that the proliferation ability of activated HSCs was significantly reversed. (5) Before and after the activation of HSCs, Cac12 and spermine stimulation can significantly induce changes in intracellular calcium. (6) Cac12 can significantly promote the apoptosis of activated HSCs. (7) In the activation of HSCs by high calcium stimulation, the expression of BAX increased and the expression of Bcl2 decreased significantly. **Conclusion:** The calcium signal mediated by CASR plays an important role in regulating the activation of hepatic stellate cells. CASR may be used as a new target therapeutic mechanism, providing a novel and effective treatment for liver fibrosis.

Keywords: hepatic fibrosis, hepatic stellate cell, oxidative stress, calcium-sensing receptor, apoptosis

PP-0048 Effect of estrogen on expression and functional activity of glucose transporter in duodenal mucosa

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Background and Aim: Obesity is closely related to abnormal glucose metabolism and absorption. Clinical studies have found that the obesity rate of middle and old aged females, especially menopausal females, has increased significantly, but the specific regulation mechanism is not clear. It is known that menopausal women are accompanied by a significant decreased estrogen, but whether this change in estrogen level can regulate the metabolism and absorption of glucose is rarely reported at home and abroad. This study aims to elucidate the effect of estrogen on duodenal glucose absorption and its possible regulatory mechanism through animal experiments in vivo and cell experiments in vitro. **Methods:** 50% glucose orally and done OGTT test, immunohistochemistry and western blot, and transfection experiments. **Results:** (1) Vivo animal experiments confirmed that the ovariectomized mice had decreased serum estradiol levels and duodenal mucosal ER- α and ER- β expressions but increased body weight, fat, and blood sugar levels, compared with the sham operation group. (2) The Ussing chamber found that the reduction of estrogen inhibits the duodenal glucose absorption, rather than promoting it. (3) Immunohistochemistry suggested that the reduction of estrogen inhibits duodenal glucose absorption; this effect may be due to the down-regulation of SGLT1 and GLUT2 protein. (4) Vitro cell experiments confirmed that SGLT1 and GLUT2 protein increased after estrogen stimulated SCBN cells, and SGLT1 and GLUT2 protein was significantly reduced after ER- α expression in SCBN cells was knocked out by shRNA, while interference with ER- β had no significant effect on the expression of SGLT1 and GLUT2. (5) Mechanism studies suggested that the estrogen's downstream, PKC, has a negative regulatory effect on the expression of SGLT1 and GLUT2. **Conclusion:** After the decline in the expression of estrogen and its receptor ER- α in menopausal females, it promotes the activation of the downstream PKC pathway and then negatively down-regulates the expression of SGLT1 and GLUT2, which ultimately leads to a decrease in duodenal glucose absorption.

Keywords: estrogen, glucose absorption, SGLT1, obesity, duodenum

PP-0049 Parameters of the cellular link of immunity in patients with subhepatic jaundice caused by cholelithiasis

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Background and Aim: One of the complications of gallstone disease is subhepatic jaundice. The inflammatory response is an important link in the pathogenesis of gallstone disease. The aim of the study was to study the parameters of the cellular link of immunity in patients with subhepatic jaundice caused by cholelithiasis. **Methods:** The study involved 60 patients with subhepatic jaundice due to cholelithiasis and 125 apparently healthy people. The flow cytometry method was used to determine the population composition of lymphocytes. Statistical data processing was carried out using Statistica for Windows 8.0 application software packages with determination of median (Me) and interquartile range (C25–C75). The statistical significance of the differences was determined using the Mann–Whitney rank test $p < 0.05$. **Results:** The absolute and relative number

of lymphocytes in patients with subhepatic jaundice caused by cholelithiasis was reduced compared with practically healthy people ($p = 0.06 * 10^{-11}$, $p = 0.01 * 10^{-8}$). In these patients, the content of CD3-CD19+ lymphocytes did not differ statistically significantly from the control group. Absolute and relative number of CD3+CD19- lymphocytes ($p = 0.01 * 10^{-12}$, $p = 0.01 * 10^{-17}$), CD3+CD4+CD8- ($p = 0.01 * 10^{-10}$, $p = 0.01 * 10^{-14}$), and CD3+CD4-CD8+ cells ($p = 0.06 * 10^{-14}$, $p = 0.0003$) in patients with subhepatic jaundice caused by cholelithiasis was reduced in comparison with practically healthy people. In comparison with the control group, the number of CD4+CD25brightCD127neg increased ($p = 0.011$, $p = 0.0004$). **Conclusion:** In patients with subhepatic jaundice caused by cholelithiasis, suppression of the T-cell link of immunity is revealed, probably due to the presence of a long-term chronic inflammatory process in the biliary tract due to resorption from the zone of inflammation of toxic substances that have a damaging effect on the cells of the immune system.

Keywords: cholelithiasis, subhepatic jaundice, cellular immunity, lymphocytes, inflammation

PP-0050 Risk factors for relapse following glucocorticoid therapy in patients with immunoglobulin G4-related sclerosing cholangitis

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Background and Aim: Although glucocorticoid (GC) therapy is considered the gold standard treatment for immunoglobulin G4-related sclerosing cholangitis (IgG4-SC), some cases of relapse have been reported. However, the risk factors for relapse remain unclear. We investigated the risk factors for relapse in patients administered GC therapy for IgG4-SC. **Methods:** Of the 48 patients who visited our hospital for >1 year between 2001 and 2020, we investigated 35 patients who initially received GC therapy. Relapse was defined as exacerbation of bile duct stenosis on imaging or diagnosis of other IgG4-related diseases after steroid taper or discontinuation. We retrospectively reviewed patients' background, imaging findings, extra-bile duct lesions, steroid dose and duration, and serum IgG4 levels. **Results:** Relapse occurred in 13 (37.1%) of the 35 patients (29 men) investigated. The mean age of onset was 65.5 years, and the mean observation period was 90.3 months (range 14–232 months). 1. We observed no association between age, sex, initial symptoms, jaundice, a history of diabetes mellitus, smoking, alcohol consumption, or the observation period and relapse. 2. Significantly higher relapse rates were observed in patients with extrapancreatic bile duct stenosis ($P = 0.04$). The type of bile duct stenosis and bile duct wall thickness were not associated with relapse. 3. We observed no association between the number of extra-bile duct lesions and relapse. 4. Steroid discontinuation was significantly associated with relapse ($P = 0.02$). We observed no association between steroid dose and therapy duration or bile duct drainage and relapse. 5. We observed no association between pre-treatment serum IgG4 levels, highest and lowest serum IgG4 levels during maintenance steroid therapy, and the rate of IgG4 improvement and relapse. **Conclusion:** We observed a relatively high IgG4-SC relapse rate in patients administered steroid therapy. Extrapancreatic bile duct stenosis and steroid therapy discontinuation were risk factors associated with relapse.

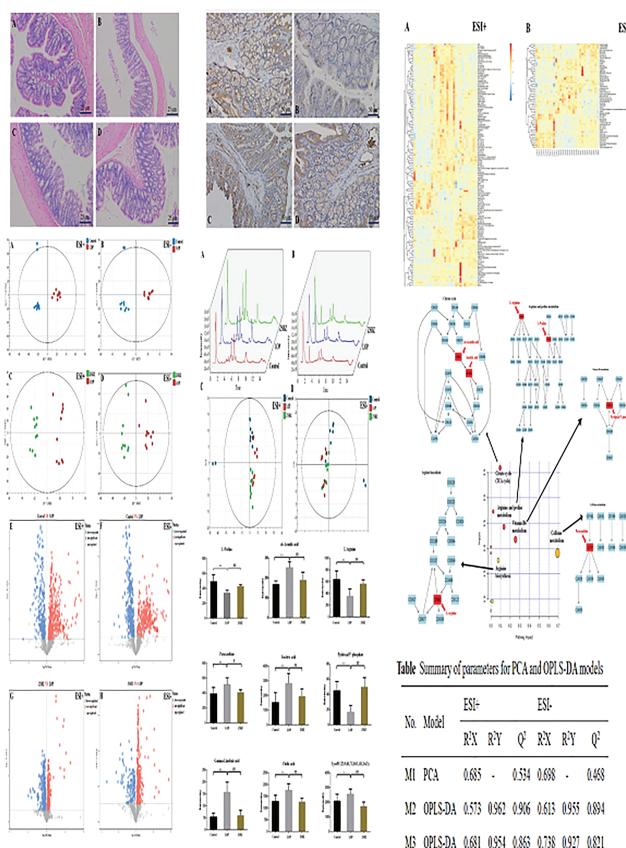
Keywords: IgG4-SC, glucocorticoid, bile duct

PP-0051 Metabolomics study on the therapeutic effect of the Chinese herb pair Fructus Aurantii Immaturus and Rhizoma Atractylodis Macrocephala in constipated rats based on UPLC-Q/TOF-MS analysis

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Background and Aim: In China, Zhishi-Baizhu (ZSBZ) is a well-known herb pair used to treat gastrointestinal motility disorders for thousands of years, and it has especially shown a definite advantage in the treatment of slow transit constipation (STC). However, the mechanism of ZSBZ in the treatment of STC remains unclear. Plasma metabolomics research combined with metabolic pathway analysis has been used to illuminate the potential mechanism of its effects against STC. **Methods:** Parameters of intestinal transit ratio, plasma motilin, substance P, adenosine triphosphate, histological alteration of the colon, and MLCK expression in the colon were detected to evaluate the effects with respect to STC. Principal component analysis was used to investigate the global metabolite alterations, while orthogonal partial least squares discriminant analysis and *t*-test were used to filter potential metabolite markers. Moreover, metabolic pathway analysis was employed.



analysis was employed. **Results:** Oral administration of ZSBZ significantly prevented the development of STC. It increased the expression of MTL and SP in serum, as well as the expression of ATP and MLCK in the colon. ZSBZ administration alleviated symptoms in loperamide-induced constipated rats, evidenced by the increase of intestinal transit ratio. Furthermore, 9 potential biomarkers of STC were screened, and the levels were all reversed to different degrees after ZSBZ administration. Metabolic pathway analysis showed that the improvement of STC by ZSBZ was mainly related to caffeine and vitamin B6 metabolism. **Conclusion:** Our study identifies the metabolic networks of constipated rats and demonstrates the efficacy of this metabolomics approach to systematically study the therapeutic effects of ZSBZ on constipation.

Keywords: constipation, Chinese herb pair, Chinese medicine, metabolomics, UPLC-Q/TOF-MS

PP-0052 Current etiological pattern of non-variceal upper GI bleed and its outcomes

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Background and Aim: Nowadays due to easy accessibility and frequent usage of PPI, there is a significant change in the etiology of NVUGIB. The aim of the study is to know the disease pattern, severity, complications, and outcome such as re-bleeding and mortality in accordance with specific findings observed in esophagogastroduodenoscopy. **Methods:** Descriptive cross-sectional study was done at AKUH, from 2016 to 2018; a total of 729 patients were included with a diagnosis of upper GI bleeding, out of which 189 were diagnosed as NVUGIB. Different variables such as age, gender, comorbid, laboratory tests, endoscopic findings, complication, and outcomes were collected from chart review and analyzed by SPSS version 21. **Results:** 189 patients with male 132 (69.8%), mean of age were analyzed. The common comorbidities were HTN (51.3%), DM (36.0%), and IHD (29.6%). Among them who are taking anti-platelets were 22.2%. On arrival, 138 (73.0%) presented with a history of melena, 101 (53.4%) had NG blood aspirate, and 95 (50.3%) had DRE positive. The majority of patients underwent endoscopy within 24 hours with the following endoscopic findings: pan-esophagitis (3.7%), distal esophagitis (21.2%), GEJ ulcer (14.8%), gastritis (46.6%), gastric ulcer (28.6%), dieulafoy lesion 4 (2.1%), gastric AVM 2 (1.1%), duodenitis (19%), duodenal ulcer (37%), and duodenal AVM 2 (1.1%). Endoscopic interventions were done in 61 (32.2%) patients, out of which sclerotherapy in 10 (5.3%), APC in 8 (4.2%), sclerotherapy + APC in 32 (16.9%), sclera + APC + hemoclip in 7 (3.7%), and sclerotherapy + hemoclip in 4 (2.1%) were performed. Radiological angio-embolization was done in 6 (3.2%) and surgical intervention in 1 (.5%) patient. Re-bleeding during admission was noticed in 9 (4.8%), there was 13 (6.9%) readmission with re-bleeding, clinic follow-up in stable condition 152 (80.4%), while mortality in the hospital or within 30 days as an outpatient was observed in 3 (1.6%) patients, and rest were lost to follow-up 21 (11.1%). **Conclusion:** It is concluded that NVUGIB is common among male gender; endoscopic findings indicate that gastro-duodenal site is still a major cause for NVUGIB in this region contrary to the western population where recent studies support esophagitis and esophageal ulcer as major findings.

Keywords: gastrointestinal bleeding, peptic ulcer, endoscopy

PP-0053 Anti-inflammatory effect of EV (extracellular vesicles) isolated from *Lactobacillus johnsonii* in colon cell line

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Background and Aim: *Lactobacillus johnsonii* along with other bacterial and mammalian cells releases extracellular membrane vesicles (EV). EV is involved in cell-cell communications in various biological systems. Cell-cell interactions, especially microbiota-host cell crosstalk, are multi-functional that implicate complex interactions between cells and cellular factors; many of these cellular factors such as lipids, proteins, nucleic acids, polysaccharides, and various soluble factors are associated with EVs. It was also reported that EVs from *Lactobacillus* sp. can stimulate the host immune and nervous systems and enhance the host immune responses against other bacteria. In this study, we tested whether EV isolated from *L. johnsonii* has an anti-inflammatory effect in LPS-induced inflammation of colon cancer cell line. **Methods:** *L. johnsonii* was isolated from a human fecal sample, and it was cultured at 37° under anaerobic conditions. After cultivation, the EV was separated and concentrated. WST-1, nitric oxide concentrations, and ELISA were used to measure whether the EV effectiveness. **Results:** The anti-inflammatory effect of EV isolated from *L. johnsonii* was confirmed in Caco-2 cell line. All experiments about EV treatment were under conditions of LPS stimulation. When the pre-stimulated colon cancer cells were treated with the EV, the concentration of NO, inflammatory factor, was significantly reduced than control. The EV (1 µg/ml) treatment group (37.2). **Conclusion:** EV isolated from *L. johnsonii* had an anti-inflammatory effect in the LPS-induced inflammation of colon cells. These results suggested the potential that just EV alone without whole live form probiotics could help suppress the inflammation of colon.

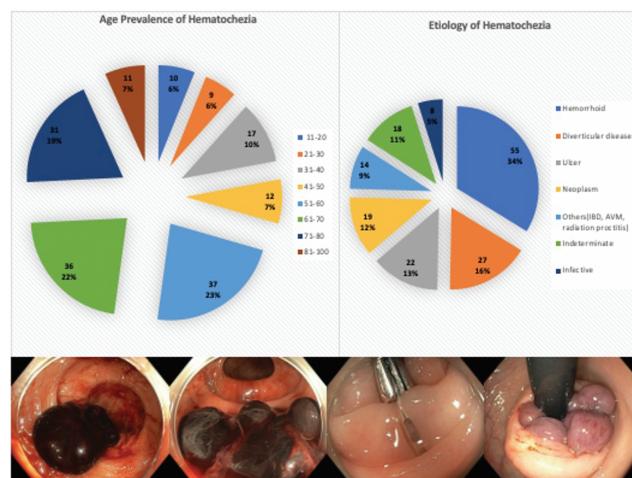
Keywords: *Lactobacillus johnsonii*, extracellular vesicles, anti-inflammation

PP-0054 Urgent colonoscopies for lower gastrointestinal bleeding—single-center experience in Sabah

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Background and Aim: Lower gastrointestinal bleeding (LGIB) constitutes 20% of all gastrointestinal (GI) bleeds, and the majority of patients (85–90%) stop bleeding spontaneously over time, with favorable outcomes. Colonoscopy provides a semi-invasive tool in both evaluating and treating bleeding pathology. There is however no risk stratification system in deciding who should benefit from the procedure. We decided to analyze our center. **Methods:** This is a single-center, cross-sectional, observational study. Endoscopic reports from January 2020 to December 2020 were retrieved. Data were cross-checked with our unit. **Results:** 163 patients were recruited, and their data analyzed. The ratio of male to female was 1.36:1 with 48% of our patients older than 60 years. The commonest cause of LGIB in our cohort was internal hemorrhoids followed by diverticular disease (34% and 16%, respectively). Only 27 patients (16.5%) eventually required specific endotherapy for which mechanical and thermal therapy



were frequently used (Figure 1). All therapeutics performed were successful, and there were no complications observed. **Conclusion:** Our study reveals elderly patients (> 60 years) with multiple medical comorbidities are the ones who would benefit from an urgent colonoscopy. In the absence of a definitive scoring system for LGIB, the ascertainment on timing of performing colonoscopy is challenging. Evaluation for colonoscopy timing ideally should be on a case-by-case basis to prevent unnecessary procedures despite its proven safety.

Keywords: lower gastrointestinal bleeding, colonoscopy, endotherapy

PP-0055 Adenoma and advanced adenoma detection rate in patients with positive faecal immunochemical tests: a single-centre retrospective study

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Background and Aim: Adenomas are precursor lesions that account for majority of colorectal cancer (CRC). Individuals with advanced adenomas (1-cm size or larger, high-grade dysplasia, or villous or tubulovillous histology) were significantly more likely to develop CRCs and at increased risk of CRC-related death. There is a lack of local data on adenoma detection rate (ADR) and advanced adenoma detection rate (AADR) in average risk screening population with positive FIT in Malaysia. **Methods:** This was a retrospective study of patients referred for screening colonoscopy following positive FIT from 1st January 2018 to 31st December 2019. The socio-demographic data, colonoscopy findings, histology and size of the polyp(s) were documented. ADR and AADR were analysed. **Results:** A total of 291 (69%) patients underwent screening colonoscopy from 422 referrals. Among the 275 patients who had a complete colonoscopy examination, CRC(s) were detected in 13 (4.7%) patients, whereas polyp(s) were found in 143 (52%) patients. The overall ADR was 40.4% with the ADR of 52.7% for men and 29.2% for female. The AADR for men was 17.6% and 8.3% for female, with an overall AADR of 12.7%. In terms of the ethnicity, the ADR and AADR were highest in Chinese, which were 46.2% and 14.3%, respectively. **Conclusion:** ADR in our study was above the minimum requirement set by United States Multi-Society Task Force (USMSTF) on CRC screening. The ADR and AADR in this study may serve

as the reference for the development of future local guidelines as well as quality indicators in CRC screening in Malaysia.

Keywords: faecal immunochemical test, colorectal cancer screening, adenoma detection rate, advanced adenoma detection rate

PP-0056 Performance of NICE classification in predicting the histopathology of colorectal polyp

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Background and Aim: Colorectal cancer originates from neoplastic polyp. The NICE classification has been recommended to differentiate neoplastic from non-neoplastic colorectal polyp.

The performance of NICE classification in predicting the neoplastic polyps.

Methods: A cross-sectional study was conducted on 142 patients with 249 colorectal polyps from October 1st, 2019, to February 29th, 2020, at University Medical Center at Ho Chi Minh City. Colonoscopy procedures were performed with EVIS EXERA III CV-190 system and CF-HQ190I endoscope. Colorectal polyps were classified according to the NICE classification and the Paris classification by the experienced endoscopists.

Results: The sensitivity, specificity, positive predicted value, negative predicted value, and accuracy of NICE classification in predicting the neoplastic polyps were 95.5%, 65.5%, 95.5%, 65.5%, and 91.9%, respectively. The diagnostic accuracy was 83.3% for polyp 1 – 5 mm, 88.9% for polyp 6 – 9 mm, 99.1% for polyp 10 – 20 mm, and 92.3% for polyp > 20 mm. According to the Paris classification, the diagnostic accuracy was 87.9% for 0-Is type, 100% for 0-Ip type, 92% for 0-IIa type, and 100% for 0-IIb type. **Conclusion:** The NICE classification had a high diagnostic accuracy in predicting neoplastic polyps and should be applied in clinical practice.

Keywords: NICE classification, diagnostic accuracy, neoplastic polyp, colorectal polyp, colorectal cancer

PP-0057 Two-dimentional ultrasound shearwave elastography: can the number of liver stiffness measurements be reduced for screening of patients undergoing liver ultrasound?

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Background and Aim: All patients undergoing abdominal ultrasound should have screening liver stiffness measurements (LSM) to detect fibrosis at an asymptomatic stage. Reducing the number of measures decreases the time taken for LSM with 2-dimensional shearwave elastography (2D-SWE). Improvement in ultrasound-based elastography technology means lower number of acquisition may be sufficient. We aimed to examine the differences in LSM taken with 2D-SWE and assess quality indicators if interpretation were taken for 3 (SWE3), 6 (SWE6), or 10 (SWE10) measures.

Methods: Data were collected from PACS and electronic patient record. We have included all patients attending hepatocellular carcinoma screening for hepatitis B and had LSM by 2D-SWE (LOGIQ E9 by GE) over a 12-month period. We compared LSM for 3, 6, or 10 readings, to assess differences in readings and quality criteria [both interquartile range (IQR)/median and coefficient of variance (CV), <0.30]. **Results:** In our study population ($n = 237$), 17 patients with invalid SWE or <10 LS measurements were excluded (success rate of 92.8%). For the 220 patients,

49.5% (101) of patients were female and the median age was 42 years (IQR 37.0–50.0). When comparing SWE3, SWE6, and SWE10, there were no statistically significant differences in the median LSM ($p = 0.97$). For CV < 0.30, SWE3, SWE6, and SWE10 achieved these criteria at 97.3%, 96.4%, and 95.9%, respectively. For IQR/median < 0.30, SWE3, SWE6, and SWE10 achieved these criteria at 96.4%, 89.1%, and 82.7%, respectively. **Conclusion:** For LS screening during ultrasound examination, median values of SWE3 and SWE6 appeared comparable to SWE10. Whether SWE3 or SWE6 can be proposed for screening liver stiffness assessment for all abdominal liver ultrasound examination requires further evaluation. Sequential assessment with screening SWE3 followed by SWE6 for confirmation and improved reliability may be feasible.

Keywords: liver stiffness, screening liver ultrasound, liver stiffness screening, 2D shearwave elastography

PP-0058 Association of ALBI grade, APRI score and ALBI-APRI score to post-operative outcomes among liver cirrhosis patients after non-hepatic surgery

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Background and Aim: Liver cirrhosis patients have increased risk for poor post-operative outcomes after non-hepatic surgery with liver dysfunction being the most important predictor. This study aims to determine the association of ALBI grade, APRI and ALBI-APRI scores to post-operative outcomes among cirrhotic patients who underwent non-hepatic surgery.

Methods: This is a retrospective cohort study involving 34 patients. Age; ASA class; urgency of surgery; etiology of liver cirrhosis; and preoperative CTP score, MELD score, ALBI grade, APRI score and ALBI-APRI score were documented. Outcomes are post-operative hepatic decompensation (POHD) and in-hospital mortality. Bivariate analysis using the Mann-Whitney U test and Fisher **Results:** ALBI grade and ALBI-APRI score were significantly associated with both POHD and in-hospital mortality. Both scores are non-inferior to CTP and MELD scores in predicting study outcome. Compared to CTP and MELD scores, ALBI grade is more sensitive but less specific in predicting POHD and as sensitive but more specific in predicting in-hospital mortality. ALBI-APRI score is less sensitive but more specific than ALBI grade in predicting both POHD and in-hospital mortality. **Conclusion:** ALBI grade and ALBI-APRI score were all associated to post-operative hepatic decompensation and in-hospital mortality and were non-inferior to CTP score and MELD score predicting short-term in-hospital outcomes among cirrhotic patients after non-hepatic surgery.

Keywords: ALBI grade, APRI, liver cirrhosis, in-hospital mortality, post-operative liver failure

PP-0059 Association of coffee intake with reduced cancer-related mortality among diagnosed patients with colorectal cancer: a systematic review and meta-analysis

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Background and Aim: Colorectal cancer (CRC) is the third most common cancer and the fourth most common cause of cancer mortality globally. Recent advances have in diagnostic and treatment options have reduced

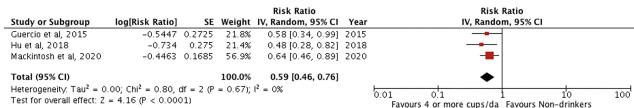


Figure 1. Four or More Cups of Coffee Per Day vs Non-Coffee Drinkers

CRC-related mortality. Coffee consumption has been studied to decrease mortality in colon, liver, and pancreatic cancer. **Methods:** A comprehensive, computerized literature search from the electronic database of MEDLINE, Google Scholar, Cochrane Library, and OVID was performed with the following search terms: colorectal cancer, coffee, and mortality. Three cohort studies were selected and validated using the Newcastle-Ottawa criteria. Multivariate results were combined under a random effects model using pooled adjusted hazards ratio (HR). The Cochrane Review Manager Software version 5.4 was used for all analyses. **Results:** Three cohort studies comprising of 3723 patients were analyzed by pooling adjusted hazards ratio using the random effects model. Coffee consumption was beneficial in reducing cancer-related mortality among CRC patients. Consumption of four or more cups of coffee per day resulted in decrease CRC-related mortality (RR 0.59, 95% CI 0.46–0.76, $I^2 = 0\%$) (Figure 1). Consumption of two to three cups per day was showed to also reduced cancer-related mortality among colorectal cancer patients (RR 0.77, 95% CI 0.66–0.91, $I^2 = 0\%$). **Conclusion:** Coffee consumption is beneficial in reducing cancer-related mortality among diagnosed patients with CRC.

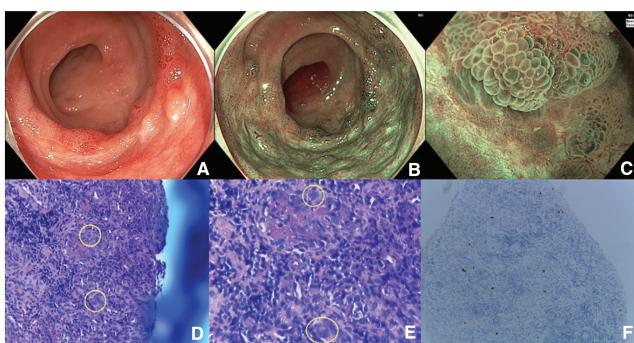
Keywords: colorectal cancer, coffee consumption, cancer-related mortality

PP-0060 A pair of ileal ulcers in an immunocompromised host

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Background and Aim: Cytomegalovirus (CMV) is a known opportunistic pathogen that is associated with immunosuppressed individuals, namely, those afflicted with malignancy, inflammatory bowel disease, and acquired immunodeficiency syndrome (AIDS). Small bowel involvement can be elusive as the symptoms are generally non-specific, mimicking other potential causes. Such a dilemma would lead to a delay in diagnosis that could presage dreadful consequences. **Methods:** A 53-year-old lady with underlying AIDS (CD4 count of 24 cells/mm³) presented with a three-month history of altered bowel habits and biochemical findings of microcytic hypochromic anemia. Colonoscopy revealed two extensive, near-circumferential terminal ileal ulcers traversing across 3–4 ileal folds (Figure A). Characterization of the ulcer edge with narrow-band imaging (NBI) revealed engorged and regular microsurface pit patterns in keeping



with a benign etiology (Figures B and C). **Results:** Targeted biopsies obtained along the ulcer edge and base returned positive for scattered CMV-infected cells marked by basophilic inclusion bodies seen below (yellow circles in Figures D–F). Following this, she received a 21-day course of valganciclovir and improved with time. **Conclusion:** Despite the lower prevalence of CMV enteritis, they are known to herald the inherent risk of fistula formation, perforation, and peritonitis which translates to poorer outcomes and higher mortality rates. A lower threshold to involve the respective subspecialties is essential to avert potential complications and avoid missing out on pertinent clues.

Keywords: ileal ulcers, CMV enteritis, colonoscopy, narrow-band imaging

PP-0061 Non-alcoholic fatty liver disease severity and gut microbiota in type 2 diabetes patients

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Background and Aim: Non-alcoholic fatty liver disease (NAFLD) has been an important health issue worldwide. The increasing prevalence of NAFLD is linked to type 2 diabetes (T2D). Gut microbiota might be associated with the development of NAFLD and T2D, and the relationship between gut microbiota and NAFLD severity has remained unclear in T2D patients. The aim of the present study was to evaluate the relationship of gut microbiota with the severity of NAFLD in T2D patients. **Methods:** The cross-sectional study used transient elastography (FibroScan) to evaluate the severity of hepatic steatosis of 163 T2D patients. We utilized qPCR to measure the abundance of *Bacteroidetes*, *Firmicutes*, *Faecalibacterium prausnitzii*, *Clostridium leptum* group, *Bacteroides*, *Bifidobacterium*, *Akkermansia muciniphila*, and *Escherichia coli*. **Results:** Of the 163 T2D patients, 83 with moderate to severe NAFLD had a higher abundance of phylum *Firmicutes* than 80 without NAFLD or with mild NAFLD. The high abundance of phyla *Firmicutes* increased the greater severity of NAFLD in T2D patients. The correlation between NAFLD severity with phylum *Firmicutes* was found in T2D patients, especially male, obesity, and glycated hemoglobin < 7.5%. **Conclusion:** The enrichment of the fecal microbiota with phyla *Firmicutes* is significantly and positively associated with NAFLD severity in T2D patients. Gut microbiota is a potential predictor of NAFLD severity.

Keywords: gut microbiota, type 2 diabetes, non-alcoholic fatty liver disease, FibroScan

PP-0062 Prognostic factors in colorectal cancer patients with metastasis in the para-aortic lymph nodes

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Background and Aim: Paraaortic lymph node (PALN) metastasis is generally considered an ominous sign indicating a poor prognosis in colorectal cancer (CRC). However, there are CRC patients with PALN metastasis who have long survivals by various treatments. In this study, we overviewed PALN metastasis from CRC and investigated predictors of prolonged survival in such patients. **Methods:** We investigated 140 CRC patients who developed PALN metastasis diagnosed in our department

between 2011 and 2020. Clinicopathological data were retrieved from medical charts. Moreover, factors associated with survival were identified by multivariate analyses using Cox proportional hazard models. **Results:** There were 93 men and 47 women (mean age 63.6 years). The mean hemoglobin and albumin values at diagnosis were 12.3 and 3.7 g/dL, respectively. Rectal cancer was the most frequent (81 patients). Fifty-three patients had synchronous PALN metastasis, and 112 had metastases in organs other than the PALNs. The frequency of mutated RAS was 44% (55 of 126 patients examined). One hundred three patients had differentiated adenocarcinoma. Regarding treatments, 10 patients underwent PALN dissection, 6 radiotherapy, and 120 systemic therapy; biologics were administered to 94 patients. The median survival time was 28.5 months. On multivariate analysis, low albumin (hazard ratio (HR) 2.38 per -1 g/dL), mutated RAS (HR 2.51), other than differentiated adenocarcinoma (HR 2.66), rectal cancer (HR 3.70 against right-sided colon, and 4.40 against left-sided colon), the presence of other site metastasis (HR 4.15), peritoneal dissemination (HR 3.42), and no use of biologics (HR 2.74) were factors associated with reduced survival after PALN metastasis. **Conclusion:** Our study revealed that hypoalbuminemia, RAS mutation, no biologics, and other tumor-related parameters worsened survival in CRC patients with PALN metastasis. It is important to select treatments based on the RAS status and make efforts for improving serum albumin level.

Keywords: colorectal cancer, para-aortic lymph node, metastasis, prognostic factor

PP-0063 Interobserver and intraobserver agreement with the use of regular arrangement of collecting venules (RAC) in the diagnosis of *Helicobacter pylori* gastritis

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Background and Aim: In this study, the reliability of regular arrangement of collecting venules (RAC) in the diagnosis of *Helicobacter pylori* gastritis in Filipino adult patients was evaluated. **Methods:** A prospective analytical study was done. Three independent endoscopists of different career levels were invited to review and analyze the images. Interobserver and intraobserver agreement was evaluated using Kappa statistics. Diagnostic yield was computed as a positive predictive value using the results of the endoscopic evaluation of the selected cases and was then compared among endoscopists with different levels of expertise using McNemar. **Results:** All endoscopists were able to determine 28 (75.7%) patients who were positive for RAC. The expert endoscopist remained the one with the highest number of correctly identified patients after the first and second evaluation (81% and 89.2%, respectively). The intermediate and expert endoscopists showed moderate intraobserver agreement ($K = 0.49$ and 0.59 , respectively), hence are more consistent in identifying RAC. For the interobserver agreement, there was noted fair agreement between the beginner vs intermediate endoscopists ($K = 0.26$) and beginner vs expert endoscopists ($K = 0.32$). Slight interobserver agreement between intermediate vs expert endoscopists ($K = 0.15$). For the association of the level of experience of the endoscopists in the diagnosis of *Helicobacter pylori* infection using RAC in endoscopy, the beginner endoscopist showed the lowest interobserver agreement (fair agreement, $K = 0.29, 0.36$) while the expert endoscopist showed the highest interobserver agreement (moderate agreement $K = 0.57$, substantial agreement $K = 0.75$). **Conclusion:** This study shows that the level of experience and advanced training of endoscopists can affect the reliability of RAC in the diagnosis of *Helicobacter pylori* gastritis. The diagnostic yield of RAC for *H. pylori* infection was high among endoscopists with more clinical experience. There

is variable interobserver and intraobserver agreement with the use of RAC in our institution.

Keywords: *Helicobacter pylori*, RAC, gastritis, intraobserver agreement, interobserver agreement

PP-0064 Validation of the Urdu version of SF-Leeds Dyspepsia Questionnaire

Authors: KUMAR DHEERAJ, KARIM SHAHID, CHANKIA VISHAL, KUMAR DEEPAK, AAKASH, TOOBA

Background and Aim: The objective of this study is to develop and validate a reasonable translation of SF-LDQ in local (Urdu) language.

Methods: A tertiary care center in Pakistan. 200 patients Urdu-speaking patients who came in opd or referred for EGD. Urdu version of SF-LDQ has developed by translation, with back translation, cross checking, and pilot testing. Patients have completed this questionnaire at time 1 and then after three days with blinded phone call at time 2. 25 randomly selected patients, diagnosed with PUD, completed a third survey at day 30 (time 3), after PPI. Cronbach's alpha used to calculate the internal consistency of tool for T 1 and T 2. The Pearson's coefficient test used to assess the test-retest reliability between T 1 and T 2. ROC curve used to validate the SF-LDQ with clinical diagnosis. The Wilcoxon rank testing used to assess the PPI response comparing T 1 and post-treatment 20 patients underwent EGD and diagnosed as PUD. All demographic variables were taken after informed consent of the patient. **Results:** Cronbach's alpha of the translated SF-LDQ was 0.680, showing acceptable consistency. Pearson correlation coefficient comparing time 1 and time 2 was 0.979 ($p < 0.001$), demonstrating high reliability. A cut-off score of 16 on the SF-LDQ showed a sensitivity of 97% and a specificity of 71% for the diagnosis of dyspepsia, correctly classifying 75% of patients. In the responsiveness analysis, the mean SF-LDQ score was reduced from 17.7 prior to treatment to 8.1 after 30 days of treatment ($p = 0.003$). **Conclusion:** The Urdu version of the SF-LDQ is valid, reliable, and responsive to treatment method for determining the frequency and severity of dyspeptic patients in Pakistan and patients who can read Urdu language.

Keywords: dyspepsia, heartburn, indigestion, regurgitation, nausea

PP-0065 Association of daily water intake with dyspepsia

Authors: KUMAR DHEERAJ, KARIM SHAHID, KHAN PUNHAL, CHANDKAI VISHAL, KALWAR HAMID

Background and Aim: Adequate water intake is very essential in the maintaining various mechanisms of body. Like as a building material, as a solvent, as a carrier, thermoregulation, as lubricant and shock absorber. Water has an essential role in GI region. In fact, adequate oral hydration improves many GI problems like dyspepsia, GERD, and chronic constipations. It will be very cheap and easy way to cure the patients coming with dyspepsia just making their water intake habits correct. **Methods:** Study will be conducted on OPD Department of Gastroenterology, Liaquat National Hospital, Karachi. A total of 436 participants were enrolled in this study. Subjects coming in OPD with history of dyspepsia as per operational definition for >2 months will be included. For all included in this study, the following information will be collected: age, sex, and duration of the disease. Dyspepsia diagnosed by SF-LEEDS questionnaire with 32 max score categorizing into mild, moderate, and severe according to the score 0–7, 8–14, and >14 , respectively. Water intake habits were collected along with other risk factors. All information will be recorded on a proforma; informed written consent will be taken before. **Results:** The mean age was 41 years with male 59.6% and female 40.4%. The mean SF-LEEDS score was 18. The mean daily water intake of patients was 1.5 L. Most common sign was

dry tongue in 40.1%. Only 6.2% patients have adequate water intake. Fisher's exact test between adequate water intake and severity of dyspepsia, showing patients having severe dyspepsia with not taking adequate water intake value of 0.015 *P* value. **Conclusion:** Adequate water intake is having strong relationship with severity of dyspepsia.

Keywords: dyspepsia, SF-LEEDS, hydration, water, indigestion

PP-0066 Prevention of Mother to Child Transmission of Hepatitis B Virus (PMCT-HBV)—an observation of routine practice in a tertiary liver centre before and after the introduction of the Global Health Sector Strategy on Viral Hepatitis (GHSSVH)

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Background and Aim: Worldwide, around 257 million people have chronic hepatitis B virus (HBV), most commonly transmitted from mother to child. In May 2016, World Health Assembly endorsed the GHSSVH calling for elimination of viral hepatitis by 2030. PMCT-HBV is a vital HBV elimination strategy utilizing immunizations and antiviral prophylaxis at 3rd trimester of pregnancy. This study aims to compare practice in a tertiary liver centre before and after GHSSVH introduction. **Methods:** This retrospective cohort study was performed using data from electronic medical record from January 2015 to December 2019. **Results:** This study included 117 pregnancies. 4 (3.4%) were on antiviral pre-pregnancy, of which 1 chose to stop during pregnancy. 18 (15.4%) were on prophylactic antiviral. In HBeAg positive women, 21 (72.4%) had HBV

DNA > 200,000 iu/ml. Conversely, 4 (7.4%) with HBV DNA > 200,000 iu/ml have negative HBeAg. HBeAg positive is 84% sensitive and 86.2% specific in predicting HBV DNA > 200,000 iu/ml. In 2015–2016, 5/9 (55.6%) of those with HBV DNA > 200,000 iu/ml were on antiviral during pregnancy, compared to 13/18 (72.2%) for 2017–2019. A patient with HBV DNA > 200,000 iu/ml has 58% higher odds (95% CI –63% to 568%) of being on antiviral prophylaxis in 2017–2019 compared to 2015–2016. **Conclusion:** The uptake of maternal antiviral prophylaxis shows an increased trend since introduction of GHSSVH with room for improvement. Late referral in some pregnant women contributed to missing HBeAg or HBV DNA and refusal of antiviral prophylaxis are some of the challenges. Protocolized HBV management in pregnant women and education may improve care.

Keywords: hepatitis B virus, pregnancy, antiviral prophylaxis, mother to child transmission, HBV DNA

PP-0067 Large balloon dilation versus mechanical lithotripsy for large bile duct stones: a systematic review and meta-analysis

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Background and Aim: Common bile duct stone (CBDS) is a common disorder of the biliary tract and often necessitates intervention to prevent biliary complications. Endoscopic retrograde cholangiopancreatography (ERCP) with sphincterotomy and balloon stone extraction remain to be the standard treatment for CBDS. However, removal of larger stones (>12 mm) may be challenging. After sphincterotomy, use of either mechanical lithotripsy (ML) or large balloon dilatation (LBD) has been widely used with high success for clearance of large stones in the past few decades. This study aims to compare the effectiveness and safety of the two procedures in clearing large CBDS. **Methods:** A literature search of randomized controlled trials (RCTs) comparing LBD and ML up to April 2020 in electronic databases including Cochrane Library, MEDLINE (PubMed), Google Scholar, Herdin.ph, and Clinicaltrials.gov as well as hand-search of publications was done. Primary outcome was stone clearance rate. Secondary outcomes include overall complication rate and specific rates for pancreatitis, cholangitis, perforation, and bleeding. **Results:** Three RCTs (273 patients) met our inclusion criteria. No significant difference was observed in stone clearance rate between the two groups (Figure 1A, OR 1.44, 95% CI 0.68–3.87, *p* = 0.34, moderate certainty). The overall complication rate was significantly higher in the ML group (RR 0.45, 95% CI 0.24–0.82, *p* = 0.01, high certainty). Six percent of the patients in the ML group developed cholangitis and was statistically significant (Figure 1B, RR 0.11, 95% CI 0.01–0.86, *p* = 0.04, high certainty). No incidence of post-ERCP cholangitis in the LBD group. No difference in post-ERCP pancreatitis, perforation, and bleeding was observed. No significant heterogeneity was seen in the studies included. **Conclusion:** LBD is a safe and effective alternative to ML in the removal of large common bile duct stones. There was no difference in rate of pancreatitis, perforation, and bleeding observed in both interventions. There appears to be increased risk of cholangitis in ML.

Keywords: balloon sphincteroplasty, mechanical lithotripsy, common bile duct stone

Table 1: comparison of between 2015–2016 and 2017–2019

Variables	2015–2016 (N = 39)	2017–2019 (N = 78)	P-value
Age in years, median (IQR)	31 (29 to 33)	33 (31 to 36)	<0.001 ^a
Race			1.000 ^b
Malay, N (%)	21 (53.8)	42 (53.8)	
Chinese, N (%)	17 (43.6)	33 (42.3)	
Indian, N (%)	0	0	
Others, N (%)	1 (2.6)	3 (3.8)	
Parity			0.020 ^b
Missing data, N (%)	1 (2.6)	0	
0, N (%)	12 (30.8)	15 (19.2)	
1, N (%)	4 (10.3)	26 (25.6)	
2, N (%)	9 (23.1)	20 (17.2)	
3, N (%)	10 (25.6)	24 (20.7)	
4, N (%)	0	7 (9.0)	
≥5, N (%)	3 (7.7)	5 (6.4)	
HBeAg status			0.954 ^b
Missing data, N (%)	3 (7.7)	7 (9.0)	
Negative, N (%)	23 (59.0)	48 (61.5)	
Positive, N (%)	13 (33.3)	23 (29.5)	
HBV DNA in iu/ml			0.801 ^c
Missing data, N (%)	13 (33.3)	18 (23.1)	
≤200,000, N (%)	17 (43.6)	42 (53.8)	
>200,000, N (%)	9 (23.1)	18 (23.1)	
Median (IQR)	1653 (115 to 12,434,917)	277 (22 to 461,895)	0.056 ^a
Anti-viral during pregnancy			0.799 ^c
No, N (%)	33 (84.6)	63 (80.8)	
Yes, N (%)	6 (15.4)	15 (19.2)	

P-values are based on the following tests – ^a Mann-Whitney test; ^b Fisher's Exact test; ^c Chi-square test

PP-0068 Safety and efficacy of endoscopic delivery of small bowel capsule endoscope in adults and children: a multicenter Japanese study (AdvanCE-J study)

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Background and Aim: Small bowel capsule endoscope (SBCE) cannot be ingested by young children or adults with dysphagia. Even if ingested, it lodges in the esophagus or stomach in patients with GI motility disorders, abnormal upper GI anatomy, etc. Endoscopic placement of SBCE is available by using various devices. Here, we retrospectively determined their safety and efficacy. **Methods:** We enrolled 8,627 patients who underwent SBCE at 16 medical centers between April 2006 and January 2021 to evaluate usage of delivery devices, total enteroscopy rate, and adverse events. **Results:** Of 8,627 patients, 503 (5.8%, male/female: 280/223, median age: 10, range: 1–85) underwent endoscopic delivery: 133 (1.5%) could not swallow it actually; 269 (3.1%) were predicted not to swallow it; and 101 (1.2%) swallowed it. In the 7 gastroenterological centers and 9 pediatric centers, 143 (2.0%) and 360 (26.5%) underwent endoscopic delivery, respectively. In 350 aged < 16, the devices were used in 339 (96.9%) due to inability to swallow SBCE (330 with AdvanCE, 13 with nets, 5 with snares, 3 with baskets, 4 accompanied by overtubes) and in 11 (3.1%) due to simultaneous EGD examination (10 with AdvanCE and 2 with snares). In 153 aged ≥ 16, the devices were used in 63 (41.2%) due to inability to swallow SBCE (37 with nets, 15 with AdvanCE, 9 with snares, 42 accompanied by overtubes) and in 90 (58.8%) due to prolonged lodging in the esophagus ($n = 23$) and stomach ($n = 61$) after ingestion, simultaneous EGD examination ($n = 5$), and postgastrectomy ($n = 1$) (64 with nets, 22 with snares, 2 with AdvanCE, 1 accompanied by overtubes). Total enteroscopy rate in patients undergoing endoscopic delivery was 87.2% (436/500). Adverse events associated with endoscopic delivery included abdominal pain ($n = 1$, 0.2%) and impossible release of SBCE ($n = 8$, 1.6%). **Conclusion:** Endoscopic delivery of SBCE was safe and effective for both adults and children.

Keywords: endoscopic delivery, small bowel capsule endoscopy, pediatric endoscopy

PP-0069 The usefulness of portable ultrasound for constipation in palliative care setting

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Background and Aim: In palliative care settings, constipation is often associated with decreased activity and opioid medication. Until now, the diagnosis of constipation has often been symptom based. However, imaging studies are also important for appropriate treatment of constipation. The portable echo can easily diagnose rectal constipation, which may lead to appropriate treatment of constipation. In this study, we will examine the usefulness of portable ultrasound for constipation in the palliative care field. **Methods:** In this study, 134 hospitalized patients who were under the intervention of the palliative care team from April 2020 to December 2020 and who had given consent to the study were included. This was a prospective observational study in which participants were asked to apply portable abdominal ultrasound to the lower abdomen and compare the ultrasound findings of the rectum with the clinical symptoms. We examined the presence or absence of structures with acoustic shading in the rectum, symptoms related to defecation, and stool properties using the Bristol stool form scale. **Results:** 52% were female, and the median age was 68 years. 56% were under treatment for cancer, and 44% were in palliative care only. Opioid use was observed in 56%. 66% had performance status 0–2 and 34% 3–4. 32% of patients had structures with acoustic shadows in the rectum. In the group with fecal masses in the rectum, compared to the group without fecal masses, background factors significantly included previous constipation, history of abdominal surgery, concomitant use of diuretics, Bristol stool form scale 1 and 2 as defecation status, and sensation of incomplete evacuation. **Conclusion:** It was suggested that portable abdominal ultrasound is useful in diagnosing rectal constipation and confirming symptoms of dyspepsia in the palliative care field. In the future, diagnosis using portable ultrasound may become a support device for appropriate treatment selection.

Keywords: portable ultrasound, palliative care, constipation

PP-0070 The prevalence and association between gastroesophageal reflux disease, irritable bowel syndrome, psychological stress, sleep, and life quality among internal medicine resident during COVID-19 pandemic: an internet-based study

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Background and Aim: COVID-19 pandemic has become high burden for internal medicine resident in Indonesia, bringing greater workload and psychological pressure. According to gut–brain-axis theory, this condition may affect gastroesophageal reflux disease (GERD) and irritable bowel

syndrome (IBS) incidence and furthermore may lead to sleep and life quality impairment. This study aims to assess prevalence and association between GERD–IBS–Stress–Depression–Anxiety–Sleep and life quality among internal medicine resident during COVID-19 pandemic using online survey. **Methods:** An online survey was conducted using Google Form® in September 2020. We included all active Sam Ratulangi University internal medicine residents, Indonesia. GERD and IBS diagnosis was determined using Indonesian-validated GERDQ score and ROME IV criteria, respectively. The analysis of stress, depression, anxiety, sleep, and life quality was assessed using validated Indonesian version of Depression–Anxiety–Stress Scales-42 (DASS-42), Pittsburgh Sleep Quality Index (PSQI), and WHO Quality of Life BREF (WHOQOLBREF) questionnaire, respectively. We excluded residents with alarm signs of bowel symptom and family history of cancer. **Results:** Among 115 residents, we found 14 residents (12.2%) having GERD with median age of 31 years old (interquartile range: 4) and 57.1% were male. More than half of all residents (50.4%) reported increased workload, and 71.4% reported feeling anxious due to COVID-19. For IBS group analysis, we excluded 18 residents, and we found 4 residents have IBS symptoms (4.1%). GERD was significantly associated with lower sleep quality ($p = 0.009$) and previous GERD history ($p = 0.010$). No significant association was found between GERD and stress ($p = 0.183$), depression ($p = 0.539$), anxiety ($p = 0.124$), and life quality ($p = 0.274$). We found significant association between IBS and having previous GERD history ($p = 0.000$), lower sleep quality ($p = 0.009$), higher depression score ($p = 0.021$), anxiety score ($p = 0.042$), and stress score ($p = 0.044$). No significant association was found between IBS and life quality ($p = 0.424$). **Conclusion:** GERD and IBS prevalence was 12.2% and 4.1%, respectively, among residents. Residents with GERD and IBS had lower sleep quality. IBS was associated with psychological health impairment. Specific measures should be addressed for residents.

Keywords: irritable bowel syndrome, gastroesophageal reflux disease, psychological health, COVID-19, functional GI disorder

PP-0071 Association of serum homocysteine levels with ultrasonographic grades of fatty liver and with hepatic fibrosis, as measured by transient elastography, in non-alcoholic fatty liver disease: an Indian perspective

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Background and Aim: NAFLD is an emerging public health problem ultimately progressing to fibrosis, cirrhosis, and hepatocellular carcinoma. The absence of specific symptom or sign warrants the need for identifying non-invasive tools for early identification of the disease and its progression. Homocysteine is a sulphydryl containing amino acid which can alter intracellular lipid metabolism thereby promoting hepatic fat accumulation. Thus, it is plausible that high homocysteine levels could be a marker for early identification, and an effective target for preventing the progression to NAFLD and its related complications. **Aim:** Determining the association of serum homocysteine levels with ultrasonographic grades of fatty liver and with hepatic fibrosis, as measured by Fibroscan, in NAFLD. **Methods:** 40 NAFLD patients along with 40 healthy volunteers underwent serum homocysteine level and abdominal ultrasonography along with a gamut of baseline investigations from August 1, 2019, to January 31, 2020, in this observational case control study conducted on an out-patient basis in the Gastroenterology Unit, Department of General Medicine, Safdarjung Hospital. Fibroscan was done in 40 NAFLD patients. **Results:** Out of the 40 NAFLD patients recruited, 57.5% (23) were males and rest were females. Mean age of case cohort was 43.08 ± 13.41 years. 40% patients were

diabetic. Mean homocysteine levels were 44.87 ± 22.81 in cases as compared to 27.57 ± 15.05 in controls. 47.50% of cases had Grade I fatty liver. 70% patients belonged to F0–F1 fibrosis score with mean liver stiffness 6.44 ± 2.05 . **Conclusion:** Higher serum homocysteine levels were significantly associated with progressive grades of fatty liver on ultrasonography ($p < 0.013$) and with increasing grades of hepatic fibrosis, as assessed by Fibroscan, in NAFLD patients and holds the potential to be used as a tool for early identification of hepatic fibrosis in NAFLD.

Keywords: NAFLD, homocysteine, transient elastography, Fibroscan, ultrasonography

PP-0072 Minimizing endoscopist facial exposure to respiratory droplets in endoscopy: optimal patient–endoscopist distance and use of a barrier device

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Background and Aim: Minimizing endoscopist exposure to bodily fluids is important for reducing the risk of infection transmission. This study investigated the patient–endoscopist vertical distance necessary to minimize an endoscopist. **Methods:** A model was developed to simulate a patient experiencing a forceful cough during an upper gastrointestinal endoscopy with a model endoscopist. Fluorescent dye was expelled from the model patient. **Results:** The flow dynamics of the cough simulation model were similar to that of an actual human cough. There was a significant inverse correlation between the patient–endoscopist vertical distance and the model endoscopist. **Conclusion:** In the simulation of a patient coughing during an upper gastrointestinal endoscopy, positioning the patient at least 100 cm below the top of endoscopist.

Keywords: infection control, transmission risk, personal protective equipment, COVID-19, SARS-CoV-2

PP-0073 An analysis of the causes of acute upper gastrointestinal bleeding from a tertiary care center in Sri Lanka

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Background and Aim: Acute upper gastrointestinal bleeding (UGIB) is a life-threatening emergency associated with high risks of mortality and rebleeding despite standard management which includes pharmacological therapy and endoscopic interventions. The data regarding the etiology of UGIB in our part of the country are scarce. The aim of this study was to determine the etiologies of acute UGIB in hospitalized patients. **Methods:** Clinical and endoscopic findings were recorded in all patients who presented within 72 h of onset of UGIB. **Results:** A total of 220 patients were included in this study. Out of 220, 159 (72%) were males. The median age was 62 years. The most common cause of acute UGIB was portal hypertension (129 (58%): oesophageal varices). **Conclusion:** Portal hypertension is the common cause of UGIB in Sri Lanka. Appropriate pharmacological management and timely endoscopy will significantly reduce the mortality and rebleeding rate.

Keywords: upper gastrointestinal bleeding, portal hypertension

PP-0074 Physician perceptions on the use of antibiotics and probiotics in adults

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Background and Aim: The over-prescription of antibiotics represents a major threat to public health worldwide and is more frequently observed in some low- and middle-income countries. In the Asia-Pacific region, economic development, health care organization, and population demographics are heterogeneous. The aim of this survey was to investigate antibiotic use and probiotic co-prescription among adults in this area. **Methods:** An online survey of physicians from 7 countries of the Asia-Pacific region (Australia, Japan, Indonesia, India, China, Singapore, and South Korea) was performed and explored current practices concerning antibiotics and probiotics and factors related to prescribing decisions. **Results:** 387 general practitioners and 350 gastroenterologists completed the questionnaire. Physicians in Australia, Japan, and South Korea were low prescribers of antibiotics (11% to 19% of visits resulted in an antibiotic prescription), while those in Indonesia, India, China, and Singapore were high prescribers (41% to 61%) (Figure). A large majority (85%) agreed that antibiotics disrupted intestinal microbiota. The rates of co-prescription of probiotics varied from 16% in Japan to 39% in Singapore (overall, 27%). 62% considered that antibiotic associated diarrhea (AAD) could be prevented by probiotics (only 16% in Japan). Probiotics were most likely to be co-prescribed to those who had a previous episode of AAD (56%), required a prolonged course of antibiotic (54%), and/or were to receive antibiotics thought most likely to be associated with diarrhea (53%). **Conclusion:** The rates of antibiotic and probiotic prescriptions varied significantly between countries in the Asia-Pacific area, suggesting that antimicrobial stewardship programs might be necessary in some countries.

Keywords: microbiota, antibiotics, probiotics, diarrhea, Asia-Pacific

PP-0075 Aetiology, management and outcomes of acute pancreatitis in children: A review from tertiary centre and teaching hospital

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Background and Aim: The treatment principle for acute pancreatitis in children mostly rely on adults published recommendation. Despite of the increasing incidence, overall morbidity and mortality in acute pancreatitis in children are generally lower than those in adult. However, with diverse management, outcomes for this condition remain different among centres. We aimed to describe aetiology, and association between management

and the outcomes of pediatric acute pancreatitis in a tertiary care centre. **Methods:** Retrospective chart review of children with acute pancreatitis between 2006 and 2016 was performed. Demographic, clinical data and outcomes were collected and analysed. **Results:** Of the 79 admitted acute pancreatitis patients (42 males and 37 females), mean age at diagnosis was 10.4 (SD 4.5) years. Medication is the most common aetiology accounts for 39.3% of the episodes, biliary tract disease in 11.4% and inconclusive/idiopathic in 30%. Sixty-two (78.5%) and 24 (30.4%) had increased serum lipase and amylase, respectively. Pancreatitis-related complications, namely, pseudocyst (7/79, 8.8%) and necrotizing pancreatitis in 6/79 (7.6%), were not related to aetiology or antibiotics administration. Seventeen patients (22.8%) had at least one recurrent episode of acute pancreatitis. We found 28% mortality which was significantly higher in patients with pre-existing illness (100% vs 0%; $p = 0.01$). Men with acute pancreatitis had a higher in-hospital mortality rate (40% vs 14%; $p = 0.01$). **Conclusion:** Medication is the most common aetiology of acute pancreatitis in children. Lipase elevation was observed in most of patients with acute pancreatitis although the level was not associated with developing of complication. In-hospital mortality in acute pancreatitis is more pronounced in patients with pre-existing illness leading to progressive multi-organ failure. Therefore, prompt diagnosis and intensive disease management and monitoring could improve survival in these group of patients.

Keywords: acute pancreatitis, paediatric, serum lipase, mortality, adverse effect

PP-0076 Haematochezia in an urban tertiary centre

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Background and Aim: Lower gastrointestinal bleeding (LGIB) is a common cause of hospitalizations worldwide in both western and Asian countries. Data with regard to the incidence and aetiologies of LGIB are scarce in our region. In this study, we aim to look at the incidence, aetiologies and colonoscopic findings of patients presented with haematochezia to our centre. **Methods:** This is a retrospective review of all patients who had undergone colonoscopy in Hospital Kuala Lumpur for haematochezia in year 2019. Data of patients with haematochezia were extracted from the Malaysian Gastrointestinal Registry (MGIR) for analysis. **Results:** A total of 2996 colonoscopy were performed in Hospital Kuala Lumpur, Malaysia, in year 2019, of which 504 cases of patients with haematochezia were extracted from the MGIR. Of these, 320 were elective procedures, 177 were emergency procedures and 7 had missing data. Majority of the patients (90.9%, 458 cases) who underwent the colonoscopy were given bowel preparation agent, of which 406 cases (80.6%) used PEG and 41 cases (8.1%) used sodium phosphate. Despite usage of bowel preparation agent, only 283 cases (56.2%) had excellent (88 cases, 17.5%) and good bowel preparation (195 cases, 38.7%). With the poor bowel preparation, it is therefore not surprising that the terminal ileum (208 cases, 41.2%) and caecal (154 cases, 30.5%) intubation rate was low at only 71.7%. 397 cases (78.8%) had abnormal findings in the colonoscopy whereas 90 cases (17.8%) had normal colonoscopy. The commonest findings were haemorrhoids 166 cases (32.9%), colonic polyps 108 cases (21.4%), diverticular disease 81 cases (16.1%), carcinoma 59 cases (11.7%) and ulcers 51 cases (10.1%). Among the cases with carcinoma, the majority of the cases (53 cases, 89.8%) were left sided (including descending colon, sigmoid colon, rectum and anus). **Conclusion:** Causes of LGIB in our region are similar to those reported worldwide. Colonoscopy remains one of the modalities of choice for investigation of patients with haematochezia.

Keywords: LGIB, haematochezia

PP-0077 Diagnostic accuracy of serum pepsinogens for chronic atrophic gastritis

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Background and Aim: Chronic atrophic gastritis (CAG) is a precancerous lesion of gastric cancer. This study is intended to observe the diagnostic accuracy of serum pepsinogens as non-invasive makers for CAG and find out their optimal cut-off values for Myanmar people. **Methods:** A cross-sectional study of 70 dyspeptic patients without red flag signs was recruited and performed endoscopy with mucosal biopsies. Histologic severity was assessed by Operative Link for Gastritis Assessment (OLGA) staging. Serum pepsinogens (PG I and PG II) were measured by ELISA GastroPanel, Biohit Healthcare (Finland). Serum pepsinogens I:II ratio (PGR) was calculated. Comparisons between the two groups were analyzed by Student's *t*-test and Wilcoxon rank-sum test. Optimal cut-offs were calculated using receiver operating curves (ROC). **Results:** The mean (\pm SD) age of the study population was 52.57 (\pm 16.33) years. The CAG was diagnosed in 61.4% of dyspeptic patients. The mediums of PG I, PG II, and PGR in dyspeptic patients were 114.5 ng/ml, 12.7 ng/ml, and 9.5, respectively. The mediums of PG I and PG II were significantly lower in patients with CAG ($P = 0.006$ and 0.029), but PGR was not significantly changed. Both PG I and PGR were reversely correlated with OLGA stages ($P = 0.013$ and 0.048) but not with PG II. For the best discrimination of CAG, the cut-off values of PG I and PGR in Myanmar were ≤ 114 ng/ml and ≤ 9.5 (sensitivity 55.8% vs 55.8%; specificity 63% vs 55.6%; accuracy 58.6% vs 55.7%; and AUC 0.59 vs 0.55), respectively. **Conclusion:** Either PG I or PGR can be useful as non-invasive biomarkers for screening of CAG with moderate diagnostic accuracies. However, PG I was significantly lower in patients with CAG than PGR.

Keywords: serum pepsinogen I (PG I), serum pepsinogen II (PG II), pepsinogens I:II ratio (PGR), chronic atrophic gastritis (CAG)

PP-0078 Biliary stent placement without endoscopic sphincterotomy in patients with common bile duct stones

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Background and Aim: Background: For the management of common bile duct (CBD) stones, endoscopic sphincterotomy (EST) is a standard procedure. However, late complications such as cholangitis, liver abscess, and recurrent CBD stones have been reported with this technique. Alternative methods should be considered to avoid such complications, especially in younger patients. Aims: To study the effect of biliary stent placement without EST in patients with CBD stones. **Methods:** Forty-nine patients with CBD stones underwent endoscopic retrograde cholangiopancreatography (ERCP), and 7 Fr double pigtail plastic stent was placed without EST. After 3 months, the rate of stone disappearance, the change in number, size and indices of stones, and CBD diameter were evaluated in second ERCP. **Results:** CBD stone(s) disappeared in 11 (22.45%) of 49 patients. Almost all of the stones which disappeared after stenting alone were < 14 mm in sizes with CBD diameter of < 18 mm. In the stone persistence cases, 3 (6.12%) patients achieved complete stone clearance with balloon extraction alone whereas 18 (36.73%) patients requiring EST in second ERCP. The stone persistent cases were found to have larger in size, indices of stones, and CBD diameter: $P = 0.003$, $P = 0.004$, $P = 0.006$, respectively. Complications at initial ERCP are mild post-ERCP pancreatitis (6.12%), stent

Table 1. Outcomes of CBD stones after stent placement alone without EST

	Initial ERCP	Second ERCP	"P" value
Stone size (mm)	14.3 \pm 5.8	9.6 \pm 6.6	$P < 0.001$
Number of CBD stones (no)	2 \pm 2	1 \pm 2	$P < 0.001$
Stone index	29.9 \pm 22.4	14.2 \pm 20.1	$P < 0.001$
CBD diameter (mm)	17.7 \pm 5.6	15.5 \pm 5.4	$P = 0.001$

CBD - Common bile duct

EST - Endoscopic Sphincterotomy

ERCP - Endoscopic retrograde cholangiopancreatography

migration (10.2%), and cholangitis (4.08%). The outcomes of CBD stones were shown in Table 1. **Conclusion:** Temporary stent placement without EST was effective for CBD stone clearance while preserving the duodenal papilla function, particularly in small CBD stones and less dilated CBD.

Keywords: ERCP, common bile duct stone, stent placement, without EST

PP-0079 Usefulness of emergency EUS in determining indications for emergency ERCP

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Background and Aim: Emergency ERCP should be considered when patients are diagnosed with acute cholangitis, but EUS can play an important role in determining the indication when the cause of the disease cannot be clearly identified by initial imaging studies such as CT. This study aimed to clarify the usefulness of EUS in determining the indication for emergency ERCP. **Methods:** Between January 2015 and October 2020, 40 patients who underwent emergency EUS to determine the indication for emergency ERCP because the cause of inflammatory reaction and elevated hepatobiliary enzymes could not be identified by the initial examination at our hospital were included. We evaluated patient background, pre-EUS diagnosis, presence of common bile duct stone/sludge, and ERCP avoidance rate. We also evaluated the presence or absence of gallbladder stones in patients who underwent EUS alone (EUS group) and those who underwent EUS followed by ERCP (EUS + ERCP group). **Results:** The M:F ratio was 20:20, and the mean age was 66.7 years (24–90). EUS pre-diagnosis was acute cholangitis: acute pancreatitis:common bile duct stone/sludge:biliary bleeding = 26:9:5:1. The avoidance rate of ERCP was 67.5%. EUS revealed common bile duct stones/sludge in 10/6 cases, and ERCP was performed in 13 cases (all common bile duct stones and 3 sludge). Among the 27 patients in the EUS group, 3 patients developed acute cholangitis after 11 days, 6 months, and 1 year, respectively: 2 due to stone fall from the gallbladder and 1 due to sludge fall. The number of patients with gallbladder stones was 14 of 26 in the EUS group and 11 of 11 in the EUS + ERCP group ($p = 0.006$). **Conclusion:** Emergency EUS can help avoid unnecessary ERCP when determining the indication for emergency ERCP. It is also important to keep in mind that patients with gallbladder stones are more likely to require emergency ERCP.

Keywords: emergency EUS, emergency ERCP, bile duct stone

PP-0080 A surgical-immunopathological characteristic differences in simple versus idiopathic complex fistula in ano

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Background and Aim: Vast literatures describe the role of bacteria, epithelialization, and inflammation in the pathophysiology of complex fistula in ano. Epithelial to mesenchymal transition (EMT) has been studied and proven to be involved in organ fibrosis and in malignancy; however, little has been studied about its role in cryptoglandular fistula in ano. In the present study, we aimed to investigate the immunopathological differences between simple and complex fistula in ano with regard to epithelial mesenchymal transition (EMT). **Methods:** Fistula tracts were categorized into simple and complex fistula in ano based on endoanal ultrasound and magnetic resonance imaging according to Park's classification. The surgical intervention performed by the attending surgeon based on clinical findings and deemed appropriate for the fistula. Post excision, fistula tract is fixed in 10% buffered formalin and embedded in paraffin. 3 µm of tissue is sectioned, and immunohistochemical staining is performed using advanced immuno-staining method. Two EMT biomarkers were evaluated: TGF-beta and beta-catenin. **Results:** A total of 53 patients were recruited: 29 simple and 24 complex fistulas with homogenous demographic data. There was a statistically significant difference in cytoplasmic staining of beta-catenin in complex versus simple fistula in ano, 12 (50%) versus 4 (13.8%), $p < 0.05$. The positive cytoplasmic staining for TGF-beta is higher in complex fistula, 9 (37.5%), compared to simple fistula, 8 (27.5%); however, it was not statistically significant, $p = 0.441$. None of the complex fistula showed nucleus positivity for beta-catenin except for one simple fistula. **Conclusion:** A plausible theory of EMT involvement in complex fistula in ano, as evident by the beta-catenin expression. However, as a follow-up to this study, future studies should incorporate more EMT biomarkers in their evaluation and dual modalities must be used (immunohistochemistry and genetic microarray analysis) to detect these biomarkers.

Keywords: fistula in ano, epithelial mesenchymal transition, beta-catenin, immunopathology, complex anal fistula

PP-0081 The association between stool retention and gastroesophageal reflux (GER) in patients with overlapping GERD and chronic constipation: a randomized, crossover study

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Background and Aim: Overlapping GERD constipation is common. Whether there is a relationship between stool retention and GER is not clearly known. **Methods:** Twelve patients (11F, age 57 ± 6) with bothersome typical GER symptoms and had stool frequency ≥ 2 times/week were randomized to 4 consecutive daily rectal enemas or no enema then crossover with a 2-week washout period. Evidence of stool retention was demonstrated by abdominal x-ray after ingested 20 radiopaque markers (retention: $\geq 90\%$ markers remained; no retention: $< 90\%$ markers remained

Table 1. Gastroesophageal reflux frequency and characteristics during 2 hours after standard meal comparing between patients with and without stool retention

	Stool retention (N=12)	No stool retention (N=12)	P value
Total GER events during 2-h postprandial (times)	10.6±4.8	6.3±4.1	0.003
- First hour postprandial GER frequency (times/h)	6.1±3.2	3.7±2.6	0.01
- Second hour postprandial GER frequency (times/h)	4.5±2.7	2.6±1.8	0.02
Reflux characteristics			
Proportion of acid reflux (%)	54.9±29.5	68.8±29.2	0.14
% Time pH less than 4 during 2-h	0.8 (0.5-2.1)	1.0 (0.1-3.0)	0.90
Mix gas and liquid reflux frequency (times/2-h)	9.1±4.9	6.3±4.1	0.03
Liquid reflux frequency (times/2-h)	0 (0-1.8)	0 (0-0.8)	0.06
Bolus clearance time (sec)	125.9±65.9	100±92.4	0.26
Proximal reflux extension (cm)	7 (7-8.8)	6.5 (6-8.5)	0.19

Data expressed as mean ± SD or median (interquartile range)

GER, gastroesophageal reflux

on day 4 after markers ingestion). After overnight fasting, all patients underwent an abdominal x-ray and a liquid meal (Ensure). **Results:** After overnight fasting, patients with stool retention had significantly more global GI symptoms [7 (3.3–8) vs. 4.5 (2.3–6), $p = 0.04$] and more bloating [5.5 (4–8) vs. 3 (2–5), $p = 0.02$] than the non-retention group. Fasting and before a standard meal H2 and CH4 breath levels were similar ($p > 0.05$). After a standard 520-kcal meal, patients with stool retention significantly developed more GER episodes than patients without stool retention [10.6 ± 4.8 vs. 6.3 ± 4.1 times/2 h, $p = 0.003$]. After finishing the satiety drink test, patients with stool retention had significantly more heartburn severity [2 (0–7.5) vs. 0 (0–0), $p = 0.04$] and tended to have a higher maximum tolerable drinking volume [591.7 ± 202.1 vs. 516.7 ± 158.6 ml, $p = 0.07$] than the non-retention group. **Conclusion:** Stool retention was significantly associated with more post-prandial GER episodes, heartburn, and a trend of higher satiation volume. This finding suggests colonic retention from constipation in overlapping GERD constipation patients can induce more postprandial GER episodes and this may associate with a higher maximum tolerable volume during the drink challenge test.

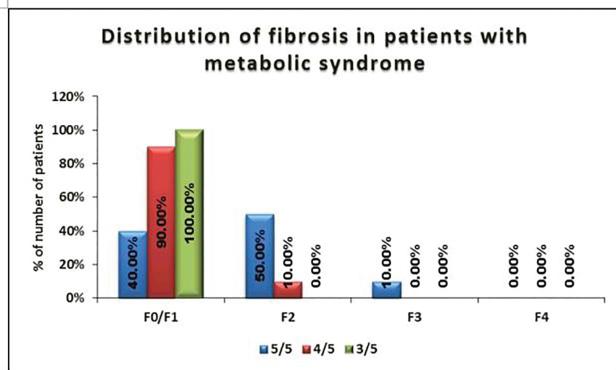
Keywords: GERD, constipation, gastric accommodation, gastroesophageal reflux, satiety drink test

PP-0082 Assessment of fibrosis by means of fibroscan in patients of metabolic syndrome: A cross-sectional study in India

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Background and Aim: The metabolic syndrome (MetS) is a complex disorder characterized by the presence of a clustering of metabolic risk factors usually in a single individual. Our aim was to assess the different grades of fibrosis by means of Fibroscan with parameters of MetS. **Methods:** 70 patients of MetS who underwent Fibroscan in our out-patient department were recruited in this cross-sectional study, for a duration of 3 months (September 2019 to December 2019). Lab investigations included complete blood count, liver function test (LFT), kidney function test (KFT), lipid profile, and fasting blood sugar. Body mass index (BMI), waist circumference, and waist-to-hip ratio were recorded. **Results:** Out of 70 patients with MetS, 35 (50%) were males and 35 (50%) females. Maximum number of patients were aged 51–60 years (76%), followed by those between 41 and 50 years (24%). Central obesity was present in all individuals, 50% were hypertensive, 70% hyperglycemic, 60% had TG > 150 mg/dl, and 50% had low HDL values. 62 patients (88.6%) had mild/no fibrosis (2.5–7.4 kPa = F0/F1), 7 (10%) had moderate fibrosis (7.5–9.4 kPa = F2), only 1 (1.4%) had severe fibrosis (9.5–12.4 kPa = F3), and none (0%) had cirrhosis (>12.5 kPa = F4). Patients fulfilling all 5/5 (10/70 = 14.3%) components



of MetS (IDF definition) had higher grades of fibrosis ($0/10 = F4$, $1/10 = 10\% F3$, $5/10 = 50\% F2$, $4/10 = 40\% F0/F1$), compared to those fulfilling $4/5$ ($20/70 = 28.6\%$ showing $0/20 = 0\% F4$, $0/20 = 0\% F3$, $2/20 = 10\% F2$, $18/20 = 90\% F0/F1$) or $3/5$ criteria ($40/70 = 57\%$ showing $0/40 = 0\% F4$, $0/40 = 0\% F3$, $0/40 = 0\% F2$, $40/40 = 100\% F0/F1$). **Conclusion:** On statistical analysis, a definite correlation was found between different grades of fibrosis and parameters of MetS. Fibroscan can be used as an invaluable screening procedure in MetS patients to delay progression of fibrosis by timely interventions.

Keywords: metabolic syndrome, MetS, Fibroscan, fibrosis, transient elastography

PP-0083 Left-sided acute appendicitis: clinical characteristics, management and outcomes: a systematic review

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Background and Aim: Left-sided acute appendicitis (LSAA) is a rare presentation described in association with congenital anomalies. The objectives of this systematic review were to explore the clinical characteristics and outcomes of LSAA. **Methods:** PubMed/Medline, Google Scholar, Scopus and Cochrane Central were searched using keywords. **Results:** Overall, 74 cases were included (median age 32 years, range: 8–86) with eight in the paediatric age group (< 12 years) and 70.3% males ($n = 52$). Left lower quadrant (LLQ) pain was the commonest presentation (66.2%) with associated fever (55.5%), vomiting (54.3%), anorexia (39.1%) and LLQ tenderness with guarding (61.1%). Median duration from onset to presentation was 2 days (range 1–21 days). Neutrophil leucocytosis was seen in 86.8%. LSAA as the principal differential diagnosis rose from 35.7% (pre-investigations) to 75.7% (post-investigations). Radiological evidence alone confirmed the diagnosis in 59.5% and supported clinical suspicion in 18.9%. Situs inversus totalis and midgut malrotation were seen in 47.5% and 43.2%, respectively. Surgery was performed in 91.7% at a median of 2 days (range: 1–25) from symptom onset. Surgical complications were reported in 4%, and none required intensive care. Appendicitis-related complications including perforation, gangrene, abscess formation and peritonitis were observed in 42.6%. **Conclusion:** LSAA results in atypical presentations leading to potential delays in presentation and definitive treatment. A high degree of clinical suspicion and low threshold for imaging are necessary in patients presenting with LLQ pain.

Keywords: left-sided acute appendicitis, midgut malrotation, situs inversus totalis

PP-0084 Severe acute pancreatitis in leptospirosis requiring extracorporeal membrane oxygenation (ECMO)

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Background and Aim: Leptospirosis is a zoonosis caused by spirochetes of the genus Leptospira. It mainly affects the liver, kidneys, and lungs. Few cases described the involvement of other organs such as the pancreas, heart, and brain. The incidence of acute pancreatitis in leptospirosis is infrequent and is more commonly seen in patients with acute respiratory distress syndrome (ARDS). Dysregulation in immunomodulation and small-vessel vasculitis are thought to play a role in its pathogenesis.

Methods: Two previously healthy adult males with history of wading through flood water who presented with fever, myalgia, abdominal pain, jaundice, and oliguria are reported here. **Results:** Both patients were diagnosed with leptospirosis and were placed on extracorporeal membrane oxygenation (ECMO) due to ARDS. The first patient developed necrotizing pancreatitis (Figure 1A) and underwent emergency laparotomy with evacuation of hematoma due to hemoperitoneum. He eventually succumbed to multi-organ failure. The second patient developed symptoms of gastric outlet obstruction approximately four weeks from the diagnosis of acute pancreatitis. CT scan revealed a walled-off necrosis and an acute necrotizing collection (Figure 1B). The patient was managed conservatively and was eventually discharged without any abdominal complaints. **Conclusion:** Leptospirosis remains a globally important zoonosis. The incidence of acute pancreatitis in leptospirosis may be underreported. A high index of suspicion is important since abdominal pain may also occur with uremia and hepatitis. A multi-disciplinary approach should address all systemic and local complications of both leptospirosis and acute pancreatitis. Further studies are needed to determine whether acute pancreatitis increases the morbidity and mortality in patients with leptospirosis.

Keywords: acute pancreatitis, leptospirosis

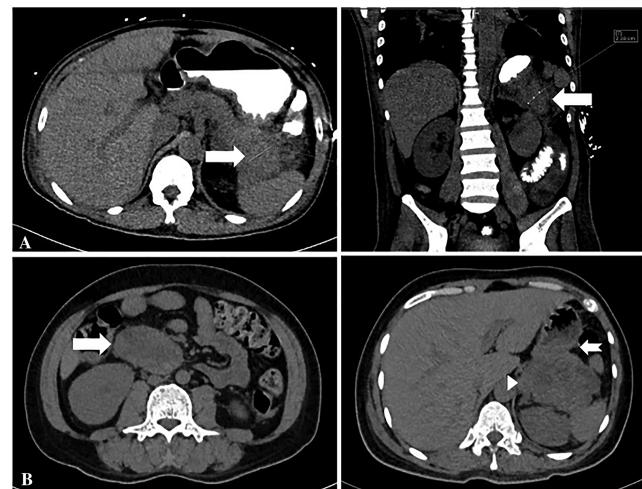


FIGURE 1. **A.** Acute necrotizing pancreatitis: computed tomography (CT) scan.* The pancreas is diffusely enlarged with peripancreatic nodularities and fat stranding. There is disruption of the pancreatic duct at the pancreatic tail (arrow) with concomitant contusion of pancreatic parenchyma. **B.** Pancreatic and peripancreatic fluid collections: computed tomography (CT) scan.* CT scan showing a thick-walled, mixed-attenuating, heterogeneous mass measuring $5.0 \times 7.2 \times 4.0$ cm at region of the pancreatic head consistent with a walled-off necrosis (arrow). An irregular, mixed attenuating focus in the pancreatic tail consistent with an acute necrotizing collection (arrow head) is seen closely associated with the stomach (notched arrow).

*Pancreatic protocol CT scan was not performed due to presence of acute kidney injury

PP-0085 Clinical presentation, treatment and prognosis of IgG4

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Background and Aim: IgG4-related disease (IgG4-RD) is a multi-organ fibro-inflammatory disease of uncertain pathogenesis. Increasing incidence of the disease worldwide is likely secondary to increasing awareness and disease identification. Diagnosis of IgG4-RD relies on clinical findings, serology, histology, radiology and response to steroids. IgG4-RD often affects the hepatopancreaticobiliary (HPB) system, highlighting the importance for gastroenterologists to recognise and manage IgG4-RD. Aim: To describe the clinical presentation, treatment and prognosis of IgG4-RD in a single centre over a nine-year period. **Methods:** All IgG4-RD patients diagnosed from 2012 to 2021 were identified and retrieved from electronic records. IgG4-RD was diagnosed with a combination of history, serology, radiological and histopathology reports. Patients were recorded as being in remission if they were symptom-free with supporting laboratory ± radiological findings for at least one year. **Results:** Of 51 patients with IgG4-RD, 38 (75%) were male. The median age at diagnosis was 61 years. 28 patients had multi-organ involvement, with HPB manifestations forming 59% of our cohort ($n = 30$). 22 patients presented with pancreatitis ± cholangiopathy, while the remaining had autoimmune hepatitis or isolated cholangiopathy. The mean serum IgG4 concentration was 4.3 g/L, and 18 (36%) had peripheral eosinophilia. Most patients had good initial response to steroids, and remission was achieved in 31/38 (82%) patients at one year. 12 (32%) patients had relapsing-remitting disease, and 20 (40%) patients required additional immunosuppression. Azathioprine was the most common steroid-sparing agent ($n = 12$), followed by methotrexate ($n = 6$). Rituximab was required for three patients with severe relapsing disease. At follow-up, a reduction in serum IgG4 concentrations was observed in 29 (74%) cases (mean reduction = 2.6 g/L). **Conclusion:** IgG4-related disease remains a diagnostic challenge as patients can present with a myriad of clinical presentations. HPB involvement occurred in over half of our patients. While a general decline in serum IgG4 concentrations was observed, 32% have relapsing-remitting disease. Early recognition and treatment initiation are crucial in the management of this condition.

Keywords: IgG4-related disease, pancreas, hepatobiliary, cholangiopathy, autoimmune

PP-0086 Insulin resistance after an attack of acute pancreatitis: the role of dietary fat content and intra-pancreatic fat deposition

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Background and Aim: Insulin resistance is a well-known derangement after an attack of pancreatitis, but the role of dietary fat intake and intra-pancreatic fat deposition (IPFD) in it is unknown. We aimed to evaluate the relationship of dietary fat intake with markers of insulin resistance in individuals after acute pancreatitis, taking into account IPFD. **Methods:** The studied markers of insulin resistance were fasting insulin, HOMA-IR, and METS-IR. Magnetic resonance imaging was used to quantify IPFD. The EPIC-Norfolk food frequency questionnaire was used to determine the habitual intake of saturated, monounsaturated, polyunsaturated fatty acids. Linear regression analysis, with adjustment for possible confounders, was performed. **Results:** A total of 111 individuals after acute pancreatitis (33 low IPFD, 40 moderate IPFD, and 38 high IPFD) were

included. In the high IPFD group, intake of monounsaturated fatty acids was inversely associated with both fasting insulin, and HOMA-IR, and METS-IR in the unadjusted ($\beta = -65.405$, $p < 0.001$; $\beta = -15.762$, $p < 0.001$; $\beta = -0.760$, $p = 0.041$, respectively) and fully adjusted models ($\beta = -155.620$, $p < 0.001$; $\beta = -34.656$, $p < 0.001$, $\beta = -2.008$, $p = 0.018$, respectively). Intake of polyunsaturated or saturated fatty acids did not have a consistently significant pattern of associations with the three markers of insulin resistance. None of the above associations was significant in the low IPFD and moderate IPFD groups. **Conclusion:** Individuals after an attack of pancreatitis who have high IPFD may benefit from a calorically balanced diet that is rich in monounsaturated fatty acids.

Keywords: dietary fat, pancreas, intra-pancreatic fat, insulin traits, insulin sensitivity

PP-0087 Combination of endoscopic ultrasound and the ASGE criteria provides additional benefit in avoiding unnecessary ERCP

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Background and Aim: For patients with suspicious CBD stones, ERCP is a useful tool for both diagnostic and therapeutic purposes. However, in order to prevent unnecessary adverse events and expenditure, it should be reserved to patients with high probability of CBD stones. A risk prediction system of CBD stones was proposed by ASGE in 2019. We want to evaluate the role of EUS in combination with the ASGE system. **Methods:** From January 2011 to January 2021, patients who received EUS in National Taiwan University Hospital for suspected CBD stone were included. The patients would proceed to ERCP or surgery if CBD stones were found after their approval. The exclusion criteria included (1) previous CBD manipulation before EUS (such as PTCD or ERCP), (2) missed data, or (3) the abnormal liver tests could be attributed to concomitant ailments. **Results:** 149 patients were included. CBD stones were detected on EUS in 87 patients. 78 of them received ERCP and 3 of them received surgery. CBD stones were found in 78 patients (the PPV of EUS was 90%). When the ASGE criteria were applied, CBD stone or CBD dilatation on image were the two significant predictors for CBD stones (table). However, even though patients had high probability to have CBD stones according to the criteria, the PPV was 67% only. A significant portion of patients would receive unnecessary ERCP if the decisions were based on the ASGE criteria alone. **Conclusion:** EUS provided additional benefit beyond the ASGE criteria even when patients were in high risk of CBD stones.

Keywords: endoscopic ultrasound, common bile duct stone, ERCP

	N (%)	Sensitivity (%)	Specificity (%)	PPV (%)	NPV (%)	Accuracy (%)	Unadjusted odds (95% CI)	Multivariate odds (95% CI)	P value of multivariate odds
High probability	89 (60)	69	53	67	55	62	2.54 (1.29-4.97)		
Strong predictors									
CBD stone on images	67 (45)	54	68	70	51	60	2.47 (1.25-4.87)	2.16 (1.06-4.39)	0.034
Ascending cholangitis	32 (22)	24	82	66	44	48	1.48 (0.65-3.34)		
T-bil >mg/dL and dilated CBD	18 (11)	10	89	56	41	43	0.91 (0.32-2.58)		
Moderate predictors									
Absent abdominal pain	119 (80)	78	18	57	37	53	0.77 (0.34-1.76)		
Age > 55 years	110 (74)	77	31	61	49	58	1.48 (0.71-3.09)		
Dilated CBD on images	98 (66)	72	44	64	53	60	2.03 (1.02-4.03)		
Biliary pancreatitis	35 (23)	22	74	54	40	44	0.80 (0.38-1.72)		

PP-0088 Impact of COVID 19 outbreak on gastrointestinal practices in Bangladesh

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Background and Aim: Deadly coronavirus declared as pandemic in March 2020 by WHO, squeezing all the health facilities into a narrow passage. COVID 19 outbreak has severely affected endoscopy practices throughout the world. We conducted the first national survey among gastroenterologists of Bangladesh to assess the impact of COVID 19 outbreak on gastrointestinal practices. **Methods:** A cross-sectional study was conducted through self-administered online questionnaire (SurveyMonkey). To collect data, 151 practicing gastroenterologists across Bangladesh were contacted through e-mail with the questionnaire link from 6th July to 27th July. To assess the impact of COVID 19 outbreak in Bangladesh (7th March), along with others, information on gastrointestinal practices (inpatients, outpatients, endoscopy, and colonoscopy procedures) at hospitals were collected. Data were analyzed descriptively, while Mann-Whitney test was used to find the significance of difference of GI services. **Results:** About half of the respondents were in the age group of 40–50 years, and 47% were working as assistant professor. The respondents followed the British Society of Gastroenterology guideline (25%), local guideline (25%), and other guidelines (25%). 47% had to close their private chambers, and 11.3% provided online or over telephone consultations. The median of weekly hospital admissions (from 50 to 10, $p = 0.00$), outpatients services (from 160 to 30, $p = 0.00$), endoscopies (from 50 to 3.5, $p = 0.00$), and colonoscopies (from 13 to 0, $p = 0.00$) decreased significantly after COVID 19 outbreak. About 10% of gastroenterologists were infected with COVID 19, and majorities (60%) of them were treated in home isolation. **Conclusion:** This study showed that there is significant reduction of endoscopy practices occur due to COVID 19 outbreak both in public and private settings. Gastroenterologists are more vulnerable to COVID 19 infections. Gastroenterologists should follow single best guideline rather than using multiple guideline haphazardly.

Keywords: COVID 19 outbreak, gastrointestinal practices

PP-0089 Safety and efficacy of small-bowel capsule endoscopy in patients with postoperative reconstructed bowel

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Background and Aim: There are few reports on the results of small-bowel capsule endoscopy (SBCE) for postoperative reconstructive bowel cases such as after gastric cancer surgery or pancreaticoduodenectomy, and we sometimes encounter cases in which we are not sure whether to perform the procedure or not. The objective is to evaluate the safety and efficacy of SBCE in patients with postoperative reconstructed bowel. **Methods:** We retrospectively analyzed 20 cases of SBCE for postoperative

reconstructed intestine performed at our hospital from November 2007 to July 2020, and we evaluated retrospectively patient characteristics, postoperative anatomy, colon arrival rate within examination time, small bowel transit time, and SBCE findings. **Results:** There were 19 male cases and 1 female case. 12 cases were Billroth I after pyloric gastrectomy, 1 case was Billroth II after pyloric gastrectomy, 1 case was Roux-en-Y after pyloric gastrectomy, 2 cases were Roux-en-Y after total gastrectomy, and 4 cases were after pancreaticoduodenectomy. The purpose of the examination was to examine 15 cases of OGIB, 3 cases of abdominal symptoms, and 2 cases of enteritis. The colon arrival rate within examination time was 80% (16 cases). 4 cases were completed in the small intestine: 3 cases by Billroth I method after pyloric gastrectomy and 1 case by Roux-en-Y method after total gastrectomy. The retention rate was 0%. The finding rate was 50%, and angiectasia was the most common finding (6 cases). **Conclusion:** SBCE was considered to be a safe and useful examination for scrutiny of small-bowel disease in postoperative reconstructed bowel. In particular, SBCE can reach the colon within the examination time in a relatively high percentage of cases after pancreaticoduodenectomy, Billroth II method, and Roux-en-Y method, and SBCE should be considered when necessary.

Keywords: small-bowel capsule endoscopy, postoperative reconstructive bowel

PP-0090 Influence of liver stiffness heterogeneity on concordance of MR elastography-based liver fibrosis staging and biopsy results in patients with nonalcoholic fatty liver disease

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Background and Aim: While hepatic fibrosis often affects the liver globally, the spatial distribution can be heterogeneous. Biopsy sampling effects have been proposed as a factor affecting agreement between non-invasive biomarkers of fibrosis and staging with histopathology. The goal of this study was to investigate the effect of liver stiffness heterogeneity on the concordance between MR elastography-based fibrosis staging and biopsy staging in patients with NAFLD. **Methods:** We retrospectively evaluated data from 110 NAFLD patients who underwent liver biopsy and 3T MRE. Mean liver stiffness measurements were obtained for fibrosis staging. Heterogeneity of liver stiffness was assessed by measuring the range between minimum and maximum liver stiffness. Variability of liver stiffness was defined as the stiffness range divided by the maximum stiffness. The cohort was divided into two groups (designated as homogenous or heterogeneous), according to whether variability were below or above the average for the cohort. **Results:** Based on histopathology and ROC analysis, optimum liver stiffness thresholds were determined in this cohort for MRE-based fibrosis staging of stage 4 fibrosis (4.43 kPa, AUROC 0.88) and for stage 3 or greater (3.93 kPa, AUROC 0.91). A total of 38 patients had LSM above the threshold for stage 4. Within this group, 22 had a biopsy stage of less than F4. In 90% of these discordant cases, the variability of liver stiffness was classified as heterogeneous. A total of 48 in the cohort had LSM above the threshold for stage 3. Within this group, 6 had a biopsy stage of less than F3. In 100% of these discordant cases, the variability of liver stiffness was classified as heterogeneous. **Conclusion:** Discordance

between biopsy-based and MRE-based fibrosis staging is associated with heterogeneity in liver stiffness, as depicted with MRE. The results support the concept that sampling effects are relevant in biopsy-based evaluation of liver fibrosis.

Keywords: NAFLD, MRE, liver stiffness, heterogeneity, homogeneity

PP-0091 Safety and efficacy of endoscopic duodenal stent for malignant gastric outlet obstruction: a multi-center retrospective study

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Background and Aim: Endoscopic duodenal stent (DS) placement for malignant gastric outlet obstruction (GOO) is rapidly increasing in clinical practice as a less-invasive treatment. However, it is unknown what cases will receive most benefit from DS placement. The aim of this study is to evaluate the safety and efficacy of DS placement and clarify the group of patients to be most suitable candidate for DS placement. **Methods:** One hundred and thirty-five patients with GOO who underwent DS placement in 3 Japanese referral centers between January 2010 and October 2019 were retrospectively evaluated. The primary endpoint was overall survival (OS) after DS placement. Technical/clinical success rates, complications, and predictive factors affecting OS after DS placement were also analyzed. **Results:** The median OS after DS placement of all patients was 81 days (7–901). Technical and clinical success rate was 100% and 83%, respectively. GOO scoring system score was significantly increased before and after DS placement (0.9 vs 2.7, $p = 0.003$). Complication rate was 6.0%. All 19 patients with stent occlusion underwent endoscopic re-intervention successfully. Multivariate analyses revealed that chemotherapy after DS placement ($p < 0.0001$) and stricture site of D3 (distal part of papilla) ($p = 0.02$) were factors that significantly associated with prolonged OS. The median OS was longer in chemotherapy group than BSC group (272 vs 86 days, $p < 0.0001$). OS in the patients with D3 stricture was also longer than that with D1–D2 stricture (120 vs 68 days, $p = 0.002$). **Conclusion:** We demonstrated the safety and efficacy of DS placement in the real-clinical setting. Patients with D3 stricture who are tolerant of chemotherapy might be the best candidates for DS placement.

Keywords: gastric outlet obstruction, endoscopic duodenal stent, multi-center study

PP-0092 A case series of pyloric tuberculosis: A rare cause of gastric outlet obstruction

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Background and Aim: Tuberculosis (TB) is a major public health concern worldwide especially in developing countries. It can involve any part of the gastrointestinal tract, and the usual site is the ileocecal region. Involvement of the stomach is rare and has an incidence rate of 0.5%. Gastric outlet obstruction (GOO) can occur when the pylorus is affected.

Methods: This paper is a case series of three patients diagnosed with GOO secondary to pyloric TB. These are the cases documented in a span of 8 years (2010 to 2018) in our institution. Patients presenting with obstructive symptoms had upper endoscopy done. Pyloric strictures,

nodules, and/or ulcerations were documented, and biopsies were done. Presence of acid fast bacilli was confirmed using Fite Faraco staining technique. **Results:** All three patients presented primarily with vomiting and significant weight loss. None had fever or pulmonary symptoms. One patient presented with upper gastrointestinal bleeding and anemia. Other laboratory exams were generally unremarkable. All patients had naso-duodenal/jejunal tube placements for nutritional support, underwent gastric bypass procedures and completed standard anti-tuberculosis regimens. Summary can be seen in Table 1. There was complete resolution and no recurrence of symptoms in all three cases. **Conclusion:** Pyloric TB should be considered in patients with GOO living in countries where the disease is still endemic. The cornerstone of treatment includes giving the proper anti-tuberculosis medications and providing relief of obstruction. Serial CRE dilatation can be used, while those who are not responsive to dilatation techniques or those presenting with complete obstruction would benefit from surgery.

Keywords: controlled radial expansion, gastrointestinal tuberculosis, gastric outlet obstruction, pyloric tuberculosis, tuberculosis

PP-0093 The predictive value of endoscopic ultrasonography for endoscopic resection of gastrointestinal submucosal tumors

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Background and Aim: Endoscopic ultrasonography (EUS) is the most accurate imaging technique for evaluating gastrointestinal submucosal tumors (SMTs). However, no previous studies have demonstrated the true relationship between these detailed EUS parameters of SMTs and the procedural complexities of endoscopic resections as well as patient outcomes after treatment. The aim of the study is to evaluate the predictive value of EUS for endoscopic resection of GI SMTs. **Methods:** Data of 410 patients with SMTs, who received EUS before endoscopic resection, were analyzed. Multivariate logistic regression analysis was used for data management. Multivariate logistic regression analysis was used for data management. Independent variables were selected as follows: (1) EUS parameters including SMTs' size, shape (regular or irregular), histologic layers, homogeneity, echo intensity, extrinsic compression, blood supply, elastography, and the consistency between EUS and final histopathology; (2) basic information including patients' gender, age, and the SMTs' location and surface appearance (smooth, erosion, or ulcer). Dependent variables were designated as duration of endoscopic resection (DER), perforation, endoscopic management of wound (none, only hemostasis, clipping, suturing, or OTSC closure), transfer to surgery, LOS (length of stay) after endoscopic resection, and type of endoscopic resection (ESD, ESE, STER, EFR, EMR, or EFTR). **Results:** The predictive risk factors for prolonged DER were SMTs' size (>2 cm), deeper histologic layers, heterogeneous echo, male, disagreement between EUS and histopathology, rich in blood supply, and extrinsic compression, among which deeper histologic layers have the highest standardized regression coefficient of 0.2597, and SMTs' size (>2 cm) has the maximum OR value of 3.177 (95% Wald coefficient limit 1.734–5.824). The predictive risk factors for whole thickness resection of SMTs' in the stomach were SMTs' location (adjacent to free abdominal cavity), deeper histologic layers, and surface damages. **Conclusion:** The accurate assessment of detailed variables by using EUS has a significant predictive value for the difficulties and risks of endoscopic resection.

Keywords: endoscopic ultrasonography, submucosal tumor, endoscopic resection

PP-0094 A more tolerable bowel preparation: low-residue semi-elemental enteral formula incorporated diet versus standard diet for colonic preparation in colonoscopy. A prospective, randomized trial

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Background and Aim: Conventional bowel preparation restricts dietary intake with high residue, up to 72 hours prior to colonoscopy. During the last 12 hours of bowel preparation, patient is only allowed clear fluid. The aim of this study is to compare the efficacy of low-residue semi-elemental enteral formula (LREF) incorporated diet, versus the standard (SD) in polyethylene glycol (PEG)-based bowel preparation in the last 12 hours in the aim improving patients. **Methods:** This was a single-centre, prospective, endoscopist-blinded, randomized non-inferiority trial. A total of 148 patients undergoing elective colonoscopy were randomized to either LREF group or SD group using a 3L PEG preparation regimen. **Results:** Only 94 patients were eligible for analysis. The LREF group showed a similar rate of satisfactory preparation compared to SD group with a mean BPPS score of 6.82. **Conclusion:** LREF incorporated diet is equivalent to SD regime in achieving satisfactory bowel cleanliness in patient undergoing PEG-based bowel preparation. LREF-incorporated regime may be an option during bowel preparation prior to colonoscopy.

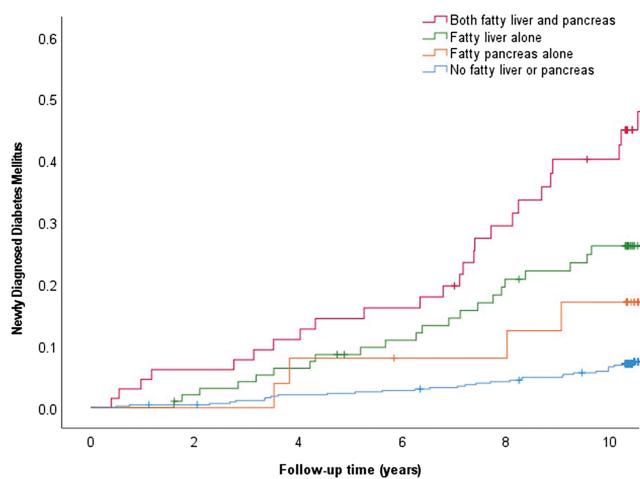
Keywords: colonoscopy, bowel preparation, low fiber, enteral formula, nutrition

PP-0095 A 10-year prospective study of clinical outcomes in patients with incidental fatty pancreas on fat-water magnetic resonance imaging

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Background and Aim: Fatty pancreas, being a counterpart of non-alcoholic fatty liver disease, is gaining increasing attention. Retrospective studies have demonstrated its association with metabolic syndrome, but large-scale prospective data are lacking. **Methods:** 631 subjects from a population study using fat-water magnetic resonance imaging to quantify pancreatic and liver fat content during 2008–2010 were followed until 31st December 2020. Subjects with significant alcohol intake and diabetes at baseline were excluded. Incidence of newly diagnosed diabetes mellitus (DM), hypertension, dyslipidemia, ischemic heart disease, cardiovascular accidents, pancreatic neoplasm, and mortality were evaluated. **Results:** In total, 93 (14.7%) subjects had fatty pancreas and 538 (85.3%) did not. The fatty pancreas group had a higher incidence of DM (33.3% vs 10.4%, $p < 0.001$), hypertension (37.7% vs 22.7%, $p = 0.003$), and dyslipidemia (37.7% vs 14.6%, $p < 0.001$) than the non-fatty pancreas group. Individuals with both fatty liver and pancreas had the highest DM incidence, followed by the fatty liver and the fatty pancreas only group ($p < 0.001$).



Fatty pancreas was independently associated with DM (adjusted hazard ratio, aHR 1.82, 95% CI 1.10–3.01, $p = 0.020$) but not hypertension or dyslipidemia after multivariate adjustment. Each percentage rise of pancreatic fat increased the risk of incident DM by 7% (aHR 1.07, 95% CI 1.01–1.13, $p = 0.016$). No subjects developed pancreatic neoplasm during follow-up. The overall survival among the two groups was similar. **Conclusion:** This is the first prospective study showing that fatty pancreas is independently associated with incident DM but not hypertension, dyslipidemia, or cardiovascular events.

Keywords: fatty pancreas, DM, metabolic syndrome, MRI

PP-0096 Undifferentiated-predominant mixed-type early gastric cancer is more aggressive than pure undifferentiated-type: a meta-analysis

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Background and Aim: Previous studies have shown that the biological behavior of differentiated-predominant mixed-type (MD) early gastric cancer (EGC) is more aggressive than pure differentiated-type (PD) EGC. However, the biological behavior of undifferentiated-predominant mixed-type (MU) EGC and pure undifferentiated-type (PU) EGC is controversial. The aim of this meta-analysis was to compare the biological behavior of MU EGC and PU EGC. **Methods:** PubMed and EmBase were systematically searched for relevant studies published from inception to January 2021. Relevant data were extracted, and the pooled results were expressed as odds ratios (ORs) with 95% confidence intervals (95% CIs) using Stata software. **Results:** In total, 10 studies were included for analysis. Patients with MU EGC had significantly higher risks of LNM (lymph node metastasis) (OR, 2.61; 95% CI, 2.18–3.13), submucosal invasion (OR, 2.12; 95% CI, 1.77–2.54), and lymphovascular invasion (OR, 2.73; 95% CI, 2.12–3.50) compared with PU EGC patients. When the data were stratified according to region, significantly higher risks for LNM (OR, 3.04; 95% CI, 2.49–3.72) and lymphovascular invasion (OR, 2.94; 95% CI, 2.27–3.80) correlated to MU EGC were found in studies from Japan; and significantly higher risks for submucosal invasion (OR, 2.46; 95% CI, 1.70–3.55) correlated to MU EGC were found in studies from China. In addition, MU EGC exhibited significantly more depressed-type (IIC) endoscopic growth patterns (OR, 1.69; 95% CI, 1.10–2.58) compared with PU EGC. **Conclusion:** This study identified that patients with MU EGC had an increased

risk of submucosal invasion, lymphovascular invasion, depressed-type (IIC) endoscopic growth patterns, and LNM compared with PU EGC patients, which indicated that more attention should be focused on the clinical management of patients with MU EGC.

Keywords: lymph node metastasis, lymphovascular invasion, submucosal invasion, mixed-type, early gastric cancer

PP-0097 Safety of ustekinumab in inflammatory bowel diseases (IBD): pooled safety analysis through 5 years in Crohn's disease (CD) and 2 years in ulcerative colitis (UC)

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Background and Aim: Ustekinumab approved in psoriasis (2009), psoriatic arthritis, Crohn's disease (CD), and ulcerative colitis (UC). Some studies of IL12/23 inhibitors in psoriasis suggest possible increased cardiovascular (CV) risk, including a recent observational case-time-control study. MACE (CV death, nonfatal myocardial infarction [MI], non-fatal stroke) analysis from ustekinumab psoriasis studies through 5 years did not show increased risk, including during 12-week-placebo period.

Table. MACE in the induction population, randomized maintenance population, all treated patients through 1 year, and in the long-term 2020 IBD integrated safety dataset

	CD	UC		
	Placebo	Ustekinumab	Placebo	Ustekinumab
<i>Induction (placebo controlled through up to week 8; phase 3 only)</i>				
N	466	941	319	641
Patient-years (PY) of follow-up	73	148	49	100
MACE (n)	0	0	1	0
Event rate per 100 PYs	0	0	2.05	0
95% CI	(0.00, 4.09)	(0.00, 2.02)	(0.05, 11.41)	(0.00, 2.99)
<i>Randomized maintenance (through up to week 44; phase 3 only)</i>				
N	133	314	175	348
Patient-years (PY) of follow-up	82	237	142	281
MACE (n)	0	0	1	0
Event rate per 100 PYs	0	0	0.7	0
95% CI	(0.00, 3.66)	(0.00, 1.27)	(0.02, 3.91)	(0.00, 1.07)
<i>All-treated through 1 year</i>				
N	943	1749	446	825
Patient-years (PYs) of follow-up	347	1106	250	627
MACE (n)	0	1	2	1
Event rate per 100 PYs	0.00	0.09	0.80	0.16
95% CI	(0.00, 0.86)	(0.00, 0.50)	(0.10, 2.89)	(0.00, 0.89)
<i>Long-term 2020 IBD integrated safety dataset</i>				
N	943	1749	446	826*
Patient-years (PYs) of follow up	526	2897	390	1063
MACE (n)	1	8	2	4
Event rate per 100 PYs	0.19	0.28	0.51	0.38
95% CI	(0.00, 1.06)	(0.12, 0.54)	(0.06, 1.85)	(0.10, 0.96)

*One patient who was only supposed to received placebo incorrectly received a dose of ustekinumab, therefore is counted in both columns

CD, Crohn's disease; CI, Confidence interval; IBD, Inflammatory bowel disease; MACE, Major cardiovascular events; UC, Ulcerative colitis

MACE in ustekinumab phase 2/3 IBD clinical studies, through 5 years CD and 2 years UC (2020 IBD pooled safety dataset), are presented.

Methods: MACE identified from all serious AEs by sponsor clinical review, excluding CD through 1 year (independently adjudicated). 6 phase 2/3 studies were pooled. Patients received ≥ 1 ustekinumab dose. Outcomes presented as events/100 patient-years (PYs) of follow-up (95% confidence interval). Populations: patients randomized to induction (weeks 0–8; phase 3), randomized maintenance (weeks 0–44, phase 3), phase 2/3 patients through 1 year, and 2020 IBD pooled safety dataset. **Results:** No MACE in ustekinumab patients in CD/UC in induction and randomized maintenance. Through 1 year in IBD, 2 MACE reported in each group (placebo and ustekinumab; 0.34 [0.04, 1.21] and 0.12 [0.01, 0.42], respectively). In 2020 IBD dataset, 2575 patients treated with ustekinumab (3960 PYs of follow-up) with 12 (0.30 events/100 PYs) MACE for ustekinumab and 3 (0.33 events/100 PYs) for placebo. The table presents MACE by indication. **Conclusion:** MACE were infrequent in long-term IBD dataset. IBD patients received higher doses than psoriasis patients, plus intravenous induction. Totality of available data in IBD patients is consistent with previous results. Suggests no significant difference in rates of MACE with ustekinumab.

Keywords: ustekinumab, IBD, safety, MACE

PP-0098 Pregnancy outcomes in women exposed to ustekinumab in the Crohn's disease (CD) and ulcerative colitis (UC) clinical trials

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Background and Aim: Ustekinumab is approved for CD and UC. Animal studies showed no adverse developmental outcomes. Limited data exist regarding effects of ustekinumab on human pregnancies. Pregnancy outcomes from CD + UC clinical trials are presented, through 5 years (yrs) in CD/2 yrs in UC. **Methods:** Patients agreed to use birth control. Pregnancies with maternal ustekinumab exposure (terminal half-life ~3 weeks [wks]) from 1 UC and 4 CD studies were evaluated (UNIFI/CERTIFI/UNITI-1/UNITI-2/IM-UNITI). Results presented as summary statistics. **Results:** In CD + UC dataset, 1289 women received ≥ 1 ustekinumab dose, 39 maternal pregnancies with outcomes (pregnancy cohort). Ustekinumab was discontinued upon pregnancy in all cases. Median maternal age was 28.0 yrs (range 18–42), and median duration of ustekinumab treatment before pregnancy was 63.7 wks. 39 pregnancies (Table): 26 (66.7%) normal newborns (NNs), 8 (20.5%) spontaneous abortions (SAs, occurred in 1st trimester), and 5 (12.8%) elective abortions. SAs and NNs, median age was 29.5 and 27.0 yrs with median ustekinumab duration 76.43 and 72.29 wks, respectively. The NNs had no congenital anomalies; 1 infant with single episode of transient hypoglycaemia treated with oral supplement. No safety signals in NNs. Among NNs, median gestational age 38.43 (33.1–40.1) wks ($n = 22$), median 5 min-APGAR 10.0 (8.0–10.0) ($n = 12$), median birthweight 7.05 (5.3–9.2) ($n = 23$); results by CD/UC (Table). **Conclusion:** In CD + UC pregnancy cohort, no congenital anomalies were reported. SAs rate was generally comparable to rate previously reported in psoriasis and general US population. Birthweight/gestational age/APGAR score were within references regardless of UST exposure

Table: Demographic Data for Maternal Pregnancies by Neonatal outcome (CD+UC) and Normal Newborn Characteristics for Mothers and Infants (CD versus UC)

	Neonatal outcomes in UST treated CD+UC pregnancy cohort			
	Normal Newborn	Spontaneous Abortion	Elective Abortion	Overall
N	26	8	5	39
Median maternal age, yrs (range)	27.0 (20-35)	29.5 (22-33)	27.0 (18-42)	28.0 (18-42)
Median duration of disease, yrs (range)	7.1 (0.3-20.9)	5.1 (0.8-12.7)	6.8 (1.9-20.6)	6.8 (0.3-20.9)
Median duration of ustekinumab treatment, weeks (range)	72.3 (0.1-232.9)	76.4 (16.7-121.1)	8.3 (0.1-80.1)	63.7 (0.1-232.29)
Tumor necrosis factor antagonist failures	12 (46.2%)	6 (75.0%)	5 (100.0%)	23 (59.0%)
Current smoker, N (%)	7 (26.9%)	2 (25.0%)	1 (20.0%)	10 (25.6%)
Normal Newborn Characteristics for Mothers and Infants				
	CD	UC		
N	18	8		
Median maternal age, yrs	26.5	31.5		
Current smoker, N (%)	7 (38.9%)	0		
Birth weight (lbs)				
N	15	8		
Median	7.00	7.06		
Gestational age (weeks)				
N	15	7		
Median	38.29	39.29		
5-minute Apgar (range 0-10)				
N	8	4		
Median	10.00	9.00		

duration. Small number of pregnancies among CD + UC women with IBD with ustekinumab precludes definitive interpretation; additional research needed for ustekinumab on pregnancy and outcomes.

Keywords: ustekinumab, IBD, safety, pregnancy

PP-0099 Safety of ustekinumab in inflammatory bowel diseases (IBD): pooled safety analysis through 5 years in Crohn

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Background and Aim: Integrated analysis of safety through 1 year showed ustekinumab had a favorable safety profile in IBD patients. Similar study designs for pivotal studies allowed for analysis across indications. Integrated analysis of the long-term phase-2/3 IBD safety data through up to 5 years in CD/2 years in UC are presented. **Methods:** 6 phase 2/3 IBD studies were pooled. In phase 3, patients received a single intravenous placebo/ustekinumab (130 mg/~6 mg/kg) induction dose and subcutaneous doses of placebo/ustekinumab (90 mg q8w/q12w). Immunomodulators/corticosteroids were permitted. Patients who received ≥1 ustekinumab dose were included. Outcomes presented as events/100 patient-years (PYs) of follow-up (95% confidence interval [CIs]). **Results:** For the IBD group, rates/100 PYs are presented (Table 1). 2575 patients were treated with ustekinumab (3960 PYs of follow-up). Rates for adverse events (AEs),

Table 1: Key safety events in phase-2/3 studies through up to 5 years in Crohn's disease (CD) and 2 years in ulcerative colitis (UC); values are numbers of events per 100 patient-years (PYs) of follow-up with 95% confidence intervals (CIs)

	Pooled CD +UC ustekinumab safety experience through 2020	
	Placebo ^a (n=1389)	Ustekinumab ^b (n=2575)
Total PYs of follow-up	916	3960
Adverse events	488.75	390.70
95% CI	474.54, 503.28	384.57, 396.90
Serious adverse events	29.57	21.57
95% CI	26.16, 33.31	20.14, 23.06
Infections	109.56	98.62
95% CI	102.88, 116.55	95.55, 101.76
Serious infections	5.35	4.17
95% CI	3.96, 7.07	3.56, 4.85
MACE	0.33	0.30
95% CI	0.07, 0.96	0.16, 0.53
Discontinuation due to adverse events	11.46	6.19
95% CI	9.37, 13.87	5.44, 7.01
Malignancies (excluding NMSC)	0.33	0.45
95% CI	0.07, 0.96	0.27, 0.72

MACE, major adverse cardiovascular events; NMSC, non-melanoma skin cancer

serious AEs, infections, serious infections, malignancy, and major adverse cardiac events were similar between placebo and ustekinumab. Most frequent AEs in the IBD group (excluding diseases under study; placebo vs ustekinumab) were nasopharyngitis (18.77 vs 22.40), headache (17.02 vs 13.56), arthralgia (15.39 vs 12.00), abdominal pain (14.08 vs 11.67), upper respiratory tract infection (11.78 vs 11.09), and nausea (11.68 vs 8.41). Most frequent serious infections were anal abscess and pneumonia (similar rates across treatments). No cases of lymphoma. Nine deaths in the IBD population (6 CD, 3 UC; all considered unrelated to treatment by investigator). **Conclusion:** The safety profile of ustekinumab in the long-term IBD pooled safety dataset was favorable and consistent with the previous report in IBD patients through 1 year and the well-established safety profile across approved indications.

Keywords: ustekinumab, IBD, long-term safety, integrated analysis

PP-0100 Long-term (5-year) maintenance of clinically meaningful improvement in health-related quality of life in patients with moderate to severe Crohn's disease treated with ustekinumab in the IM-UNITI long-term extension study

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Background and Aim: In IM-UNITI study, subcutaneous ustekinumab was safe and efficacious for maintenance therapy in patients with moderately-to-severely active Crohn's disease who responded to ustekinumab induction therapy. In long-term extension of IM-UNITI through Week 140, ustekinumab maintained clinically meaningful

improvement in health-related quality of life (HRQoL). We present final HRQoL results for patients who received ustekinumab in long-term extension through 5 years (Week 252). **Methods:** Patients who completed Week 44 safety and efficacy evaluations from IM-UNITI study were eligible to continue their regimen in long-term extension study (ustekinumab 90 mg every 12 weeks [q12w] or ustekinumab 90 mg every 8 weeks [q8w]; placebo group not evaluated). HRQoL was assessed using 32-item Inflammatory Bowel Disease Questionnaire (IBDQ) and Medical Outcomes Study 36-Item Short Form (SF-36). Data for all treated patients from randomized and nonrandomized populations were summarized through Week 252. **Results:** Mean IBDQ and SF-36 scores (Table) at maintenance baseline were comparable for both ustekinumab regimens. At Week 252, for both ustekinumab regimens, improvements in IBDQ and SF-36 scores that were achieved by maintenance baseline were maintained; further improvement was observed in IBDQ bowel and emotional symptoms scores. From baseline to Week 252, clinically meaningful improvement in IBDQ total score was achieved (q12w: 40.8%; q8w: 43.2%). Clinically meaningful improvement was also observed in SF-36 physical component summary (q12w, 37.5%; q8w, 37.7%) and mental component summary scores (q12w, 33.9%; q8w, 31.0%). **Conclusion:** Long-term (5-year) ustekinumab 90 mg (q12w or q8w) treatment was effective at maintaining improvements in HRQoL that were achieved during ustekinumab induction therapy in patients with Crohn's disease.

Keywords: anti-interleukin 12/23, ustekinumab, Crohn's disease, health-related quality of life, long-term extension

Table 1. Inflammatory Bowel Disease Questionnaire (IBDQ) and 36-Item Short Form (SF-36) scores through Week 252

IBDQ scores in randomized and nonrandomized patients who entered long-term extension study	Ustekinumab 90 mg SC q12w (N=213)	Ustekinumab 90 mg SC q8w (N=354)
Total score		
Maintenance baseline, mean (SD)	148.0 (36.15)	151.8 (36.61)*
Change from maintenance baseline to Week 252, mean (SD) ^b	16.7 (41.35)	16.0 (40.22) ^c
Clinically meaningful improvement from induction baseline to Week 252, n (%) ^d	87 (40.8)	153 (43.2)
Bowel symptoms		
Maintenance baseline, mean (SD)	47.8 (10.75)	48.2 (11.22)
Change from maintenance baseline to Week 252, mean (SD) ^b	5.1 (13.62)	5.4 (12.95)*
Emotional symptoms		
Maintenance baseline, mean (SD)	55.1 (15.50)	57.0 (15.00)
Change from maintenance baseline to Week 252, mean (SD) ^b	6.2 (15.63)	5.4 (15.52)*
Systemic function		
Maintenance baseline, mean (SD)	20.1 (6.46)	20.8 (6.37)
Change from maintenance baseline to Week 252, mean (SD) ^b	2.6 (7.78)	2.7 (7.22) ^a
Social function		
Maintenance baseline, mean (SD)	25.0 (7.60)	25.6 (7.60)*
Change from maintenance baseline to Week 252, mean (SD) ^b	2.8 (8.19)	2.7 (7.78) ^c
36-Item Short Form (SF-36) scores in patients who entered long-term extension study	Ustekinumab 90 mg SC q12w (N=192)	Ustekinumab 90 mg SC q8w (N=332)
Physical component summary		
Maintenance baseline, mean (SD)	43.65 (8.189)	43.77 (8.291)
Change from maintenance baseline to Week 252, mean (SD) ^b	3.10 (8.750)	3.70 (8.725) ^c
Clinically meaningful improvement from induction baseline to Week 252, n (%) ^d	72 (37.5)	125 (37.7)
Mental component summary		
Maintenance baseline, mean (SD)	42.51 (11.466)	43.82 (11.253)
Change from maintenance baseline to Week 252, mean (SD) ^b	2.86 (11.513)	1.74 (11.772) ^c
Clinically meaningful improvement from induction baseline to Week 252, n (%) ^d	65 (33.9)	103 (31.0)

CD, Crohn's disease; q8w, every 8 weeks; q12w, every 12 weeks; SC, subcutaneous; SD, standard deviation.

*N=353. ^aPatients who had a treatment failure between Week 44 and Week 252 had their induction baseline value carried forward and patients who had insufficient data had their last value carried forward. ^bN=352. ^cDefined as a change of ≥10 points; patients who had a treatment failure between Week 44 and Week 252 or who had insufficient data were considered not to have achieved clinically meaningful improvement. ^dN=331. ^eDefined as a change of ≥5 points; patients who had a treatment failure between Week 44 and Week 252 or who had insufficient data were considered not to have achieved clinically meaningful improvement.

PP-0101 The pharmacokinetics and immunogenicity of 5 years of treatment with ustekinumab (UST): results from the IM-UNITI long-term extension (LTE)

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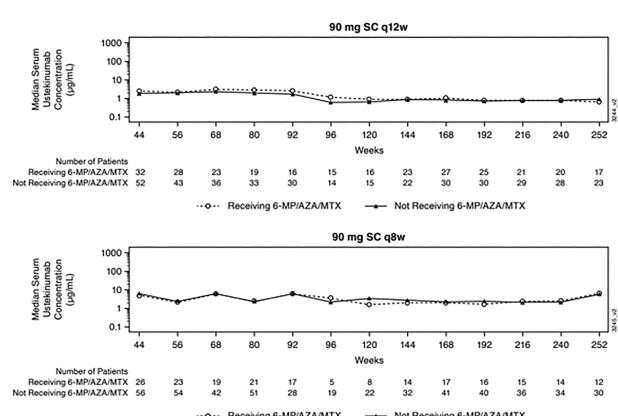
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Background and Aim: We evaluated the pharmacokinetics/immunogenicity of treatment with subcutaneous UST (additional 4 yrs) in moderate-severe Crohn's disease in the LTE following the IM-UNITI maintenance study. **Methods:** Consistency of systemic UST exposure in patients during LTE was evaluated by summarizing median steady-state trough (MST)-UST concentrations from weeks (W) 44–252. The relationship between serum UST concentration, immunosuppressants use (6-mercaptopurine/azathioprine/methotrexate), and clinical remission was assessed. Safety was assessed through W272. Anti-drug antibodies (ADA) were evaluated using a drug-tolerant immunoassay. **Results:** Among UST-randomized patients (*n* = 166) treated in the LTE and not dose adjusted in maintenance (q12w, *n* = 84; q8w, *n* = 82), MST-UST concentrations from W44 to W252 were 0.71–0.88 µg/mL (q12w) and 2.18–3.13 µg/mL (q8w) and were similar to maintenance study (W8–W44; 0.62–0.76 [q12w], 2.04–2.37 [q8w]). Serum UST concentrations were similar between patients receiving/not receiving immunosuppressants (Figure). Proportion of patients in clinical remission at W252 by average serum through UST concentration quartiles (Q) were Q1 ($\leq 0.70 \mu\text{g}/\text{mL}$), 64.9% (24/37); Q2 ($>0.70\text{--}\leq 1.52 \mu\text{g}/\text{mL}$), 47.2% (17/36); Q3 ($>1.52\text{--}\leq 2.78 \mu\text{g}/\text{mL}$), 58.3% (21/36); and Q4 ($>2.78 \mu\text{g}/\text{mL}$), 58.3% (21/36), for combined UST doses. Patients with infections (Q1–Q4: 66.7%–86.7%) and serious infections/serious AEs (Q1–Q4: 8.9%–17.8%/24.4%–28.9%) reported during LTE were similar across serum UST concentrations. Among 532 UST-treated patients (induction + maintenance + LTE), 5.8% (*n* = 31) were ADA positive; of these, 45% were positive at only 1 visit. Overall, 14/181 (7.7%) versus 17/351 (4.8%) patients receiving/not receiving 6-mercaptopurine/azathioprine/methotrexate (W44) developed ADAs. **Conclusion:** Serum UST concentrations were maintained through W252, consistent with maintenance study (W44). MST-UST concentrations were ~3 times higher in q8w than q12w group. Use of 6-mercaptopurine/azathioprine/methotrexate neither impacted UST levels nor reduced ADA incidence. No clear trend was observed for UST concentration and proportions of patients in clinical remission/safety events.

Keywords: anti-drug antibodies, immunosuppressants, ustekinumab

Figure: Median serum UST-concentration over time from W44 through W252 by 6-MP/AZA/MTX usage at W44: Randomized patients who entered the LTE

Ustekinumab 90 mg SC q12W: Subjects who were in clinical response to ustekinumab IV induction dosing, were randomized to receive ustekinumab 90 mg SC q12w on entry to this maintenance study, and did not meet loss of response criteria from Week 8 through Week 32.
Ustekinumab 90 mg SC q8W: Subjects who were in clinical response to ustekinumab IV induction dosing, were randomized to receive ustekinumab 90 mg SC q8w on entry to this maintenance study, and did not meet loss of response criteria from Week 8 through Week 32.

PP-0102 Effectiveness of diclofenac in preventing post-ERCP pancreatitis (PEP): a meta-analysis

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Background and Aim: Among several pharmacologic interventions, use of NSAIDS gave the most promising result in the prevention of post-ERCP pancreatitis (PEP), but no specific drug under this class was specifically recommended. This meta-analysis aims to evaluate the effectiveness of diclofenac in preventing PEP, to compare the different routes of administration in terms of incidence of PEP, to determine the severity of pancreatitis in patients who develop PEP, and to identify adverse events that may arise post-ERCP (bleeding, perforation, and infection). **Methods:** Databases from PubMed, ScienceDirect, and COCHRANE Library were used. Prospective, randomized controlled trials (RCT) comparing diclofenac with placebo in the prevention of PEP using different routes of administration were searched up to August 2020. Meta-analysis was performed using RevMan 5.4. Risk ratios at 95% CI were calculated. **Results:** Eleven RCTs with a total population of 2,012 were reviewed. Diclofenac was associated with a significant reduction in overall risk of PEP compared with patients with placebo (RR = 0.59; 95%, 0.47–0.74; $P < 0.000001$). Subgroup analyses showed that among the four routes of drug administration, rectal diclofenac was the superior choice to significantly reduce the overall incidence of PEP (RR = 0.34; 95%, 0.23–0.51; $P < 0.000001$). There was no statistical difference among the different routes of administration of diclofenac with a risk ratio of 0.84 ($P = 0.33$) for mild, 0.64 ($P = 0.10$) for moderate, and 0.80 ($P = 0.73$) for severe pancreatitis. Adverse events were not statistically significant among the different routes of administration of diclofenac. **Conclusion:** This study shows that rectal diclofenac could significantly reduce the risk of post-ERCP pancreatitis and should be recommended as routine for clinical use in adult patients who will undergo ERCP.

Keywords: diclofenac, NSAID, pancreatitis, ERCP, post-ERCP pancreatitis

PP-0103 EUS TTNB is superior to FNA for diagnosis of PCLs—initial results from a prospective single center analysis

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Background and Aim: Accurate diagnosis of pancreatic cystic lesions (PCLs) is challenging. Histology obtained via EUS through the needle biopsy (TTNB) may aid diagnosis. The adverse effect profile of TTNB limits its use. Careful patient selection may improve diagnostic yield and rate of adverse events, and proportion of patients in whom diagnosis changed clinical management. **Aims:** To compare the diagnostic yield of TTNB vs FNA, the rate of adverse events after institution of standardized prophylactic measures and the proportion of patients where TTNB-derived diagnosis changed clinical management. **Methods:** Patients (Table 1) underwent both EUS TTNB and FNA of PCLs. Both FNA and TTNB were performed via a 19G FNA needle. TTNB was performed using the Moray biopsy microforceps (US Endoscopy, Mentor, Ohio, USA). Histology was reported by a specialist gastrointestinal pathologist. All patients received prophylactic rectal NSAIDs, intravenous hydration, and antibiotics pre-procedure. **Results:** 12 patients (mean age 67.6 years, 66.7% female) underwent EUS TTNB and FNA. PCLs measured 32.9 ± 13.8 mm with 2.0 ± 1.1 worrisome features. Procedures lasted 40.2 ± 13.6 min with 3.3 ± 0.9 biopsies performed per procedure. Technical success was achieved in all 12 cases. TTNB was superior to FNA for determining cyst type (58.3% vs 0%, $p = 0.032$) and presence of dysplasia (58.3% vs 8.3%, $p = 0.046$). 6 (50%) patients had IPMN. All TTNB but no FNA specimens were able to distinguish IPMN subtype. 1 (8.3%) patient had minor self-resolving abdominal pain. There were no cases of pancreatitis, bleeding, infection, nor readmission 30 days post-procedure. TTNB-derived diagnosis changed clinical management in 4 (33.3%) patients. **Conclusion:** TTNB had superior diagnostic yield than FNA. Complication rates of TTNB were low. Addition of TTNB to EUS examination in selected patients can change clinical management.

Keywords: through the needle biopsy, pancreatic cysts, fine needle aspiration, pancreatitis, diagnostic yield

Indications

1. PCLs with low cyst volume precluding optimal cyst fluid analysis
2. Cysts with atypical features
 - Known mucinous cysts with fluid CEA <192ng/ml
 - Oligocystic Serous cystic neoplasms (SCNs)
3. Establish suspected low risk lesions (eg. SCNs) for discharge from surveillance
4. Further investigation of cysts with worrisome features to increase yield of possible high grade dysplasia or malignancy

Table 1. Indications for use of EUS TTNB.

PP-0104 *Helicobacter pylori* infection among patients with dyspeptic symptoms: prevalence and relation to endoscopy diagnosis and histopathology

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Background and Aim: *Helicobacter pylori* (*H. pylori*) is considered the most prevalent chronic infection in the world and nowadays has been considered as one of the important factors in dyspepsia management. The prevalence of *H. pylori* infection in patients with dyspepsia who underwent endoscopic examination at the various hospital in Indonesia was 10.4%. This study aimed to determine the prevalence of *H. pylori* among patients with dyspepsia in Lampung, Sumatera, based on endoscopy biopsy and to investigate the association between *H. pylori* and endoscopy diagnosis and histopathological diagnosis. **Methods:** This cross-sectional study was conducted at Imanuel Way Halim Hospital, Bandar Lampung, from January 2017 to December 2019 that included 501 endoscopic biopsies. Endoscopy and histopathological results together with the colonization of *H. pylori* were recorded and compared using appropriate statistical tests. **Results:** The overall prevalence of *H. pylori* was 39.7%, 44% in males and 37.4% in females. The median age was 48 years (16–84 years) whereas the group age of 50–59 years had the highest prevalence. The prevalence of *H. pylori* infection was varied according to our endoscopy findings. The subjects who were infected and diagnosed with gastritis were 38 (31.7%), duodenitis 31 (39.2%), duodenal ulcer 8 (57.1%), gastric ulcer 33 (40.7%), gastric erosive 88 (42.7%), and gastric carcinoma 1 (100%). Among 501 subjects, 476 (95%) had mild gastritis, 21 (4.2%) suffered moderate gastritis, and 4 (0.8%) had severe gastritis. The presence of *H. pylori* was associated with metaplasia, lymphoid follicles, and atrophy. There was a significant statistical relationship between the prevalence of *H. pylori* infection and the severity of gastritis ($p < 0.05$). **Conclusion:** The overall prevalence of *H. pylori* infection in our study is high (39.7%) without significant differences in gender and age. The severity of gastritis is influenced by *H. pylori* infection. These findings emphasize the *H. pylori* infection role in gastric inflammation progression thus require *H. pylori* eradication.

Keywords: *Helicobacter pylori*, prevalence, dyspepsia, endoscopy, gastritis

PP-0105 Elobixibat effectively relieves chronic constipation in cancer patients, regardless of food intake amount

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Background and Aim: Cancer patients receiving palliative care often suffer from chronic constipation. Elobixibat is a novel inhibitor of the ileal bile acid transporter which is used for treatment of chronic constipation, and recent clinical trials have reported its effectiveness. However, the effectiveness of elobixibat for cancer patients with constipation has not been clarified. The aim of this study was to investigate the efficacy of elobixibat for the management of constipation in cancer patients.

Methods: This was a prospective, single-center study, and targeted hospitalized cancer patients diagnosed with chronic constipation using the ROME IV criteria. Each participant started receiving elobixibat administration (**5 Results:** Among the 83 participants, the mean pre- and post-treatment frequencies of daily SBMs were 0.3 and 1.2 ($P < 0.0001$) and those of CSBMs were 0.1 and 0.6 ($P < 0.0001$), respectively. The mean pre-treatment BSFS score was 1.6, whereas the post-treatment value was 3.5 ($P < 0.0001$); the mean PAC-QOL score (overall) improved from 1.01 to 0.74 ($P = 0.01$). There was no significant change in the daily SBM frequency between fasting and feeding states (1.2 vs 1.3, $P = 0.8$), and there was no correlation between the amount of food intake and the SBM frequency, after elobixibat administration ($r = 0.03$). Severe adverse events were not observed. **Conclusion:** This study demonstrated that elobixibat is safe and effective for cancer patients with chronic constipation, regardless of the food intake amount.

Keywords: elobixibat, constipation, cancer patients, palliative care

PP-0106 Effectiveness of naldemedine and magnesium oxide in preventing opioid-induced constipation: proof-of-concept, two-arm, open-label, phase II randomized controlled trial (MAGNET study)

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Background and Aim: Opioid-induced constipation (OIC) may occur in patients receiving opioid treatment and decrease their quality of life (QOL). We compared the effectiveness of magnesium oxide (MgO) and naldemedine (NAL) in preventing OIC. **Methods:** This randomized controlled study included 120 patients with cancer scheduled to receive

opioid therapy. They were randomly assigned (1:1) and stratified by age and sex to receive magnesium oxide (500 mg, thrice daily; MgO group) or naldemedine (0.2 mg, once daily; NAL group) for 12 weeks. Change in the Japanese version of Patient Assessment of Constipation QOL (JPAC-QOL) from baseline to 2 weeks was assessed as the primary endpoint. Change in the spontaneous bowel movements (SBM) and the complete SBM (CSBM) from baseline to 2 and 12 weeks was assessed as exploratory endpoints. Efficacy analysis was performed considering intention to treat. This trial was registered in the University Hospital Medical Information Network (UMIN) Clinical Trials Registry (UMIN000031891). **Results:** Between March 26, 2018, and June 30, 2019, 166 patients were screened for inclusion and 60 patients were randomly assigned to the MgO or NAL group. Change in JPAC-QOL was significantly lower in the NAL group than in the MgO group after 2 weeks (MgO vs NAL; 0.5 vs -0.01, $P < 0.001$) and 12 weeks (0.4 vs 0.03, $P < 0.001$). There was no significant difference in the change in SBMs between the groups at 2 and 12 weeks. The CSM rate was higher in the NAL group than in the MgO group at 2 weeks ($P = 0.02$) and 12 weeks ($P = 0.01$). There were fewer adverse events in the NAL group than in the MgO group. No serious adverse events or death occurred. **Conclusion:** In patients with cancer experiencing OIC, naldemedine significantly prevented deterioration in defecation QOL and CSM rate compared to magnesium oxide.

Keywords: constipation, opioid, naldemedine, magnesium oxide

PP-0107 A retrospective analysis on hepatitis C patients undergoing treatment with DAA and factors associated with treatment outcome in Hospital Sultanah Aminah Johor Bharu

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Background and Aim: Hepatitis C infection is emerging public health globally. In Malaysia, the incidence of hepatitis C had increased from 2.56 per 100,000 in 2010 to 6.91 per 100,000 population in 2015. In this study, we looked at demographic and clinical characteristic of hepatitis C patients receiving DAA and association between gender, ethnicity, and cirrhosis with SVR (sustained viralologic response). **Methods:** A retrospective cross-sectional, conducted in Gastroenterology Clinic, Hospital Sultanah Aminah Johor Bharu, a tertiary centre in the southern state of Malaysia, involving 213 patients receiving DAA (direct acting antiviral) from 1st March 2018 to 31st July 2020. In this study, we looked at demographic and clinical characteristic of hepatitis C patients receiving DAA and association between gender, ethnicity, and cirrhosis with SVR (sustained viralologic response). **Results:** A total of 213 patients included in this study. The mean age is 51.8 (SD 10.68) with male being 76.5% and female were 23.5%. Malays make up the most number of patients 54%, followed by Chinese (36.6%), Indian (7%), others (1.4%), and Bumiputera Sarawak (0.9%). 25.8% of these patients had HIV coinfection, 2.4% had hepatitis B coinfection, and chronic kidney disease (CKD) each. 94.3% of the patients were treatment naïve. 35.9% were cirrhotic patients and among these were Genotype 3 (67%), Genotype 1a (15.8%), Genotype 1b (15.8%), and undetermined 1.3%. Overall, 95% of patients achieved SVR. Association between sex, ethnicity, and cirrhosis with SVR was tested using the Fisher exact test with the respective p value at 0.55, 0.717, and 0.129. **Conclusion:** SVR had been successfully achieved in 95% of our patients; however, there were no significant association between sex, ethnicity, and cirrhosis with SVR in our study.

Keywords: hepatitis C, SVR, DAA, HSAJB

PP-0108 Anomalous pancreatobiliary ductal union (APBDU) presenting as recurrent acute and chronic pancreatitis in children and young adults, responding to endotherapy

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Background and Aim: Anomalous pancreatobiliary duct union (APBDU) is defined by abnormal position of union of bile duct (BD) and pancreatic duct (PD), outside duodenal wall above influence of sphincter of Oddi. APBDU may rarely present as recurrent acute pancreatitis (RAP) or chronic pancreatitis (CP). We assessed the response to endotherapy in patients of APBDU with RAP or CP. **Methods:** Retrospective audit of prospectively maintained endoscopy database at our institute between January 2018 and January 2021

identified 35 cases of APBDU, of which five cases presented as RAP or CP. Details of investigations, endoscopic retrograde cholangiopancreatography (ERCP) findings, and follow-up till 6 months were noted. **Results:** Of 5 patients, 2 had RAP while 3 presented with CP (median 11 years, range 4–25 years). MRCP showed APBDU in 3 patients. One patient with RAP had a Komi type IIIB anomaly. Another RAP patient had a rare anomaly with absent ventral PD, with the BD communicating and draining through dorsal duct. Two patients with CP had a long common channel with Komi IIA anomaly. One patient with CP had IIIC2 anomaly. Pancreas divisum was noted in 3 patients, all of whom underwent minor-papilla sphincterotomy. Successful pancreatic stent placement was done in all patients. Over 6 months **Conclusion:** APBDU is rare cause of RAP and CP in young patients, occasionally missed on MRCP. RAP and CP caused by APBDU show good response to endotherapy.

Keywords: APBDU, chronic pancreatitis, recurrent acute pancreatitis, pancreaticobiliary maljunction

Table 1: Demographic & ERCP findings of patients with APBDU and pancreatitis

	Case 1	Case 2	Case 3	Case 4	Case 5
Age/Sex	6 yr/ Male	4 yr/ Female	25 yr/ Male	11 yr/ Male	15 yr/ Female
Clinical presentation	RAP	Acute on chronic pancreatitis	RAP	CP	CP
Major papilla	Absent	Normal	Normal	Normal	Floppy
Minor papilla	Normal morphology, however drains bile	Normal	Stenosed	Normal	Normal
Dorsal duct	Dominant	Dominant. Stricture in proximal 2 cm with distal dilatation	Dominant. Drains into minor papilla.	Not cannulated	Not cannulated
Ventral duct	Absent	Rudimentary	Drains into dorsal duct which drains in minor papilla.	Stricture at head and neck junction with distal duct dilated	Drains into major papilla. Dilated irregular with dilatation of side branches with stricture at distal end
Pancreas Divisum	Type II	Type III	Type II	Normal ductal anatomy	Normal ductal anatomy
Communication between ducts	No	Yes	No	No	No
Bile duct	Blind distal end of bile duct. There was communication with dorsal pancreatic duct.	Normal	Dilated to 10 mm size uniformly. Draining into major papilla. (Seen on MRCP)	Normal	Normal
Common channel	Absent.	Long common channel	Absent	Long common channel	Long common channel
Angle of insertion	Absent	Acute	Absent	Perpendicular	Perpendicular
Stricture	No	2 cm in dorsal duct and junction of dorsal and ventral duct	Nil	Stricture in head-neck junction of PD with dilatation of PD in body and tail	Stricture in distal PD
Komi classification	Not included in Komi Classification	IIIC2	IIIB	IIA	IIA
APBU type	Not applicable	BP type	Not applicable	Y type	Y type
Endotherapy	Minor papilla sphincterotomy and 5 French(Fr) plastic stent placement	Minor papilla sphincterotomy, stricture dilatation with biliary dilator, 5 Fr stent placed.	Minor papilla sphincterotomy with 7 Fr stent placed	Pancreatic sphincterotomy of major papilla and 7 Fr PD stenting	Pancreatic sphincterotomy of major papilla and 7 Fr PD stenting
Post procedure complications	Nil	Nil	Nil	Nil	Post procedure mild pancreatitis- treated conservatively
Response to endotherapy	No further episodes of RAP	Significant reduction in pain	No further episodes of RAP	Significant reduction in pain	Significant reduction in pain

PP-0109 Regorafenib for Taiwanese patients with unresectable hepatocellular carcinoma progressing on sorafenib treatment

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Background and Aim: Regorafenib has demonstrated its survival benefit for unresectable hepatocellular carcinoma (uHCC) patients progressing on sorafenib treatment in the phase III clinical trial. We aimed to assess the efficacy and safety of regorafenib and the predictors of treatment outcomes in real-world settings. **Methods:** uHCC patients who experienced tumor progression on sorafenib treatment and received regorafenib between March 2018 and November 2020 were enrolled. The primary endpoint was overall survival (OS). The secondary endpoints included safety, progression-free survival (PFS), time to progression (TTP), and tumor response, assessed radiologically by using the Response Evaluation Criteria in Solid Tumors version 1.1. **Results:** Eighty-six uHCC patients who received regorafenib following progression on sorafenib treatment were analyzed (median age, 66.5 years; 76.7% male). The median regorafenib treatment duration was 4.0 months (95% confidence intervals [CI], 3.6–4.6). Of 82 patients with regorafenib responses assessable, none had complete response, 4 (4.9%) had partial response, and 33 (40.2%) had stable diseases, with a disease control rate of 45.1%. With regorafenib, the median PFS was 4.2 months (95% CI, 3.7–4.7); median OS was 12.4 months (95% CI, 7.8–17.0). Hepatitis C, albumin-bilirubin grade 1, and lack of macrovascular invasion were associated with better OS. Baseline serum alpha-fetoprotein ≥ 400 ng/mL was a poor predictor of OS, PFS, and disease control rate of regorafenib, except that patients experienced an early alpha-fetoprotein response (decline $> 10\%$ from baseline at treatment week 4). The most frequently reported adverse events were hand-foot skin reaction (44.2%) and diarrhea (36.0%). **Conclusion:** This real-world study verified the tolerability and efficacy of regorafenib in uHCC progressing on prior sorafenib treatment. HCV infection, low ALBI grade, and lack of macrovascular invasion, low baseline alpha-fetoprotein, or early alpha-fetoprotein response were predictive of better treatment responses and/or outcome.

Keywords: hepatocellular carcinoma, regorafenib, sorafenib, efficacy

PP-0110 Management of covered self-expandable metal stents for the treatment of ERCP-related perforations

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Background and Aim: Although ERCP-related perforation is a rare complication, it results in high morbidity and mortality. Treatments of ERCP-related perforation are diverse, depending on the location and mechanism of the perforation and the time of diagnosis. Covered

self-expandable metal stent (CSEMS) has become a therapeutic option to seal perforation and prevent entry into the perforation site. The aim of this study was to assess the safety and efficacy of CSEMS for the treatment of ERCP-related perforations. **Methods:** Between November 2011 and February 2021, consecutive 8 patients (2 men, 6 women, mean age 75.5 years, range, 67–87 years) who underwent CSEMS placement for ERCP-related perforations were enrolled in this study. We used 8–12 mm in diameter, 6 cm long, CSEMS (fully CSEMS in 7 patients and partially CSEMS in 1). We reviewed endoscopic and medical records of these patients to collect the following data: patients. **Results:** Indications for initial ERCP were choledocholithiasis in 6 patients and malignant biliary strictures due to pancreatic cancer in 2. Causes of perforation were endoscopic sphincterotomy in 5, and one case each of needle knife papillotomy, catheter, and guidewire. Perforation sites were perivaterian in 7 and common bile duct in 1. In all patients except one, perforation was recognized during or immediately after the procedure. After deployment, there was no need for surgery and the median time to post-operative feeding was 6 (1–13) days. CSEMSs were removed in 6 patients with choledocholithiasis after a median time of 16 (10–61) days with grasping forceps or polypectomy snare without any complications. Adverse events related to placement were cholangitis in 1 and inward migration in 1. There were no procedure-related deaths. **Conclusion:** CSEMS placement is effective for ERCP-related perforation. However, attention should be paid to the procedure-related complications.

Keywords: ERCP-related perforation, covered metal stent, complication

PP-0111 Patient opinions and attitudes regarding surgical management of anal fistulas during COVID-19 outbreaks

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Background and Aim: This study is set in the backdrop of an administrative decision taken in 2020 at a tertiary care hospital to postpone non-emergency surgical procedures such as anal fistula management, during COVID-19 outbreaks. We attempted to study the patients' opinion on the healing of anal fistulas after surgery, and their attitude towards the delay.

Methods: All consenting patients (from an ongoing study) operated on to treat a perianal fistula in 2019 and 2020 were followed up through phone calls using an interviewer-administered questionnaire. We collected data on patients' opinion on fistula healing, time delays between surgeries and follow-up, problems faced due to delays, patient attitude towards these problems, and their assessment of COVID-19 exposure risk during surgeries. We compared the data from 2019 and 2020 for any significant differences. **Results:** A total of 40 patients (females = 27.5%) were followed up (response rate = 58.8%), of whom 15 (37.5%) had their first surgery in 2019 and 25 (62.5%) in 2020 (total number of surgeries: 2019 = 73; 2020 = 49). There were significantly more patients from 2020 than 2019 who reported of incomplete healing (Pearson chi-square = 12.9, $p = 0.001$). However, there was no significant difference in the time taken for the fistula to heal after the final surgery (Kaplan–Meier log rank test: chi-square = 0.447, p -value = 0.5). Most patients (82.5%) preferred early surgical management of fistula, despite COVID-19 exposure risk. Of the patients who underwent surgery during the pandemic, thirteen (32.5%) felt they were safe from exposure during the surgery while only three (7.5%) reported fear of exposure. **Conclusion:** Though there was a significant difference in patient report of fistula healing between 2019 and 2020, there was no significant difference in time taken for complete healing. The overall patient attitude towards the delay in surgery and follow-up was negative.

Keywords: fistula, COVID-19, surgery, outcomes, proctology

PP-0112 The effect of guselkumab induction therapy on endoscopic outcome measures in patients with moderately to severely active Crohn's disease: week 12 results from the phase 2 GALAXI-1 study

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Background and Aim: GALAXI-1, is a phase-2, double-blind, placebo-controlled, multicenter study of guselkumab, IL-23 antagonist, in patients with moderately-to-severely active Crohn's disease (CD) with inadequate response/intolerance to conventional and/or biologics therapies. We evaluated endoscopic improvement at Week (W) 12 following induction

treatment. **Methods:** Patients were randomized 1:1:1:1:1 into 5 arms: guselkumab 200/600/1200 mg IV at W0, 4, 8; ustekinumab ~6 mg/kg IV at (W0) and 90 mg subcutaneous (W8, reference arm); or placebo IV. Assessments: video ileocolonoscopies; simple endoscopic score for CD (SES-CD) change from baseline; and endoscopic response, healing, and remission. **Results:** Of 250 evaluated patients, ~50% had failed biologic therapy. Baseline demographics and disease characteristics between treatment groups were balanced. Per central endoscopy read, patients had isolated ileal (29.6%), colonic (42.8%), and ileocolonic disease (27.6%). At W12, mean reduction in SES-CD was greater in guselkumab-combined group vs placebo (LS mean -4.6 vs -0.5) and greater across all guselkumab groups vs placebo (Table). Overall and in biologic- and conventional-failure populations, endoscopic response was greater with guselkumab vs placebo. Greater proportion of patients in guselkumab-combined group vs placebo achieved endoscopic healing and remission. For biologic and conventional failures, the guselkumab-combined group had higher endoscopic response vs placebo (Table). No dose-response/consistent exposure-response relationship was observed with guselkumab. **Conclusion:** In moderately-to-severely active CD, guselkumab showed greater mean reduction in SES-CD vs placebo. Endoscopic response, healing, and remission were higher in guselkumab vs placebo. Higher endoscopic response rates occurred with guselkumab in biologic- and conventional-failure subgroups, but small sample sizes limit conclusions. For endoscopic outcomes, no dose-response relationship was demonstrated with guselkumab.

Keywords: anti-interleukin 23, guselkumab, Crohn's disease, endoscopic outcomes, efficacy

Table. Endoscopic outcomes at Week 12

	Placebo (Control)	Guselkumab				Ustekinumab ^a (Reference)
		200 mg IV q4w	600 mg IV q4w	1200 mg IV q4w	Combined	
Primary efficacy analysis set	51	50	50	50	150	49
SES-CD score change from BL						
LS mean (SE)	-0.5 (0.72)	-4.9 (0.74)	-4.8 (0.73)	-4.1 (0.74)	-4.6 (0.42)	-4.1 (0.73)
BIO-Failure, N	23 -0.4 (1.20)	24 -5.4 (1.16)	25 -4.3 (1.16)	27 -3.9 (1.11)	76 -4.5 (0.66)	26 -2.7 (1.10)
CON-Failure, N	28 -0.5 (0.88)	26 -4.5 (0.93)	25 -5.3 (0.94)	23 -4.2 (0.99)	74 -4.7 (0.54)	23 -5.6 (0.98)
LS mean difference (95% CI) from placebo		4.4 (2.4, 6.5)	4.4 (2.3, 6.4)	3.7 (1.6, 5.7)	4.2 (2.5, 5.8)	
BIO-Failure, N		24 5.0 (1.7, 8.3)	25 3.9 (0.6, 7.2)	27 3.5 (0.3, 6.8)	76 4.1 (1.4, 6.8)	
CON-Failure, N		26 4.1 (1.6, 6.6)	25 4.8 (2.3, 7.4)	23 3.8 (1.2, 6.4)	74 4.2 (2.2, 6.3)	
Patients in endoscopic response^{b,c,d}	6 (11.8%)	18 (36.0%)	20 (40.0%)	18 (36.0%)	56 (37.3%)	15 (30.6%)
BIO-Failure, N	N=23 3 (13.0%)	N=24 8 (33.3%)	N=25 8 (32.0%)	N=27 7 (25.9%)	N=76 23 (30.3%)	N=26 5 (19.2%)
CON-Failure, N	N=28 3 (10.7%)	N=26 10 (38.5%)	N=25 12 (48.0%)	N=23 11 (47.8%)	N=74 33 (44.6%)	N=23 10 (43.5%)
Patients with endoscopic healing^{c,d,e}	2 (3.9%)	11 (22.0%)	5 (10.0%)	10 (20.0%)	26 (17.3%)	9 (18.4%)
Patients in endoscopic remission^{c,d,f}	2 (3.9%)	8 (16.0%)	5 (10.0%)	8 (16.0%)	21 (14.0%)	7 (14.3%)

^a Patients received a single ustekinumab IV induction dose (~6 mg/kg IV) at Wk 0. At Wk 8, patients received one ustekinumab SC maintenance dose (90 mg SC).

^b Endoscopic response is defined as at least 50% improvement from baseline in SES-CD score or SES-CD score ≤2.

^c Patients who had a prohibited change in concomitant Crohn's disease medication, a Crohn's disease-related surgery, or discontinued study agent due to lack of efficacy or an AE of worsening Crohn's disease prior to Wk 12 were considered not to be in endoscopic response/healing/remission at Wk 12. Patients who had discontinued study agent due to any other reasons prior to Wk 12 had their observed Wk 12 data used, if available, to determine responder and nonresponder status at Wk 12.

^d SES-CD score at Wk 12 was based on all observed segments scored. Subjects who had insufficient data to calculate total SES-CD score at Wk 12 were considered not to be in endoscopic response/healing/remission

^e Endoscopic healing is defined as the absence of mucosal ulcerations

^f Endoscopic remission is defined as SES-CD score ≤2

PP-0113 Difference of efficacy for small bowel lesion in Crohn

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Background and Aim: It has been reported that small intestinal lesions of Crohn's disease (CD) are likely to remain even when biologics are used. The aim of this study is to investigate the difference in the effect of anti-TNFα antibody and anti-IL12/23 antibody on small intestinal lesions. **Methods:** The subjects were small intestine-type and small-intestine-colon-type CD cases into which biologics was introduced between January 2017 and December 2019. Balloon assisted endoscopy (BAE) findings within 12 to 24 months after introduction, and mRNA expression of cytokines in the small intestinal mucosa were compared between anti-TNFα group (infliximab/adalimumab introduction) and UST group (ustekinumab introduction). **Results:** In anti-TNFα group/UST group, the number of cases was 18 (IFX/ADA = 11/7)/21, males were 16 (88.8%)/18 (85.7%) cases, median age was 44 (20–66)/45 (24–57) years, and median duration of illness was 110.5 (1–489)/187.5 (1–1415) months. No significant difference was observed in albumin, CRP, CDAI, and modified SES-CD [10 (6–19) vs. 13 (5–24)] at the time of introduction. There was no significant difference in mSES-CD after introduction [7 (1–16) vs. 5 (0–22)]. However, the sum of only the small intestine score of mSES-CD was significantly lower in the UST group [7 (1–16) vs. 5 (0–12), $P = 0.021$]. The mRNA expression of the small intestinal mucosa was not different between the two groups for TNFα, INFγ, IL10, IL4, and IL23, but IL17A was significantly lower in the UST group (5.6 $P < 0.05$). **Conclusion:** Small intestinal lesions after introduction were significantly lower in ustekinumab rather than anti-TNFα antibody. Low expression of 17A mRNA suggests that ustekinumab may be effective for small intestinal lesions by suppressing the action of Th17, which is widely distributed in the small intestine.

Keywords: Crohn's disease, small intestine, anti-TNFα antibody, anti-IL12/23 antibody

PP-0114 Ethnic variations in colorectal cancer epidemiology in Northern Malaysia: A 10-year review

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Background and Aim: While certain ethnic groups were known to have a relatively high incidence of colorectal cancer (CRC) in Malaysia, very little is known about the changes in the trend of CRC epidemiology across various ethnic groups over the years. **Objectives:** To explore the trends of CRC incidence and mortality across major ethnic groups in Malaysia, and to determine the ethnic distributions of CRC staging at the time of diagnosis. **Methods:** This retrospective cohort study was grounded on the National Cancer Patient Registry – Colorectal Cancer (NCPR-CC). The data were contributed by 21 public and private hospitals located in Perlis, Kedah, and Penang. All the CRC patients, who sought medical care between 1st January 2008 and 31st December 2017 and were enrolled in the NCPR-CC, were included in the study. They were categorized based on the ethnicity reported into Malay, Chinese, Indian, and others. The changes in trends for the age-standardized incidence and mortality rates (ASIRs and ASMRs) over time for each

ethnic group were assessed using the time-series analysis. **Results:** The 10-year ASIRs for the Malay, Chinese, and Indian ethnic groups were 113.99, 290.68, and 145.58 per 100,000, respectively. The Chinese ethnic group also had the highest ASMR (149.77 per 100,000), followed by India (76.27 per 100,000) and Malay (66.02 per 100,000). Although all ethnic groups demonstrated a downturn in the annual ASMRs ($p < 0.05$), only the Malay ethnic group recorded an increasing trend in the annual ASIRs ($B = 0.403$; $p = 0.029$). As compared with other ethnic groups, a higher proportion of the Malay patients were also only diagnosed at stage III or IV of CRC ($p < 0.001$). **Conclusion:** The findings call attention to the uptrend in the incidence and delayed diagnosis of CRC in Malaysia, particularly in the Malay ethnic group.

Keywords: colorectal cancer, CRC

PP-0115 Accuracy of Goodsall's rule for fistula-in-ano: a systematic review and meta-analysis

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Background and Aim: Successful treatment of fistula-in-ano depends on precise identification of the course of the fistula. Goodsall's rule (GR) is used to predict the location of internal opening depending on the position of external opening. We aim to perform a meta-analysis of the accuracy of Goodsall's rule for fistula-in-ano. **Methods:** PubMed, Embase, Cochrane Library, and Google Scholar were searched using 'Goodsall's rule' OR 'Goodsalls law' AND 'anal fistula' OR 'fistula in ano' in the title or abstract fields up to December 2020. Studies that described the accuracy of GR were analyzed. **Results:** Twelve studies reporting predictive accuracy of Goodsall's rule in 1388 patients were included in the meta-analysis. In the pooled analysis, the predictive accuracy of Goodsall's rule was 66.4% (95% confidence interval = 59.5%–73.2%, $p < 0.001$). We detected a considerable heterogeneity in this comparison ($I^2 = 87.19\%$, $df = 6$, $p < 0.001$). A subgroup analysis based on the position of the external fistula orifice demonstrated that the predictive accuracy for anterior and posterior fistulae were 63.3% (95% confidence interval = 55.7%–70.8%, $p < 0.001$) and 69.2% (95% confidence interval = 59.2%–79.2%, $p < 0.001$), respectively. Nonetheless, there was a considerable heterogeneity of 69.75% and 92.73% for anterior and posterior subgroups, respectively. A subsequent sensitivity analysis by including studies with a sample size of at least 30 per each subgroup did not reduce the heterogeneity significantly. **Conclusion:** In the pooled analysis, the predictive accuracy of Goodsall's rule was approximately 66% indicating a modest accuracy. Variations in the aetiology and patient characteristics are possible reasons for the heterogeneity.

Keywords: fistula, Goodsall, meta-analysis, review, proctology

PP-0116 Diagnostic value of rectal retroflexion in lower gastrointestinal endoscopy

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Background and Aim: Rectal retroflexion is a technique used during colonoscopy to better visualize the anorectal junction which is a blind spot that may not be seen on antegrade view. However, its utility remains to be a matter of controversy especially in detecting malignancy. The aim of this study is to assess whether significant lesions are missed when

rectal retroflexion is not done. **Methods:** This is a prospective cohort study. Consecutive patients for lower gastrointestinal endoscopy from October 2019 to February 2020 were included. **Results:** There were 269 eligible patients. Retroflexion was successfully performed in 188 patients including 92 females (49%) and 96 males (51%), with a mean age of 59. **Conclusion:** Performing a retroflex maneuver as part of lower GI endoscopy would increase the diagnostic yield of rectal polyps. Although rectal retroflexion does not increase adenoma detection, its safety and possibility of detecting lesions undetectable by straight view justifies its use.

Keywords: rectal retroflexion

PP-0117 Outcomes of endoscopic polidocanol injection therapy for small-bowel angioectasia in systemic sclerosis patients

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Background and Aim: Systemic sclerosis (SSc) is an autoimmune disease characterized by fibrosis of the skin and various internal organs. The gastrointestinal tract is one of the most commonly affected organs in SSc patients. Vascular lesions such as small-bowel angioectasia are also frequent in SSc patients. Polidocanol is widely accepted for endoscopic therapy of esophageal varices as a safe and effective hemostatic treatment for gastrointestinal bleeding. We evaluated outcomes of polidocanol injection (PDI) for small-bowel angioectasia in SSc patients.

Methods: We retrospectively evaluated 65 consecutive SSc patients (61 females; mean age 64.3 years) underwent capsule endoscopy (CE) and/or DBE at Hiroshima University Hospital between April 2012 and December 2019. They were classified according to the presence of small-bowel angioectasia. In patients performed CE during the same periods, patients with small-bowel angioectasia without concomitant disease were compared to SSc patients with small-bowel angioectasia. Clinical and endoscopic characteristics, treatment outcomes, and incidence of metachronous small-bowel angioectasia after PDI were evaluated. **Results:** Hemoglobin level was significantly higher in between patient's outcome of PDI and without small-bowel angioectasia ($p < 0.0001$). The incidence of telangiectasia of skin was more frequent in SSc patient with small-bowel angioectasia than in those without small-bowel angioectasia. Females were more frequent in SSc patients with small-bowel angioectasia than in non-SSc patients ($p = 0.0272$). Characteristics of small angioectasia and outcomes of PDI were not significantly different between the 2 groups. There were no cases of rebleeding after treatment and adverse events. Incidence of metachronous small-bowel angioectasia was significantly frequent in SSc patients with small-bowel angioectasia than in non-SSc patients ($p = 0.0045$). **Conclusion:** It was necessary to perform CE on a regular basis, and PDI was considered to be a useful treatment in SSc patients with small-bowel angioectasia.

Keywords: capsule endoscopy, systemic sclerosis, small-bowel angioectasia, polidocanol injection

PP-0118 Clinical outcomes of endoscopic resection for small rectal neuroendocrine tumors: advantages of endoscopic submucosal resection with a ligation device (ESMR-L) compared to conventional EMR and ESD

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Background and Aim: There are some endoscopic resection (ER) methods for rectal neuroendocrine tumors (NETs); however, which method is the most useful remains unclear. This study aimed to compare the outcomes of different ER techniques, such as conventional endoscopic mucosal resection (cEMR), endoscopic submucosal dissection (ESD), and endoscopic submucosal resection with a ligation device (ESMR-L) for rectal NETs.

Methods: We retrospectively analyzed 96 consecutive patients (male: 58, average age: 56.3 years) with 102 rectal NETs of 10 mm or less in diameter who underwent ER between 2001 and 2019 at Hiroshima University Hospital. We compared the clinical outcomes of each ER method (cEMR 60 lesions, ESD 21 lesions, and ESMR-L 21 lesions) divided according to the treatment periods and evaluated the risk factors for positive tumor vertical margin (VM+) in relation to clinicopathological characteristics. **Results:** The procedure time for ESD (13.5 ± 3.1 min) was significantly longer than that for cEMR (3.3 ± 0.8 min) and ESMR-L (5.7 ± 1.2 min). En bloc resection rate was 100% in all methods; however, histologically complete resection rate in each ER method was 80% for cEMR, 85.7% for ESD, and 100% for ESMR-L, which was significantly higher in ESMR-L than in cEMR. VM positive rate of cEMR (20%) was significantly higher than that of ESMR-L (0%). The only significant risk factor for VM+ was the non-selection of ESMR-L. The tumor front to VM distance was significantly longer in the ESMR-L group (641.5 ± 763.8 μm) than in the cEMR (188.9 ± 199.1 μm) and ESD groups (202.8 ± 125.4 μm). No perforation or local recurrence was observed in all methods. **Conclusion:** ESMR-L is considered to be the most reliable ER method for small rectal NETs.

Keywords: rectal neuroendocrine tumor, endoscopic mucosal resection, endoscopic submucosal dissection, ESMR-L

PP-0119 Clinical characteristics and outcomes of transanal evisceration of abdominal contents: a systematic review

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Background and Aim: Transanal evisceration is a rare complication of rectal prolapse. This systematic review was aimed to study its clinical characteristics and outcomes. **Methods:** PubMed, Embase, Cochrane Library, and Google Scholar were searched using 'transanal' OR 'rectal prolapse' AND 'evisceration' in the title or abstract fields from January 2000 to December 2020. Case reports and series describing transanal evisceration were included. The data regarding patient's characteristics, possible risk factors, and management were described qualitatively. **Results:** The assessment

of 22 case reports ($n = 25$) was performed according to the PRISMA guidelines. The majority were females ($n = 20$, 80%), and median age was 76.3 years (range: 22–96). Most were associated with rectal prolapse ($n = 16$, 64%) with a median duration of 2 (range: 0.5–30) years. Rectum was the common site of perforation ($n = 20$, 80%) followed by recto-sigmoid junction ($n = 4$, 16%) and sigmoid ($n = 2$, 8%). The majority had small bowel evisceration ($n = 21$, 84%), and 50% were precipitated by straining. Majority underwent laparotomy ($n = 21$, 84%), and one patient underwent laparoscopic reduction. Thirteen patients (52%) required bowel resection, and twenty-one patients (84%) required a defunctioning stoma. Complications included acute kidney injury, stroke, pneumonia, and wound infection in one each. Three patients died and of them, 2 were managed conservatively. Four patients (18%) required intensive care, and median duration of hospital stay was 9.5 days (range: 2–44 days). **Conclusion:** Transanal evisceration was associated with considerable morbidity requiring urgent surgical procedure. Apart from longstanding rectal prolapse, no other risk factors were identified.

Keywords: evisceration, transanal, surgery, outcomes, review

PP-0120 Comparison of endoscopic ultrasound elastography in differential diagnosis of malignant pancreatic neoplasm versus mass forming chronic pancreatitis: propensity score matching analysis

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Background and Aim: Endoscopic ultrasound-elastography (EUS-EG) have emerged as non-invasive complementary methods to increase the diagnostic yield of EUS-FNA/FNB. EUS-EG measures the hardness of solid pancreas lesion (SPL) and expressed as different color pattern according to the hardness. It can also indicate the relative elasticity of SPL to that of adjacent soft tissue as strain ratio (SR). However, the optimal cut-off SR value for differential diagnosis has not yet been determined. The aim of this study was to find the optimal SR value for differential diagnosis of SPLs. **Methods:** Patients who underwent EUS-EG to evaluate SPL between March 2014 and June 2019 were retrospectively investigated. Among them, 134 patients with confirmed pathological diagnosis were included and divided into three groups based on the final diagnosis: pancreatic neuroendocrine tumor (pNET), mass forming pancreatitis (MFP), and pancreatic ductal adenocarcinoma (PDAC) groups. Patients' demographics, characteristics of SPL, and EUS-EG were compared between three groups. **Results:** The mean (\pm standard deviation) SR value of each group was 11.85 ± 7.56 (pNET group, $n = 10$), 11.45 ± 5.97 (MFP, $n = 37$), and 22.50 ± 13.19 (PDAC, $n = 87$), respectively. Multinomial logistic regression analysis revealed

that increase of SR value is significantly associated with PDAC diagnosis (pNET vs. PDAC, $p = 0.0216$; MFP vs. PDAC, $p = 0.0006$). To find the optimal cut-off SR value for differential diagnosis between MFP and PDAC, propensity score matching was performed. The mean SR value was significantly different between MFP and PDAC even after matching (12.33 ± 6.08 vs. 23.37 ± 14.06 ; $p = 0.0019$). The optimal cut-off value for differential diagnosis was confirmed as 17.14. Receiver operating characteristic curve analysis yielded an area under the curve of 0.760 for the differential diagnosis. **Conclusion:** We found the optimal cut-off SR values for differential diagnosis between MFP and PDAC. EUS-EG can be used as supplementary diagnostic method for diagnosis of SPLs.

Keywords: endoscopic ultrasound, elastography, pancreatic neoplasm

PP-0121 Comparison between FOLFIRINOX and Gemcitabine plus Nab-paclitaxel including sequential treatment for metastatic pancreatic cancer: a propensity score matching approach

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Background and Aim: FOLFIRINOX (FFX) and Gemcitabine plus Nab-paclitaxel (GnP) have been recommended as the first-line chemotherapy for metastatic pancreatic cancer (mPC). However, the evidence is lacking comparing not only two regimens, but also sequential treatment (FFX).

Methods: Data of 528 patients (FFX, $n = 371$; GnP, $n = 157$) with mPC were collected retrospectively. Propensity score matching was conducted to alleviate imbalance of the two groups. Overall survival (OS), progression-free survival (PFS), and toxicity of patients were analyzed. **Results:** In the whole population, OS (12.5 months vs. 10.3 months, $P = 0.05$) and PFS (7.1 months vs. 5.8 months, $P = 0.02$) were longer in the FFX group before matching and after matching (OS: 11.8 months vs. 10.3 months, $P = 0.02$; PFS: 7.2 months vs. 5.8 months, $P < 0.01$). For sequential treatment, OS and PFS showed no significant difference. Interruptions of chemotherapy due to toxicities were more frequent (6.8 vs. 29.3%, $P < 0.001$) in the GnP group, and cessation of chemotherapy showed a significant association with mortality ($z = -1.94$, $P = 0.03$). **Conclusion:** FFX achieved a longer overall survival than GnP in mPC, but not in the comparison for sequential treatment. More frequent adverse events followed by treatment interruptions during GnP might lead to a poor survival outcome. Therefore, FFX would be a better first-line treatment option than GnP for mPC.

Keywords: pancreatic neoplasms, FOLFIRINOX, albumin-bound paclitaxel, survival

PP-0122 Effect of leukotriene receptor antagonists on rectal aberrant crypt foci as indicators of risk of colorectal cancer development: a single-center non-randomized controlled trial

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Background and Aim: Aberrant crypt foci (ACF) in the rectum have been reported to correlate with the risk of colorectal tumorigenesis and are useful biomarkers for predicting the risk of colorectal cancer because they are quantitative and can be evaluated in a short period of time. Leukotriene receptor antagonists (LTRAs) have been reported to have inhibitory effects on various carcinomas, but their effects on colorectal cancer are unknown. Based on the report that colorectal cancer overexpresses the cysteinyl leukotriene receptor, we investigated whether LTRA medication affects the number of ACF. **Methods:** The eligibility criteria were patients who were between 30 and 80 years old, had colorectal tumors that were suitable for endoscopic resection, and had at least five ACFs in the rectum. First, 30 patients were enrolled in the LTRA group, who were treated with montelukast sodium 10 mg for 8 weeks, and rectal ACFs were counted during treatment of colorectal tumors. 10 patients in the no medication follow-up group were enrolled as the control group. **Results:** One patient in the control group was not examined due to the COVID-19 pandemic, so we examined 30 patients in the LTRA group and 9 patients in the control group. The number of rectal ACFs decreased to -2.4 (SD 2.2) in the LTRA group compared to baseline, while there was no decrease to 0.4 (SD 2.3) in the control group, and there was a significant difference in ACF trends between the two groups ($P = 0.002$). The Ki67 labeling index, which is a cell proliferation activity, was -1.34 (SD 2.68) in the LTRA group compared to baseline, while it was 0.13 (SD 1.89) in the control group, but there was no significant difference between the two groups. **Conclusion:** The LTRA treatment decreased rectal ACF and may reduce the risk of colorectal cancer.

Keywords: colorectal cancer, ACF, leukotriene receptor antagonists

PP-0123 Genetic association and functional significance of matrix metalloproteinase-14 promoter variants rs1004030 and rs1003349 in gallbladder cancer pathogenesis

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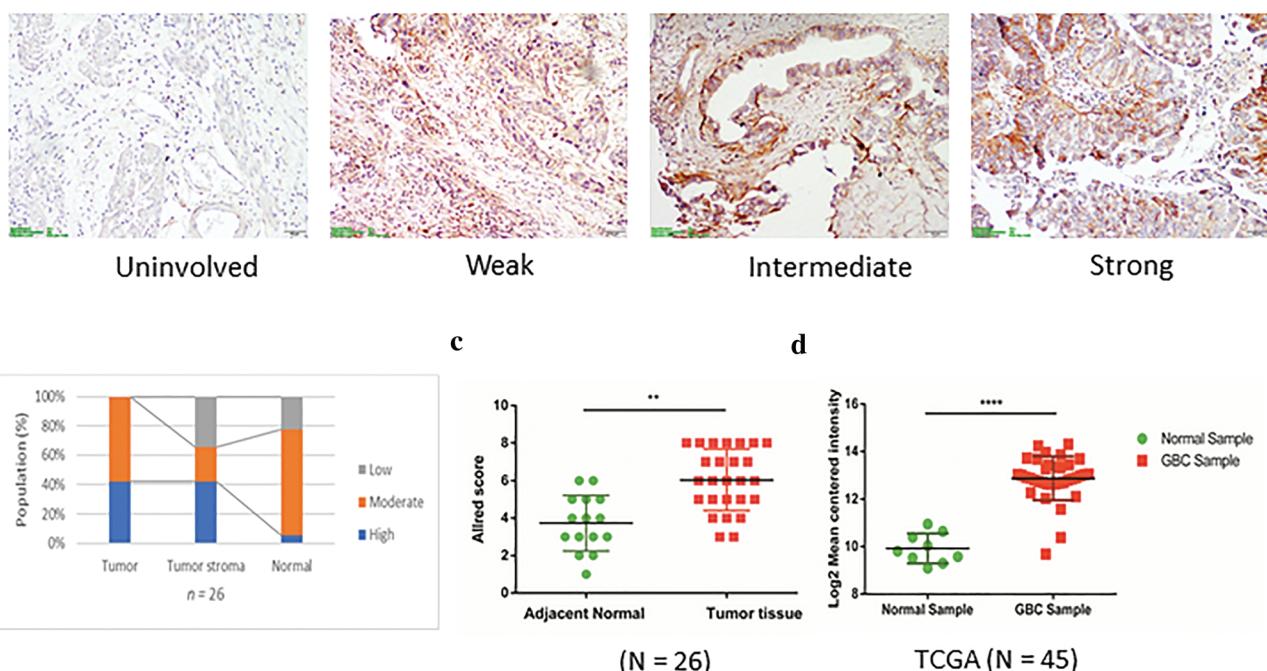
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Background and Aim: Gallbladder cancer (GBC) is a rare but highly malignant cancer; its prevalence is more in certain geographical regions and ethnic groups, which include Northern and Eastern states of India. Previous studies in India have reported the genetic predisposition as one of the risk factors in GBC pathogenesis. Although the matrix metalloproteinase-14 (MMP14) is a well-known modulator of tumour microenvironment and tumorigenesis and TCGA data also suggest its upregulation yet, its role in genetic predisposition for GBC is completely unknown. We elucidated the role of MMP14 promoter variants as genetic risk factors and their implications in expression modulation in GBC. **Methods:** We screened MMP14 promoter variants for association with GBC using Sanger's sequencing. The expression of MMP14 in GBC tissue samples was checked by immunohistochemistry. In vitro luciferase reporter assay was carried out to elucidate allele-specific roles of promoter genetic variants on expression levels in two different cell lines. **Results:** The variants rs1004030 (p value = 0.0001) and rs1003349 (p value = 0.0008) were significantly associated with gallbladder cancer. The luciferase assay in two different cell lines, HEK-293 (p = 0.0006) and TGBC1TKB (p = 0.0036), showed significant increase in relative luciferase activity in presence of risk alleles for both the SNPs. Similarly, genotype–phenotype correlation in patients' samples confirmed that presence of risk alleles at rs1004030 and rs1003349 increased MMP14 expression. **Conclusion:** Overall, this study unravels the genetic association of MMP14 promoter variants rs1004030 and rs1003349 with gallbladder cancer which may contribute to pathogenesis by increasing its expression.

Keywords: gallbladder cancer, matrix metalloproteinase-14, single nucleotide polymorphism, case control study, genetic association study

The MMP14 protein expression in gallbladder adenocarcinoma and adjacent normal tissue.

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PP-0124 Not your usual GISTs: Two cases of symptomatic, large esophageal gastrointestinal stromal tumors (GISTs)

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Background and Aim: Two cases of esophageal GISTs with unusual presentations are reported. The clinical, endoscopic, and imaging characteristics to differentiate it from other esophageal tumors are reviewed. **Methods:** Case 1: A 60-year-old man with progressive dysphagia was referred for further management after being diagnosed with esophageal squamous cell carcinoma. Computed tomography scan (CTS) revealed an inhomogeneous enhancing mass at the middle to distal esophagus with areas of necrosis. Endoscopy showed a 17-cm-long tortuous submucosal lesion. Endoscopic sonography reported a heterogeneous hypoechoic lesion contiguous with the esophageal fourth layer. Histopath showed clusters and fascicles of polygonal to spindle cells, positive for CD117, DOG1, and CD34. Case 2: A 54-year-old man presented with hematemesis. Endoscopy showed a long segment luminal narrowing caused by circumferential lobulated submucosal masses at the distal esophagus. Histopath was conclusive of GIST. CTS revealed a concentric, irregular soft tissue mass occupying the lower half of the esophagus extending into the stomach. **Results:** Both cases were started on imatinib 400 mg daily. Both patients were able to eat normally after 1 month of treatment, and tumor regression on CTS was evident after 4 months of treatment. The definitive plan for both patients is surgery. **Conclusion:** GIST should be considered in symptomatic patients with large, bulky subepithelial esophageal lesions. Endoscopic and imaging characteristics can help differentiate GIST from other tumors. The two cases reported were highly responsive to imatinib, but surgery remains to be the definitive management plan.

Keywords: dysphagia, esophageal GIST, esophageal submucosal mass, esophageal tumor, hematemesis

PP-0125 High safety and tolerability of glecaprevir and pibrentasvir for Japanese hemodialysis patients with genotype 2 HCV infection

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Background and Aim: The number of hemodialysis patients with chronic renal failure in Japan exceeds 0.3 million and is showing an increasing trend. The rate of infection with hepatitis C virus (HCV) is high in hemodialysis patients, and it has been revealed that the prognosis is poorer. In addition, Japanese dialysis patients with HCV infection are older and are thought to have more concomitant medications. Until recently, DAAs regimen does not provide treatment option for dialysis patients with genotype 2 HCV infection, estimated at 30% of all Japanese HCV patients. Glecaprevir/pibrentasvir (G/P) combination therapy is an oral anti-HCV 8- to 12-week therapy and are effective for all HCV genotypes 1–6 HCV infection. In this prospective multicenter study, we aimed to investigate the efficacy and safety of G/P in Japanese hemodialysis patients with GT2 HCV infection. **Methods:** Twenty Japanese hemodialysis patients with GT2 HCV infection who were initiated with 8- or 12-week G/P were included and followed up for around 12 weeks after treatment completion. **Results:** Among the 20 included patients, 9 non-liver cirrhosis (LC) and direct-acting antivirals (DAAs)-naïve patients were treated with 8 weeks of G/P and 11 patients with LC ($n = 10$) or history of failure of DAAs ($n = 1$) were treated with a 12-week regimen. Notably, a total of 50% (10/20) hemodialysis patients were 65 or more than 65 years old. The overall sustained virological response at 12 weeks after treatment completion (SVR 12) was 100% (20/20). Even in one patient who previously failed to respond to DAAs could achieve SVR12. No patients experienced lethal adverse events during the therapy, and all included patients completed this therapy. Pruritus is the most common adverse event. **Conclusion:** G/P regimen for

Japanese hemodialysis patients with genotype 2 HCV infection is highly effective and safe.

Keywords: HCV, hemodialysis, glecaprevir, pibrentasvir, genotype 2

PP-0126 Variations in colorectal cancer epidemiology across age groups in Northern Malaysia: A 10-year retrospective cohort study

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Background and Aim: While young-onset colorectal cancer (CRC) becomes a global health concern, there is lack of information on the role of age in the CRC epidemiology in Malaysia. The aim of this study is to explore the age distribution of CRC patients, the changes in trends of CRC incidence, and mortality across age groups over time. **Methods:** This study was based on the National Cancer Patient Registry – Colorectal Cancer (NCPR-CC). The data were obtained from 21 hospitals located in Northern Malaysia. All the CRC patients diagnosed between 1st January 2008 and 31st December 2017 and reported to the NCPR-CC were included in the study. They were categorized into 12 groups based on their age at the point of diagnosis, ranging from <25 to ≥75 years. The changes in trends of both the age-standardized incidence and mortality rates (ASIRs and ASMRs; per 100,000) for each age group were assessed using the time series analysis. The impact of age on the patient survival was explored using the Cox regression analysis (adjusted for gender, ethnicity, and CRC staging). **Results:** The 10-year ASIR peaked in the above 75 group (44.44 per 100,000), followed by the 65–69 (19.53 per 100,000) and 60–64 (24.61 per 100,000) groups. However,

only the 65–69 and 60–64 groups demonstrated an uptrend in the annual ASIRs. Except for the 60–64 group, all the age groups above 50 years witnessed a decreasing trend in the annual ASMRs. No significant trend changes were detected for either the annual ASIRs or ASMRs in all the age groups below 50 years. With the 40–44 group set as the standard, all the age groups above 50 years of age also demonstrated higher mortality risk. **Conclusion:** Young-onset CRC did not show an increasing trend over time in Malaysia, suggesting that the existing CRC screening strategy targeting individuals above 50 years of age is reasonable.

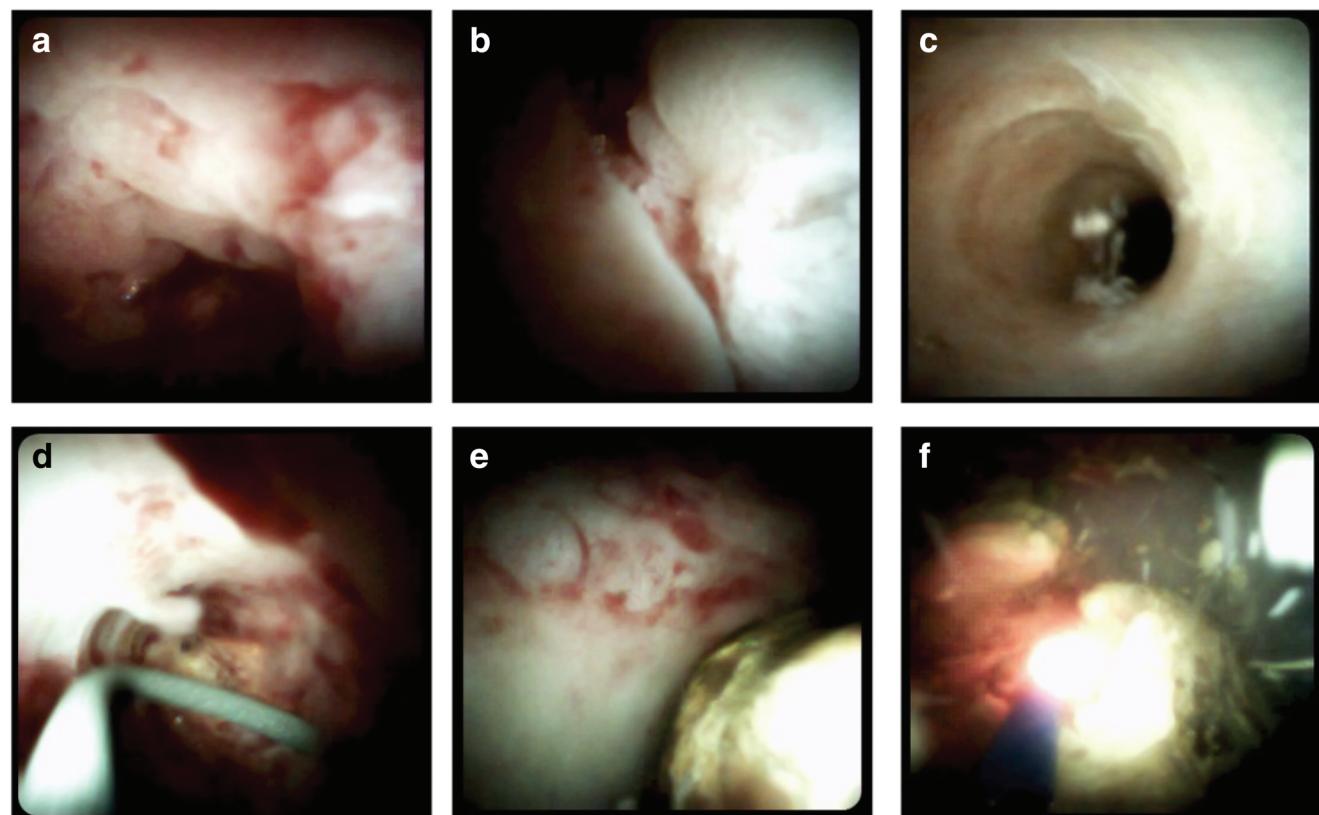
Keywords: colorectal cancer, incidence, mortality, age groups

PP-0127 SpyGlass—a new innovation for endoscopic retrograde appendicitis therapy (ERAT)

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Background and Aim: To investigate the diagnostic and therapeutic value of the SpyGlass DS (single-operator cholangioscopy system) for endoscopic management of acute appendicitis. **Methods:** Fourteen patients with acute uncomplicated simple or supportive appendicitis were evaluated between November 2018 and September 2020. The diagnosis of acute appendicitis was confirmed by colonoscopy direct vision imaging and SpyGlass imaging. The successful rate of the SpyGlass DS-assisted endoscopic retrograde appendicitis therapy, the procedure time, post-operative length of hospital stay, complications, and



recurrence rate were recorded. **Results:** The procedure technical success rate was 100% with high-quality imaging of the appendiceal cavity of all 14 patients using SpyGlass DS. The average procedure time was 37.8 **Conclusion:** SpyGlass-assisted endoscopic retrograde appendicitis therapy provides a feasible, safe, effective alternative approach to diagnose and management of acute uncomplicated appendicitis without the need for X-ray or ultrasonic guidance.

Keywords: SpyGlass, ERAT, acute appendicitis

PP-0128 Gemcitabine plus Nab-paclitaxel as a second-line treatment for patients with advanced pancreatic cancer after FOLFIRINOX failure: a multicenter, single-arm, open-label, phase 2 trial

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Background and Aim: The aim of this study was to evaluate the efficacy and safety of gemcitabine plus Nab-paclitaxel (GnP) as a second-line chemotherapy in patients with pancreatic cancer who had progressed after first-line FOLFIRINOX. **Methods:** This was a multicenter, single-arm, open-label, phase 2 trial done at three tertiary centers in South Korea. Eligible patients were aged 18 years or older, had histologically confirmed advanced pancreatic ductal adenocarcinoma, and disease progression after receiving first-line FOLFIRINOX. Patients received second-line GnP every 4 weeks until disease progression or

unacceptable toxicity. The primary outcome was survival rate at 6 months, and the secondary outcomes were median progression-free survival (PFS), overall survival (OS), disease control rate (DCR), and adverse events. This study is registered with Clinicaltrials.gov (NCT03401827). **Results:** From May 2018 to December 2019, 40 patients were assigned to receive second-line GnP for median follow-up of 16.3 months (95% CI, 14.3 **Conclusion:** GnP demonstrated favorable activity with acceptable toxicity in patients with advanced pancreatic ductal adenocarcinoma after FOLFIRINOX failure.

Keywords: pancreatic cancer, Nab-paclitaxel, gemcitabine, second-line chemotherapy

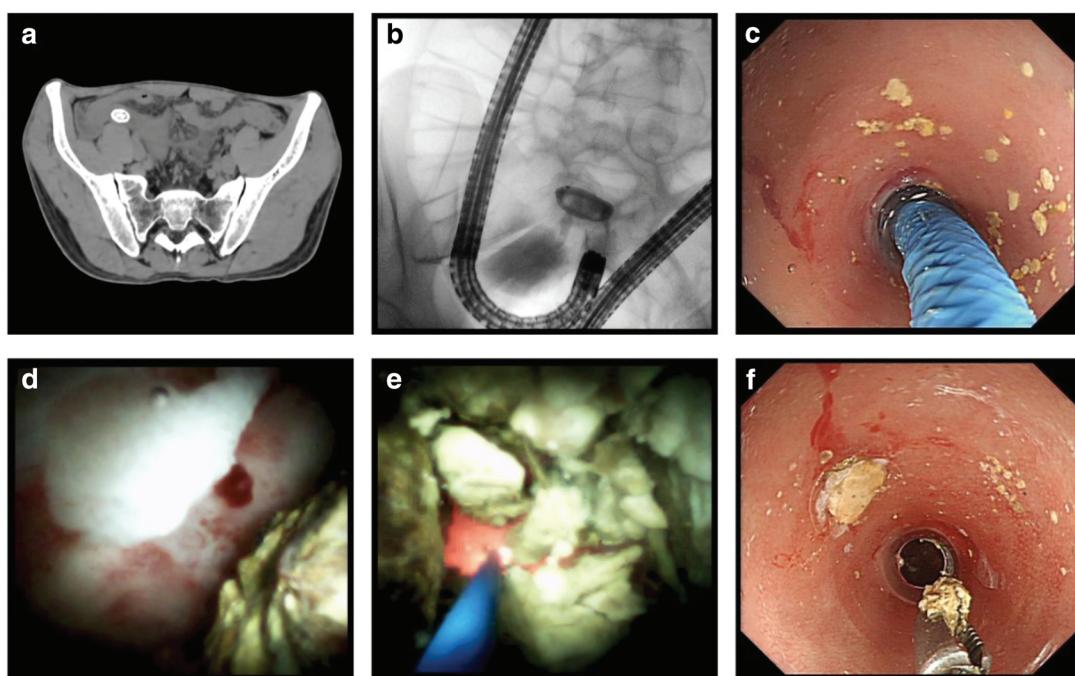
PP-0129 SpyGlass-guided laser lithotripsy in endoscopic retrograde appendicitis therapy

Authors: LINGJIAN KONG, JIYU ZHANG, DAN LIU, SAIF ULLAH, DELIANG LI, HUIYU YANG, LIXIA ZHAO, LULU JIA, BINGRONG LIU

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Background and Aim: Appendectomy remains the first-line treatment for adult appendicitis with appendicitis stones. However, it is difficult to remove the giant hard appendicolith embedded in the appendiceal orifice by surgery. Here, we report our experience of the SpyGlass-guided laser lithotripsy for the treatment of giant appendiceal fecolith. This minimally invasive organ-sparing procedure relieved the obstruction of the appendix and preserved the physiological function of the appendix.

Methods: After obtaining patient consent and explain standard of care alternatives SpyGlass-guided laser lithotripsy for the treatment of giant appendiceal fecolith was performed. A large amount of yellow and white hard fecal stones were removed with stone basket extractor and foreign body forceps. Under the guidance of guide wire, the catheter was inserted to the distal end of the appendix cavity. A plastic stent with a length of about 6 cm was placed along the guide wire (removed after



1 month). **Results:** The procedure technical success rate was 100% of all 3 patients using SpyGlass DS. The average procedure time was 50.8 min. **Conclusion:** SpyGlass-guided laser lithotripsy in endoscopic retrograde appendicitis therapy has the ability to solve the huge hard appendix stones in the appendix, which provides a new feasible alternative treatment method for the patients who are unwilling or unable to undergo appendectomy.

Keywords: laser lithotripsy, SpyGlass, ERAT

PP-0130 Delayed diagnosis of colorectal cancer in northern Malaysia and its impact on patient survival

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Background and Aim: Introduction: While colorectal cancer (CRC) remains the second most common cancer in Malaysia, the poor public awareness of the disease, coupled with the suboptimal screening uptake, often results in its late diagnosis. Objectives: To determine the 10-year incidence of delayed diagnosis of CRC in northern Malaysia, and to assess its impact on the patient survival. **Methods:** This was a retrospective cohort study based on the National Cancer Patient Registry. **Results:** Of the 5,746 patients captured by the NCPR-CC, 3,770

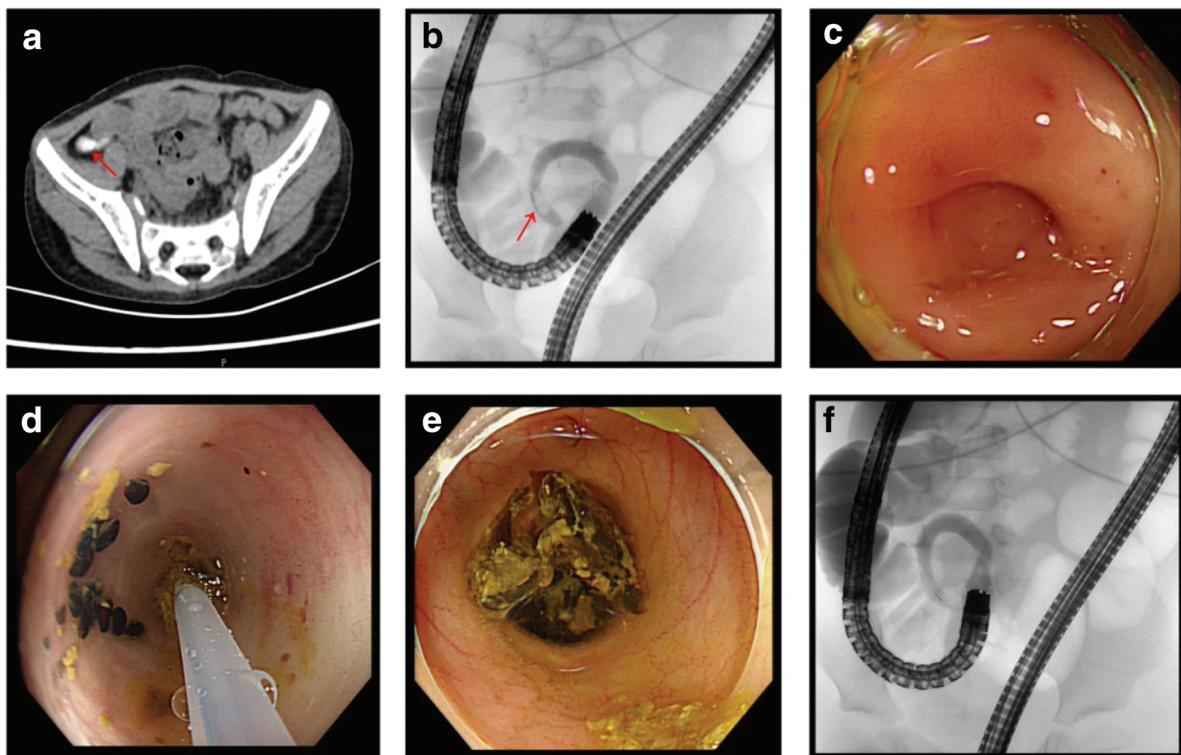
(65.6%) had their CRC staged. Only 25.1% of them recorded an early diagnosis (7.0% stage I and 18.1% stage II). The proportions of patients diagnosed at stages III and IV of the disease were, respectively, 21.9% and 18.6%. The median survival for stages II, III, and IV were, respectively, 9.3, 4.6, and 1.3 years. As compared with stage I, CRC diagnosed at stages III (adjusted HR: 1.84; 95% CI: 1.52, 2.23) and IV (adjusted HR: 4.71; 95% CI: 3.90, 5.68) demonstrated a higher mortality risk. **Conclusion:** As delayed diagnosis of CRC clearly showed a negative impact on the patient survival, a multidimensional public health approach to enhance the awareness of the disease is warranted.

PP-0131 Endoscopic retrograde appendicitis therapy: A new therapeutic method for acute appendicitis in children with leukemia

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Background and Aim: Leukemia is a common hematological malignancy in children. However, the high-dose chemotherapy drugs and corticosteroids used in the treatment inhibit the bone marrow hematopoiesis and immune function. These patients are often complicated with agranulocytosis, severe anemia, and thrombocytopenia and are more prone to infection and bleeding. Endoscopic retrograde appendicitis treatment



(ERAT) was a minimally invasive treatment technique; we can quickly reduce the pressure of appendiceal cavity, eliminate inflammation, and treat appendicitis. Here, we investigated therapeutic value advantages of ERAT for acute appendicitis in children with acute leukemia. **Methods:** Four cases (2 male, 2 female) were diagnosed as leukemia by Pediatrics Department. All patients developed acute appendicitis during neutropenia after chemotherapy. Patients with complicated appendicitis such as appendicitis perforation or acute gangrene were excluded. After the routine bowel preparations, under general anesthesia, ERAT was performed. At last, angiography showed that the appendiceal cavity developed well without stenosis or filling defect. **Results:** The ERAT procedure technical success rate was 100%. The average operation time was 39.8. **Conclusion:** Successful implementation of ERAT in children with leukemia showed that ERAT provides an alternative treatment for children with acute appendicitis and leukemia. Further studies with large sample size are needed before drawing a definitive conclusion.

Keywords: acute appendicitis, ERAT, children with leukemia

PP-0132 The effect of guselkumab induction therapy on inflammatory biomarkers in patients with moderately-to-severely active Crohn's disease: week 12 results from the phase 2 GALAXI-1 study

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Background and Aim: C-reactive protein (CRP) and fecal calprotectin (FeCal) are useful tools for clinical management of Crohn's disease (CD). We report Week (Wk) 12 inflammatory biomarker results from the GALAXI-1 study of guselkumab, in patients with moderately-to-severely active CD showing inadequate response/intolerance to conventional

Table 1. Proportion of patients with CRP ≤ 3 mg/L or FeCal ≤ 250 $\mu\text{g/g}$ at Week 12

	Placebo (Control)	Guselkumab				Ustekinumab ^a (Reference)
		200 mg IV q4w	600 mg IV q4w	1200 mg IV q4w	Combined	
Interim analyses population	51	50	50	50	150	49
Patients with CRP ≤ 3 mg/L at Wk 12 ^{b,c}	22 (43.1%)	28 (56.0%)	24 (48.0%)	24 (48.0%)	76 (50.7%)	19 (38.8%)
Adjusted treatment difference (95% CI) ^d		13.4 (-4.6, 31.4)	5.8 (-12.6, 24.3)	6.5 (-12.2, 25.2)	8.6 (-6.3, 23.5)	
Patients with abnormal CRP (>3 mg/L) at baseline	31	34	31	31	96	32
Patients with normalized CRP (≤ 3 mg/L) at Wk 12 among patients with abnormal CRP (>3 mg/L) at baseline ^{b,c}	6 (19.4%)	15 (44.1%)	9 (29.0%)	10 (32.3%)	34 (35.4%)	8 (25.0%)
Adjusted treatment difference (95% CI) ^d		22.5 (3.2, 41.7)	11.6 (-8.9, 32.1)	13.7 (-6.2, 33.7)	15.5 (-0.3, 31.3)	
Patients with FeCal ≤ 250 $\mu\text{g/g}$ at Wk 12 ^{b,e}	16 (31.4%)	24 (48.0%)	21 (42.0%)	22 (44.0%)	67 (44.7%)	20 (40.8%)
Adjusted treatment difference (95% CI) ^d		17.8 (-0.1, 35.7)	11.6 (-6.4, 29.6)	13.0 (-4.7, 30.7)	13.8 (-0.3, 28.0)	
Patients with abnormal FeCal (>250 $\mu\text{g/g}$) at baseline	33	30	37	35	102	36
Patients with normalized FeCal (≤ 250 $\mu\text{g/g}$) at Wk 12 among patients with abnormal FeCal (>250 $\mu\text{g/g}$) at baseline ^{b,e}	9 (27.3%)	10 (33.3%)	10 (27.0%)	14 (40.0%)	34 (33.3%)	9 (25.0%)
Adjusted treatment difference (95% CI) ^d		8.1 (-13.5, 29.7)	0.7 (-19.0, 20.5)	11.9 (-8.0, 31.9)	5.9 (-10.7, 22.5)	

^aPatients received a single ustekinumab IV induction dose (~6 mg/kg IV) at Wk 0. At Wk 8, patients received one ustekinumab SC maintenance dose (90 mg SC).

^bPatients who had a prohibited change in concomitant Crohn's disease medication, a Crohn's disease-related surgery, or discontinued study agent due to lack of efficacy or an AE of worsening Crohn's disease prior to the designated analysis timepoint had their baseline value carried forward from that timepoint onwards. Patients who had discontinued study agent due to any other reasons prior to the designated analysis timepoint had their observed data used, if available, from that timepoint onwards.

^cPatients who had missing CRP value at Wk 12 were considered not to have CRP ≤ 3 mg/L at Wk 12.

^dThe confidence intervals for adjusted treatment differences were based on the Wald statistic with Mantel-Haenszel weight for pairwise comparisons of each Guselkumab treatment group with the placebo treatment group.

^ePatients who had missing FeCal value at Wk 12 were considered not to have FeCal ≤ 250 $\mu\text{g/g}$ at Wk 12.

therapies and/or biologics. **Methods:** Patients were randomized 1:1:1:1:1 to guselkumab 200/600/1200 mg intravenous at Wk0/Wk4/Wk8; ustekinumab ~6 mg/kg intravenous (Wk0) and 90 mg subcutaneous (Wk8); or placebo. Interim analyses (Wk12) evaluated change from baseline in CRP, FeCal, and clinical-biomarker response (≥ 100 -point reduction from baseline in CD Activity Index [CDAI] score or CDAI score < 150 and $\geq 50\%$ reduction from baseline in CRP/FeCal). **Results:** Of 250 patients, ~50% failed biologic therapy. For guselkumab-combined group vs placebo, median baseline CRP/FeCal concentrations were 5.81 mg/L ($n = 150$) / 626.50 $\mu\text{g/g}$ ($n = 146$) vs 4.18 ($n = 51$) / 433.50 $\mu\text{g/g}$ ($n = 50$). Through Wk12, guselkumab-treated patients had greater reductions in CRP and FeCal concentrations than placebo. At Wk12, median change in CRP in the guselkumab-combined group vs placebo was -2.17 vs 0.00 mg/L and median change in FeCal was -176.00 vs 20.00 $\mu\text{g/g}$, respectively, and among patients with abnormal CRP/FeCal at baseline 35.4% vs 19.4%/33.3% vs 27.3% showed normalized CRP/FeCal (Table 1). Guselkumab-combined group vs placebo achieved higher clinical-biomarker response (48.0% [72/150] vs 7.8% [4/51]) at Wk12; similar results were achieved among the bio-failure cohort (46.1% [35/76] vs 8.7% [2/23]) and conventional therapy failure cohort (50.0% [37/74] vs 7.1% [2/28]). **Conclusion:** Guselkumab had greater reductions in CRP/FeCal concentrations and achieved higher clinical-biomarker response than placebo in moderately-to-severely active CD patients. Similar improvements were observed in a sub-analysis of patients that failed biologic/conventional therapy.

Keywords: C-reactive protein, fecal calprotectin, clinical-biomarker, guselkumab, ustekinumab

PP-0133 A cross-sectional retrospective analysis of colorectal cancer incidence among Sabahans

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Background and Aim: Colorectal cancer (CRC) is the third leading cause of cancer-related deaths worldwide, and its incidence is steadily increasing in many developing countries. In Malaysia alone, CRC tops the list for all-cancer etiology in males and ranks a close second behind breast cancer for females. This study aims to analyze the incidence of CRC in Sabah, a Malaysian east-coast state with multi-ethnic origins comprising mostly of the indigenous population. **Methods:** Cross-sectional retrospective analysis. **Results:** As of 2014, Sabah recorded a population of 3.7 million individuals with an approximate 1:1 gender ratio. The people of Sabah are divided into 36 officially recognized ethnic groups with the majority coming from the Kadazan/Dusun (23.6%), Bajau (18.7%), Chinese (11.8%), Malays (10.2%), and Murut (4.3%) populace. There was a total of 2,166

CRC cases reported statewide from the studied time frame. Males (58.5%) were more commonly diagnosed compared to females (41.5%). There was a sharp increase in incidence after age 40 for both genders with the highest cases reported amongst the Chinese population (Figure 1). **Conclusion:** The incidence of CRC in Sabah is higher among males (58.5%) than females (41.5%), and most cases occurred at the age of 40 and above. Incidence was highest among Chinese for both sexes. The indigenous group in Sabah showed significant higher incidence of CRC as compared to Malays. This needs a larger prospective study to confirm.

Keywords: colorectal cancer, colonoscopy, Sabah, Malaysia

PP-0134 Usefulness of magnified blue laser imaging combined with Japan NBI expert team classification for the diagnosis of colorectal sessile lesions

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Background and Aim: Blue laser imaging (BLI) is a newly developed image-enhanced endoscopic system and enables us to observe surface and vessel patterns of colorectal sessile lesions. Precise evaluation of sessile lesions before management is of great importance. The aim of this study was to evaluate the usefulness of magnified BLI combined with Japan NBI expert team (JNET) classification for the diagnosis of colorectal sessile lesions. **Methods:** This was a multicenter retrospective study; a total of 149 colorectal sessile lesions were enrolled. Both experts and non-experts evaluated the lesions using magnified BLI combined with the JNET classification, and the diagnostic performance was analyzed. **Results:** The final pathological diagnoses of the 149 lesions were 2 hyperplastic/sessile serrated lesions (HP/SSL), 70 low grade dysplasia (LGD), 36 high-grade dysplasia (HGD), 16 superficial submucosal invasive cancer (m-SMs), and 7 deep submucosal invasive cancer (SM-d) (Table 1). When JNET classification type 2A corresponds to LGD, the sensitivity, specificity, PPV, NPV, and accuracy were, respectively, 88%, 94.6%, 94.3%, 88.6%, and 91.3% for experts; and 56%, 67.2%, 72.9%, 49.4%, and 60.4% for non-experts. When JNET classification type 2B corresponds to HGD and m-SMs, the sensitivity, specificity, PPV, NPV, and accuracy were, respectively, 88.2%, 92.9%, 86.5%, 93.8%, and 91.3% for experts; and 53.4%, 76.9%, 59.6%, 72.2%, and 67.8% for non-experts. The total inconsistency rate of JNET identification between non-experts and experts was 38.3%. Non-experts had difficulty in distinguishing the regular vessel caliber and variable caliber, which accounted for 27.7% of misclassification. **Conclusion:** Magnified BLI with JNET classification is a useful method to diagnose colorectal sessile lesions. Expert endoscopists could effectively diagnose lesions with high accuracy and specificity by

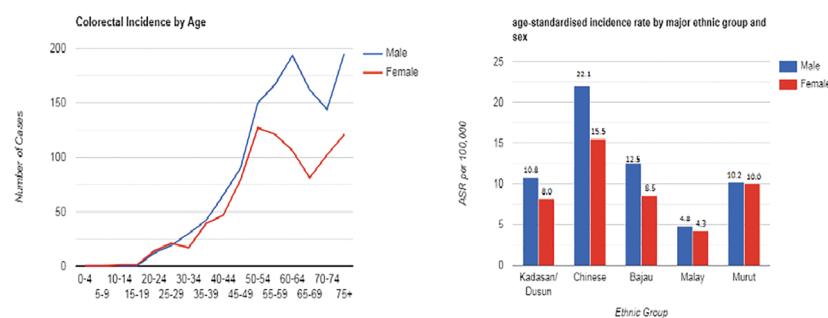


Figure 1: Colorectal incidence according to age (left) and age-standardized incidence rate based on major ethnic group and sex (right)

Table 1. The JNET classification and histologic findings in Isp or Is between non-experts and experts.

JNET classification	N (%)	Histologic findings					
		HP or SSP	LGD	HGD	other	m-SMs	SMd
Non-expert							
Type 2A	91 (100)	2(2.2)	51(56.0)	16(17.6)	12(13.2) ^a	5(5.5)	5(5.5)
Type 2B	58 (100)		19(32.8)	20(34.5)	6(10.3) ^b	11(19.0)	2(3.4)
Expert							
Type 1	15 (100)		1(6.7)		14(93.3) ^c		
Type 2A	75(100)	2(2.7)	66(88.0)	1(1.3)	4(5.3) ^d	2(2.7)	
Type 2B	51(100)		2(3.9)	34(66.7)		11(21.6)	4(7.8)
Type 3	8(100)		1(12.5)	1(12.5)		3(37.5)	3(37.5)
Total	149(100)	2(1.3)	70(47.0)	36(24.2)	18(12.1) ^e	16(10.7)	7(4.7)

Note: JNET, Japan NBI Expert Team; HP, hyperplastic lesion; SSP, sessile serrated polyp; LGD, low-grade dysplasia; HGD, high-grade dysplasia; m-SMs, pathologically diagnosed intramucosal cancer or submucosal cancer with submucosal invasion depth <1000 um; SMd, pathologically diagnosed cancer with submucosal invasion depth equal to or large than 1000 um.

using this method. Standard BLI workshop is needed to improve the diagnostic accuracy of non-experts.

Keywords: blue laser imaging, JNET, colorectal sessile lesions

PP-0135 Impact of *Lactobacillus reuteri* supplementation on clarithromycin-based sequential therapy for *Helicobacter pylori* eradication

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Background and Aim: Globally, probiotics are under debate regarding their efficacy in eradication of *H. pylori* as compared to conventional therapies. Therefore, we aimed to determine the efficacy of addition of *Lactobacillus reuteri* to conventional therapy for *H. pylori* eradication in comparison to conventional therapy alone. **Methods:** An open label randomized control trial is being conducted at the Department of Gastroenterology, Liaquat National Hospital, Karachi. Patients aged 18 to 60 years with detection of *H. pylori* infection either with histopathology, stool antigen test, or rapid urease test were assigned to two groups through sequentially numbered opaque sealed envelope protocol. Sequential therapy (control group) consisted of Omeprazole 20 mg twice daily, Amoxicillin 1 g twice daily for first 5 days, Clarithromycin 500 mg twice daily, and Tinidazole 500 mg twice daily for next 5 days whereas in the intervention group *Lactobacillus reuteri* 100 mg twice daily for 2 weeks was added in sequential therapy. Successful eradication was defined as negative *H. pylori* stool antigen 4 weeks after eradication therapy. **Results:** A total of 197 patients have been enrolled into the study with 70 (35.5%) patients in the intervention group. Two study groups did not differ on the basis of age ($p = 0.617$) and gender ($p = 0.491$). Median duration for the resolution of symptoms was 8 (IQR = 6 \pm 6). **Conclusion:** This study analysis showed that there was no benefit noticed in *H. pylori* infection eradication by the addition of *Lactobacillus reuteri* to the sequential therapy, but it did result in early resolution of symptoms as compared to conventional therapy.

Keywords: *Lactobacillus reuteri*, *H. pylori*, eradication, sequential therapy

PP-0136 Sustainability of weight loss among patients with nonalcoholic fatty liver disease: a retrospective longitudinal analysis

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Background and Aim: Weight loss, though difficult to attain and sustain over time, remains the cornerstone of nonalcoholic fatty liver disease (NAFLD) management. We aimed to describe the weight changes among NAFLD patients and probability to sustain weight loss. **Methods:** NAFLD patients with >2 clinic visits from March 2007. **Results:** Among 244 patients with >2 clinic visits, 97 (39.8%), 107 (43.9%), and 40 (16.4%) had weight gain, weight loss, and no change, respectively, after 1 year. Thirty-three (31%) had significant while 74 (69%) had mild weight loss. No baseline demographic and laboratories predicted weight change pattern. Patients who had subsequent follow-up, 23 (9.4%) had no weight changes, 86 (35.2%) gained weight, 95 (38.9%) lost weight, and 40 (16.4%) had weight cycling. Evaluable data (29.5%, 15.9%, and 13.1% at 3, 5, and 7 years) declined over succeeding years. Patients who lost weight in 1st year, 72%, 55%, and 64% sustained weight loss on 3rd, 5th, and 7th year while 28%, 45%, and 29% gained weight during the same period. There was no difference in weight loss sustainability among patients with mild vs. significant weight loss. Patients who gained weight after 1st year, 15%, 14%, and 0% lost weight in the succeeding 3rd, 5th, and 7th year with majority (85%, 86%, and 100% at 3, 5, and 7 years) maintaining their weight gain. **Conclusion:** Less than half of patients follow doctor.

Keywords: weight loss, nonalcoholic fatty liver disease, sustainability, NAFLD

PP-0137 Clinical characteristics and outcomes of acute pancreatitis following spinal surgery: a systematic review

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Background and Aim: Acute pancreatitis (AP) is a rare post-operative complication of spinal surgery. This study reviews the current evidence on clinical characteristics and outcome of AP following spinal surgery. **Methods:** A systematic search was performed on English articles published up to May 2020 using PubMed, Scopus, EMBASE, LILACS and Cochrane databases. Data on clinical characteristics, risk factors and outcomes were extracted and analysed. **Results:** Eleven papers meeting the inclusion criteria which included a total of 306 patients developing AP following spinal surgery were included (mean age = 14.17 years). Of the 11 studies that specified symptoms ($n = 55$ patients), abdominal pain (43.6%), nausea and vomiting (32.7%) and abdominal distension (7.27%) were the commonest symptoms. The mean duration from surgery to onset of symptoms was 6.15 days (range: 1–7). Almost all ($n = 10$, 90.9%) were treated non-operatively. Of the complications mentioned ($n = 306$ patients), glucose intolerance (25%), peritonitis (2%), pseudocyst (2%) and fluid collection (2%) were the commonest. Of the studies mentioning associated factors ($n = 22$ patients), prolonged fasting time (13.6%), intra-operative blood loss (9.09%), gastroesophageal reflux disease (9.09%), age $>$ 14 years (9.09%), low BMI (9.09%) and anterior/combined approach (9.09%) were the commonest associated factors for AP. A total of 2 deaths ($n = 2/306$, 0.65%) were reported. **Conclusion:** Although uncommon, AP remains an important post-operative complication of spinal surgery

due to its associated morbidity and mortality. Avoiding major risk factors including prolong fasting and minimizing intra-operative blood loss may help reduce the incidence of AP in patients undergoing spinal surgery.

Keywords: acute pancreatitis, spinal surgery, scoliosis, systematic review

PP-0138 Present status of cancer burden in Sri Lanka based on GLOBOCAN estimates

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Background and Aim: We aimed to provide an overview of cancer burden in Sri Lanka including incidence, prevalence and mortality rates in 2018 by age groups. **Methods:** We used the data from GLOBOCAN 2018 which provided worldwide estimates of cancer incidence, prevalence and mortality for each country and regions. **Results:** Highest prevalence in both sexes (total = 56,054) in Sri Lanka included cancers of the breast ($n = 9,534$, 87.5/100,000 population), lip and oral cavity ($n = 5,904$, 28.2/100,000), thyroid ($n = 4,387$, 20.9/100,000), colorectum ($n = 3,634$, 17.3/100,000) and leukaemia ($n = 3,234$, 15.4/100,000), respectively. In males, the highest incidence was reported for lip and oral cavity, lung and oesophageal cancers and in females, breast, uterine cervix, thyroid and ovarian cancers. Cancers causing highest mortality among Sri Lankan males included lung, lip and oral cavity, oesophagus and leukaemia and in females, breast, uterine cervix, leukaemia and ovary. **Conclusion:** The burden of cancer is increasing in Sri Lanka which is probably related to changing cancer risk factor profiles and rapidly aging population. New innovative strategies for prevention, early detection and improving the quality cancer treatment are essential to deal with this effectively.

Keywords: cancer, malignancy, incidence, prevalence, GLOBOCAN

PP-0139 Association between irritable bowel syndrome and micronutrients: a systematic review

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Background and Aim: Irritable bowel syndrome (IBS) is a common disorder of gut–brain interaction characterised by recurrent abdominal pain related to changes in bowel habits. Due to the poor satisfaction with drug treatment, many IBS patients turn to health supplements and exclusion diets to control their symptoms. With the exception of vitamin D, micronutrients are not produced in the body and must be derived from the diet. We aimed to review the available literature on the (i) association between micronutrients and IBS (ii) whether micronutrient supplementation can alleviate IBS symptoms. **Methods:** Four electronic databases (PubMed, Embase, Cochrane and Web of Science) were searched for articles that reported micronutrient data in patients with IBS. **Results:** 27 articles were included in this systematic review (12 interventional and 15 observational studies). Studies showed that generally IBS subjects had lower level of dietary intake of vitamin B2, vitamin D, calcium and iron at baseline compared to non-IBS subjects. There were no data on serum level or interventional trial of micronutrients other than vitamin D. Studies showed that IBS subjects have lower vitamin D than non-IBS subjects and vitamin D supplementation is beneficial for IBS. Exclusion diets were associated with lower intake of micronutrients especially vitamin B1, B2, calcium, iron and zinc. **Conclusion:** Our systematic review showed that micronutrients may be associated with IBS development; however, studies on serum level and supplementation of

micronutrients are needed. Patients should undergo exclusion diets under the guidance of a trained dietitian to prevent malnutrition.

Keywords: IBS, micronutrients, vitamins, minerals, irritable bowel syndrome

PP-0140 Age as one of predictor factors of relapse free survival on inflammatory bowel diseases undergoing long-term medical treatment

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Background and Aim: The two forms of inflammatory bowel diseases are ulcerative colitis (UC) and Crohn. **Methods:** We would evaluate the factors that might have an important role on the relapse free survival of the patients who have completely medicated for inflammatory bowel disease. The diagnosis of IBD will be confirmed by histopathological examination. All patients treated medically with 5-amino salicylic acid (5-ASA) for 6 months; the characteristic of the patients will be recorded including the remission free survival. The patients who could not complete medical treatments will be excluded from this study. **Results:** During 1-year period from January 2019 until 2020, we reported 27 patients included into this study; all patients had completed medical treatment and no adverse effect related to medication. No patient had been dropped out from this study. 15 patients were more than 40 years old; 12 patients were young IBD patients (< 40 years old). All patients had been already confirmed diagnosed with ulcerative colitis, after completing medical treatment; 2 patients on young IBD group had recurrence intermittent left lower abdominal pain which had continued medical treatment. **Conclusion:** 5-ASA was still effective enough to get the remission. Older IBD patients were associated with better relapse free survival after completed medical treatments.

Keywords: age, predictor factor, relapse free survival, inflammatory bowel disease

PP-0141 Point prevalence of *Helicobacter pylori* infection among patients presented to Endoscopy Unit, Queen Elizabeth Hospital, Sabah, Malaysia, in year 2020

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Background and Aim: *Helicobacter pylori* infection is the most common cause of chronic gastritis and is strongly linked to peptic ulcer disease and gastric cancer. The infection has a high morbidity but low mortality rate and is curable with antibiotic therapy. This study aimed to determine the point prevalence of *Helicobacter pylori* infection among the patients presented to Endoscopy Unit, Queen Elizabeth Hospital, Sabah, Malaysia, in the year 2020 and to assess the efficacy of first-line therapy (PPI, amoxicillin and clarithromycin 14-day regimen) for *Helicobacter pylori* eradication. **Methods:** Oesophagogastroduodenoscopy (OGDS) reports for the year 2020 in the Malaysia Gastrointestinal Registry (MGIR) were reviewed. List of patients who were prescribed *Helicobacter pylori* eradication treatment was traced from Pharmacist Information System (PhIS). *Helicobacter pylori* infection was diagnosed either by a positive rapid urease test (RUT) during OGDS or via urea breath test (UBT). A negative UBT after treatment confirmed the eradication of *Helicobacter pylori* infection. **Results:** A total of 3641 OGDS were done on 2922 patients

throughout the year 2020 for various indications. 734 patients (25%) were diagnosed with *Helicobacter pylori* infection via RUT during OGDS. Another 104 patients were diagnosed via UBT. Out of these 838 patients who were given first-line *Helicobacter pylori* eradication treatment, 244 patients underwent UBT and only 16 patients (6.5%) failed first-line eradication treatment. **Conclusion:** The point prevalence of *Helicobacter pylori* infection is high in our study population, but the standard first-line triple therapy was still effective in achieving high eradication rate. Limitations in our study were acknowledged. Missing data were encountered as in any retrospective study. This point prevalence study may still provide an overview of the current *Helicobacter pylori* infection in our local setting and serve as a framework for future prospective study.

Keywords: *Helicobacter pylori*, prevalence, rapid urease test, urea breath test, triple therapy

PP-0142 Prognostic significance of lymph node status in resected ampullary adenocarcinoma followed by adjuvant chemotherapy

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Background and Aim: Lymph node (LN) metastasis is considered an important prognostic factor in ampulla of Vater (AoV) cancer, and many parameters have been proposed to predict prognosis. The purpose of this study is to evaluate the prognostic importance of various LN parameters in resected AoV cancer followed by adjuvant chemotherapy. **Methods:** From January 2005 to January 2018, 459 patients with surgically resected periampullary cancer were analyzed. In total, 81 patients with surgically treated AoV cancer followed by adjuvant chemotherapy were included. We evaluated the prognostic efficacy of N-stage, LN number (LNN), LN ratio (LNR), log odds of positive LNs (LODDs), neutrophil-to-lymphocyte ratio, and platelet-to-lymphocyte ratio. The maximal chi-square method was used to determine the optimal cutoff points for each parameter. **Results:** Forty-six patients (56.8%) recurred within 5 years, and the 5-year survival rate was 43.2%. The median of the dissected LNs is 15. We divided patients into 2 groups, LNN 0 vs. LNN \geq 1, LNR \leq 5% vs. > 5% or LODD \leq -0.91 vs. > -0.91, based on maximal chi-square method. LNN, LNR, LODD, as well as N-stage based on 8th edition of staging system of American Joint Committee on Cancer showed prognostic efficacy at 5-year survival rate, 5-year disease free survival rate, and 5-year distant metastasis free survival rate. Perineural invasion was also another independent predictor of overall survival, 5-year disease free survival, and 5-year distant metastasis free survival rate. **Conclusion:** In patients with radically resected AoV cancer followed by adjuvant chemotherapy, LN metastasis is one of the most significant prognostic factors. With appropriate cutoff points, many LN parameters including LNN, LNR, and LODDs showed good predictive performance on overall survival and disease free survival.

Keywords: ampullary adenocarcinoma, lymph node metastasis, prognosis

PP-0143 Real-world data of cardiovascular disease in patients with metabolic dysfunction-associated fatty liver disease based on medical claim database in Japan

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Background and Aim: Metabolic syndrome is a cluster of metabolic abnormalities that indicates people at risk of diabetes mellitus (DM) and cardiovascular disease (CVD). Recently, fatty liver caused by nutritional metabolic disorders regardless of other chronic liver diseases has been proposed as a new liver disease concept, "metabolic dysfunction-associated fatty liver disease (MAFLD)." We undertook a longitudinal analysis of MAFLD based on prescription records derived from a large administrative claims database to estimate the incident risk of developing CVD in cohorts encountered in routine practice. **Methods:** Population-based, electronic primary healthcare database (2013–2019: Japan Medical Data Center [JMD]) was used. The primary outcome was the new onset of ASCVD in the NAFLD and non-NAFLD groups. Patients were followed at least for \geq 12 months. The primary study endpoint was the onset of CVD in MAFLD patients comparing with non-MAFLD patients. **Results:** A total of 2,453,459 people were included in this study. Mean follow-up period was 4 years. MAFLD was estimated to be 9.7% ($n = 2,215,707$). The overall prevalence of hypertriglyceridemia, DM, and the combination of hypertriglyceridemia and DM were 64.1%, 20.6%, and 12.9%, respectively, in the MAFLD group. The incidence rates of CVD were 1.01 (95% CI, 0.98 to 1.03) and 2.69 (95% CI, 2.55 to 2.83) per 1000 person-years in the non-MAFLD and MAFLD groups, respectively. When adjustments were made for age, sex, smoking habit, LDL cholesterol, and statin use, the respective hazard ratio for CVD was 1.89 (1.78 to 2.01) in the MAFLD group compared to the MAFLD group. **Conclusion:** Patients with MAFLD have higher risk of CVD. Furthermore, MAFLD was a factor that related with CVD independently of age, sex, statin use, age, smoking, LDL cholesterol, and statin use.

Keywords: MAFLD, NAFLD, CVD, big data

PP-0144 Profile of COVID-19 patients taking proton-pump inhibitor at Dr. Saiful Anwar Hospital Malang

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Background and Aim: Coronavirus Disease 2019 (COVID-19) is caused by Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) which causes pneumonia, acute respiratory syndrome, and death. Proton-pump inhibitors (PPIs) are generally indicated in disorders of increased stomach acid by inhibiting gastric acid secretion. The use of PPIs has been associated with an increased risk of pneumonia as well as worse outcomes in COVID-19 cases. This study aims to determine the profile of the use of PPIs in COVID-19 patients in September 2020 at Dr. Saiful Anwar Malang (RSSA). **Methods:** The study design was an observational cohort retrospective. Profiles of confirmed

COVID-19 patients, including early clinical condition, comorbid, mortality, and use of PPI, were obtained from September 1st to 25th, 2020, at RSSA which include a total of 46 patients. **Results:** PPI use was associated with a significantly increased risk of death (OR 4.33; 95% CI 1.02–18.38; $p = 0.047$). Use of PPIs in COVID-19 patients with diabetes was associated with a significantly higher risk of death (OR 6.00; 95% CI 1.63–22.03; $p = 0.007$). In contrast, the use of PPIs in non-diabetic patients showed a non-significant reduction in the risk of death in patients with COVID-19 (OR 0.6; 95% CI 0.13–2.71; $p = 0.50$). **Conclusion:** The use of PPIs is associated with a significantly increased risk of mortality in COVID-19 patients at Dr. Saiful Anwar Hospital Malang; however, the cause of mortality is still possibly related to early severity of patients' clinical condition and comorbid and is not only influenced by the use of PPI.

Keywords: COVID-19, proton-pump inhibitor

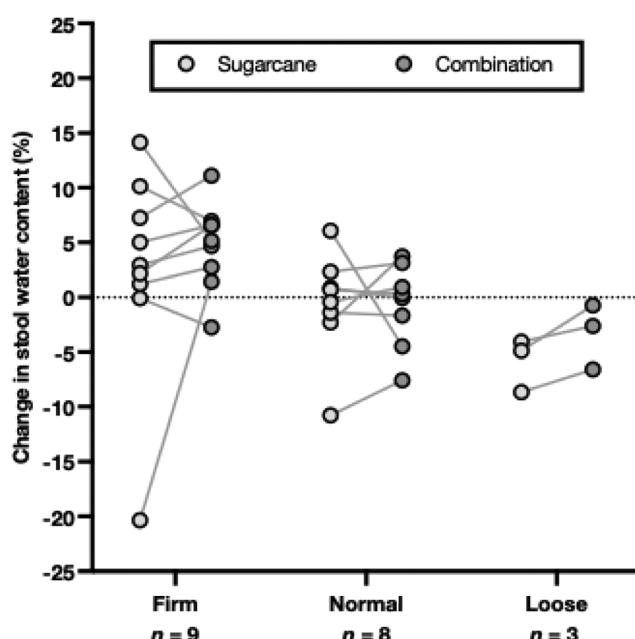
PP-0145 Adjunctive supplementation of dietary fibres normalises stool characteristics in patients with irritable bowel syndrome with varying bowel habit initiated on a low FODMAP diet

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Background and Aim: A low FODMAP diet (LFD) may affect fibre adequacy, but the effects of adjunctive fibre supplementation are unknown. We aimed to assess the impact of minimally-fermented sugarcane bagasse (SCB) with/without slowly-fermented resistant starch 2 (RS2), as adjuncts to a LFD on symptoms, colonic transit and stool characteristics in patients with irritable bowel syndrome (IBS). **Methods:** In a double-blind, cross-over trial, patients with IBS completed a 7-day baseline and were randomised to three diets lasting 14 days with >21 days washout between where majority of food was provided: LFD control (23 g/d total fibre);

Changes in stool water content based on predominant stool consistency



LFD with SCB (33 g/d); LFD with SCB; and RS2 (45 g/d). End-points were symptoms (100-mm visual analogue scale), colonic transit times (motility capsule) and stool water content. Patients were sub-grouped based on transit time (slow, normal, fast) and investigator-assessed stool characteristics (firm, normal, loose). **Results:** In 20 patients, overall symptoms were >10 mm lower compared with baseline (57.0 ± 13.2 mm) in all diets ($P < 0.05$; linear mixed model) with no differences across diets. In the fibre-supplemented diets, colonic transit time decreased in patients with slow-transit (29–65%) and increased with fast-transit (33–150%) compared with LFD alone. Stool water content was similar across diets overall, but fibre supplementation led to increases in patients with firm stools, while decreases in the loose stool and minimal change in the normal subgroups were observed (Fig. 1). **Conclusion:** In patients with IBS, adjunctive supplementation of minimally-fermented with/without slowly-fermented fibre during initiation with a LFD is well tolerated and appears to normalise stool characteristics and transit time.

Keywords: irritable bowel syndrome, dietary fibre, resistant starch, transit time, bowel habit

PP-0146 Clinical feasibility of modified full-face snorkel mask as personal protective equipment during endoscopic procedures in coronavirus disease pandemic

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Background and Aim: The risk of exposure and infection of endoscopists from coronavirus disease (COVID-19) is high because of respiratory droplets and aerosols. The rapid COVID-19 spread led to personal protective equipment (PPE) shortage. Recently, a modified full-face snorkel mask (FFSM) is being used as PPE by healthcare workers lacking appropriate PPE. We tested the clinical feasibility of the modified FFSM as PPE during endoscopic procedures. **Methods:** We recruited nine experienced endoscopists to perform endoscopic procedures with general facial protection (N95 mask, goggles, and face shield) and modified FFSM; the endpoint was the completion rate of endoscopic procedures with general facial protection vs modified FFSM. We compared the participants' vital signs pre- vs post-endoscopic procedure with both PPE and the responses obtained from a questionnaire on the participants' impression regarding both PPE. **Results:** The completion rates of endoscopic procedures with general facial protection and modified FFSM were 100% (9/9) and 88.8% (8/9), respectively. With modified FFSM, respiratory rate pre- vs post-endoscopy was $16.0 \pm 3.5/\text{min}$ vs $17.5 \pm 3.2/\text{min}$. The respiratory rate increased significantly post-endoscopy. In the 7-question survey, the scores for speech clarity with general facial protection and modified FFSM were different. The participants were required to speak more loudly when using the modified FFSM. **Conclusion:** Almost all endoscopists completed the endoscopic procedure with modified FFSM. It is necessary to consider the modified FFSM's characteristics regarding the possibility of CO₂ accumulation and interference with speech clarity.

Keywords: endoscopy, modified full-face snorkel mask, personal protective equipment, COVID-19

PP-0147 Optimal timing of endoscopic retrograde cholangiopancreatography for acute cholangitis associated with distal malignant biliary obstruction

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Background and Aim: There is a lack of studies regarding the optimal timing for endoscopic retrograde cholangiopancreatography (ERCP) in patients with cholangitis caused by distal malignant biliary obstruction (MBO). This study aims to investigate the optimal timing of ERCP in patients with acute cholangitis associated with distal MBO with a naïve papilla. **Methods:** A total of 421 patients with acute cholangitis, associated with distal MBO, were enrolled for this study. An urgent ERCP was defined as being an ERCP performed within 24 hours following emergency room (ER) arrival, and early ERCP was defined as an ERCP performed between 24 and 48 hours following ER arrival. We evaluated both 30- and 180-day mortality as primary outcomes, according to the timing of the ERCP. **Results:** The urgent ERCP group showed the lowest 30-day mortality rate (2.2%), as compared to the early and delayed ERCP groups (4.3% and 13.5%) ($P < 0.001$). The 180-day mortality rate was lowest in the urgent ERCP group, followed by early ERCP and delayed ERCP groups (39.4%, 44.8%, 60.8%; $P = 0.006$). A subgroup analysis showed that in both the primary distal MBO group and the moderate-to-severe cholangitis group, the urgent ERCP had significantly improved in both 30- and 180-day mortality rates. However, in the secondary MBO and mild cholangitis groups, the difference in mortality rate between urgent, early, and delayed ERCP groups was not significant. **Conclusion:** In patients with acute cholangitis associated with distal MBO, urgent ERCP might be helpful in improving the prognosis, especially in patients with primary distal MBO or moderate-to-severe cholangitis.

Keywords: cholangitis, endoscopic retrograde cholangiopancreatography, neoplasms, early intervention, treatment outcomes

PP-0148 Safety and efficacy of intraperitoneal paclitaxel plus systemic FOLFOX for gastric cancer with peritoneal metastasis

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Background and Aim: With the development of new target agents, immune therapy, and better surgical techniques, the overall life expectancy of gastric cancer patients has improved over the decade. However, peritoneal metastasis still remains a major obstacle in the treatment of stage IV gastric cancer. This study was designed as a dose-escalation study of

intraperitoneal (IP) paclitaxel combined with intravenous fluorouracil, leucovorin, and oxaliplatin (mFOLFOX6) to determine the recommended dose in gastric cancer patients. **Methods:** Patients with potentially resectable gastric adenocarcinoma having peritoneal metastasis were enrolled. During diagnostic laparoscopy, peritoneal cancer index (PCI) score was evaluated, and IP chemoport and intravenous chemoport insertion was done. IP paclitaxel was given with an initial dose of 40 mg/m², then stepped up to 60 then 80 mg/m². Target dose was 100 mg/m². Intravenous mFOLFOX6 was administered on the same day at the standard recommended dose (oxaliplatin 100 mg/m², leucovorin 100 mg/m², fluorouracil 2400 mg/m²). Dose limiting toxicity (DLT) was defined as leukopenia—grade 4, thrombocytopenia—grade 3, febrile neutropenia—grade 3, and other nonhematologic toxicity—grade 3. **Results:** Fifteen patients were enrolled, and two patients were dropped due to patient consent withdrawal. There was no DLT at 40 and 60 mg/m² doses. Two patients had grade 3 febrile neutropenia at dose 80 mg/m², and thus, the final recommended dose was 60 mg/m². Other patients underwent IP paclitaxel and mFOLFOX6 without serious adverse events. Among 5 patients who had second-look diagnostic laparoscopy, 4 patients had a decrease in PCI score. Cytology was converted to negative in 4 out of 5 patients (80.0%). Three patients received total gastrectomy after an average of 8.3 cycles. **Conclusion:** The biweekly regimen of IP paclitaxel and mFOLFOX6 is safe, and the recommended dose for a phase II trial is 60 mg/m².

Keywords: gastric cancer, peritoneal metastasis, intraperitoneal chemotherapy

PP-0149 Comparison of the Influence of COVID-19 on the Training of Current Fellows and Recent Graduates of the Accredited Institution of the Philippine Society of Gastroenterology

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Background/Aims: The coronavirus disease 2019 (COVID-19) pandemic has virtually affected all facets of life. Significantly, this created challenges to the healthcare system worldwide, leading to changes in the usual operations of medical practices, hospitals, and academic health institutions.

Methods: The survey consists of a total of 17 questions. The fellows-in-training will answer all 17 questions, while only four will be allocated to the fellows who already finished the program. The primary investigator will distribute the questionnaire via electronic mail. **Results:** Of the 139 eligible participants, only 84 (60%) responded to the survey. Half (50%) of the respondents were graduates of the fellowship program, and the other half were current fellows-in-training. Expectedly, the median patient and procedure counts are significantly higher in the graduate group than current fellows-in-training. In contrast, the median number of conferences attended by the current fellows-in-training is considerably higher than recent graduates. There is no evidence to conclude that the median Generalized Anxiety Score **Conclusion:** The number of patients both in- and outpatients, and endoscopic procedures were strongly reduced. However, symposiums and webinars definitely outnumbered the conferences of the recent graduates. The anxiety level may not differ much among the participants but most of the present fellows had their apprehensions about the different aspects of their training/practice specially the fear of being infected by the virus and/or infecting a family member.

Keywords: Covid-19, Gastroenterology training

PP-0150 The clinical characteristics of spontaneous bacterial peritonitis (SBP) and comparison between community SBP (C-SBP) and nosocomial SBP (N-SBP)

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Background and Aim: SBP is an important watershed with grave prognosis in decompensated cirrhosis. We aimed to study the clinical features, type of organism, and outcome of SBP in a transplant tertiary liver center. **Methods:** We retrospectively analyzed the electronic medical data of consecutive cirrhotic with clinically suspected SBP admitted under our care between January 2017 and December 2019. Bedside inoculation of ascites fluid into the blood culture bottles was performed. SBP was defined as polymorphonuclear cell count $> 250 \text{ cells/mm}^3$ or positive culture from the ascites fluid. N-SBP was defined as SBP diagnosed more than 48 hours after hospitalization. **Results:** 36 among 489 cirrhotics with 45 episodes of SBP were analyzed. Incidence of SBP was 6.2%. Their mean age was 58.8 ± 9.3 years with 63.9% males. Hepatitis B and C are the commonest etiology of cirrhosis followed by ethanol. The mean MELD-Na score was 24.7 ± 6.3 , 66.7% were Child Pugh Score (CPS) C, and 8.3% had ACLF. N-SBP accounts for 20% of SBP cases, more commonly associated with multi-drug resistant organism (MDRO) than C-SBP ($p = 0.039$), significantly associated with lower MAP ($p = 0.006$), and required longer length of stay ($p < 0.001$). The 30- and 90-day mortality among SBP patients was 36.1% and 47.2%, respectively. **Conclusion:** N-SBP occurs in about 20% of SBP cases in our center and associated with more resistant organisms, lower MAP, and longer hospital stay.

Keywords: SBP, nosocomial, multi-drug resistant organism

PP-0151 Analysis of potential liver donors in LDLT programme

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Background and Aim: In HKL, evaluation donor for LDLT programme has just started in end of year 2019, and first LDLT was performed in December 2020. We aimed to study the reasons for non-maturation of potential donors at our centre. **Methods:** A retrospective data analysis of all potential living liver donors evaluated at our centre from November 2019 to January 2021 was performed. **Results:** 21 potential donors were evaluated for 18 recipients. 57% of potential donors were male (M = 12, F = 9). All males were father to recipient, and only one 1st degree relative among female donor. Mean age was 37.23, with the eldest of 57 years old. 8 out of 21 (8%) had some knowledge on LDLT and came forward voluntarily to be a donor. Mean BMI was 24.4 in which 6 donors classified as overweight donor (BMI 25–29.9) and 3 had BMI of grade 1 obesity (BMI 30–34.9). 8 (67.7%) out of 12 male donors were found active smoker during initial evaluation. 4 were not willing to stop smoking and contributed to non-maturation donor evaluation. 10 (47.6%) donors were disqualified. Reasons for donor non-maturation include 3 high BMI, 3 donors reluctance including unwillingness to quit smoking, 1 had severe fatty liver based from imaging and 2 had psychosocial issues. Donors older than 50 years and those with BMI over 26 were less likely to be accepted for donation. 11 donors (53.4%) were qualified and completed donor assessment. Of these, 3 was found to have underlying well-controlled hypertension, hyperlipidaemia and subclinical hypothyroidism. **Conclusion:** We conclude that donor reluctance including unwillingness to stop smoking

and high BMI are major reasons for non-maturation of potential into actual donors. Underlying medical conditions were not a major cause of rejection. **Keywords:** living donor transplantation, Malaysia, Hospital Kuala Lumpur, donor selection, donor evaluation

PP-0152 Role of esophagogastroduodenoscopy, colonoscopy, and deep enteroscopy in chronic diarrhea in Thailand

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Background and Aim: While esophagogastroduodenoscopy (EGD) and colonoscopy are recommended investigation in chronic diarrhea patients in Western countries, their benefits have rarely been studied in Asia. Enteroscopy may play a role in the diagnosis of chronic diarrhea as well. The aim is to determine the diagnostic performance of EGD, colonoscopy, and enteroscopy in chronic diarrhea patients. **Methods:** We reviewed the medical records of all patients with chronic diarrhea who underwent EGD or colonoscopy from January 2008 to December 2012 and enteroscopy from January 2008 to December 2018. **Results:** Two hundred and ninety-eight patients were included. The mean age was 53.3 years, and 125 (42%) were male. Of 264 patients undergoing EGD and/or colonoscopy, 137 had diseases with mucosal abnormality, and 127 had diseases with normal mucosa. The sensitivity, specificity, and accuracy for diagnosis of mucosal diseases for EGD were 0.12, 0.99, and 0.59, respectively, and for colonoscopy were 0.89, 0.94, and 0.92, respectively ($p < 0.001$). No patient with normal colonoscopy had positive EGD findings. Forty patients with negative both EGD and colonoscopy underwent deep enteroscopy. The sensitivity, specificity, and accuracy for diagnosis of mucosal diseases were 0.67, 0.93, and 0.83 in 23 patients undergoing push enteroscopy, 0.92, 1.00, and 0.95 in 19 patients undergoing balloon-assisted enteroscopy, and 1.00, 1.00, and 1.00 for patients undergoing capsule endoscopy, respectively. Furthermore, the corresponding values were 0.89, 0.58, and 0.71 for CT abdomen and 1.00, 0.33, and 0.68 for small bowel follow-through. **Conclusion:** In Thailand, where there was no celiac disease, EGD had very low sensitivity for the diagnosis of chronic diarrhea and did not add more diagnostic value to colonoscopy. Enteroscopy, which has the potential to reach the abnormal small bowel segments, should be more considered. Small bowel imaging studies might help to exclude small bowel mucosal disease in patients with clinically severe diarrhea if they were completely normal.

Keywords: diarrhea, enteroscopy, small bowel, EGD, colonoscopy

PP-0153 Analysis between gastroesophageal varices and spleen stiffness measurement using a novel Fibroscan

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Background and Aim: Liver stiffness measurement (LSM) and spleen stiffness measurement (SSM) using standard Fibroscan (liver shear wave frequency: 50 Hz) have been proposed as a non-invasive tests for screening of gastroesophageal varices (GEV) in chronic liver disease (CLD). Recently, a novel spleen-dedicated Fibroscan (spleen shear wave frequency: 100 Hz) has been developed. Spleen mode is adjusted optimal frequency, measurement depths, and stiffness range for spleen. The aim of this study is to evaluate GEV using a novel spleen-dedicated Fibroscan. **Methods:**

123 patients (mean age 68.9). **Results:** GEV were present in 57 (46.3%). The area under the receiver operating characteristic (AUROC) for GEV with LSM@50Hz was 0.717. The success rate was significantly higher in SSM@100Hz than that in SSM@50Hz ($P < 0.05$). The AUROC for GEV with SSM@50Hz or SSM@100Hz was 0.855 or 0.917. In the patients with LSM ?11.8 kPa, who were diagnosed cirrhosis, the AUROC for GEV with SSM@50Hz or SSM@100Hz was 0.850 or 0.920. SSM@100Hz were increased in a stepwise manner from the grade I to III GEV (Kruskal-Wallis test, $P < 0.001$). Correlation coefficient between HVPG and SSM was 0.750 ($P < 0.05$). **Conclusion:** SSM with the Fibroscan630 is a useful non-invasive test in evaluating portal hypertension and useful method for avoiding esophagogastroduodenoscopy. These results have to be validated in another population.

Keywords: spleen stiffness, gastroesophageal varices

PP-0154 Genotype and serotype analysis on potential hepatitis B virus as a candidate sequence for hepatitis B vaccine based on immunoinformatics

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Background and Aim: Currently, there are 10 types of hepatitis B virus genotypes, from A to J, and 4 types of serotypes, namely, adw, adr, ayw, and ayr. This study aims to determine the genotype and serotype of the hepatitis B virus that has potential as a hepatitis B vaccine candidate. One effective method at present is bioinformatics, a multidisciplinary web-based biological science that can explore various sequences and see phylogeny.

Methods: The first stage is the collection and selection of nucleotide DNA sequences or hepatitis B virus amino acids. All data on nucleotide DNA sequences and hepatitis B virus amino acids with the target genotype and serotype are accessed and collected from GenBank. Next, a kinship tree is made. This kinship tree is designed with multiple alignments, phylogeny, and tree viewers using phylogeny.fr. **Results:** The data obtained show that there are 43 sequences with the same subtype, Adw, but the genotype and distribution of the spread of hepatitis B virus are different. Genotype A originates from Somalia (Africa) and the Philippines (Asia); genotype B originates from Indonesia and China. Genotype C explains that genotype C is found around South Asia and East Asia, genotype H obtained information from America and Mexico, and genotype I originates from China. **Conclusion:** Sequence data that can be candidates for hepatitis B vaccine design are hepatitis B virus genotype B with subgenotype B3 and genotype C with subgenotype C6 for the scope of Indonesia, while for the scope of the world obtained the potential of the Adw serotype.

Keywords: genotype and serotype, HBV vaccine, immunoinformatics

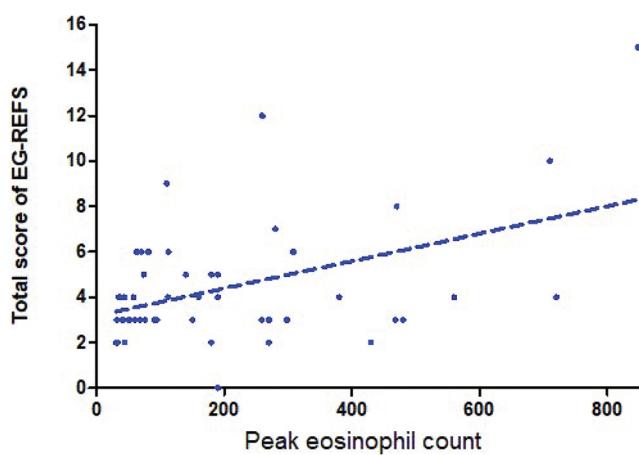
PP-0155 Evaluation of endoscopic and clinicopathologic features of eosinophilic gastritis in Korea following Western consensus guideline

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Background and Aim: Recently, an endoscopic activity assessment and scoring system for eosinophilic gastritis (EG) has been proposed in Western consensus group. The aim of this study was to validate Western EG scoring system by analysis of the endoscopic and clinicopathological characteristics of EG in Korea. **Methods:** We retrospectively reviewed 223,990 gastric biopsies between 2005 and 2019 at a tertiary care center. We diagnosed EG on the basis of ?30 eosinophils/high-power field (HPF), upper gastrointestinal symptoms, and peak eosinophil count (PEC), and the Eosinophilic Gastritis Endoscopic Reference System (EG-REFS) including features of erosion/ulceration, granularity, raised lesions, erythema, friability, fold thickness, and pyloric stenosis. Additionally, we performed immunohistochemical analysis for tryptase to quantify mast cells. **Results:** We diagnosed EG in 49 patients (32 men and 17 women; median age: 54.0 years; interquartile range [IQR] 35.0–62.0 years) who presented with symptoms, including epigastric pain (32.7%) and nausea/vomiting (20.4%). The median PEC was 113.0 (IQR 59.0–275.0) per HPF. Notable histopathological findings included sheets (aggregate of ?20 eosinophils) in 26 cases (53.1%) and abscess formation (aggregate of ?50 eosinophils) in 6 cases (12.2%). The median peak mast cell count was 24.0 (IQR 15.25–29.75) per HPF. The median total score of EG-REFS scores was 4.0 (IQR 3.0–5.5) spanned from 0 to 15. The total score of EG-REFS was correlated with PEC ($r = 0.293, p = 0.041$; Figure 1). **Conclusion:** The newly developed EG-REFS scoring system correlated well with histological severity in the Korean EG patients. A high suspicion of EG is warranted when patients have unexplained gastrointestinal symptoms and abnormal endoscopic findings.

Keywords: eosinophilic gastritis, endoscopy, allergy



PP-0156 Effect of propofol sedation during upper gastrointestinal endoscopy in cirrhotics and utility of psychometric tests, inhibitory control test and critical flicker frequency in assessment of recovery from sedation

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Background and Aim: Minimal hepatic encephalopathy (MHE) impairs health-related quality of life and predicts overt hepatic encephalopathy (HE) in cirrhotic patients. Cirrhotics are at increased risk of development of complications related to sedation. Aim: To study effect of propofol sedation during upper gastrointestinal (UGI) endoscopy in cirrhotics and utility of psychometric tests, inhibitory control test (ICT) and critical flicker frequency (CFF) in assessment of recovery from sedation.

Methods: 204 cirrhotic patients were taken to assess the effect of propofol sedation during UGI endoscopy. Out of 100 cirrhotic patients, 49% (49 patients) were diagnosed as MHE on the basis of psychometric tests. All patients underwent CFF test, ICT and combination of psychometry (NCT A,B); digit symbol test (DST), line tracing test (LTT) and serial dotting test (SDT) at baseline. CFF and ICT done at 30 min and repeated every 30 min for 2 hr. Psychometry repeated at 2 hr. **Results:** 125/204 cirrhotics (61%) had MHE before the endoscopy. In propofol group, there was no significant deterioration in psychometry. Significant deterioration from baseline was seen in CFF at 30 min (38.8 ± 2.3 Hz, $p = 0.001$) and 1 hr (39.2 ± 2.4 Hz, $p = 0.001$) but no difference thereafter. Cirrhotics with MHE had significantly higher lures (22 ± 7.8 vs 11 ± 5.6) and lower target response compared with controls. **Conclusion:** Propofol sedation for UGI endoscopy is safe and associated with improved recovery in cirrhotics. CFF is less time consuming, easy to perform, more sensitive and more specific than ICT to diagnose MHE. Keywords: MHE—minimal hepatic encephalopathy, ICT—inhibitory control test, CFF—critical flicker frequency.

Keywords: hepatic encephalopathy, inhibitory control test, critical flicker frequency

PP-0157 Duodenal neoplasm: What's rare?

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Background and Aim: Duodenal neoplasms are uncommon, and the predominant histological type is adenocarcinoma. Other less common histology includes lymphoma and carcinoid. These neoplasms often have similar clinical, radiologic, and morphologic features making the distinction difficult without histopathology examination. **Methods:** Case 1—A 36-year-old lady presented with lethargy and significant weight loss. Her BMI was 18 kg/m^2 with no other remarkable physical findings. She had anemia (Hb 8 g/dL) with significant raised inflammatory markers (ESR 116 mm/hr and CRP 130.2 mg/L). Tumor markers were normal. Her US abdomen showed multiple enlarged nodes. OGDS revealed a huge ulcerated mass at the second part of the duodenum. This finding was later coincided with the CT image of thickened duodenal wall showing poor fat plane with the adjacent head of pancreas. The histopathological examination of the duodenal mass confirmed diffused large B cell lymphoma (non-GCB subtype). She was referred to hematologist and was commenced on chemotherapy (R-CHOP). **Results:** Case 2—A 33-year-old lady presented with anemic symptoms, upper abdominal pain, and significant

weight loss for past 2 months. She was pale, not jaundice, with epigastric tenderness. She had microcytic hypochromic anemia (Hb 4.7 g/dL). Liver function and other laboratory parameters were within normal range. An emergency OGDS showed a mass at the second part of the duodenum, and further examination with a side viewing duodenoscope confirmed its ampullary origin. Targeted biopsies of the ampullary mass revealed neuroendocrine tumor, grade 1 (Ki67 proliferative index < 3%). CT abdomen 1 week later showed the ampullary mass causing upstream biliary dilatation. She was referred to surgical team, and Whipple procedure was done. **Conclusion:** OGDS readily picks up the presence of duodenal neoplasm up to the second part of duodenum. Further examination including duodenoscopy, EUS, CT, or MRI may be useful to delineate and stage the duodenal neoplasm. However, histopathology is required for the definite diagnosis before determining subsequent treatment strategy.

Keywords: duodenal neoplasm, lymphoma, neuroendocrine tumor, ampullary neoplasm

PP-0158 Endoscopic retrograde appendicitis therapy (ERAT) vs. appendectomy for acute uncomplicated appendicitis: a prospective multicenter randomized clinical trial

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Background and Aim: To compare the efficacy and feasibility of endoscopic retrograde appendicitis therapy (ERAT) and appendectomy for treating acute uncomplicated appendicitis. **Methods:** This was a prospective multicenter randomized trial in which consecutive patients were randomized (1:1) to ERAT or appendectomy. The outcomes from 2 arms were evaluated and compared with regard to success rate, procedure time, postoperative pain, postoperative analgesic use, and time to soft diet intake, duration of hospital stay, postoperative complications, and recurrence rate.

Results: From August 2013 to December 2015, 110 patients (55 in each group) with acute uncomplicated appendicitis age ranged from 19 to 68 years (mean 37.5 ± 14.5 years). **Conclusion:** ERAT provides a feasible, safe, and effective alternative approach to management of acute uncomplicated appendicitis. Its advantages include no skin wound, organ preservation, reduced postoperative pain, early food intake, quick recovery, fewer postoperative complications (infections, fistula, abscess, etc.), and short hospital stay. The unsolved problem is recurrences of appendicitis which remains to be solved.

Keywords: appendicitis therapy, acute appendicitis, ERAT, endoscopic therapy, appendectomy

PP-0159 Evaluation of therapeutic efficacy of ustekinumab in Crohn's disease—a single-center retrospective observational study

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Background and Aim: Ustekinumab (UST) is a type of biologics for Crohn's disease (CD), which is newly used in China. As the sake of expensive cost of UST, the number of CD patients who were administrated UST is relatively small. Until now, we still lack large clinical data to evaluate its therapeutic efficacy. We aimed to assess the short-term efficacy of UST in treatment of CD. **Methods:** We retrospectively collected data of CD patients from March 1, 2020, to October 30, 2020, to

descriptively analyze clinical and endoscopic responses at 8 and 16/20 weeks after first use of UST. **Results:** A total of 36 patients were enrolled, with 63.9% (23/36) of male, average age of 29.5 ± 7.6 years, average disease duration of 6.5 ± 4.9 years. A majority of patients were A2 (77.8%), L3 (82.1%), and B1 (39.5%) according to the Montreal classification. 66.7% (24/36) patients had perianal disease, 27.8% (10/36) had extraintestinal manifestation, and 63.9% (23/36) patients had previous surgeries. More than half of the patients had undergone treatment of glucocorticoids (55.6%), immunosuppressants (72.2%), and biologics (91.7%). 92.9% patients reached clinical remission while 42.9% had clinical response at 8 weeks after first use of UST. 71.4% patients reached clinical remission while 42.9% had clinical response at 16/20 weeks. Only 10 patients had undergone endoscopy examination at the time of 16/20 weeks. Endoscopic remission rate was 40.0% (4/10) while endoscopic response rate was 90.0% (9/10) at 16/20 weeks. Data of Alb and HGB were increased while CRP was decreased at 8 and 16/20 weeks compared with baseline values ($P < 0.05$). **Conclusion:** UST effectively improved clinical symptoms and ameliorated endoscopic manifestations in the short-term treatment of CD. Large multicenter data are needed to further evaluate long-term efficacy of UST on refractory CD patients.

Keywords: Crohn's disease, efficacy, ustekinumab, short term

PP-0160 The effect of nafamostat mesilate infusion after ERCP for post-ERCP pancreatitis

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Background and Aim: Nafamostat mesilate decreases the incidence of pancreatitis after endoscopic retrograde cholangiopancreatography (ERCP). However, no studies have administered nafamostat mesilate after ERCP. So we investigated if the infusion of nafamostat mesilate after ERCP can affect the post-ERCP pancreatitis (PEP) in high-risk patients. **Methods:** In a tertiary hospital, 350 high-risk patients of PEP were reviewed retrospectively. Among them, 201 patients received nafamostat mesilate after ERCP. Patient-related and procedure-related risk factors for PEP were collected. We performed a propensity score matching to adjust for the significant different baseline characteristics. The incidence and severity of PEP were evaluated according to the infusion of nafamostat mesilate. The risk factors of PEP were also analyzed by multivariate logistic regression. **Results:** The baseline characteristics were not different after the matching. The PEP rate (17.4% vs. 10.3%, $P = 0.141$) was insignificant. Among the PEP patients, mild PEP was significantly higher in the nafamostat mesilate group (85.7% vs. 45.5%, $P = 0.021$). Only one patient in the nafamostat mesilate group developed severe PEP. Young age (odds ratio [OR] 2.69, 95% CI 1.28–5.66, $P = 0.009$) and female sex (odds ratio [OR] 3.25, 95% CI 1.54–6.86, $P = 0.002$) were risk factors associated with PEP. **Conclusion:** The administration of nafamostat mesilate after ERCP in high-risk patients was not effective in preventing PEP but may attenuate the severity of PEP.

Keywords: nafamostat, endoscopic retrograde cholangiopancreatography, post-ERCP pancreatitis

PP-0161 The value of GNAS mutation testing in the workup of incidental pancreatic cysts

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Background and Aim: Incidental pancreatic cysts are found in 10% of patients who underwent computed tomography (CT) or magnetic resonance imaging (MRI). Amongst the common types of pancreatic cysts, intraductal papillary mucinous neoplasms (IPMNs) and mucinous cystic neoplasms (MCNs) are often a cause for concern due to their potential to progress to malignancy. Currently, workup for pancreatic cysts include clinical presentation, radiological imaging and cytologic findings from aspirates of the cysts. Increased understanding of the molecular landscape of pancreatic cancers has made assessment of KRAS and GNAS as standard of care. In this study, we assess the value of GNAS sequencing in identifying mucinous pancreatic neoplasms. **Methods:** We performed a mutational assessment of KRAS and GNAS for 26 patients who underwent fine-needle aspiration for their pancreatic cysts from 2016 to 2019. Sanger sequencing for KRAS (exon 2 and 3) and GNAS (exon 8 and 9) was done. This was correlated to the clinical impression as obtained from the clinicopathologic characteristics of the patients. **Results:** KRAS, with an analytical sensitivity of 83% for mucinous pancreatic neoplasms, had a specificity of 71%. GNAS had an analytical sensitivity of 50% and analytical specificity of 86%. Together, KRAS and GNAS showed an analytical sensitivity of 42% and specificity of 100%. In identifying IPMNs, KRAS and GNAS showed an analytical sensitivity of 50% and analytical specificity of 100%. **Conclusion:** Although a combined GNAS and KRAS assessment was unable to identify all mucinous pancreatic neoplasms, GNAS mutations were identified only in IPMNs and MCNs, and its identification will lead to greater diagnostic confidence, given the high specificity of GNAS for pancreatic mucinous neoplasms in this cohort.

Keywords: pancreatic cyst, GNAS, KRAS, mucinous cystic neoplasms, pancreas

PP-0162 Urinary neutrophil gelatinase-associated lipocalin level correlates with severity of liver steatosis and the presence of diabetes mellitus in obese patients

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Background and Aim: Lipopolysaccharides play role in the development of insulin resistance and induce expression of neutrophil gelatinase-associated lipocalin (NGAL) in adipose tissue and liver. We aimed to evaluate association between urine NGAL level and amount of liver fat in obese patients with or without type 2 diabetes mellitus (T2DM). **Methods:** We collected uNGAL and biochemical parameters in obese patients (body mass index (BMI) $> 25 \text{ kg/m}^2$). Amount of liver fat was determined by controlled attenuated parameter (CAP). Patients with uncontrolled DM ($\text{HbA1C} > 9\%$), microalbuminuria or had chronic kidney disease (glomerular filtration rate (GFR) $< 60 \text{ ml/min}/1.73 \text{ m}^2$) were

excluded. Pearson correlation analysis was used to evaluate association between uNGAL and metabolic parameters. Subgroup analysis was performed among patients with ($n = 36$) and without ($n = 99$) T2DM. **Results:** There were 135 patients in the study (59.3% were female). Mean age and BMI were 50.3 ± 12.6 years and 31.6 ± 7.2 kg/m 2 , respectively. Mean uNGAL level was 21.3 ± 50.5 ng/ml, and mean CAP was 319.1 ± 47.3 dB/m. Of all, 3 (2.2%), 9 (6.7%), 20 (14.8%) and 103 (76.3%) patients had no, mild, moderate and severe degree of steatosis, respectively. There was no significant correlation between uNGAL level and current GFR ($p = 0.727$). Urine NGAL level was not found correlated with BMI ($p = 0.748$), triglyceride ($p = 0.613$), SGPT ($p = 0.259$) and liver fibrosis by transient elastography ($p = 0.510$). By all obese patients, there was a negative correlation between uNGAL level and CAP ($r = -0.265$, p -value = 0.002). After subgroup analysis, we found that patients with T2DM had a negative moderate correlation between uNGAL and CAP ($r = -0.509$, $p = 0.007$) whereas uNGAL level among patients without T2DM remained weakly correlated with CAP ($r = -0.244$, $p = 0.020$). **Conclusion:** In obese patients with normal renal function, urine NGAL levels correlated with degree of liver steatosis and the presence of T2DM. **Keywords:** NGAL, obesity, steatosis, diabetes mellitus, insulin resistance

PP-0163 Comparing sequential regimen 10–14 days between omeprazole and non-omeprazole-PPIs based for HP eradication in Thai patients

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Background and Aim: Proton pump inhibitor (PPIs)-based sequential therapy had shown high efficacy of *Helicobacter pylori* (HP) eradication. Concerning high prevalence of rapid metabolizer CYP2C19 genotype in Thailand, omeprazole which was metabolized via CYP2C19 might cause a lower efficacy. Our objective was to assess the recommendation from Thailand consensus on HP eradication in 2015 for comparing the efficacy of omeprazole versus non-omeprazole-PPI-based sequential regimens. **Methods:** A retrospective study of HP infection patients who received 10- to 14-day sequential therapy as a first line of treatment consisted of PPIs high dose plus amoxicillin 2,000 mg per day for the first 5–7 days, followed by PPIs plus clarithromycin 1,000 mg per day and metronidazole 1,200 mg per day for another 5–7 days. Post-treatment status was assessed by urea breath test after eradication therapy 4 weeks later. The eradication rate was compared omeprazole based versus non-omeprazole-PPIs based and eradication rate of 10- versus 14-day sequential therapy with analyzing the cost of each regimen. **Results:** A total of 592 patients treated with sequential therapy between January 2018 and March 2020. The eradication rates of omeprazole- and non-omeprazole-PPIs-based sequential therapy were 90.9% (358/394) and 80.3% (159/198), respectively ($p < 0.01$). The eradication rates of omeprazole-based 10- and 14-day sequential

therapy were 90.0% (153/170) and 91.5% (205/224), respectively ($p = 0.605$). The eradication rates of non-omeprazole-PPIs-based 10- and 14-day sequential therapy were 79.3% (119/150) and 83.3% (40/48), respectively ($p = 0.544$). The cost of omeprazole based for 10-day regimen was 4.88 USD and 14-day regimen was 6.88 USD which was the lowest price among each regimen. **Conclusion:** Regarding the high eradication rate on HP infection and the cost-effectiveness of 10-day sequential omeprazole regimen, we recommend this regimen as a first-line regimen for HP eradication in Thailand and may be considered as a first-line regimen for any limited resources countries.

Keywords: omeprazole, sequential therapy, *Helicobacter pylori* eradication

PP-0164 Endoscopic and radiological treatment for recurrent gastroesophageal variceal bleeding after liver transplantation

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Background and Aim: Gastroesophageal variceal bleeding (GVB) may complicate liver transplantation and result in graft loss and mortality. Endoscopy and interventional radiology can be possible treatment option, but their effectiveness and long-term outcomes remain undefined. This study was undertaken to analyze the characteristics of posttransplant late GVB and evaluate efficacy of endoscopic and radiological therapies.

Methods: A retrospective study involving 13 liver recipients with GVB between February 2011 and September 2018 was performed. Endoscopy and interventional radiology were implanted. The occurrence of subsequent adverse events including rebleeding and thrombosis was followed up. The applied interventions' effects on graft and patient survival were evaluated. **Results:** The median duration between liver transplantation and the first bleeding episode was 78.43 months. The patients underwent endoscopy and interventional radiology, mainly endoscopic esophageal varix ligation and gastric varix cyanoacrylate injection or interventional embolotherapy including percutaneous transhepatic variceal embolization. After intervention, 10/13 cases of recurrent bleeding were reported. Their median bleeding-free time was 122.5 days. 2 patients suffered graft dysfunction and underwent retransplantation; 1 patient developed hemorrhagic shock and ultimately died. Graft and overall survival rates were 76.92% and 92.31%, respectively, during a median follow-up time of 33.23 months.

Conclusion: Endoscopic and radiological treatment for late GVB has high technical success and also high graft and patient survival rates in transplant recipients, but the rebleeding risk is relatively high. Therefore, endoscopy and interventional radiology can be used as an early hemostasis method but not the optimal therapy for posttransplant late GVB, and more treatments need to be evaluated.

Keywords: gastroesophageal variceal bleed, liver transplantation, portal vein thrombosis, endoscopic treatment, interventional radiology

PP-0165 The effect of fermentable, oligosaccharides, disaccharides, monosaccharides, and polyols (FODMAPs) diet on upper gastrointestinal (GI) function in patients with overlapping irritable bowel syndrome (IBS) and gastroesophageal reflux disease (GERD)

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Background and Aim: Overlapping IBS-GERD is common. The benefits of low FODMAPs diet on GERD are incompletely understood. Aims: To evaluate the effects of FODMAPs on transient lower esophageal sphincter relaxation (TLESR), intestinal gas production, and post-prandial GERD/GI symptoms in overlapping IBS-GERD patients.

Methods: Eight patients (6 F, age 57) **Results:** TLESR after a lunch of high FODMAPs diet was significantly higher than low FODMAPs (5.0

Conclusion: High FODMAPs diet induced more TLESR, GER, and upper GI symptoms severity compared to low FODMAPs diet in patients with overlapping IBS-GERD. These high FODMAPs effects associated with more intestinal gas production. Thus, FODMAPs dietary modification might be benefit on upper GI symptoms in overlapping IBS-GERD patients.

Keywords: non-constipation IBS, GERD, low FODMAPs, high FODMAPs, intestinal gas

PP-0166 SIRT3 promotes the development of esophageal squamous cell carcinoma by regulating HK2 through the AKT signaling pathway

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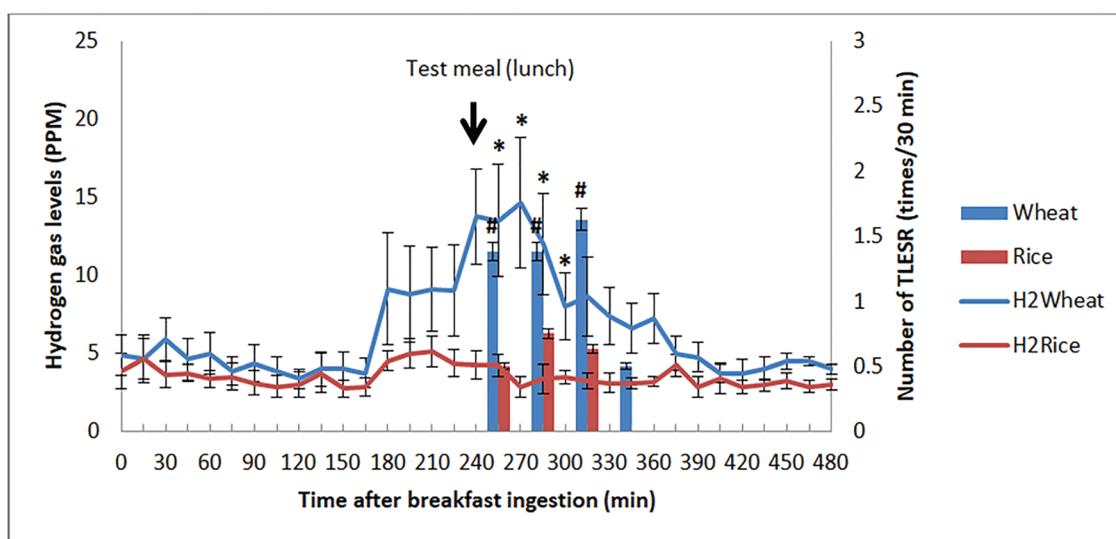
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Background and Aim: Sirtuin-3 (SIRT3) is a mitochondrial NAD+-dependent deacetylase that plays an important role in cellular metabolism and oxidative stress. Studies display that SIRT3 acts as a tumor suppressor or oncogene in various cell types, which is closely related to tumor occurrence and development. However, the molecular mechanisms are complex. Researchers found that high expression of SIRT3 was associated with poorer prognoses in esophageal squamous cell carcinoma (ESCC) patients. Nevertheless, the cellular metabolism and oncogene roles of SIRT3 in ESCC are still undefined. In the present study, we explored whether SIRT3 regulates the proliferation and migration of ESCC cells and investigated the mechanisms underlying the oncogene role of SIRT3. **Methods:** siRNA was used to transfet Eca109 cells and downregulate SIRT3. The proliferation and migration of Eca109 cells were examined by a CCK-8 assay, colony formation assay, wound healing, and transwell assay. Quantitative real-time PCR (qRT-PCR) and western blot analysis were used to detect the expression of SIRT3, HK2, AKT, and p-AKT. **Results:** Functional assays showed that downregulation of SIRT3 could inhibit the proliferation and migration of ESCC cells in vitro. Reduced SIRT3 expression downregulated the level of HK2 and inhibited AKT activation in ESCC. These results indicated that SIRT3 may promote ESCC development and progression by regulating HK-2 through the AKT signaling pathway.

Conclusion: SIRT3 may promote esophageal squamous cell carcinoma proliferation and migration by regulating HK-2 through the AKT signaling pathway.

Keywords: SIRT3, esophageal squamous cell carcinoma, energy metabolism, HK2, AKT

Figure1. The temporal relationship between the number of TLESR per 30 minutes and breath H₂ concentrations



* , # = P < 0.05 wheat vs. rice

PP-0169 Endoscopic closure of gastro-intestinal defects with over-the-scope clips: long-term results and clinical implications

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Background and Aim: Management of gastro-intestinal (GI) perforations and fistulae are challenging. The endoscopic application of over-the-scope clips (OTSCs) provides a non-surgical minimally invasive alternative. The aim of this study is to present our clinical experience of using these OTSCs for closing GI perforations and fistulae. **Methods:** Between January 2016 and March 2021, 55 patients underwent OTSC application for GI bleed and closure of GI defects by an experienced endoscopist at our center. The Ovesco clips (Tübingen, Germany) were used in 14 patients for closure of GI perforations or fistulae. The ‘traumatic’ t-type model was used. **Results:** Out of 55 patients who underwent Ovesco clip application, 14 were used to close GI defects. Ten patients had GI perforations, while four patients had GI fistulae. The size of defects ranged from 12 to 20 mm. Technical success in terms of clip adherence and defect closure was achieved in all 14 patients. Clinical success (feed tolerance, bowel movements and clinical improvement) were seen in 12 out of the 14 patients. In these two patients, although technical success was achieved, clinical improvement was not seen due to the severity of underlying disease and poor nutritional status who ultimately succumbed to the illness. A mean

follow-up of 26 months was accomplished, and no complications were noted. **Conclusion:** In conclusion, the Ovesco clips have major advantages of safe, easy and minimally-invasive deployment avoiding major surgeries. OTSCs are now being considered as a primary approach for closing GI defects up to 20 mm and are preferred over surgery.

Keywords: Ovesco clip, over-the-scope clips, GI defects, perforation and fistula, endoscopic management

PP-0170 Diagnostic utility of Renal Resistive Index (RRI) in predicting type of acute kidney injury (AKI) in decompensated cirrhosis

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Background and Aim: AKI is a frequent complication associated with significant morbidity and mortality in cirrhotic patients. Serum creatinine is a poor marker of renal function in patients with cirrhosis. Newer biomarkers have shown promise for differentiating types of AKI in patients with cirrhosis, but they are not widely available. Therefore, we aimed to study the utility of RRI in predicting type of AKI in decompensated cirrhosis patients. **Methods:** A prospective study was conducted in hospitalized patients with decompensated cirrhosis and AKI. Baseline

Sr. No.	Age	Sex	Disease	Indication	Technical Success	Clinical Improvement	Discharged / Expired	Adverse Events
1	30	M	Esophageal Perforation due to arrow injury	Perforation	Yes	Yes	Discharged	None
2	63	M	Duodenal Perforation - s/p right nephrectomy	Perforation	Yes	Yes	Discharged	None
3	62	F	Duodenal Perforation - post EUS	Perforation	Yes	Yes	Discharged	None
4	60	F	Colonic perforation - post cholecystectomy	Perforation	Yes	Yes	Discharged	None
5	39	M	Duodenal Perforation - post ERCP	Perforation	Yes	Yes	Discharged	None
6	50	M	Lower esophageal tear	Perforation	Yes	Yes	Discharged	None
7	34	F	Gastric Fistula - s/p sleeve gastrectomy	Fistula	Yes	Yes	Discharged	None
8	46	M	Lower esophageal tear	Perforation	Yes	Yes	Discharged	None
9	70	F	Gastro-cutaneous Fistula - Post PEG	Fistula	Yes	No	Expired	None
10	80	M	Post ERCP duodenal lateral wall tear	Perforation	Yes	Yes	Discharged	None
11	56	M	Duodenal Perforation	Perforation	Yes	Yes	Discharged	None
12	67	F	Rectal anastomotic site	Fistula	Yes	Yes	Discharged	None
13	38	F	Rent in stomach wall	Perforation	Yes	Transient	Expired	None
14	22	M	Duodenal fistula due to stent migration	Fistula	Yes	Yes	Discharged	None

Table no. 1: Summary of the patient characteristics

demographic profile and biochemical parameters were recorded. RRI at baseline was obtained. Patients were treated according to standard of care and clinically adjudicated into 3 types: pre-renal AKI, HRS (hepatorenal syndrome) and ATN (acute tubular necrosis). **Results:** We included 47 patients; 27 (57.4%) had pre-renal AKI, 10 (21.3%) had HRS-AKI and 10 (21.3%) had ATN. Mean age was 48.9 ± 12.46 years, 87.2% patients were males and alcohol was the most common etiology (57.4%). Median sCr was 2.05 (1.5–9.2). Mean MELD was 28.86 ± 6.16 , and median Child score was 12. Median bilirubin was 3.550 (0.4–26.5), and mean INR was 1.88 ± 0.565 . Mean RRI was calculated to be 0.649 ± 0.067 . Median RRI in patients with pre-renal AKI, HRS and ATN was 0.633, 0.642 and 0.677, respectively ($p = 0.184$). **Conclusion:** In patients with decompensated cirrhosis with AKI, RRI was not found to be useful to differentiate between types of AKI. However, this needs to be validated with a larger sample size.

Keywords: renal resistive index, cirrhosis, acute kidney injury

PP-0171 Deep learning-based computer-aided diagnosis for the classification of EUS-guided probe-based confocal laser endomicroscopy videos on pancreatic cystic lesions

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Background and Aim: EUS-guided probe-based confocal laser endomicroscopy (nCLE) is a novel tool for optical diagnosis of pancreatic cystic lesions (PCL). Teaching and learning epithelial and vascular patterns on nCLE remain challenging. Our aim is to develop a deep learning-based CAD program. **Methods:** A total of 31 pathology-confirmed nCLE videos were obtained retrospectively from the image archival. PLC included

Variables	N=47
Age (years)	48.90 ± 12.46
Sex (Male) [n(%)]	41 (87.2)
Cause of Cirrhosis	
Alcohol	25 (53.2)
HCV	9 (19.1)
HBV	6 (12.8)
Others	7 (14.9)
Serum bilirubin (mg/dL)	3.55 (0.4-26.5)
INR	1.88 ± 0.565
Platelets ($\times 10^9/L$)	107 ± 69
Blood Urea (mg/dL)	85 (32-232)
sCr (mg/dL)	2.05 (1.5-9.2)
Serum Sodium (mEq/L)	131.48 ± 8.09
MELD Score	28.86 ± 6.16
Total protein (g/dL)	6.49 ± 0.95
Serum albumin (g/dL)	2.40 ± 0.558
Child-Pugh	
Score	12 (7-14)
Class (A/B/C)	0/14/33
Type of AKI	
Pre-renal	27 (57.4)
HRS	10 (21.3)
ATN	10 (21.3)
Renal resistive index	0.649 ± 0.067
Continuous variables reported as mean ± SD or as median (range)	
Discrete variables reported as absolute and relative frequency	

IPMN, MCN, SCN, NET, and pseudocyst. Images from 20 videos constituted the training set (IPMN 2 videos, MCN 2, SCN 6, NET 4, pseudocyst 6, total 15,893 images), and the rest 11 videos as the test set (IPMN 3, MCN 2, SCN 2, NET 2, pseudocyst 2, total 3,737 images). We applied image rotation for data augmentation. Images were preprocessed with contrast limited adaptive histogram equalization and local ternary pattern methodology. Subsequently, the final trained deep learning model was tested by the testing set video. The model processed each image frame of the testing videos and gave PCL classification frame by frame. **Results:** Our results revealed PCL-specific classification accuracy as 96.23%, 99.73%, 100%, 94.7%, and 98.05% for IPMN, MCN, SCN, NET, and pseudocyst, respectively, on a frame-by-frame basis. Interestingly, NET had the lowest sensitivity (65.11%), often mistaken as IMPN or pseudocyst by the model. Specificity was more than 95% across five PCL types. Meanwhile, IPMN videos took less computation time (0.045 second/frame) than other types (0.067 second/frame). **Conclusion:** Our study demonstrated the potential of deep learning-based computer-aided diagnosis on nCLE images for PCL. More videos are required for further validation.

Keywords: endoscopic ultrasound, confocal laser endomicroscopy, pancreatic cystic lesion, computer-aided diagnosis, deep learning

PP-0172 Endoscopic evaluation of patients presenting with dysphagia at tertiary care hospital in Karachi

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Background and Aim: Dysphagia has a significant impact on the quality of life. Diagnosis of dysphagia is important due to its association with morbidity and mortality. Upper gastrointestinal endoscopy is one of the most effective and appropriate tools for the evaluation of patients with dysphagia and to determine the underlying etiology. The prevalence of dysphagia is much high especially in individuals with advancing age. Therefore, we aimed to find out the common endoscopic findings and their frequencies in patients presenting with dysphagia, to conclude definitive diagnosis more evidence based. **Methods:** A prospective, cross-sectional study is being conducted at the Department of Gastroenterology, Liaquat National

Hospital, Karachi. Patients aged 12 years or more with clinical presentation of dysphagia with duration varied one week or more were enrolled for endoscopy who attended gastroenterology clinic. **Results:** A total of 239 patients were enrolled; 120 males (50.2%) and 119 females (49.8%) presenting with dysphagia were studied, and the mean age was 52.67. **Conclusion:** This study analysis concluded that esophageal growth and esophageal stricture are the commonest causes of dysphagia, warranting early diagnosis and management.

Keywords: endoscopy, dysphagia

PP-0173 Safety and feasibility of not suturing gastric non-penetrating perforations secondary to endoscopic full-thickness resection

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Background and Aim: Closure of large lesions located on the upper part of stomach is often technically difficult and time consuming. In addition, some defects do not leak and seal spontaneously under post-operative nasogastric decompression. This study aimed to evaluate the safety and feasibility of not suturing non-penetrating defects after endoscopic full-thickness resection (EFTR). **Methods:** Patients who underwent gastric EFTR for submucosal tumors (SMTs) were recruited prospectively. Participants were enrolled according to the following criteria: (1) SMT was larger than 3 cm in diameter, (2) non-penetrating perforation occurred after EFTR, and (3) defect after EFTR was not closed endoscopically. Patient characteristics, tumor nature, EFTR procedure, post-operative adverse events, and length of hospital stay were evaluated. **Results:** Sixteen patients were included in the final analysis (Figure 1). The mean patient age was 48.5. **Conclusion:** Non-penetrating perforated defects that occur after EFTR spontaneously seal without suturing, providing a safe and reasonable treatment option that saves time and makes EFTR easier and more economical.

Keywords: gastric submucosal tumors, EFTR, gastric perforations, suturing

Table 1 Endoscopic Evaluation of Dysphagia with frequent causes

Endoscopic findings	Frequency	Percent
Esophageal Growth	74	31%
Esophageal Stricture	44	18.4%
Esophageal ulcer	24	10%
Reflux Esophagitis	21	8.8%
Candidiasis	16	6.8%
Normal Examination	15	6.3%
Esophageal web/RIng	15	6.3%
Hiatus Hernia	9	3.8%
Esophageal Polyp	6	2.5%
Achalasia	5	2.1%
Esophageal Spasm	5	2.1%
Eosinophilic Esophagitis	4	1.7%
Esophageal Varices	1	0.4%
Total	n=239	100%

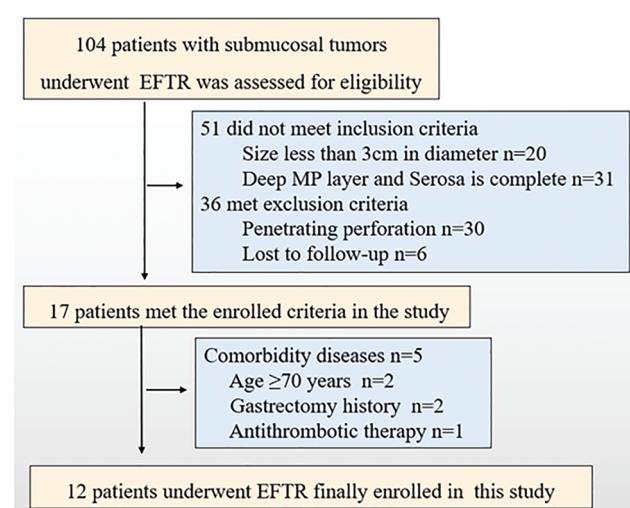


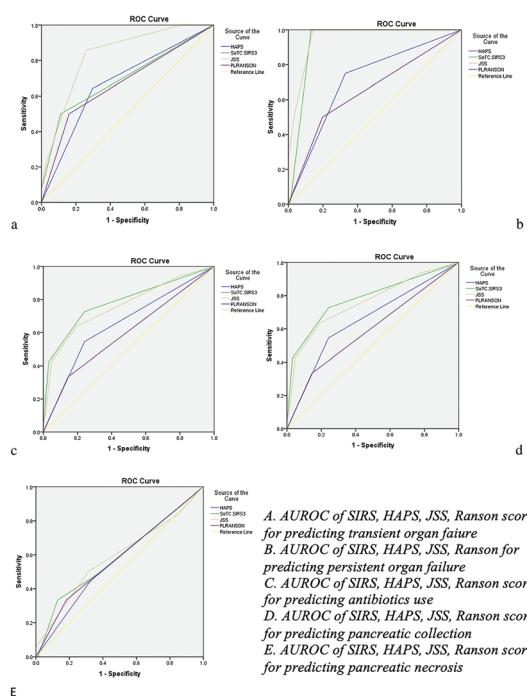
Figure 1: Patient enrollment flowchart.

PP-0174 Validation of clinical risk scores (SIRS, HAPS, JSS) for predicting the severity of acute pancreatitis at Hanoi Medical University Hospital, Vietnam

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Background and Aim: To validate the clinical risk score SIRS, JSS, HAPS for predicting the severity of acute pancreatitis at Hanoi Medical University Hospital during the time from January 2019 to November 2020. **Methods:** Demographic, clinical, biochemistry and radiographic data from 101 patients with AP were retrospectively evaluated. The harmless acute pancreatitis score (HAPS), systemic inflammatory response syndrome (SIRS), Japanese severity score (JSS), Ranson's score, Balthazar score, modified computed tomography severity index (CTSI). The prognostic performance of clinical scoring systems were compared for severity according to the revised Atlanta Criteria 2012. The data were evaluated by calculating the receiver operator characteristic (ROC) curves and area under the ROC (AUROC). **Results:** Out of 101 patients, 61.4% had moderately severe AP and 5.1% had severe AP. Novel parameters (SIRS, HAPS, JSS) have better AUROC than Ranson's score for predicting transient and persistent organ failure. The AUROC for the JSS score was 0.832 with the highest value for predicting transient and persistent organ failure, with a cut-off of JSS ≥ 1.5 , and sensitivity and specificity were 85.7% and 74.1%, respectively. The AUROC for SIRS was 0.783, with the moderate value for predicting antibiotics use. The AUROC for JSS was 0.72, with the moderate value for predicting pancreatic collection, with a cut-off of JSS ≥ 1.5 , and sensitivity and specificity were 43% and 88.5%, respectively. All of the clinical scoring systems weren't good performance for predicting pancreatic necrosis on radiological imaging. **Conclusion:** The



novel parameter (SIRS, JSS, HAPS) might be preferred as early determinants of severity in AP. The novel parameter score might not be suggested for predicting pancreatic necrosis on radiological imaging.

Keywords: acute pancreatitis, prognosis, novel parameters, SIRS, HAPS, JSS, clinical risk score

PP-0175 Endoscopic trans-gastric fenestration

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Background and Aim: Pancreatic fluid collection (PFC) is a common and potentially fatal complication of acute pancreatitis. There are a number of approaches for management of PFCs including endoscopic, percutaneous, or surgical drainage. We previously developed a new endoscopic approach to drain pancreatic fluid collections called endoscopic trans-gastric fenestration (ETGF). The aim of this study was to evaluate the efficacy, safety, and feasibility of ETGF for the management of PFCs. **Methods:** We performed a retrospective analysis of all cases that underwent stentless ETGF for drainage of PFC at the first affiliated hospital of Zhengzhou University and the second affiliated hospital of Harbin Medical University between October 2014 and December 2019. Preoperative symptoms, procedure time, fenestration diameter, blood loss, postoperative fasting time, and the incidence of serious complications (delayed massive hemorrhage, perforation, and abdominal infection) were analyzed. The recurrence and the need for further surgery were also analyzed. **Results:** A total of 27 (20/28, 71.4% men) patients successfully underwent trans-gastric endoscopic fenestration for treatment of PFC. The main presentation in patients who required fenestration was abdominal pain (21/28, 75%), distension (8, 28.6%), fever (maximum temperature 39.1 °C). **Conclusion:** Endoscopic trans-gastric fenestration appears to be feasible, safe, and effective alternative method for the treatment of pancreatic fluid collection adhesive to the gastric wall. However, further prospective randomized controlled study in combination with endoscopic ultrasound-guided stent drainage and surgery are needed before the final recommendations are made.

Keywords: pancreatic fluid collection, endoscopic trans-gastric fenestration, pancreatitis, pancreatic pseudocyst, endoscopic management

PP-0176 Early complications and quality of life improvement following palliative oesophageal stenting across gastro-oesophageal junction

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Background and Aim: Self-expanding metal stents (SEMS) provide enhanced levels of relief and palliation to patients battling with advanced oesophageal cancer. Stenting of lower oesophageal and gastro-oesophageal junctional (GOJ) tumours can lead to stent being placed across the GOJ which can lead to reflux symptoms and risk of aspiration. Even though specialized GOJ stents are developed with anti-reflux valves, these are costly and are not available in resource limited settings. Often conventional SEMS are well tolerated when placed across GOJ and increase quality of

life when combined with lifestyle measures. The objective of this study was to evaluate the placement of conventional SEMS across GOJ in terms of reflux symptoms and quality of life. **Methods:** All patients who underwent oesophageal stenting across GOJ for lower oesophageal and GOJ tumours from January 2020 to January 2021 were included in the study. Placement was confirmed with X-ray. Patients were assessed for early complications, improvement in dysphagia score and quality of life at 24 hours and 1 week following the procedure. **Results:** Out of total 21 patients who underwent oesophageal stenting within the study period, nine patients had undergone stenting across GOJ (42%). All patients had dysphagia score of 4 before stenting. One patient in the GOJ group died on day 2 after procedure from a myocardial infarction. All other patients in the GOJ group reported improvement in dysphagia score to 2 (able to take semi-solid diet), no reflux symptoms and improved quality of life. **Conclusion:** Conventional SEMS placement across GOJ is feasible and improves quality of life in patients with obstructing GOJ tumours.

Keywords: self-expanding metal stent, oesophageal stenting, upper GI endoscopy, oesophageal cancer, GOJ tumours

PP-0177 Pancreaticopleural fistula causing recurrent right-side pleural effusions treated with lateral pancreaticojejunostomy

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Background and Aim: Pancreaticopleural fistula is an uncommon complication of acute or chronic pancreatitis. Pathological process begins with the disruption of the main pancreatic duct. These can cause massive pleural effusions leading to distressing symptoms. **Methods:** A 53-year-old male patient presented with epigastric pain and dyspnoea. Chest X-ray showed a moderate right-side pleural effusion. Contrast enhanced computed tomography (CECT) of the abdomen and chest showed features of chronic pancreatitis with formation of a pseudocyst which was in communication with the posterior mediastinum and right pleural cavity. Pleural effusion was treated with ultrasound scan-guided pigtail catheter insertion and drainage. Drain fluid amylase was over 5000 U/L. Elevated drain fluid amylase levels and CECT imaging findings were in line with formation of a pancreaticopleural fistula. **Results:** As several attempts of ERCP failed

and conservative management failed to completely resolve the effusion over several months, patient underwent exploration of pancreaticopleural fistula and lateral pancreaticojejunostomy. Intraoperative inspection of the anterior surface of the pancreas (Figure 1) revealed the site of pancreatic duct blowout (yellow arrow) and the granulation tissue tract of the fistula (blue arrow). Patient had a smooth post-operative recovery and was discharged home on the seventh postoperative day. Follow-up visits did not reveal any distressing symptoms or pleural effusions. **Conclusion:** Management of pancreaticopleural fistula requires careful patient evaluation and timing of interventions to achieve an optimal outcome. Even though surgery is considered a last resort in the era of advanced therapeutic endoscopy, surgery may be absolutely indicated in some patients with complicated disease.

Keywords: pancreaticopleural fistula, chronic pancreatitis, pancreaticojejunostomy, pancreatic surgery, pleural effusions

PP-0178 Fibroscan findings in patients with fatty liver on ultrasonography

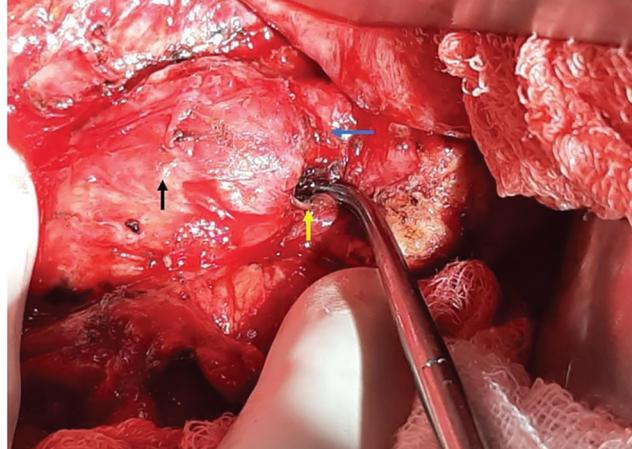
Authors: N. AHMED, L. KAMANI, T. SHAIKH

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Background and Aim: To determine the score of steatosis and fibrosis in asymptomatic patients having fatty liver on ultrasonography. **Methods:** Patients visiting outpatient Department of Gastroenterology, Liaquat National Hospital, Karachi, fulfilling inclusion criteria were enrolled. Written consent, brief history and clinical examination, along with fibroscan were done to stage steatosis and fibrosis. Chi square test was used. P -value < 0.05 was considered as significant. Fibroscan echosens mini 430 was used.

Results: A total of 91 patients having fatty liver were included. 53 patients (58.2%) were males with mean age of 44.3187 ± 11.575 years. The mean BMI was $29.2848 \pm 4.87 \text{ kg/m}^2$, cholesterol $201.0714 \pm 68.911 \text{ mg/dL}$, triglyceride $232.4474 \pm 128.092 \text{ mg/dL}$, HbA1c 10.733 ± 15.674 , ALT $66.1236 \pm 42 \text{ IU/L}$, steatosis 291.8132 ± 39.986 and fibrosis score 8.2473 ± 7 . The most common co-morbid was DM seen in 17 patients (18.7%). The most common steatosis score was S3 in 36 (39.6%) correlating more with having raised BMI, P -value 0.003, while the most common fibrosis score was F0–1 in 35 (38.5%) correlating with hypertension. **Conclusion:** Raised BMI is a leading risk factor for hepatosteatosis, so fibrosis and steatosis can be screened non-invasively by using fibroscan.

Keywords: fibroscan, fatty liver, steatosis, fibrosis, non-invasive



PP-0179 Clinical outcomes of gastric antral vascular ectasia (GAVE)

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Background and Aim: Gastric antral vascular ectasia (GAVE) is a rare disease and one of important causes of gastrointestinal (GI) bleeding. To date, clinical course of GAVE was not well known, and recurrent bleeding from GAVE is a therapeutic challenge. We aimed to evaluate clinical course of GAVE, and risk factors for bleeding from GAVE. **Methods:** We retrospectively reviewed the database of 348 patients who were diagnosed as GAVE



with upper gastrointestinal endoscopy at Asan Medical Center between January 2014 and December 2019. Clinical courses and risk factors for bleeding of GAVE were evaluated. **Results:** Mean age was 62.3 ± 10.7 years, and 62% of patient was male. During median of 17.3 months (interquartile range [IQR], 4.2–46.6) follow-up, bleeding from GAVE occurred in 123 patients (35%). Child-Pugh class B or C liver cirrhosis (odds ratio [OR], 2.55; 95% confidence interval [CI], 1.57–4.16), chronic kidney disease (OR, 2.77; 95% CI, 1.52–5.07), medication of antiplatelet agent and/or anticoagulant (OR, 2.34; 95% CI, 1.13–4.82), and involvement of duodenal bulb (OR, 3.21; 95% CI, 1.76–5.86) were significant associated factors for GI bleeding from GAVE in multivariate analysis. Rebleeding occurred in 39 of 123 patients (32%). In bleeding group, chronic kidney disease (OR, 3.21; 95% CI, 1.76–5.86) was only associated factor for rebleeding. Argon plasma coagulation (APC) was most frequently used (94%) as endoscopic hemostasis, and median number of performed endoscopic hemostasis was 2 (IQR, 1–3). **Conclusion:** A careful follow-up for bleeding is needed in GAVE patients with liver cirrhosis, chronic kidney disease, medication of antiplatelet agent and/or anticoagulant, and duodenal bulb involvement.

Keywords: gastric antral vascular ectasia, endoscopy, risk factors, gastrointestinal hemorrhage

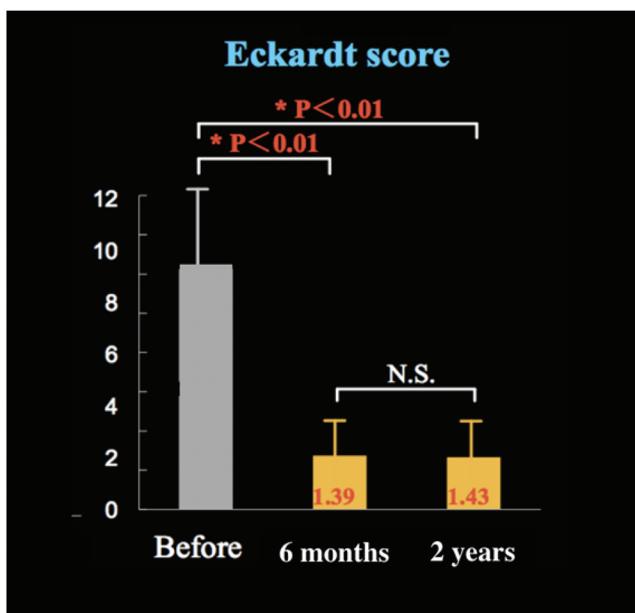
PP-0181 A prospective single-center experience on peroral endoscopic myotomy (POEM) for primary achalasia in the Philippines

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Background and Aim: Peroral endoscopic myotomy (POEM) has been considered as a minimal invasive technique for long-term treatment of all types of esophageal achalasia and other esophageal motility disorders. Laparoscopic myotomy is the standard treatment, but POEM is a safe and effective alternative, with good short-term and medium-term results. Our aim was to describe the short-term and medium-term experience with POEM. **Methods:** The study was conducted within the time frame of November 2014 and December 2019. Treatment-na **Results:** A total of 38 patients underwent POEM with mean age of 38 (range 9–77); 17 were males (48%). Treatment na **Conclusion:** POEM is a safe and effective treatment for primary achalasia. Significant reduction in symptom scores was achieved and maintained on minim follow-up of 24 months.

Keywords: POEM, primary achalasia



PP-0182 Alcoholic hepatitis as a trigger of acute on chronic liver failure during first wave of COVID-19, our experience in a UK-based hospital

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Background and Aim: In patients with known liver disease, acute decompensation in association with organ failure due to acute liver insult is known as acute on chronic liver failure (ACLF). We aim to identify and assess the presence of ACLF during the first COVID-19 wave and the main insulting agent. **Methods:**

We retrospectively assessed all patients who had been admitted to our hospital with liver pathology between January 2020 and June 2020. Blood tests, radiological imagines, histological results, and endoscopy reports were electronically retrieved. Patients were divided using Child–Pugh liver cirrhosis scoring, MELD, and UKELD.

Results: The total number of liver admissions was 194 during the study period of 2020. 145 were males (74.74%) and 25.2% were females ($n = 49$) with 156 patients above 50 years (80.41%) ($p = .0028$). Thirty-three of them had variceal bleeding ($n = 17$) and 62 had normal gastroscopy (31.9%) whereas 99 did not have gastroscopy (OR = 1.61; 95% CI = 1.9; 2.852, $p = .0024$). During the study period, 36.08% of the studied individuals had Child–Pugh score of A and B ($n = 70$ each) with only 54 who had Child–Pugh (C) liver cirrhosis ($n = 54$), $p = .008$. ACLF was identified in eight patients (4.12%), while 91 had decompensated liver disease (46.9%) and 51.4% had compensated liver cirrhosis (OR = 1.05; 95% CI = 0.51; 3.05, $p = .015$). Although 96.9% had alcoholic hepatitis ($n = 188$) as the cause of ACLF, 3.1% had other causes ($p = .0019$). Interestingly, 7.7 % had MELD score higher than 40 ($n = 15$) and 12.8% had UKELD score of more than 49 ($n = 25$) (OR = 2.90; 95% CI = 3.99, $p = .005$). **Conclusion:** Few numbers of patients had ACLF during the first COVID-19 wave; however, majority of them had alcohol hepatitis as main trigger. We recommend a robust community education program to help reducing this phenomenon especially during the stressful times.

Keywords: alcoholic hepatitis, acute on chronic liver failure, liver cirrhosis

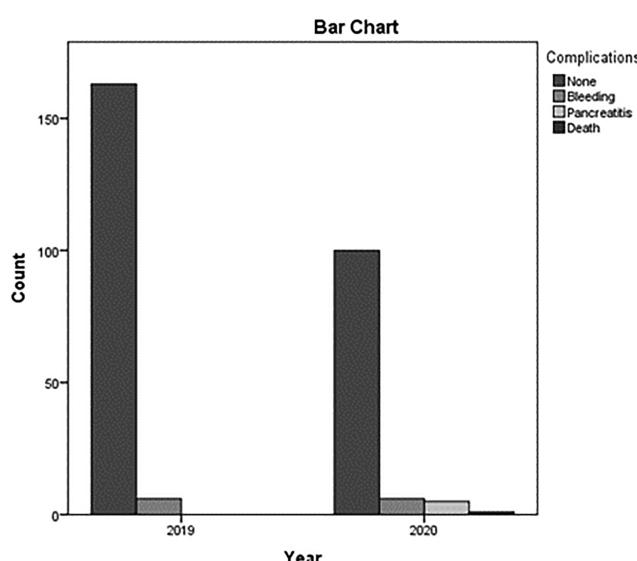
PP-0183 Challenges of ERCP during first wave of COVID-19: Secondary centre experience

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Background and Aim: British Society of Gastroenterology (BSG) recommended that the endoscopy units to perform ERCP during the COVID-19 pandemic for obstructive biliary pathologies in emergency. We aim to assess the local performance of ERCP during the COVID-19 first wave at our local endoscopy centre. **Methods:** All ERCP procedures performed from January 2020 to June 2020 were retrospectively assessed and compared with procedures performed between January and June 2019 at Royal Lancaster Infirmary. Chi-Square and Fisher **Results:** 279 ERCP were included in this study; with 168 and 111 performed during the first 6 months of 2019 and 2020, respectively. 51% were female ($n = 144$) whereas 135 male patients. The main indication was recorded is common bile duct (CBD) stones 68.8% ($n = 115$) in 2019 and 59.4% ($n = 66$) during the first wave of COVID-19 in 2020, followed by Cholangitis (8% $n = 15$ vs 14% $n = 16$). Success therapeutic rate during the first COVID-19 wave was 78.3% ($n = 87$) in comparison to 87% ($n = 146$) in the previous year ($p = 0.015$). No recorded ERCP related complications for study period in 2019; however, we have recorded 16.2% complications among the study group of 111 procedures ($n = 18$) ($p = 0.003$). Their complications were as follows: perforation 5% ($n = 6$), bleeding 5% ($n = 6$), post-ERCP pancreatitis (PEP) 4% ($n = 5$) and one case of mortality (0.9%). The ERCP complications during the first wave of COVID-19 ($M = 4.5$, $SD = 2.83$, $n = 5$) were higher than post-ERCP complications last year ($M = 0$, $n = 5$). This difference was significant, $t(6) = 2.11$, ($p = 0.004$). **Conclusion:** First wave of COVID-19 had a statistically proven negative impact on the expected standards of ERCP performance in our unit. We recommend adding the complexity of the cases and ASA to the local and national recording database. This study is the first study from UK-based hospitals to our knowledge.

Keywords: ERCP, gallstone pancreatitis



PP-0184 Surveillance and screening of hepatocellular carcinoma in cirrhotic patients, can we do better?

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Background and Aim: The British Society of Gastroenterology (BSG) recommends, if HCC surveillance is offered, 6 monthly ultrasound-scan with serum AFP. We aim to evaluate our screening practice in liver cirrhosis patients and compare it with the BSG guidelines. **Methods:** Retrospectively, all patients with liver cirrhosis at different stages who were admitted to gastroenterology ward between January 2020 and June 2020 at Royal Lancaster Infirmary were assessed. Data were analysed using one-way ANOVA on SPSS. **Results:** Total number of hepatology admissions during the study period was 183 patients with 65% ($n = 119$) known to have liver cirrhosis. 74% were male ($n = 137$) of total admissions and only 46 female patients. Among individuals with liver cirrhosis, 27 patients had Child-Pugh (A) liver cirrhosis with 50 and 42 had Child-Pugh (B) and (C) respectively. Admission with decompensated alcoholic liver cirrhosis was higher in male patients 69% ($n = 47$) compare to female patients of only 30% ($n = 21$) ($p = 0.001$). None of the patients had autoimmune or metabolic liver disease as main cause of cirrhosis ($p = 0.0001$). Oesophageal varices were diagnosed in 31 patients (26%) predominantly males ($n = 22$). HCC surveillance with ultrasound occurred in 85% ($n = 102$) whereas only 73 patients (61.3%) had AFP checked. The ANOVA results suggest the HCC surveillance differs significantly between different stages of liver cirrhosis (Child-Pugh A, B and C) ($F_{3,359} = 6.11$, $p = 0.003$). Male patients had more robust HCC surveillance ($M = 37.61$, $SD = 23.46$, $n = 13$) in comparison to female patients with liver cirrhosis ($M = 13.38$, $SD = 8.60$, $n = 13$). This was statistically significant, $t(24) = 2.06$, ($p = 0.0009$). **Conclusion:** Two third of hepatology admissions have liver cirrhosis; however, the study period was during the first COVID-19 wave, HCC surveillance guidelines was achieved in 85% and 61.3% with USS and AFP, respectively. We recommend adding HCC checklist and proforma to the patients' record.

Keywords: hepatocellular carcinoma, alpha feto-protein, liver cirrhosis, liver ultrasound scan

PP-0185 Outcome of liver transplantation in secondary sclerosing cholangitis: Meta-analysis and systematic review

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Background and Aim: In recent years, the development of secondary sclerosing cholangitis in critically ill patients (SSC-CIP) has increasingly been perceived as a separate disease entity. Our aim was to perform a systematic review and meta-analysis of secondary sclerosing cholangitis and ischemic cholangiopathy in post organ transplant patients and intensive therapeutic unit (ITU). **Methods:** A comprehensive search strategy using the PubMed, Biosis, and EMBASE databases was designed to retrieve relevant clinical data from the published literature up to 2020. **Results:** 862 patients were extracted from sixteen studies. Eighteen studies were searched for the meta-analysis, out of which 16 studies were eligible for the meta-analysis, two studies were excluded from the meta-analysis. A significant result was found in the meta-analysis carried out on patients with liver transplantation

(LT) studies show a significant result with ($p < 0.01$, prop: 0.45, 95% CI: 0.35, 0.56) which implies that there is a successful treatment in both DCD and DBD liver transplanting. Among the studies, there are high percentage heterogeneity ($I^2 = 98\%$) with ($\text{tan}^2 \text{value} = 0.1182$); however, studies (Edie, 2007, Kirchner *et al.*, 2011, Scheppach *et al.*, 2001) were slightly diverted from line of no difference to the right which implies an insignificant results (prop: 0.95, 95% CI: 0.86, 0.99, prop: 0.91, 95% CI: 0.59, 1.00, prop: 0.56, 95% CI: 0.30, 0.80, prop: 0.33, 95% CI: 0.01, 0.91), but the overall random effect model is highly significant (prop: 0.30, 95% CI: 0.12, 0.49). **Conclusion:** The systematic review and meta-analysis show that liver transplantation is a valid option for patients with SSC-CIP with excellent long-term outcome and improvement of quality of life.

Keywords: secondary sclerosing cholangitis, liver transplantation

PP-0186 Hepatotoxicity among Sudanese patients with COVID-19 in Khartoum Isolation Centre: Outcome review

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Background and Aims: Hepatic injury occurs in a significant proportion (60%). Our aim was to study the course of liver derangement among Sudanese patients with COVID-19 in the main isolation centres in Khartoum-Sudan. **Methods:** A retrospective observational study was conducted at isolation centres in Khartoum state carried out between September to January 2021. All adult patients with confirmed COVID-19 who developed new liver impairment without known underlying liver disease. Regular blood tests were carried out during the admission. Cross-tabulation analysis was used. **Results:** The study included 74 participants who were diagnosed with COVID-19 using quantified PCR and fulfilling all inclusion criteria. Forty-four (59.6%) of them were male and (40.4%) were female ($n = 30$) with approximate male: female ratio 1:7. Most of the included patients age were above 50 years old (75.5%) with mean age of 43.8 ± 23.6 . Liver enzymes derangement was recorded in 31% ($n = 23$) and 17.6% ($n = 13$) had elevated AST and ALT more than 40 U/L respectively ($p = 0.004$). Interestingly, 82.4% had normal ALT ($p = 0.008$). AST:ALT ratio was normal in (51%). Thirteen of population (20%) had elevated ALP ($p = 0.003$). Bilirubin level was normal in 88% ($n = 66$) ($p = 0.001$). Forty-two (57%) had elevated INR levels more than 1.2 ($p = 0.3$). Mortality rate among the included patients was significant with 23% ($n = 17$); however, 77% had good recovery and discharged home ($p = 0.0006$). ALT mean \pm SD for discharges (35.76 ± 47.63) with mean \pm SD for deaths (80.34 ± 81.65), ($p = 0.008$), AST mean \pm SD was 32.56 ± 34.08 and 89.54 ± 122.99 for discharges and deaths respectively, ($p = 0.004$), and ALP mean \pm SD (86.50 ± 51.70) for discharges and 137.38 ± 69.93 for deaths, ($p = 0.003$) **Conclusion:** This study is first one to be done in African COVID-19 isolation centres to best of our knowledge, we recommend that further detailed study to be conducted to understand this better.

Keywords: hepatotoxicity, COVID-19

PP-0187 TNF-alfa antagonist and thiopurine induced hepatotoxicity in patients with inflammatory bowel disease: Meta-analysis and systematic review

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Background and Aim: Drug-induced hepatotoxicity and biologic drugs have historically been challenging in IBD. We aim to study the prevalence of hepatotoxicity in adult patients using biologic medications. **Methods:** With the guidelines described by PRISMA-P, a detailed search strategy for each electronic database was developed based on PubMed, Medline, and Embase. We include RCTs that assessed the efficacy and hepatotoxicity of biologics in IBD patients. Hepatotoxicity was defined as AST and/or ALT $>2\times$ upper limit of normal or cholestasis. The odds ratio (OR) was calculated with a 95% confidence interval (CI). Heterogeneity was assessed using the χ^2 test and the I^2 statistic. **Results:** 862 records identified in total. After removing the duplicates, 564 records were left for review. Four studies did not report on how participants were randomized to treatment groups or how allocation concealment was achieved; we rated these studies at unclear risk of bias for these domains. There was no presence of any heterogeneity among studies by ($\chi^2 = 2.21$, $df = 6$, $P = 0.90$, and $I^2 = 0\%$). Our meta-analysis was conducted on the fixed effects model, with the (0.770, 95% CI [-0.630, 0.957], and $P = 0.02$). Hepatotoxicity was not related to any TNF-alfa antagonist. Thiopurine-induced liver injury occurred more frequently within the first months of treatment, 50% of cases within the first 3 months (11.4% vs 2.3%, $P < 0.05$). **Conclusion:** When hepatotoxicity occurred, the treatment was withdrawn in 31% of patients. This group of patients had a dose-dependent hepatotoxicity rather than an immunologic hepatitis.

Keywords: hepatotoxicity, infliximab, azathioprine, inflammatory bowel disease

PP-0188 Hepatotoxicity secondary to medications in COVID-19 patients, has the concept changed!

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Background and Aim: Liver impairment was seen in 60% of cases of COVID-19. Drug induced liver injury in COVID-19 patients has not been thoroughly reviewed yet. We aim to study this phenomenon and test the available data. **Methods:** Comprehensive retrospective review was conducted to see the drug-induced liver damage due to COVID-19. One author was assigned to do systematic search from the Advanced Cochrane Library and PubMed from all reported studies and data from December 2019 to December 2020. Results were checked and reviewed using SPSS version 27. **Results:** A single-centre cross-sectional study, Cai *et al.* (2020), 417 patients reported the association of raised liver tests with liver injury and severity of pneumonia. Abnormal liver tests including AST, ALT, and GGT were reported in 76.3% of patients and 21.5% acquired liver injury during admission. Liver enzymes were more prominently high during hospital stay over 3 ULN (upper limit units), specifically ALT and GGT 37% and 41% ($P = 0.006$) respectively whereas AST and TBIL was raised up to 20% and 10% ($P = 0.002$). Retrospective case series of 113 deceased patients, Chen *et al.* 2020, analysed to understand the risk factors. All 113 deceased received treatment of antiviral therapy 89 (79%), glucocorticoid therapy 99 (88%), antibiotics 105 (93%), intravenous immunoglobulin therapy 39% ($n = 44$), interferon inhalation 22% ($n = 22$), oxygen treatment 113 (100%) including high flow nasal cannula 68% ($n = 77$). Lopinavir and ritonavir were reportedly linked with COVID-19 associated liver injury whereas, in this retrospective analysis few deceased cases 89; 79% ($P = 0.009$) received monotherapy or combined treatment of oseltamivir, arbidol, or lopinavir and ritonavir. **Conclusion:** Lopinavir and ritonavir have been associated with liver injury development in COVID-19 patient. Elevated AST levels with the use of antifungals. Drug-induced liver injury in COVID-19 patients is a complex process and more critical research needs to be conducted.

Keywords: drug induced liver injury, hepatotoxicity, COVID-19

PP-0189 Post-polypectomy surveillance interval in high-risk subjects after screening colonoscopy

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Background and Aim: Evidence of recommendation of surveillance interval after removal of advanced adenoma at screening colonoscopy is limited. We aimed to determine whether the risk of metachronous advanced neoplasia increases if surveillance interval was beyond the current recommendation of 3 years for high-risk subjects identified at screening colonoscopy. **Methods:** Subjects stratified as high-risk after screening colonoscopy were identified from the cohort of an existing territory wide colorectal cancer (CRC) screening programme and open recruitment. High-risk subjects were those with advanced adenoma (AA) (defined as size ≥ 1 cm, with tubulovillous or villous components, or with high-grade dysplasia) or \geq non-AA. High-risk subjects who had baseline colonoscopy done within 3 years and those who colonoscopy done prior 3 years (but not yet received surveillance colonoscopy) and due for surveillance colonoscopy, were recruited for surveillance colonoscopy. **Results:** 90 eligible subjects were recruited in ≤ 3 -year group and 90 in >3 -year group. Subjects in >3 -year group had higher risk of metachronous AA than those in ≤ 3 -year group (8.9% vs 4.4%); however, statistical significance could not be achieved ($p = 0.232$). There was one subject in >3 -year group detected CRC. The overall adenoma detection rate (ADR) of >3 -year group was significantly higher (67.8% vs 47.8%, $p = 0.007$). **Conclusion:** Our study results echo with the international recommendations of surveillance interval for high-risk subjects and show that subjects with high-risk adenoma at baseline screening had a higher ADR and might have a higher risk to metachronous AA if surveillance interval is more than 3 years.

Keywords: surveillance, post-polypectomy, advanced adenoma

Table 1. Baseline characteristics and colonoscopy findings.

	≤ 3 -year group	>3 -year group	p-value
Age (SD)	59.8 (6.6)	59.0 (5.0)	0.393
Male (%)	62 (68.9)	53 (58.9)	0.163
Adenoma detection (%)	42 (46.7)	61 (67.8)	0.004
Advanced adenoma detection (%)	4 (4.4)	8 (8.9)	0.232
Colorectal cancer detection (%)	1 (1.1)	0 (0)	1
Advanced neoplasia detection (%)	4 (4.4)	8 (8.9)	0.232

PP-0190 Epidemiology of adenomatous colorectal polyps in asymptomatic Indian population: A prospective cohort study

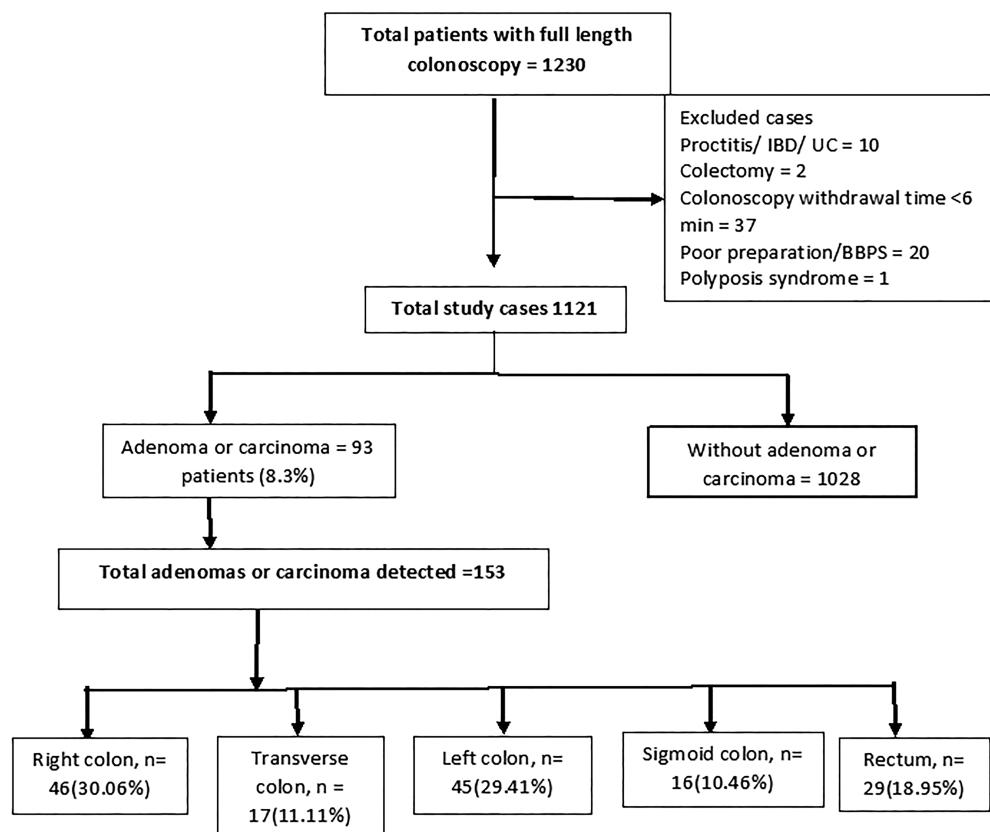
Authors: MAHESH GOENKA, SHIVARAJ AFZALPURKAR, BHAGEERATH RAJ, GAJANAN RODGE, BHAVIK SHAH
Affiliation: Institute of Gastrosciences and Liver, Apollo Gleneagles Hospitals, Kolkata, India

Background and Aims: Worldwide colorectal cancer is the third most common malignancy with an incidence of 10.2% and second highest cause of cancer mortality (9.2%) after lung cancer. There is scant data on the incidence and prevalence of colorectal polyps from Asian countries particularly Indian subcontinent. To estimate the incidence of adenomatous polyps in India and to study the correlation between epidemiological factors and adenoma detection rate during colonoscopy. **Methods:** Consecutive patients with gastrointestinal symptoms who underwent full colonoscopy in our institution between January 2019 to February 2020 were included. Patients with alarm symptoms (hematochezia, weight loss, abdominal or rectal mass), recent change (<3 months) in bowel habits, failed caecal

intubation and poorly prepared bowel were excluded. **Results:** Polyps were seen in 168 of 1121 patients (14.99%) who underwent complete colonoscopies and mainly belonged to ≥50 years age group (71%, $P < 0.0001$, OR = 2.72) with a mean age of 55.8 years. Polyps were common in men compared to women (76.3% vs 23.7%, $P = 0.011$, OR = 1.89). Adenomatous polyps or malignancy was detected in 93 (55.36%) patients while remaining 75 (44.62%) had hyperplastic polyps or inflammatory polyps. Adenoma incidence was higher in smokers when compared to non-smokers (71.4% vs 28.6%, $P < 0.0001$, OR = 3.84), non-vegetarianians (80% vs 20%, $P = 0.004$, OR = 2.64) and in obese individuals. Distribution of adenoma or carcinoma in colon was 46 (30.06%) in right colon, 17 (11.11%) in transverse colon, 45 (29.41%) in left colon, 16 (10.46%) in sigmoid colon, 29 (18.95%) in rectum (Fig. 1). **Conclusion:** Incidence of colorectal polyps is significant in India though compared to western countries, it is still lower. Smoking, red meat and high body mass index were predominant risk factors. Polyps were more commonly distributed in right and transverse colon.

Keywords: adenoma detection, risk factors, adenomatous polyps, smoking, red meat

Figure 1: Study flowchart



PP-0191 Correlation of platelet count with endoscopic findings in a cohort of Malaysian patients with liver cirrhosis

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Background and Aim: Screening endoscopy is recommended for early detection of esophageal varices (EVs) in all cirrhotic patients with portal hypertension. We aim to study if platelet count can predict the grading of EV and further attempt to determine if platelet count can predict the likelihood of prophylaxis Endoscopic Varix Ligation (EVL) procedure being done. **Methods:** We conducted a retrospective analysis on cirrhotic patients that underwent elective OGDS for varix surveillance within 1 year. OGDS findings and platelet count were obtained from electronic medical records. Acute variceal bleeding was excluded from this study. **Results:** 312 cirrhotic patients were studied and divided into 4 groups: group I with a platelet count below 50 000/mL ($n = 32$), group II 51 000 to 99 000/mL ($n = 87$), group III 100 000 to 149 000/mL ($n = 95$), and group IV above 150 000/mL ($n = 98$). 68.6% of those without EV had normal platelet count (>150 000) and 61.5% of patients with severe thrombocytopenia (<50 000) had F3 EV. We also conducted a comparison between the thrombocytopenia groups and the need for prophylaxis EVL. 87.05% for platelets group >100 000 and 89.8% for those with platelet >150 000 did not require a prophylaxis EVL. **Conclusion:** We conclude that platelet as a biomarker alone in cirrhotic patients can be used as a predictor for prophylaxis EVL in patients with PLT >100 000 but it cannot be used clinically to predict grading of EV accurately.

Keywords: varix, ligation, cirrhosis, biomarker, esophageal

TABLE 3

PLATELET COUNT	NO EVL	%	EVL DONE	%	TOTAL
<50 000	18	56.25	14	43.75	32
50000 – 99000	70	80.459	17	19.54	87
100000 – 149000	80	84.21	15	15.78	95
>150000	88	89.79	10	10.2	98

$P < 0.001$

TABLE 4

Platelet count	No EVL	EVL done
0-99,999	88 (73.95%)	31 (26.05%)
≥ 100,000	168 (87.05%)	25 (12.95%)
$P=0.003$		

PP-0192 Efficacy of antioxidants in relieving pain in children with chronic pancreatitis: A prospective observational study

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Background and Aim: Pain is the major problem in 90% of patients with CP. Although antioxidants are often used in children with CP, but no study has objectively assessed its role in children. Adult data should not be directly extrapolated to children due to variation in etiology, severity and nutritional status. To study the efficacy of antioxidant supplementation in improving pain, markers of oxidative stress(OS) and antioxidant (AO)levels in children with chronic pancreatitis (CP). **Methods:** Children with CP were given antioxidants for 6 months. Pain assessment and measurement of OS (serum thiobarbituric acid reactive substances [TBARS], superoxide dismutase [S-SOD]), and AO levels (vitamin C, selenium, total antioxidant capacity-ferric reducing ability of plasma [FRAP]) were done at baseline and after 6 months. Good response was defined as ≥50% reduction in number of painful days per month. **Results:** 48 CP children (25 males, median age 13 years, pain duration 24 months) and 14 healthy controls were enrolled. 38/48 cases completed 6-month follow-up on antioxidant supplements. Baseline OS marker [TBARS (7.8 vs 5.20 nmol/mL; $p < 0.001$)] was higher and AO markers [FRAP (231 vs 381.3 μmol/L; $p = 0.003$), vitamin C (0.646 vs 0.780 mg/dL; $p < 0.001$)] were lower in CP as compared to controls. Significant reduction in TBARS, S-SOD and increase in FRAP, vitamin C and selenium occurred after 6 months of antioxidant therapy. Good response in pain was seen in 26 (68%) cases, with 9 (24%) becoming pain-free. Responders also had significant reduction in the requirement of analgesics and hospitalization. Baseline haemoglobin and selenium were significantly lower in non-responders than responders. Patients with Cambridge grade III responded in 100% as compared to 58% in grade IV-V ($p = 0.03$). No predictor of response was identified on multivariate analysis. **Conclusion:** CP children have higher oxidative stress than healthy controls. Antioxidant therapy is safe and pain response is seen in 68% cases with improvement in markers of OS.

Keywords: antioxidants, chronic pancreatitis, pain, pediatric, oxidative stress

PP-0193 Neutrophil to lymphocyte ratio as predictor of short-term mortality in patients with decompensated cirrhosis of liver

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Background and Aims: Neutrophil to lymphocyte ratio (NLR) is a marker of subclinical inflammation, shown to predict mortality and post-transplant survival in decompensated cirrhotics. We aimed to evaluate its role as predictor of 30-day mortality in decompensated cirrhotic patients. **Methods:** The research protocol was reviewed and approved by the Institutional Review Board of Bangabandhu Sheikh Mujib Medical University. This was a prospective observational study, including 93 patients of decompensated cirrhosis. Baseline NLR was obtained and the patients were longitudinally followed up for mortality or appearance of liver related complications for a period of 30 days. 71 patients with $\text{NLR} < 5$ were classified as group A and 22 patients with $\text{NLR} \geq 5$ were classified as group B. The groups were compared on the basis of cirrhosis related complications, CTP score, MELD score and mortality. End of study was considered after death or 30 days whichever one was shorter. **Results:** 66 patients (92.9%) in group A and 7 patients (32.0%) in group B were found alive at the end of the study. 5 patients (7%) in group A and 15 patients (68.0%) in group B did not survive. The difference was statistically significant ($p < 0.05$) between the groups. The rate of development of liver related complications was higher in patients of group B compared to group A and this difference was statistically significant ($p < 0.05$). In multivariate analysis, NLR (OR 2.28, 95% CI 1.23–4.22%, $p = 0.009$) was significantly associated with mortality within 30 days. Receiver-operator characteristic (ROC) was constructed, using NLR level, which gave a cut off value 4.79, with 85% sensitivity and 89% specificity for prediction of mortality. **Conclusion:** Raised NLR is an independent predictor of early mortality in patients with decompensated cirrhosis of liver. It is also observed that high NLR is associated with increased frequency of cirrhosis-related complications.

Keywords: neutrophil to lymphocyte ratio, cirrhosis, predictor of mortality

PP-0194 Hypoxic hepatitis: Incidence, biochemical markers, and risk factor of mortality: A cohort study

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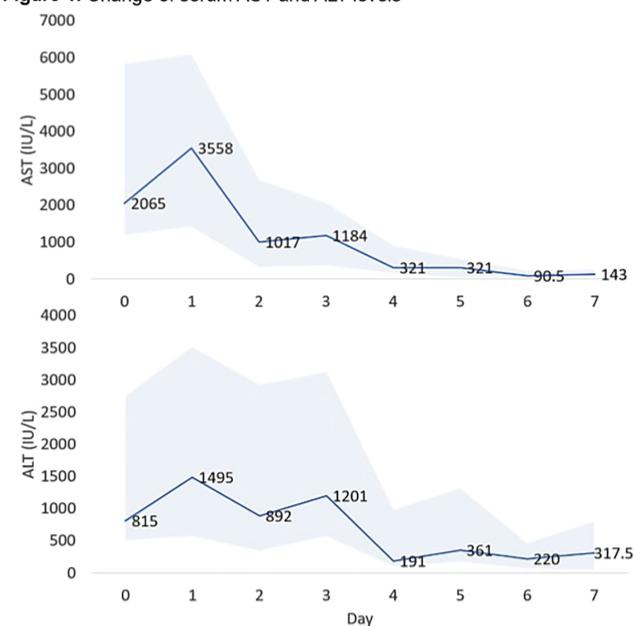
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Background and Aim: Hypoxic hepatitis is an acute severe liver injury, usually associated hemodynamic instability. Diagnosis is usually made by exclusion with clinical setting compatible with hypoxic hepatitis. Prior studies reported the incidence of hypoxic hepatitis in the range of 0.9–2.4% in all admission. There is no specific treatment for hypoxic hepatitis and mortality rate is about 50–70%. This study is aimed to evaluate incidence of hypoxic hepatitis and to study clinical course and outcome of these patients. **Methods:** This study is a retrospective cohort study conducted at Siriraj Hospital from October 30, 2019, to January 25, 2021. Data

were retrieved from hospital admission chart of the patients who were admitted at Siriraj Hospital from January 1, 2008, to December 31, 2018. Hypoxic hepatitis was defined by the following criteria: serum AST and/or ALT levels of more than or equal to 20 times ULN in the absence of evidence of drug, toxic, or acute viral hepatitis. **Results:** Of 4000 admission, there were 29 cases (0.73%) who met the criteria of hypoxic hepatitis. Mean age was 68.2 years old and median serum AST and ALT levels at the time of diagnosis were 2065 and 815 IU/L, respectively (Figure 1). Underlying diseases of these patients included hypertension (69%), diabetes mellitus (48.3%), chronic kidney disease (37.9%), and atrial fibrillation (31%). Comorbidities included acute kidney injury (93.1%), sepsis (79.3%), hypotension (75.9%), requirement of vasopressor (65.5%), acute respiratory failure (55.2%), heart failure (41.4%), unstable arrhythmia (41.4%). Mortality rate at day 28 was 72.4%, none of which was liver related. The only significant risk factor of mortality was lower bicarbonate level ($p = 0.012$). **Conclusion:** Hypoxic hepatitis was uncommon with incidence of 0.73% of admission, most patients associated with multiple organ failure and had high mortality rate of 72.4%. The only predictor of high mortality was lower bicarbonate level.

Keywords: ischemic hepatitis, shock liver, mortality, multiorgan failure

Figure 1. Change of serum AST and ALT levels



* Day 0 defined as the day of serum AST and/or ALT more than 20 times of UNL

* The line and number showed median of serum AST/ALT and the area around the line showed P₂₅-P₇₅ of serum AST/ALT

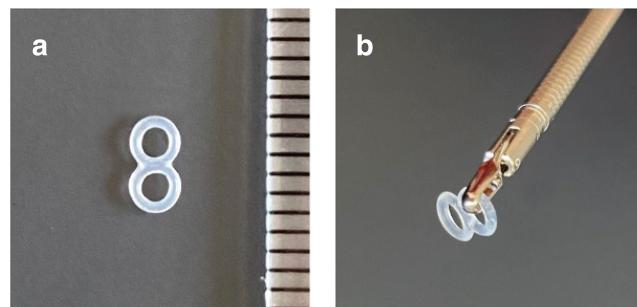
PP-0195 A new traction method (traction ring) for colorectal endoscopic submucosal dissection

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Background and Aim: Colorectal endoscopic submucosal dissection (ESD) is a challenging operation because it is often difficult to attain good visualization of the submucosal layer. Lots of traction methods have been developed to facilitate submucosal dissection, but still not widely applied. Therefore, we designed a new traction device “traction ring.” This pilot study is to evaluate if traction ring is feasible and safe for colorectal ESD. **Methods:** We retrospectively analyzed 20 patients with colorectal lesions who had undergone traction ring assisted ESD. The main outcome was the rate of en bloc resection, R0 resection rate, procedure time, resection time, intraoperative and postoperative complications. **Results:** This technique with simple structure can be set up by matching with the endoclip and can be used at any location in the colorectum (Fig. 1). Traction ring can avoid the situation that the tension on both ends of the ring is unequal. The median procedure time was 74.5 min. The median resection time was 55 min. The application of the traction system accounting for only 2.7% of the whole procedure time. Rate of en bloc resection was 95% (19/20). Rate of R0 resections was 90% (18/20). All traction rings were successfully settled and retrieved. No serious excessive intraoperative bleeding was observed. One patient was found perforation after treatment, no further intervention was required. No delayed complications were observed within one month after the operation. **Conclusion:** Traction ring is an effective and safe way for colorectal ESD and can be used at any location in the colorectum.

Keywords: endoscopy, endoscopic submucosal dissection, colorectal neoplasms, traction, traction ring

**PP-0196 Development of cultural specific guided imagery and progressive muscle relaxation therapy for treatment of functional bloating**

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Background and Aim: Cognitive restructuring, hypnotherapy, and mind-body techniques have been shown in recent studies to be effective in treating patients with functional gastrointestinal disorders (FGIDs). Guided Imagery (GI) utilises imagination in eliciting mind-body responses. Progressive Muscle Relaxation (PMR) induces relaxation by tensing and relaxing different muscle groups in sequence. Our aim was to develop specific GI and PMR techniques for use in bloating, a common symptom in FGIDs. **Methods:** Techniques are developed based on the Medical Research Council guidelines. Scripts were written by a health psychologist (GK) and narrated in the local dialect. The background music for each audio script was selected using an adapted version of the Brunel Music Rating Inventory-2. Suitability of music was rated based on rhythm, tempo, melody, style, and instruments. Recordings of narrator was normalized to -10 dB and background noises removed. Audio was camouflaged with binaural alpha waves pulse using Audacity version 2.4.0 to facilitate delivery. Seven experts from related fields and 32 patients (mean age = 35.57).

Results: A nature-based musical background was composed. Content validity index (CVI) and face validity index (FVI) were generated using previously established technique. The CVI/Average and FVI/Average of the GI audio were 0.95 and 1.00, respectively, while the PMR had a CVI/Average and FVI/Average of 0.92 and 1.00, respectively. **Conclusion:** The newly developed and specific GI and PMR techniques for bloating are proven suitable for use in the targeted population. The efficacy of interventions will be delivered through a mobile application and studied in a randomized controlled trial design (ClinicalTrials.gov Identifier: NCT04789967).

Keywords: guided imagery, progressive muscle relaxation, functional abdominal bloating, functional GI disorder (FGID), psychological interventions

PP-0197 The diagnostic yield of Japan narrow band imaging expert team (JNET) classification in identifying colorectal polyps: A single center study

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Background and Aim: The study aims to determine if JNET classification would remain accurate in predicting histopathology of polyps when used among endoscopists with varied expertise. **Methods:** Data on polyps seen during colonoscopy that were identified using the JNET Classification and were biopsied were collected. **Results:** 360 polyps identified using JNET classification and sent for histopathology were included in the study. For JNET Type 1, the specificity, PPV and accuracy were 95.7%, 89.4% and 85.87%, respectively. Sensitivity was low at only 66%. For JNET Type 2A, the sensitivity, PPV, and accuracy were 87.8%, 82.8% and 80.6%, respectively. Specificity is 70% and NPV is 75.86%. For JNET Type 2B, the minimum sample size required for our study was not met. Nonetheless, specificity is 94% while NPV is 99.7%. Sensitivity and PPV cannot be determined because none of the biopsies were identified as a high grade intramucosal neoplasia or shallow submucosal invasive cancer. For JNET Type 3, specificity was 100%, but sensitivity was low at 33%. PPV, NPV, and accuracy are at least 99%. **Conclusion:** JNET Type 1 and 3 were used with accuracy at par with other studies abroad, but sensitivities are low. The diagnostic yield of JNET Type 2A remains variable while limited conclusions can be made for Type 2B. Conduction of short-course conferences or workshops may be prudent to refine the use of this well-validated tool that will guide proper therapeutic strategies during endoscopy.

Keywords: JNET classification, diagnostic yield, identifying colorectal polyps

ESD. In this study, we evaluated the safety and efficacy of stainless steel weight assisted-ESD(WA-ESD) compared with conventional ESD (C-ESD). **Methods:** This study included patients with early gastric cancer or gastric adenoma who underwent stainless steel weight assisted-ESD at our endoscopy center between March 2019 to September 2020. Lesions treated by conventional ESD and by ESD with stainless steel 2g weight system were compared. After partially dissecting the submucosa, the clip was attached to the edge of the exfoliated mucosa and the 2g weight traction assisted the partly resected lesion. A black silk line (1 cm) is attached to the edge of the exfoliated mucosa by the arm part of the clip, and the submucosal side of the target lesion is grasped. The line is pulled very gently. Primary endpoint was procedure time. Secondary endpoints were level of satisfaction, complete resection rate, and adverse events. **Results:** This method creates a clear field of vision. WA-ESD produced similar R0 resections to C-ESD, but its procedure time (minutes) was shorter than that of C-ESD. **Conclusion:** Simple methods with traction can make ESD easier and safer. In the near future, simple, noninvasive, and effective ESD with traction is expected to be developed and become established as a standard treatment for superficial gastrointestinal neoplasias worldwide.

Keywords: endoscopic submucosal dissection, steel weight

PP-0199 Correlation of neutrophil-to-lymphocyte ratio with rapid urease test in *Helicobacter pylori*-related chronic gastritis patients

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Background and Aim: Rapid urease test (RUT) is one of diagnostic tests to detect *H. pylori*. *H. pylori* infection in chronic gastritis can cause changes in the immune system in the body, include neutrophilia and lymphopenia. The results of the comparison between neutrophils and lymphocytes are more sensitive in the incidence of bacterial infection than the total white blood cell count. An increase in the neutrophil-to-lymphocyte ratio (NLR) indicates an increase of pro-inflammatory cytokines. The aim of this study was to determine the relationship between NLR and *H. pylori*-related chronic gastritis based on RUT. **Methods:** This study was conducted on chronic gastritis patients who underwent endoscopy in the Endoscopic room of the Prof. R.D. Kandou Hospital Manado from February to March 2018, used a RUT from histopathological biopsy taken from the corpus and gastric antrum. Blood samples were collected at the same day. Sampling was carried out by consecutive sampling. The data were processed using SPSS version 25. The correlation between the LNR and the RUT was tested using biserial points correlation coefficient analysis. **Results:** The total sample was 15 patients with gastritis, mean age 44.7 ± 11.5 years, consisted of 9 (60%) women and 6 (40%) men. It was obtained $r_{pb} = 0.365$ ($p = 0.091$), states that if the test result is positive, the NLR tends to be high compared to the negative test result, but there is no significant correlation between the two variables. **Conclusion:** There was no statistically significant correlation between the value of the neutrophil to lymphocyte ratio and the urea rapid test result in *H. pylori*-related chronic gastritis patients.

Keywords: neutrophil-to-lymphocyte ratio, rapid urease test, chronic gastritis, *H. pylori*

Table 3. Diagnostic Yield of JNET classification in Identifying Colorectal Polyps

HISTOPATHOLOGY RESULTS					
JNET CLASSIFICATION	Sensitivity (%)	Specificity (%)	Positive Predictive Value (%)	Negative Predictive Value (%)	Accuracy (%) (95% Confidence interval)
Type 1	66.1	95.7	89.4	83.83	85.87 (81.85 – 89.3%)
Type 2A	87.8	70	82.8	75.86	80.6 (76 – 84.52%)
Type 2B	-	94	-	99.7	-
Type 3	33	100	99.44	99.44	99.44 (98.01 – 99.93%)

PP-0198 Efficacy of stainless steel weight assisted endoscopic submucosal dissection

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Background and Aim: Endoscopic submucosal dissection (ESD) is accepted as a minimally invasive treatment for early gastric cancer or advanced gastric adenoma. Endoscopic submucosal dissection (ESD) is widely used to treat gastrointestinal lesions. Endoscopic submucosal dissection (ESD) has always been challenging for endoscopists, but the procedure can be made easier after adequate exposure of submucosal layer and cutting line. A traction assisted strategy has been recently developed for

PP-0200 Case report: A report of 3 cases of hepatocellular carcinoma with tumor thrombus to inferior vena cave and the right atrium

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Background and Aim: Hepatocellular carcinoma (HCC) is a primary liver tumor and one of the most aggressive malignant tumors. Invasion of tumour to hepatic or portal veins is common. However, HCC with tumor thrombus (TT) to inferior vena cava (IVC) and right atrium (RA) is rare with reported incidence of 0.67 % to 4%. It carries a very poor prognosis. **Methods:** Herein, we report 3 cases of advanced HCC with TT to IVC and RA/RV. **Results:** All cases are presented with short history of symptoms but vary in clinical presentation. The first case is a 59-year-old woman who never been diagnosed with liver cirrhosis, complained of abdominal discomfort and distension. The second case is a 56-year-old man who had 10 years history of untreated chronic hepatitis C infection, presented with exertional dyspnea, and other failure symptoms. The third case is a 63 years who admitted for acute variceal bleeding and 3 weeks history of jaundice. He was diagnosed with CPS C (11) liver cirrhosis secondary to previous hepatitis C infection and achieved SVR12. 2 out of 3 cases had normal alpha-feto protein. All cases were diagnosed based on CT multi-phase liver, and the presence of cardiac mass was confirmed with transthoracic echocardiography. 2 cases succumbed to death within 2 weeks after the diagnosis. **Conclusion:** As a conclusion, despite cardiac metastasis is a rare clinical entity associated with HCC, we begin to see more of these cases than the number incidence reported in other countries. There are various clinical presentations in HCC with TT to the RA. The disease course is insidious, and making an early diagnosis remains challenging. Patients may present at a very late stage. Up to now, there is no consensus about anticoagulation or other interventions in these patients.

Keywords: hepatocellular carcinoma, Malaysia, right atrium, tumour thrombus

PP-0201 Assessment of gastric accommodation using quantitative SPECT imaging and high-resolution manometry in a healthy multi-ethnic Asian population

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Background and Aim: Impaired gastric accommodation (GA) is a mechanism that underlies gastroparesis and functional dyspepsia. To investigate GA, few minimally-invasive diagnostic modalities were recently developed, namely single-photon emission computed tomography (SPECT) and high-resolution manometry (HRM). In this study, we sought to explore the utility of these novel techniques and to determine the normative GA values in a healthy, multi-ethnic Asian population. **Methods:** After an

overnight fast, participants underwent quantitative ^{99m}Tc-pertechnetate SPECT imaging to measure gastric volume and HRM to assess intragastric pressure (IGP) in the stomach's fundus. GA parameters were defined as: (1) SPECT-based – change in gastric volume after 250 mL Ensure Gold® (Abbott) nutrient drink (262 kcal); (2) HRM-based – change in IGP during nutrient drink test (NDT) with multiple Ensure Gold® feedings given at a rate of 60 mL/min. Besides, during HRM, participants were instructed to score satiation and epigastric symptoms before termination at the maximum tolerance. Motion artifacts and outlier influences were addressed using appropriate raw data transformation. Data were presented as median ± interquartile range. **Results:** Twenty young adults (11 females; age: 23.5 ± 3.3 years; BMI: 23.7 ± 8.4 kg/m²) were prospectively recruited and completed both procedures. SPECT measurements revealed an accommodation volume (AV) and postprandial-to-fasting volume ratio (PFR) of 325.8 ± 44.2 mL and 5.31 ± 1.86, respectively. At the fundus, the HRM detected a maximum IGP change (greatest gastric relaxation) of 6.4 ± 4.8 mmHg after 6 feedings (360 ± 210 mL ingested volume). The participants reached maximal satiation at 7.5 feedings (450.0 ± 210.0 mL ingested volume). There were no significant differences among sexes, and no significant correlations were found between GA parameters and anthropometric measures ($P > 0.05$). **Conclusion:** SPECT and HRM provide a minimally-invasive and valid evaluation of GA. The normative values for both methodologies are determined for the healthy, multi-ethnic Asian population.

Keywords: gastric accommodation, gastrointestinal motility, SPECT, high-resolution manometry, quantitative evaluation

PP-0202 Comparison of Hong Kong liver cancer with Barcelona clinic liver cancer staging systems in a cohort of egyptian patients with hepatocellular carcinoma

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Background/Aims: Accurate staging information is necessary to determine the prognosis of patients with hepatocellular carcinoma (HCC) and to guide subsequent patient management. Aim: to compare the prognostic performance of Hong Kong Liver Cancer (HKLC) staging system with Barcelona Clinic Liver Cancer (BCLC) staging system in an Egyptian cohort of HCC patients. **Methods:** This was a retrospective study conducted at National Liver Institute, Menoufia University, Egypt, on 1015 HCC patients with full data recruited from our medical records during the last 10 years. BCLC and HKLC stages were determined and Kaplan-meier survival analysis was used to compare patients' overall survival regarding treatment within BCLC staging system and within HKLC staging system. Performance and prognostic value of HKLC and BCLC staging systems were compared using area under the receiver operating characteristic curve (AUC). **Results:** A total of 1015 patients with HCC were recruited. There was a statistically significant difference in survival between different stages of BCLC as well as different stages of HKLC staging systems. Depending on Receiver operating characteristic (ROC) curves, the discriminatory ability to predict survival at 3 years of HKLC and BCLC staging systems were nearly the same (AUC= 0.667, 0.619 respectively). Out of 459 patients at BCLC stages B and C, 123 patients were already treated beyond BCLC treatment options but matching the HKLC recommendations. Their median survival time was 14.6 months which was not inferior to the 336 patients

treated according to BCLC classification with median survival time of 12.3 months (p-value 0.001). **Conclusion:** In our study, the HKLC classification had a slightly better prognostic performance compared to the BCLC staging system and might provide a survival benefit favoring expanding the treatment options for BCLC stages B and C HCC.

Keywords: Hepatocellular Carcinoma, Hong Kong Liver Cancer, Barcelona Clinic Liver Cancer, Egypt
(283 words)

#887-405

PP-0203 Relationship between hepatic steatosis, liver fibrosis and body mass index (BMI) using fibrotouch in a Malaysian adult sample

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Background and Aim: Nonalcoholic fatty liver disease (NAFLD) is seen worldwide and the major risk factors being central obesity, type 2 diabetes mellitus, dyslipidemia, and metabolic syndrome are common. **Methods:** In this study, FibroTouch examinations were performed in a total of 174 individuals out of which 64 (37%) were male and 110 (63%) were female and data collected for liver fibrosis and hepatic steatosis compared in relation to BMI. **Results:** Among 174 individuals, BMI $\geq 30 \text{ kg/m}^2$ (obesity) was found in 16% of the cases and BMI $\geq 25\text{--}29.9 \text{ kg/m}^2$ (overweight) was found in 29% of the cases. The prevalence of liver fibrosis based on FibroTouch was 17.7%, with F2 stage, F2-F3 stage, F3-F4 stage and F4 stage consisting of 6.3%, 2.3%, 3.4% and 5.7%, respectively. The prevalence of liver steatosis based on FibroTouch was however recorded to be 50.6%, with mild steatosis, moderate steatosis and severe steatosis comprising of 16.1%, 15.5% and 19.0%, respectively. In this study, individuals with BMI $\geq 30 \text{ kg/m}^2$ (35.7%) had the highest prevalence of significant fibrosis (stage 2 and above) followed by those with BMI $\geq 25\text{--}29.9 \text{ kg/m}^2$ (22.0%) and BMI $< 18.5 \text{ kg/m}^2$ (20.0%). Overweight and obese individuals had a prevalence of liver steatosis of 74.0% and 100%, respectively. Liver steatosis was also observed among 25.6% subjects with normal BMI. Among 88 participants with steatosis (mild-to-severe), 20 (22.73%) has developed liver fibrosis of stage 2 and above. Among 31 participants that exhibited significant liver fibrosis ($\geq F2$), 20 (64.52%) were found to have liver steatosis (mild-to-severe). Among the 20 participants, 9 (29.03%) were having severe steatosis. **Conclusion:** Overall, the results of the study indicate that the prevalence of hepatic steatosis is higher in overweight and obese patients. Obese patients have higher prevalence for significant fibrosis as well. FibroTouch is a good non-invasive modality to risk stratifies patients and aids in the management.

Keywords: NAFLD, FibroTouch, hepatic steatosis, hepatic fibrosis

PP-0204 KRT17 promotes HSCs activation via EMT process in liver fibrosis

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Background and Aim: Activation of HSCs plays a central role in the development of liver fibrosis. However, the underlying mechanism of HSCs activation remains unclear. KRT17, a member of intermediate filament family, can regulate tumor cells proliferation and migration. This study is

aimed to elucidate the role of KRT17 in HSCs activation and the underlying mechanisms of liver fibrosis. **Methods:** KRT17 expression level was determined by tissue microarray subjected to immunohistochemistry. Human and mice liver fibrosis tissues were used to detect KRT17 expression by western blot and qRT-PCR. LX-2 cells were treated with TGF- β 1 recombinant protein and MDI mix to induce and reverse LX-2 cells activation respectively to explore the correlation between KRT17 and HSCs activation. Additionally, cell proliferation and migration abilities of LX-2 cells transfected with KRT17 overexpressed plasmid or siRNA were determined by CCK-8, flow cytometry, transwell and wound healing assays. Finally, rescue assay explored the underlying mechanisms of KRT17 in HSCs activation and EMT process. **Results:** KRT17 expression was higher in human and mice fibrotic liver tissues than that in normal liver tissues, which was positively correlated with HSCs activation. Upregulated KRT17 in LX-2 cells could enhance proliferation, migration, HSCs activation and EMT process of cells, while knockdown KRT17 could reverse these effects. Mechanically, TGF- β 1 recombinant protein could accelerate KRT17-mediated EMT, HSCs activation and proliferation, while TGF- β 1 inhibitor could counteract the effect of KRT17 in vitro. **Conclusion:** KRT17 positively regulates HSCs activation, proliferation and EMT process in hepatic fibrosis. It may function in a TGF- β -dependent manner and might serve as a candidate biological target for intervention of liver fibrosis.

Keywords: KRT17, hepatic stellate cell activation, liver fibrosis, EMT transition, TGF- β signaling

PP-0205 HIBAG scoring system: A new dynamic risk assessment model that accurately predicts the mortality of acute upper gastrointestinal bleeding: A prospective real-world study in China

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Background and Aim: Existing scores cannot accurately predict the mortality of upper gastrointestinal bleeding (UGIB). We aim to develop and validate a new risk scoring system to dynamic predict UGIB mortality.

Methods: Prospective multicenter real-world study in China. UGIB patients who visited hospitals in 20 centers were used to derive a risk scoring system for predicting mortality through regression analysis. The scoring system includes two risk scores. The performance of all scores in UGIB has been externally verified in the Chinese population and compared with the existing scores in our cohort. We calculated the receiver operating characteristic curve (AUROC), sensitivity, specificity, and area under the result in patients classified as high-risk. **Results:** We included 749 UGIB patients in the development cohort and 323 UGIB patients in the validation cohort. The HIBAG scoring system (HIBAG-1 and HIBAG-2) includes the patient's condition at admission and treatment during hospitalization. HIBAG-1 was used in patients on admission, and HIBAG-2 was used 48 h after admission. The HIBAG scoring system were closer associated with mortality in UGIB (AUROCs 0.77–0.81) than the existing scores (pRS, RS, AIMS-65, ABC; AUROCs 0.62–0.72; p<0.02). In UGIB, patients with low HIBAG-1 score (2), medium HIBAG-1 score (5)

Conclusion: In contrast to the previous scoring, the HIBAG scoring system performs well in predicting mortality in UGIB, allowing early identification and targeted management of high-risk patients of death at admission, and evaluating the state of UGIB patients and therapeutic effect during hospitalization.

Keywords: upper gastrointestinal bleeding, risk stratification, assessment system, mortality

PP-0206 A survey of knowledge and attitude of healthcare professionals on non-alcoholic fatty liver disease in Hospital Teluk Intan

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Background and Aim: Non-alcoholic fatty liver disease (NAFLD) is a disease with an increasing burden of disease impacting the healthcare service.

Methods: We conducted a hospital wide survey among 175 doctors in Hospital Teluk Intan to explore understanding, knowledge and attitude of healthcare professionals (HCPs) towards care of patients with NAFLD.

Results: Majority of HCPs were not aware of the high prevalence (20–30%) of NAFLD (85, 48.6%). Majority of HCPs were able to identify the common comorbidities associated with NAFLD: obesity (163, 93.1%), diabetes mellitus (148, 84.6%), and dyslipidemia (160, 91.4%). 134 (76.6%) of respondents said that NAFLD presents without symptoms. 91 subjects (52.0%) agreed that NAFLD is a risk factor for progression to cirrhosis, only 5 HCPs (2.9%) agreed that NAFLD is associated with hepatocellular carcinoma. Investigation wise, respondents agreed that the important investigations include full blood count (135, 77.1%), liver function test (172, 98.3%), viral hepatitis screening (156, 89.1%), and ultrasound abdomen (151, 86.3%). Subjects agreed that weight loss (153, 87.4%), exercise (143, 81.7%) and a lower calorie diet (133, 76.0%) are important in management of NAFLD. Few respondents were aware of novel therapies including vitamin E (22, 12.6%), obeticholic acid (5, 2.9%), silymarin (4, 2.3%), oral hypoglycemic agents like metformin (55, 31.4%), GLP1r agonists (31, 17.7%), DPP4i (28, 16.0%) or thiazolidiones (18, 10.3%) that can improve outcomes in patients with NAFLD. 85 respondents (48.6%) had experience in managing patients with NAFLD but only 31 respondents (17.7%) were confident in managing patients with NAFLD. **Conclusion:** While HCPs in Hospital Teluk Intan possess basic understanding of NAFLD, many are unaware of recent developments in treatment of NAFLD, which could contribute to reduced confidence in management. As such, more effort and engagement is required from our hepatology services to ensure that updates and advances in the field of NAFLD is adequately disseminated to our doctors.

Keywords: NAFLD, HCP, knowledge, attitude

PP-0207 Modified peroral endoscopic myotomy (Liu-POEM) versus traditional-POEM for achalasia: A multicenter randomized retrospective study

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Background and Aim: To compare the efficacy and feasibility of modified peroral endoscopic myotomy (Liu-POEM) versus traditional-POEM for the treatment of achalasia. **Methods:** This was a multicenter randomized prospective study in which consecutive patients were randomized into (1:1) to Liu-POEM or traditional-POEM. The outcomes from 2 arms were evaluated and compared with regards to success rate, procedures time, duration of hospital stay, postoperative complications, recurrence rate and symptoms (Eckardt score). **Results:** A total of 100 patients with achalasia age ranged from 18 to 79 years (mean \pm SD: 46.27 ± 15.33) were randomized to either Liu-POEM or traditional-POEM. The technical success rate was 100% for each group. The average operation time of the Liu-POEM

group was significantly shorter than traditional-POEM group (32.51 ± 15.16 min vs 51.11 ± 27.42 min, $P = 0.003$). No significant difference in posthospital stay duration was found in traditional-POEM vs Liu-POEM (4.80 ± 1.44 days vs 4.90 ± 1.84 days, $P = 0.115$). **Conclusion:** Liu-POEM is a modified traditional-POEM to treat achalasia and both are same in terms of efficacy and recurrence rate. However, Liu-POEM advantages include short procedures time, simplicity of the procedure, limiting the tunneling to one step which causes minimal submucosal tissue injury (invasiveness), and less bleeding.

Keywords: Liu-POEM, traditional-POEM, achalasia

PP-0208 Daclatasvir resistance among NS5A inhibitor naïve patients infected with hepatitis C virus (HCV) genotype 3 in Malaysia

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Background and Aims: Many efforts have been engaged to improve the overall management of hepatitis C virus (HCV) patients in Malaysia such as the decentralization of HCV treatment at the primary health care facilities. The main treatment regime for hepatitis C infection in Malaysia is a combination of Sofosbuvir and Daclatasvir, which were made available in the hospitals since 2018. In spite of Daclatasvir's impact on sustained virological remission (SVR), an emergence of resistance-associated substitutions (RASs) from the use of this NS5A inhibitor is inevitable. This study aimed at determining RASs to NS5A inhibitors in naïve patients infected with HCV genotype 3 in Malaysia. **Methods:** 373 HCV genotype 3 infected patients' plasma prior to DAAs treatment were received from various hospitals throughout Malaysia. In-house population based sequencing (Sanger) assay was chosen and developed based on the literature search. The DNA sequences of HCV strains covering 1-213 codon of NS5A region were then submitted to the geno2pheno [HCV] resistance database by Max Planck Institute (MPI) Informatics to yield RASs. **Results:** Of 373, 338 samples were successfully amplified and sequenced. RASs towards Daclatasvir were detected in 12.1% of study participants. The most predominant RAS detected was 93H, contributing 85.4% of the total RASs detected. While 34.1% patients had 30K/V/S mutations which were present alone or in combination with 93H mutation. These detected 30K/V/S mutations had caused resistance to Daclatasvir. **Conclusion:** A high level of RASs towards Daclatasvir was shown in this study. Nonetheless, the analysis was done on a small number of study participants which therefore, warrant further analysis on a larger sample size. A clinical correlation is greatly needed to determine the significance of these findings. However, this information is crucial in managing HCV infected patients in the country, specifically in the era of DAAs and towards elimination of viral hepatitis by 2030.

Keywords: HCV, NS5A Inhibitor, genotype 3

PP-0209 Role of preoperative endoscopic ultrasonography in predicting the tumor invasion depth of early gastric cancer

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Background and Aim: Endoscopic ultrasonography (EUS) is generally considered the most accurate method for T staging of early gastric cancer (EGC). However, the studies pertaining to EUS for staging EGC have reported widely varied sensitivities and specificities. We aimed to estimate the overall diagnostic accuracy of EUS for staging the depth in EGCs and to explore the influential factors. **Methods:** We retrospectively reviewed data from 208 consecutive patients with EGC; all patients underwent EUS for estimating tumor invasion depth, followed by either curative surgery or endoscopic submucosal dissection (ESD). The diagnostic accuracy of EUS was evaluated by comparing the final histologic result of resected specimen. The correlation between accuracy of EUS and characteristics of EGC was analyzed. **Results:** The overall diagnostic accuracy of EUS in assessing the tumor invasion depth of EGCs was 55.9%. The univariate analysis showed that the accuracy was significantly lower for the lesions located at angle and body of the stomach, ulcer/scar (+), excavated type, lesions with white fur on surface, >2.0 cm in diameter, and submucosal invasion, as well as the undifferentiated types of lesions. Multivariate analysis of these 7 factors showed that submucosal invasion (OR 2.599; 95% CI 1.195–5.653, $P = 0.016$) and superficial type (0-II) (OR 0.208; 95% CI 0.047–0.909, $P = 0.037$) were independently associated with misdiagnosis of the depth of EGC by EUS. **Conclusion:** EUS has a quietly low accuracy for staging the invasion depth in EGCs. Accordingly, EUS may be not indispensable in the staging of EGCs, especially for 0-III-type EGCs.

Keywords: early gastric cancer, endoscopic ultrasonography, invasion depth

PP-0210 Validity and reliability of the Malay language version of the patient-physician relationship (PPR) survey and determinants of effective PPR in the management of irritable bowel syndrome

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Background and Aim: An effective patient-physician relationship (PPR) often affects the treatment outcome of irritable bowel syndrome (IBS), but its determinants are not fully known. We aimed to validate the newly developed Malay-translated PPR survey and to determine the determinants of effective PPR in IBS. **Methods:** The original English PPR survey (patient version) was first translated into the Malay language, using a standardized approach. PPR survey was administered to patients with IBS (Rome IV criteria) and exploratory factor analysis (EFA) and reliability performed. For comparative validity, the Malay version SKIP-11 questionnaire (to assess patient satisfaction) was administered concomitantly. Comparative mean and regression analyses were conducted with $P < 0.05$ as significant. **Results:** The EFA yielded three factors (Kaiser-Meyer-Olkin 0.798 and Bartlett's test of sphericity $P < 0.001$) (Table 1). The final Malay version PPR survey consisted of three domains and 28 items. The factor/domains were interpersonal features, clinical care expectations, and aspects of communication. Internal consistency was satisfactory (Cronbach's alpha 0.932). A total of 80 patients with IBS (mean age 52 years, 52.5% females) had responded (66% respond rate). Single marital status (median score 36, $P = 0.038$) and higher household income (mean score 37.67, $P = 0.02$) were significant determinants of effective PPR in IBS. PPR and SKIP-11 were fairly correlated ($r = 0.3$, $P = 0.007$). **Conclusion:** The Malay version PPR survey (patient version) is valid and reliable. Single marital status and high household income are determinants of effective PPR in IBS.

Keywords: patient-physician relationship, irritable bowel syndrome

Table 1 Exploratory factor analysis (EFA) of Malay version of PPR

Factor/Domain	Item	Factor loading	Communality
Clinical care expectation	Listen to me	0.612	0.643
	Provide educational information	0.653	0.799
	Will continue to care for me	0.479	0.631
	Spends adequate time with me	0.583	0.638
	Is empathic and caring	0.423	0.621
	Checks to make sure I understand	0.490	0.275
	Uses language I understand	0.778	0.869
	Accepts my feelings and point of view	0.368	0.706
	Is knowledgeable	0.707	0.719
	Comes up with a plan of care	0.390	0.795
	Knows about my case	0.826	0.785
	Makes it easy for me to understand	0.749	0.851
	Is available to me	0.567	0.381
	Is friendly	0.800	0.654
Communication aspect	Fails to give me treatment options	0.928	0.816
	Makes decisions about my care without involving me	0.477	0.422
	Does not do a physical examination	0.884	0.771
	Is someone I respect	0.464	0.736
	Interrupts me	0.634	0.542
	Does not explain my condition to me	0.695	0.574
	Is rude	0.550	0.715
Interpersonal feature	Is someone I can trust	0.637	0.548
	Makes me feel comfortable when talking about GI problems	0.631	0.977
	Is someone I like	0.814	0.858
	Is someone I feel connected to	0.714	0.635
	Can be humorous	0.358	0.276
	Is responsive to my questions and concerns	0.806	0.830
	Is honest	0.733	0.728

Kaiser-Meyer-Olkin was 0.798, Bartlett's test of sphericity was significant (P -value <0.001), Principal axis factoring was applied.

PP-0211 Evaluation of liver function test in glucose-6-phosphate dehydrogenase (G6PD) deficiency patients consuming fava beans

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Background and Aim: G6PD deficiency is the most common inherited enzymopathy of red blood cells. G6PD deficiency is closely linked to favism, a disorder characterized by a hemolytic reaction to consumption of broad beans. The clinical manifestation of favism is jaundice, hematuria, and hemolytic anemia that affect the liver in long term. The aim of the present study is to evaluate liver function test in G6PD-deficient patients consuming fava beans, over 3 years. **Methods:** We conducted a case control study in 55 favism patients (characterized by anemia, jaundice, and

irregular fever) and 60 healthy controls of Upper Assam whose liver and basic kidney function tests were performed. **Results:** The result showed significant abnormalities of liver function in study population ($p < 0.05$) but not in renal function ($p > 0.05$). The AST (65.3 ± 35.8), ALT (28.6 ± 15.3), and ALP (377.5 ± 120.5) levels were high. The renal function values for creatinine is 0.85 ± 0.35 which is not significant. **Conclusion:** Deranged liver function in favism patients is common and can potentially be a serious threat to their health. Therefore, a high index of suspicion along with early diagnosis of abnormal liver function and prompt medical care in G6PD deficiency can help in preventing progressive, serious liver dysfunction. In addition to biochemical liver function tests, radio-imaging and Fibroscan of the liver may further give more insights in this regard.

Keywords: G6PD, favism, liver function

PP-0212 Does effectiveness of sofosbuvir and daclatasvir vary across hepatitis C genotypes and cirrhosis status in the real world? A nationwide cohort study from Malaysia

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Background and Aim: Sofosbuvir and daclatasvir, a pan-genotypic combination of direct-acting antivirals (DAAs), have been widely used as the standard treatment for hepatitis C virus (HCV) infection in public health institutions across Malaysia since 2017. We aim to determine and compare the effectiveness of the two-drug combination in patients of different HCV genotypes and cirrhosis status. **Methods:** This was a nationwide, retrospective cohort study undertaken at 16 public hospitals. The HCV-infected patients treated with sofosbuvir and daclatasvir with or without ribavirin in 2018 and 2019 were included in the study. The information gathered ranged from their baseline characteristics, HCV genotypes, cirrhosis status, and the achievement of sustained virologic response (SVR). **Results:** Of the 1797 patients received the two-drug DAA regimen, 40% had a history of intravenous drug use. The main HCV genotype was 3 (46.9%), followed by 1a (20.0%) and 1b (8.7%). However, the HCV genotype in 21.6% of the patients was unknown. While nearly one-third of the patients had liver cirrhosis, ribavirin was added mainly in the cirrhotic patients with genotype-3 infection (76.6%). An overall SVR rate of 95.4% (95% CI: 94.2%, 96.7%) was recorded, but none of the HCV genotypes demonstrated a significantly different SVR rate as compared with genotype 1a ($p > 0.05$). The presence of cirrhosis also did not impact on the SVR rate ($p = 0.120$). **Conclusion:** The findings suggest that the WHO-recommended two-DAA regimen is highly effective in the real world despite the HCV genotypes and cirrhosis status of the patients.

Keywords: sofosbuvir, daclatasvir, pan-genotypic, direct acting antivirals (DAAs), hepatitis C

PP-0213 The correlation of malnutrition with Child–Pugh score and MELD-Na score as a prognostic indicator of mortality and hepatic decompensation among cirrhotic patients

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Background and Aim: Given the strong correlation of nutrition to various clinical outcomes, it is necessary to accurately assess nutritional status of patients with liver cirrhosis. In our knowing, there is no published material regarding cirrhosis and malnutrition locally. Hence, it would be beneficial to establish these associations in the local setting. **Methods:** This was a retrospective cohort study on patients admitted at the St. Luke's Medical Center Global City. All patients were assessed using the Subjective Global Assessment (SGA) tool, Child–Pugh score, and MELD-Na score and were correlated with clinical outcomes, namely, in-hospital mortality, length of hospitalization, and decompensation of cirrhosis. **Results:** Eighty-two (82) patients were studied, and 68% (56) were classified as having high risk of malnutrition. There was significantly higher proportion of compensated cirrhosis, admission to ICU, and mortality rates in the high risk group. Ascites (53.57%), infection (26.79%), and hepatic encephalopathy (15%) were the most common clinical outcomes. If we correlate this with the Child–Pugh score and MELD-Na score, the pattern remains consistent that the higher the score, the more patients who develop poor outcomes. These begin with a Child–Pugh score of C and a MELD-Na score of >21 . Statistically, higher SGA, Child–Pugh, and MELD scores were correlated positively with mortality and longer hospital stay ($p = 0.111, 0.012, 0.035$) **Conclusion:** The SGA, Child–Pugh, and MELD-Na scores are predictive of mortality and poor clinical outcomes. High scores for these indices are associated with higher probability of admission to ICU and longer hospital stay.

Keywords: cirrhosis, malnutrition, Child–Pugh, MELD-Na, prognosis

Table 1. Clinical Profile of Cirrhotic Patients (n = 82)

	Frequency (%); Mean \pm SD; Median (Range)
Etiology of cirrhosis	
Alcoholic	8 (9.76)
Hep B	21 (25.61)
Hep C	5 (6.1)
NAFLD	28 (34.15)
Cardiac	4 (4.88)
Mixed	3 (3.66)
Others	13 (15.85)
SGA score	
A	4 (4.88)
B	22 (26.83)
C	56 (68.29)
Child Pugh Score	
A	14 (17.07)
B	33 (40.24)
C	35 (42.68)
MELD – Na score	
A	41 (50)
B	28 (34.15)
C	13 (15.85)
Albumin, g/dL	2.55 \pm 0.67
Albumin Lymphocyte count	1120 (206.8 – 5978)
qSOFA	0 (0 – 3)
0	45 (54.88)
1	12 (14.63)
2	7 (8.54)
3	18 (21.95)

PP-0214 Analysis of predictive factors for R0 resection, bleeding, and recurrence of colorectal adenomas after endoscopic mucosal resection

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Background and Aims: Larger colonic polyps require advanced resection techniques such as endoscopic mucosal resection (EMR) for safe and effective removal. There is a steady accumulation of scientific evidence with regard to the technical aspects and long-term outcomes of colonic EMR compared with surgery. This study identified and analyzed different factors predictive of clinical outcomes for patients undergoing EMR of colorectal lesions. **Methods:** This is a retrospective cohort study on all patients who underwent colorectal EMR from January 2015 to December 2018. The diagnostic yield of Japan NBI Expert Team (JNET) classification and clinical outcomes, namely, R0 resection, complications, and recurrence of lesions, were studied. **Results:** Two hundred eighty-two patients were studied. The R0 resection rate was 96.3% ($n = 231$) for lesions resected en bloc; 15.2% ($n = 43$) presented with a complication, most commonly presenting as intraprocedural bleeding ($n = 36$, 12.8%); 10.7% ($n = 11$) had recurrence post-EMR on surveillance colonoscopy. Main predictors of recurrence include a non-granular morphology of a resected polyp (cOR 2.621 [95% CI 1.0-6.84]) and piecemeal resection (cOR 2.306 [95% CI 1.06-5.04]). A larger lesion size of >20 mm was associated with both positive resection margin and post-EMR complications. The JNET classification exhibited good sensitivity for Type 1 (71.8%) and Type 2A (91.9%) and good specificity for Type 1 (96.9%) and Type 2B (95.5%). Accuracy was high at for JNET Types 1 (91.02%), 2A (80.24%), and 2B (89.22%). **Conclusion:** EMR is an important advancement in the field of therapeutic endoscopy with good clinical outcomes. The JNET classification has a high diagnostic accuracy rate; hence is a good endoscopic tool for characterization of lesions.

Keywords: EMR, endoscopic mucosal resection, colorectal polyp, adenoma, JNET classification

PP-0215 Risk factors for proximal adenoma and non-adenoma polyps who underwent first colonoscopy

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Background and Aim: Currently, the risk factors for developing proximal non-adenoma polyp remain unclear, and the results of risk factors for adenoma polyp in Asian countries are quite conflicting. We aim to prove that there are risk factors in proximal adenoma and non-adenoma colon polyps.

Methods: We conduct a cross-sectional study of 225 patients undergoing colonoscopy for the first time, and questionnaires provided information

on risk factors for colon polyp. The colon polyps grouping into two, namely, non-adenoma and adenoma. Measurements of the serum 25(OH)D3 used the CMIA method, to determined β-catenin expression used qRT-PCR. Multivariate analysis conducting to search the independent risk factors for polyps. **Results:** The mean of serum 25(OH)D3 in the adenoma (16.7 + 3.6 ng/mL), lower than non-adenoma (17.4 + 3.6 ng/mL), and normal groups (19.7 + 3.9 ng/mL), $p = 0.000$. Serum 25(OH)D3 < 18.2 ng/mL increased the risk of incidence of non-adenoma (OR, 3.6; 95% CI 1.59).

Conclusion: Risk factors for adenoma polyps are low 25(OH)D3 serum, smoking, and high BMI, while elevated β-catenin expression and polyp size are risk factors for the non-adenoma polyps to become adenoma polyps.

Keywords: risk factors, proximal colon polyps

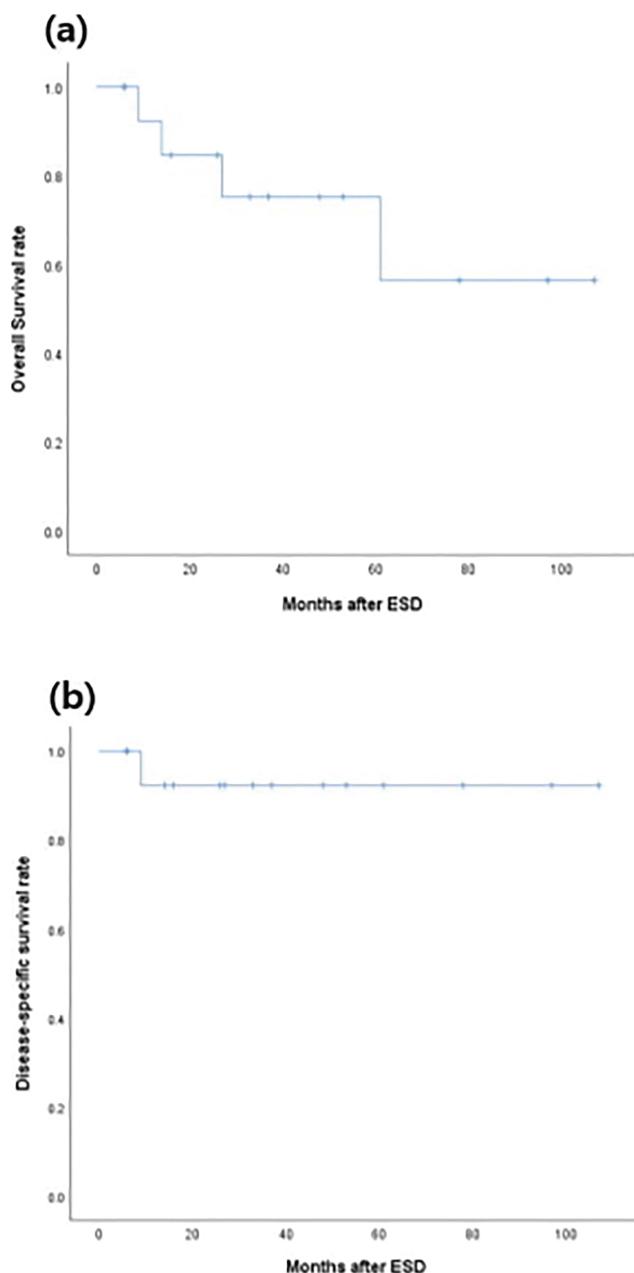
PP-0216 Endoscopic submucosal dissection for superficial Barrett's neoplasia in Korea: A single-center experience

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Background and Aim: While the incidence of Barrett's neoplasia has been increasing in Western countries, the disease remains rare in Asian countries. Therefore, very few studies have investigated endoscopic treatment for Barrett's neoplasia in Korea. Endoscopic submucosal dissection (ESD) enables en bloc and complete resection of gastrointestinal neoplastic lesions. This study aimed to evaluate the therapeutic outcomes of ESD for Barrett's neoplasia in Korea and examine the predictive factors for incomplete resection. **Methods:** We conducted a retrospective observational study of 18 patients who underwent ESD for superficial Barrett's neoplasia (adenomas and early cancers) between January 2010 and December 2019 at Pusan National University Hospital. Therapeutic outcomes of ESD and procedure-related complications were analyzed. **Results:** En bloc resection, complete resection, and curative resection were performed in 94%, 72%, and 61% of the cases, respectively. Histopathology (submucosal or deeper invasion of the tumor) was a significant predictive factor for incomplete resection ($p = 0.047$). Procedure-related bleeding and stenosis were not observed, whereas perforation occurred in one case. During the median follow-up period of 12 months (range, 6–74 months), local recurrence occurred in 2 patients with incomplete resection—1 patient underwent repeat ESD and the other patient received concurrent chemoradiotherapy. The 3-year overall and disease-specific survival rates were 73% and 93%, respectively (Figure). **Conclusion:** ESD seems to be an effective and safe treatment for superficial Barrett's neoplasia in Korea. Nevertheless, the suitability of ESD for Barrett's cancer cases should be determined considering the high risk of deep submucosal invasion.

Keywords: Barrett's esophagus, neoplasm, endoscopic submucosal dissection, adenocarcinoma



PP-0217 Randomized crossover feasibility trial of Vital®, a calorically dense enteral formula, as an alternative to egg-white sandwich for gastric emptying scintigraphy in healthy individuals

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Background and Aim: The egg-white sandwich (EWS) is known as the gold-standard validated meal for gastric emptying scintigraphy (GES). However, it is contraindicated in patients with an egg allergy or those with dietary restrictions, for example, lacto-vegetarianism. Therefore, this study aimed to determine the normative GES profile of a liquid-based alternative meal (Vital®, Abbott) (AV) and to explore its feasibility as an EWS substitute. **Methods:** This was a single-center, 2 × 2 crossover pilot trial with 30 asymptomatic healthy individuals. All participants underwent GES imaging with 99mTc-radiocolloid (37 MBq) and were randomized in a 1:1 ratio to receive either EWS (255 kcal) or 200 mL AV (300 kcal) on the first session then crossed over to the other meal after a 1-day interval. ClinicalTrials.gov Identifier: NCT04812301. **Results:** Two participants were excluded from the analysis due to grossly delayed emptying, resulting in a final sample size of 28 (13 females; median age: 23.0 ± 1.0 years). The median rate (95th upper normative limit) and delta-median retention (Δ) of total gastric retention for EWS vs AV were found to be within the internationally-recognized normal GES values: 0.5 h [84.5% (98.0%) vs 77.0% (93.0%); Δ = 7.5%], 1 h [68.0% (85.0%) vs 58.0% (83.0%); Δ = 10.0%], 2 h [31.5% (60.0%) vs 22.5% (49.0%)], 3 h [9.0% (35.0%) vs 6.0% (21.0%); Δ = 3.0%], and 4 h [2.0% (9.0%) vs 2.0% (12.0%); Δ = 0.0%]. EWS was found to have a greater gastric retention of up to 2 h ($P < 0.05$) but possessed comparable rates at 3 and 4 h ($P > 0.05$). The median gastric emptying half-time (T1/2) was similar for both meals (108.9 ± 8.9 min vs 105.0 ± 7.1 min.; $P = 0.215$) and were significantly correlated ($\tau = 0.429$; $P = 0.001$). **Conclusion:** AV is a feasible alternative to EWS for GES.

Keywords: SPECT, gastric emptying, reference value, Abbott Vital®, stomach diseases

PP-0218 EUS-guided FNA of pancreatic mass lesions

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Background and Aim: We study the contribution of FNA under endoscopy in the histological diagnosis of pancreatic masses in our center. We aim to evaluate the epidemiological and morphological characteristics of the masses of the pancreas. **Methods:** Retrospective study from February 2018 to March 2020. We reviewed all the files of patients who underwent an EUS with FNA for a pancreatic mass, suspected on imaging (CT and/or abdominal MRI). Data were collected from the endoscopic's ultrasound register. **Results:** EUS with fine needle aspiration was performed in 38 patients with a pancreatic mass. The mean age was 63 years with ranges from 25 to 80 years, the sex ratio was M/F of 1,2. The indication for

EUS-FNA was to have histological proof before neoadjuvant treatment or palliative chemotherapy in 50% of cases, 50% in the face of doubt about the nature of the mass. The site of pancreatic masses at EUS was as follows: head (45%), isthmus (11%), body (32%), hook (5%), tail (3%), peripancreatic (5%) with an average size of 39 mm. Vascular invasion was found in 40% of cases, lymph node invasion in 15% of cases. The needles used were of the standard type of variable gauge (19, 20, or 22 gauge) in 89% of cases, and cutting type (20 or 22G) in 11% of cases. The anatomopathological study came back positive in 79% of cases ($N = 30$). In favor of ADK in 20 cases, well-differentiated NET in 2 cases, high-grade dysplasia TIPMP in 2 cases, serous cystadenoma in 2 cases, in favor of a false pancreatic cyst in 2 cases, 2 cases of adenitis (tuberculous and lymph node sarcoidosis) and negative in the 8 other patients. A second cytopuncture was retried in 4 cases, coming back positive in all cases.

Conclusion: The study showed that this technique performance is satisfactorily compared to the literature. But controversy remains the choice of needle, the appropriate diameter, number of passages, and which method to use. More studies are needed to optimize the procedure to achieve its diagnostic performance.

Keywords: EUS, FNA, pancreatic mass

PP-0219 Expanding the therapeutic modalities of the over-the-scope padlock clip system

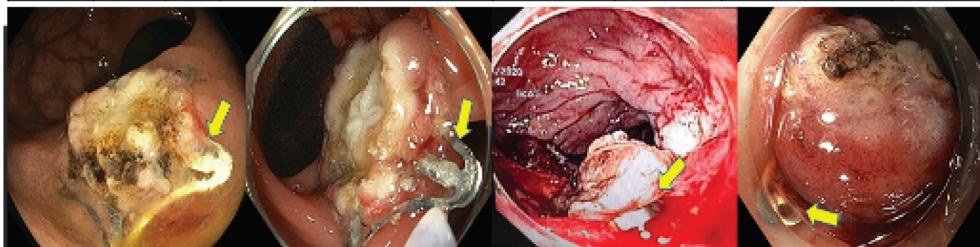
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Background and Aim: Endoscopic devices continue to evolve to match the ever-increasing demands of invasive endotherapy. One such innovative accessories are over-the-scope clips (OTSC) that have seen novel uses in various gastrointestinal lesions, be it iatrogenic or pathological. These include tackling refractory bleeders that were unresponsive to conventional methods, sealing gastrointestinal leaks and perforations, closure of intestinal fistulae, and resection of early colorectal cancers. **Methods:** We present five consecutive cases from our center commencing from July 2020 to March 2021 that required the usage of over-the-scope Padlock Clip Defect Closure System (STERIS) for a variety of indications. In this case series, the Padlock Clip with a tissue chamber depth of 1.0 cm was used. **Results:** As per table. **Conclusion:** Our case series demonstrate the efficacy and versatility of the Padlock Clip with 100% success rates and desirable outcomes. The attractive technical aspects of these clips include their ease of endoscopic installation, a simple thumb-press clip deployment technique, and the unique circumferential 6-inner prongs that offer a firm grip and watertight closure. The emerging role of Padlock Clips in the field of endotherapy has thus far been successful, though a larger-scale with longer follow-up study is warranted to further establish its overall efficacy, technical challenges, and limitations.

Keywords: over-the-scope clips, padlock clips, endotherapy

Patient no.	Age, years	Sex	Number of clips	Indication	Site	Technical success	Outcome	Follow-up, months
1	59	M	1	Postpolypectomy intraprocedural refractory bleeding	Rectum	Yes	Hemostasis secured	8
2	67	M	1	Early ascending colon cancer (failure to lift)	Ascending colon	Yes	Full thickness resection (FTR), adenocarcinoma with R0 clearance	7
3	81	M	1	Billroth I anastomotic ulcer refractory bleeding	Stomach	Yes	Hemostasis secured but patient succumbed to severe sepsis	0
4	68	F	1	Colovesical fistula	Sigmoid colon	Yes	Clinical and endoscopic resolution	4
5	64	F	1	Iatrogenic duodenal perforation	Duodenum	Yes	Clinical resolution	3



PP-0220 Differences in gene expression in idiopathic complex versus simple fistula in ano: A preliminary microarray analysis result

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Background and Aim: Idiopathic complex fistula in ano (FIA) is a debilitating disease that requires repetitive surgical intervention. Vast literatures describe the role of bacteria, epithelialization, and inflammation in forming idiopathic FIA. The theory of epithelial-to-mesenchymal transition (EMT) was recently introduced; however, its pathophysiology is not fully understood. This study aims to investigate the genes expressions involved in idiopathic complex and simple FIA. **Methods:** Categorization of fistula tracts were done based on endoanal ultrasound and magnetic resonance imaging (MRI) according to Park's classification. Fistula tracts were collected and preserved in RNA later. RNA was extracted and microarray profiling was conducted using Agilent SurePrint G3 Human Gene Expression v3 Microarray kit, 8 × 60K. Differentially expressed gene [fold change > 1.5, $p < 0.05$] were determined using the Agilent Genespring Analysis Software Version 14.9.1. Gene ontology (GO) and pathway analysis were also performed. **Results:** Twenty-two patients were recruited: 9 simple and 13 complex fistulas. Differentially expressed genes revealed 132 transcripts between idiopathic complex and simple FIA samples. The top 10 of upregulated, and downregulated genes were both analyzed, and a review was done on the gene expression. AKT1S1, NFKBIZ, TMEM165, IFNG, and MUC4 from the top 10 upregulated genes and PLP1, ADCYAP1R1, and AANAT from the top 10 downregulated genes were reported to have a connection with the tissue inflammation, fibrosis, and epithelialization process. NEDD9 from the other upregulated genes were also chosen. No significant GO at corrected p -value cut off 0.1. Thirty-four significant pathways [$p < 0.05$] were found using Single Experiment Analysis (SEA). **Conclusion:** There are differences in the gene expressions in idiopathic complex and simple FIA which may explain the pathophysiology of the disease. A further study is needed to establish the differences and highlighting the potential alternative treatment options for this condition.

Keywords: fistula in ano, EMT, gene expression

PP-0221 Gamma-glutamyl transpeptidase dynamics as a biomarker for advanced fibrosis in non-alcoholic fatty liver disease

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Background and Aim: Abnormal lipid profiles and liver biochemistry are common in non-alcoholic fatty liver disease (NAFLD). However, it is unclear whether changes in blood tests are associated with advanced fibrosis. **Methods:** Patients diagnosed with NAFLD between 2009 and 2017 at a health check-up were included. The changes in blood tests were calculated using the following formula: [(value at 6-month-value at baseline)/value at baseline]×100. The endpoint was advanced fibrosis determined by the NAFLD fibrosis score, calculated every year from the index date until 2019. Cox proportional hazards models were used to identify factors predicting advanced fibrosis. **Results:** After a median follow-up of 31.7 (19.4–50.8) months, advanced fibrosis occurred in 64 (6.3%) of 1021 patients. The advanced fibrosis group was older and had a higher prevalence of obesity, hypertension, or diabetes ($P < 0.05$). Gamma-glutamyl transpeptidase (GGT) levels (72.9 vs. 51.1 IU/L; $P = 0.23$) and ΔGGT (+6.0% vs. -6.9%; $P = 0.06$) were higher in the advanced fibrosis group. After multivariate adjustment, ΔGGT (hazard ratio [HR] 1.03; $P < 0.001$), age,

and platelet counts were significantly associated with advanced fibrosis. The positive ΔGGT group showed a higher incidence of advanced fibrosis than the negative group ($P = 0.01$). The 1-standard deviation increment in ΔGGT showed a significant association with advanced fibrosis both in statin users (HR, 1.35) and in non-users (HR, 1.31; $P < 0.001$). The restricted cubic spline model identified positive correlation between ΔGGT and the NAFLD fibrosis scores ($P < 0.001$). The sensitivity analysis showed consistent results. **Conclusion:** ΔGGT calculated at 6 months following NAFLD diagnosis is associated with advanced fibrosis.

Keywords: Gamma-Glutamyl Transpeptidase, Non-Alcoholic Fatty Liver Disease, Advanced Fibrosis, Lipoprotein, Apolipoprotein

PP-0222 Influence of the preoperative nutritional status in patients with upfront surgery for esophageal squamous cell carcinoma

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Background and Aim: Few studies are focused on preoperative nutritional status of esophageal cancer patients eligible to upfront surgery. We aimed to investigate the association with preoperative nutritional status and prognosis of patients who undergo upfront surgery for esophageal cancer. **Methods:** A total of 274 patients who undergo upfront surgery for esophageal squamous cell carcinoma on clinical stage T1-2N0Mx between January 2012 and December 2016 were eligible. The preoperative nutritional status was evaluated using the scoring system of prognostic nutritional index (PNI), nutritional risk screening 2002 (NRS 2002), and controlling nutritional status (CONUT). The association between preoperative nutritional status, overall survival, and postoperative complication was analyzed. **Results:** The median age was 63 years (interquartile range, 58). **Conclusion:** Our results demonstrate that poor preoperative nutritional status on high NRS 2002 are associated with postoperative complications as well as poor overall survival in patients with upfront surgery for esophageal cancer.

Keywords: esophageal cancer, prognostic nutritional index, nutritional risk screening 2002, controlling nutritional status, prognosis

PP-0223 Scoring system for predicting clinical outcomes and endoscopic intervention requirement in peptic ulcer bleeding

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Background and Aim: Few studies are focused on the predictability of the scoring system for the risk stratification and prognosis of peptic ulcer bleeding. We aimed to analyze the pre-Rockall score (pre-RS), Glasgow–Blatchford score (GBS), and AIMS65 for predicting clinical outcomes and endoscopic intervention requirement in patients with peptic ulcer bleeding. **Methods:** Between January 2013 and December 2017, 682 who visit in emergency room and underwent esophagogastroduodenoscopy for peptic ulcer bleeding were eligible. The

area under the receiver-operating characteristic curves (AUROC) of each score was calculated for the prediction of endoscopic intervention requirement, rebleeding, blood transfusion, and mortality. **Results:** The median age was 64 years (interquartile range, 56). **Conclusion:** Pre-RS, GBS, and AIMS65 scoring system were all acceptable for predicting clinical outcomes in patients with peptic ulcer bleeding. In particular, pre-RS is the most useful scoring system for detecting the patients who need endoscopic intervention.

Keywords: upper gastrointestinal bleeding, peptic ulcer bleeding, Rockall score, Glasgow–Blatchford score, AIMS65

PP-0224 Urgent ERCP decreases mortality in acute cholangitis from common bile duct stones

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Background and Aim: ERCP is a mainstay treatment for acute cholangitis. Urgent ERCP within 24 h is suggested for moderate to severe acute cholangitis, but the impact on clinical outcomes remains to be explored. This study aimed to assess clinical outcomes of patients undergoing urgent ERCP compared to delayed ERCP in acute cholangitis from CBD stones. **Methods:** A retrospective review of the ERCP database of patients diagnosed with acute cholangitis due to CBD stone undergoing ERCP from 2008 to 2017. Timing of urgent ERCP was defined as within 24 h after admission. In-hospital mortality, persistent organ failure at 72 h, length of stay, complete stone removal, and complications were assessed. **Results:** 455 patients were recruited with mean age of 66. 98 (21.5%) had severe cholangitis, whereas 184 (40.4%) had moderate, and 173 (38%) had mild severity. 208 (45.7%) underwent urgent ERCP. There were no differences in clinical characteristics between two groups except underlying malignancy, found more frequently in the delayed ERCP group ($p = 0.047$). The in-hospital mortality in the urgent ERCP group was significantly lower than those undergoing delayed ERCP ($p = 0.032$). Subgroup analysis showed that urgent ERCP was associated with lower in-hospital mortality in severe ($p = 0.024$), but not in mild and moderate severity. The length of stay was shorter in the urgent ERCP group than in the delayed group ($p < 0.01$). Nonetheless, urgent ERCP did not alter persistent organ failure, complete stone removal, complication, and readmission rate between two groups. (Table 1) **Conclusion:** Urgent ERCP in acute cholangitis from CBD stones decreased in-hospital mortality and length of stay.

Keywords: cholangitis, cholangiopancreatography, endoscopic retrograde, cholestasis, choledocholithiasis

PP-0225 Retrospective study on economic evaluation between tenofovir versus entecavir in achieving virological response for treatment naïve chronic hepatitis B patients

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Background and Aim: Entecavir (ETV) and tenofovir disoproxil fumarate (TDF) are first line treatment for chronic hepatitis B (CHB) infection. Both are equal in efficacy in achieving treatment objectives and are known to possess high barrier towards drug resistance. The primary outcome is to evaluate the economic burden from our hospital's perspective in the utilization of ETV (Baraclude, Bristol-Myers Squibb) and generic TDF (Tenvir, Cipla Limited) over the course of the first 2 years of treatment. Secondary outcomes include comparison in terms of efficacy in biochemical normalization and virological suppression between these two drugs for our CHB infected patients. **Methods:** We retrospectively reviewed and compared the data of patients commenced on ETV and TDF starting from 2007 to 2016. Variables contributing to direct health care costs were identified and evaluated. Cost effectiveness ratio (CER) and incremental cost effectiveness ratio (ICER) between ETV and TDF were then calculated based on their efficacy in achieving complete virological suppression (CVR) by year two. **Results:** Year two CVR rates were found to be 88% for ETV and 94% for TDF for our CHB infected population. The CER for ETV and TDF was MYR 12 956.17 and MYR 5037.40, respectively, while the ICER was MYR -1111.05. **Conclusion:** There is no difference between ETV and Tenvir in achieving CVR by year two, and the generic TDF is indeed a more sustainable economical alternative during the first 2 years of treatment.

Keywords: hepatitis B, tenofovir, entecavir, economic evaluation

Table 9: Cost effectiveness analysis of Entecavir versus Tenofovir in treating HBV

	Entecavir 0.5mg	Tenofovir 300mg
Effectiveness		
Virological suppression	0.88	0.94
Cost measure		
Cost of treatment (MYR)	11,401.43	4,735.16
Summary measure		
CER (MYR)	12,956.17	5,037.40
ICER (MYR)	-1,111.05 per additional patient to achieve virological suppression	

CER (MYR per successfully treated patient) = Cost of treating patient divided by complete response rate (in the fraction of one)

ICER (MYR per successfully treated patient) = Incremental cost divided by incremental efficacy (in the fraction of one)

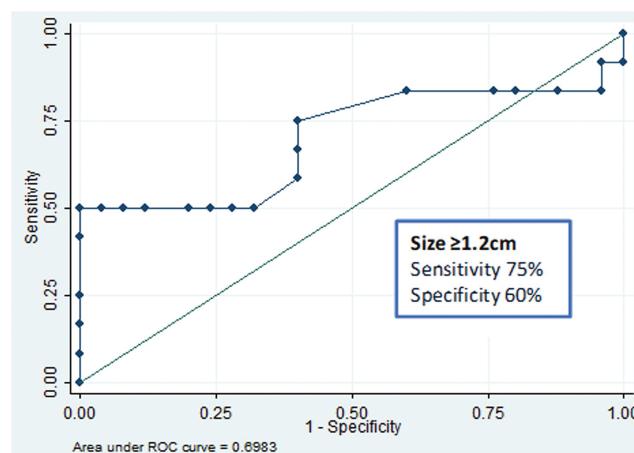
PP-0226 Comparison study of surgical versus endoscopic resection of esophagogastric junction subepithelial tumors: A single center experience

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Background and Aim: Endoscopic submucosal dissection (ESD) and submucosal tunneling endoscopic resection (STER) have been applied to the management of esophagogastric junction (EGJ) subepithelial tumors (SETs) while surgical resection is sometimes difficult in this area. We aimed to compare surgical *versus* endoscopic resection (ER) of EGJ SETs in terms of efficacy and safety. **Methods:** Between January 2010 and August 2020, we retrospectively enrolled patients with EGJ SETs, which was defined as within 1 cm proximal and 2 cm distal to the EGJ, after either surgical or endoscopic management. Technical, clinical success rates and adverse events were compared between two groups. **Results:** Totally 16 and 20 patients were enrolled in surgery and ER (10 ESD and 10 STER) group, respectively. The mean \pm SD (SR *vs* ER) of age (57.50 ± 13.10 years vs 50.30 ± 13.10 years old, $p = 0.097$), gender ratio (female/male 4/12 vs 10/10, $p = 0.709$), technical success rate (100% *vs* 100%), en bloc rate (100% *vs* 100%), location of tumor (esophageal/gastric site, 0/16 vs 6/14, $p = 0.850$), and follow-up period (1231 ± 1364 vs 697 ± 445 days, $p = 0.108$) were not different between two groups, while larger gross and pathological tumor size (4.14 ± 2.20 vs 1.02 ± 0.49 cm, $p < 0.001$), and 4.40 ± 1.90 vs 0.90 ± 0.40 cm, $p < 0.0001$), longer hospital stay (8.80 ± 7.30 vs 4.90 ± 1.30 days, $p = 0.025$), longer procedure time (176.10 ± 88.40 vs 46.50 ± 33.80 min, $p < 0.0001$), and higher complication rate (18.75% *vs* 0%, $p < 0.0001$) were noticed in surgery group. 33% (56.25% and 15.00% in surgery and ER group, respectively) were gastrointestinal stromal tumors (GISTs). Tumor size ≥ 12 mm had sensitivity and specificity of 75% and 60%, respectively, to predict GIST (area under ROC = 0.698). **Conclusion:** ER is an efficient and safe method for the management of small EGJ SETs.

Keywords: subepithelial tumor, STER, third space endoscopy, gastrointestinal stromal tumor



PP-0227 Tenofovir is superior to entecavir on recurrence in hepatitis B virus-related hepatocellular carcinoma after curative resection

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Background and Aim: It is unclear whether entecavir (ETV) and tenofovir disoproxil fumarate (TDF) have different effects on hepatocellular carcinoma (HCC) recurrence and death in patients receiving curative hepatectomy for HBV-related HCC. We aimed to compare the long-term efficacy of ETV and TDF in HCC recurrence and overall survival of patients after curative hepatectomy for HBV-related HCC. **Methods:** A total of 20 572 patients with HCC who received hepatectomy between January 2010 and December 2019 were screened for study eligibility. Finally, a total of 219 consecutive patients treated with ETV ($n = 146$) or TDF ($n = 73$) after curative hepatectomy for HBV-related HCC of BCLC stage 0 or A were analyzed by propensity score matching (PSM) (2:1) analysis. HCC recurrence and overall survival of patients were compared between ETV and TDF groups. **Results:** After a median follow-up of 52.2 months, 81 patients (37.0%) had HCC recurrence, 33 (15.1%) died, and 5 (2.3%) received liver transplantation. We found TDF therapy was an independent protective factor for HCC recurrence compared with ETV therapy (HR, 1.687; 95% CI, 1.027–2.770, $p = 0.039$); however, no difference in the risk of death or liver transplantation. We further found TDF therapy was significantly associated with lower risk of late recurrence (HR, 4.705; 95% CI, 1.763–12.558, $p = 0.002$), but not in early recurrence. **Conclusion:** TDF therapy is associated with a significantly lower risk of HCC recurrence, especially of late recurrence, compared to ETV therapy among patients who undergo curative hepatectomy for HBV-related early-stage HCC.

Keywords: entecavir (ETV), tenofovir disoproxil fumarate (TDF), chronic hepatitis B, hepatocellular carcinoma, recurrence

PP-0228 Prevalence of helicobacter pylori in advanced gastric carcinoma patients in tertiary referral hospital in Jakarta, Indonesia

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Background and Aim: Infection with *Helicobacter pylori* is the strongest known risk factor for gastric adenocarcinoma, but only a minority of colonized individuals develop cancer of the stomach. In a progression of becoming cancer, bacteria can be lost from the stomach; thus, it is rarely found in gastric biopsy of gastric cancer. The aim of this study is to evaluate the prevalence of *Helicobacter pylori* in **Methods:** We retrospectively collected data from January 2014 until December 2019 of gastric cancer patients in our institution. **Results:** A total of 156 patients with advanced gastric carcinoma were included in this study. Male patients were 55.8%

($n = 87$), while females were 44.2% ($n = 69$). Mostly age range between 41 and 59 years old (50.6%; $n = 79$), amount of 17.3% ($n = 27$) were below 40 years old, and 32.1% ($n = 50$) were more than 60 years old. One hundred sixteen tumors (74.4%) were Lauren intestinal type, 24 tumors (15.4%) were diffuse type, and 16 tumors (10.3%) were mixed type. Only four tumors (2.6%) were found with *Helicobacter pylori* from the biopsy samples. **Conclusion:** *Helicobacter pylori* is rarely found in gastric biopsy of gastric cancer. Other techniques are maybe needed to evaluate the presence of the bacteria from the gastric tissue.

Keywords: *Helicobacter pylori*, gastric cancer

PP-0229 Utility of pre and post treatment alpha-fetoprotein in the prognosis of hepatocellular carcinoma treated with ultrasound-guided percutaneous radiofrequency ablation

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Background and Aim: Post-treatment alpha-fetoprotein (AFP) response has been reported to be associated with prognosis of hepatocellular carcinoma (HCC). We aimed to determine whether pre- and post-treatment AFP are associated with survival for HCC patients undergoing radiofrequency ablation (RFA). **Methods:** RFA was performed on 166 index HCC patients from 2007 to 2018. Post-treatment AFP was monitored at 1-, 3-, and 6-months and percentage AFP response was computed from pre-treatment AFP. Overall survival (OS) was estimated using Kaplan-

Meier, and Cox regression analysis of predictors was analyzed. **Results:** Pre-treatment AFP levels > 10 ng/mL, > 100 ng/mL, and > 1000 ng/mL were observed in 55.1% (92/166), 31.1% (52/166), and 9.6% (16/166), respectively. Patients with pre-treatment AFP > 10 ng/mL had poorer OS compared to AFP < 10 ng/mL (1-, 3-, and 5-year: 77.3%, 50.7%, 23.3% vs 93.1%, 70.1%, 42.2%; $p = 0.003$). In those with normal post-treatment AFP, AFP response $> 50\%$ at 6 months was a predictor of OS (1-, 3-, and 5-year: 96.4%, 84.4%, 62.8%; $p = 0.014$). In those with high post-treatment AFP, AFP response $> 50\%$ at 1 month ($p = 0.009$) and 3 months ($p = 0.002$) were predictors of OS. Furthermore, normal AFP at any time during 1-, 3-, or 6-months post-treatment with RFA were associated with better OS ($p < 0.001$). When pre- and post-treatment AFP were analyzed, pre-treatment AFP < 10 ng/mL and post-treatment AFP response $> 50\%$ at 1 month yielded the best estimated 5-year survival ($p = 0.002$). **Conclusion:** Pre-treatment AFP < 10 ng/mL, 6-months post-treatment AFP response $> 50\%$ with normal AFP, and 1- and 3-months post-treatment AFP response $> 50\%$ with high AFP were predictors of better OS. AFP < 10 ng/mL at any time during 1-, 3-, or 6-months after RFA was an important predictor of better prognosis. The best prognosticator for OS was a patient with pre-treatment AFP < 10 ng/mL and post-treatment AFP response $> 50\%$ at 1 month.

Keywords: retrospective, prognosis, radiofrequency ablation, hepatocellular carcinoma, alpha-fetoprotein

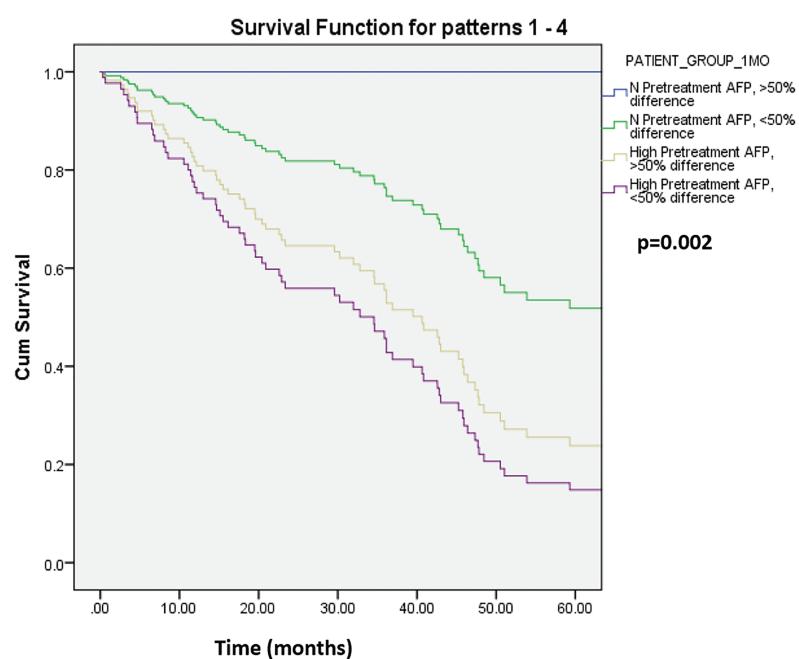


Figure 3. Kaplan-Meier curve for overall survival of HCC patients based on pre-treatment AFP and post-treatment AFP response $\geq 50\%$ at 1-month after RFA

PP-0230 Comparison of the initial endoscopic versus percutaneous approach biliary drainage for palliative perihepatic cholangiocarcinoma: An 8-year follow up

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Background and Aim: The palliative treatment for obstructive jaundice associated with unresectable perihepatic cholangiocarcinoma (PHC), percutaneous transhepatic biliary drainage (PTBD), or endoscopic retrograde biliary drainage (ERBD) has been performed. We aim to investigate and compare the outcomes of PTBD and ERBD in the unresectable PHC patients with obstructive jaundice. **Methods:** From January 2013 to December 2019, 1009 patients were diagnosed with cholangiocarcinoma or gall bladder cancer and 61 patients with PHC in the Kaohsiung Chang Gung Memorial Hospital cancer registry. We excluded those with resectable tumor, previous history of hepatectomy or gallbladder surgery, combined intrahepatic tumor, or without any treatment. 23 patients received initial ERBD ($n = 14$) or PTBD ($n = 9$) for the palliative treatment. **Results:** The age, gender, coexistence with chronic hepatitis B or C, tumor stage, or Bismuth type was similar between the two groups. The overall clinical successful rate of drainage was similar between the PTBD group and the ERBD group (66.7% vs 57.1%, $p = 0.648$). Two groups had similar complication rates (hemorrhage, cholecystitis, cholangitis, and pancreatitis), but the former had a longer survival time in trend ($p = 0.078$) than the latter in the 2-year follow-up. PTBD was easily dislodged (44.4%) with shorter patency time in trend than ERBD (47 ± 32 vs 122 ± 140 day, $p = 0.120$). **Conclusion:** ERBD and PTBD may be used as the initial treatment option to improve obstructive jaundice in palliative PHC patients with similar complications and could be each other's rescue method if initial drainage approach had no clinical response.

Keywords: endoscopic retrograde biliary drainage, location of cholangiocarcinoma, palliative, percutaneous transhepatic biliar, unresectable

PP-0231 The clinical presentations of liver abscess after endoscopic retrograde cholangiopancreatography with choledocholithiasis after sphincterotomy or not: A 17-year follow-up

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Background and Aim: Endoscopic retrograde cholangiopancreatography (ERCP) for choledocholithiasis creates a communication of bowel contents to biliary system, which implies the risk of pyogenic liver abscesses (PLA). Up until now, there has been a lack of data regarding the issue. **Methods:** The data were retracted from the Chung Gung Research Database between January 1, 2001, and December 31, 2018. After strict exclusions, 11 697 patients were enrolled as a cohort, and 220 (1.88%) cases developed PLA in the following period for 17 years. We further divided the liver abscess cases into the endoscopic sphincterotomy (ES) group ($n = 195$) and

non-ES group ($n = 25$) for analysis. **Results:** The glycated hemoglobin, white blood count, liver function, creatinin, and C-reactive protein were also similar, but the lower bilirubin level in ES groups than non-ES groups (1.9 ± 2.0 vs 4.3 ± 5.8 , $p < 0.001$) at the admission date of PLA. The size, location, single, or multiple distributions of abscess were also similar. The interval time from previous ERCP to PLA was 835.6 ± 1121.9 days vs 948.3 ± 968.6 days ($p = 0.674$) in ES and non-ES groups, respectively. The most common pathogen was Klebsiella pneumonia (33.3–40.0%), followed by *Escherichia coli* (20.0–25.6%). There were significantly less prevalence infection of Pseudomonas in ES than non-ES groups (3.6% vs 16.7%, $p = 0.007$). The hospital stay (18.5 ± 13.2 days vs 22.2 ± 10.4 , $p = 0.182$) and in-hospital mortality (12.8% vs 12.0%, $p = 0.908$) did not show significant difference between ES and non-ES groups. **Conclusion:** Although the PLA was the late and relatively minor complication of ERCP with choledocholithiasis, it should be paid more attention to check the patency of hepatobiliary system.

Keywords: endoscopic retrograde biliary drainage, liver abscess, choledocholithiasis, sphincterotomy

PP-0232 Liver function tests deteriorate with increasing severity of COVID19: A single center retrospective study of 1474 Indian patients

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Background and Aim: Coronavirus disease 2019 (COVID-19) is a respiratory system trophic disease. Liver involvement is emerging from recent data. Studies describing liver function test (LFT) abnormalities are lacking from our population. We studied liver function abnormalities in different categories of COVID-19 and its significance. **Methods:** It was a retrospective study from a single center of a metropolitan city. All consecutive patients with proven COVID-19 by reverse transcriptase-polymerase chain reaction (RT-PCR) from 23rd March till 30th September were enrolled. Of 3280 case records profiled, 1474 cases were included in the study. Clinical characteristics, biochemical parameters, and outcomes were recorded. **Results:** Deranged LFTs were present in 681/1474 (46%) patients enrolled. Overall, hepatocellular type of injury was most common (93%). Patients with deranged LFTs had more probability of developing severe disease ($P < 0.001$), longer intensive care unit (ICU) stay ($P < 0.001$), and mortality ($P < 0.001$). Higher mean age ($P < 0.001$), male gender ($P < 0.001$), fever ($P < 0.001$), diabetes mellitus ($P < 0.001$), lower oxygen saturation levels at admission ($P < 0.001$), higher NL ratio ($P < 0.001$), IL-6 ($P < 0.001$), higher D-dimer levels ($P < 0.001$), and positive radiological findings were associated with deranged LFTs ($P < 0.001$). Acute liver injury was seen in 65 (4.33%) cases on admission and 57 (3.5%) cases during hospital stay. In severe COVID-19, raised serum total bilirubin, aspartate and alanine transaminases (AST & ALT), international normalized ratio (INR), and low serum albumin were found to be significant. However, on multivariate analysis for predicting mortality, age, serum creatinine, and PaO₂/FiO₂ ratio only were found to be significant ($P < 0.001$). **Conclusion:** In COVID-19, LFT abnormalities are common and multifactorial. Derangement increases as severity progresses. Presence of liver injury is associated with worse clinical outcomes.

Keywords: COVID-19, SARS-CoV-2, liver function tests, mortality

PP-0233 Early single-stage endoscopic retrograde common bile duct stone removal in mild and moderate acute cholangitis

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Background and Aim: Evidence supporting the feasibility of single-stage stone removal in patients with moderate grade of acute cholangitis remains insufficient. The maximal size of common bile-duct stone suitable for removal during single-stage ERCP in moderate grades of acute cholangitis is unknown. **Methods:** We prospectively enrolled 196 endoscopic retrograde cholangiopancreatography (ERCP)-naïve patients diagnosed with acute cholangitis and choledocholithiasis between September 2018 and February 2020 at a single hospital. For eligible patients, single-stage treatment involved stone removal at initial ERCP. Early ERCP was defined as ERCP performed ≤ 72 h following diagnosis in the emergency room.

Results: A total of 138 patients were included in the final analysis. The success rate of complete stone extraction was similar between patients with mild and moderate grades of acute cholangitis (88.5% vs 91.7%; $p = 0.536$). Complication rates were comparable between the two groups. In the moderate grade of cholangitis group, the length of hospitalization declined significantly among patients who underwent early single-stage ERCP (10.6 ± 6.1 vs 18.7 ± 12.5 days; $p = 0.001$) compared with patients treated with delayed ERCP. In the multivariate analysis, early single-stage ERCP indicated shorter hospitalization times (≤ 10 days) (odds ratio (OR), 4.746; $p < 0.001$). A stone size larger than 1.5 cm was an independent risk factor for stone extraction failure (OR, 7.034; $p = 0.003$). **Conclusion:** Single-stage retrograde endoscopic CBD stone removal in mild and moderate grades of acute cholangitis with choledocholithiasis may be safe and effective, which can obviate the requirement for a second ERCP session, thus reducing medical expenses.

Keywords: endoscopic retrograde biliary drainage, endoscopic papillary balloon dilatation, endoscopic retrograde endoscopic, acute cholangitis

PP-0234 Clinical outcomes of rebleeding in patients with benign peptic ulcer bleeding after emergency endoscopy: A retrospective observational study

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Background and Aim: Benign peptic ulcer bleeding (BPUB) accounts for most cases of nonvariceal upper gastrointestinal bleeding (UGIB) and rebleeding is one of the most significant predictive factors for UGIB associated mortality. **Methods:** From 2013 to 2017, medical records of final

864 patients diagnosed with benign peptic ulcer disease were selected out of 5076 patients who underwent emergency endoscopy because of suspected UGIB. The patients were selected who visit emergency room or who is hospitalized for other medical illness. The primary end point was rebleeding within 30 days after initial endoscopy. The risk factors of rebleeding and subgroup analysis according to patient **Results:** Among 864 BPUD patients, rebleeding occurred in 140 patients (16.2%). Of all significant variables, initial existence of hypotension (OR 1.878, $p = 0.005$), Forrest class Ia (OR 28.572, $p < 0.001$), Ib (OR 3.155, $p = 0.005$), IIa (OR 23.820, $p < 0.001$), and IIb (OR 25.761, $p < 0.001$), hospitalized patients (OR 1.748, $p = 0.012$) were positively correlated with rebleeding on the logistic regression analysis. In subgroup analysis according to patient **Conclusion:** To reduce mortality from BPUD, more attention should be paid not only to emergency room patients but also to hospitalized patients which may be one of the independent factors that increase rebleeding.

Keywords: benign peptic ulcer rebleeding, emergency endoscopy, patient's location, second look endoscopy

PP-0235 Direct percutaneous endoscopic gastrostomy

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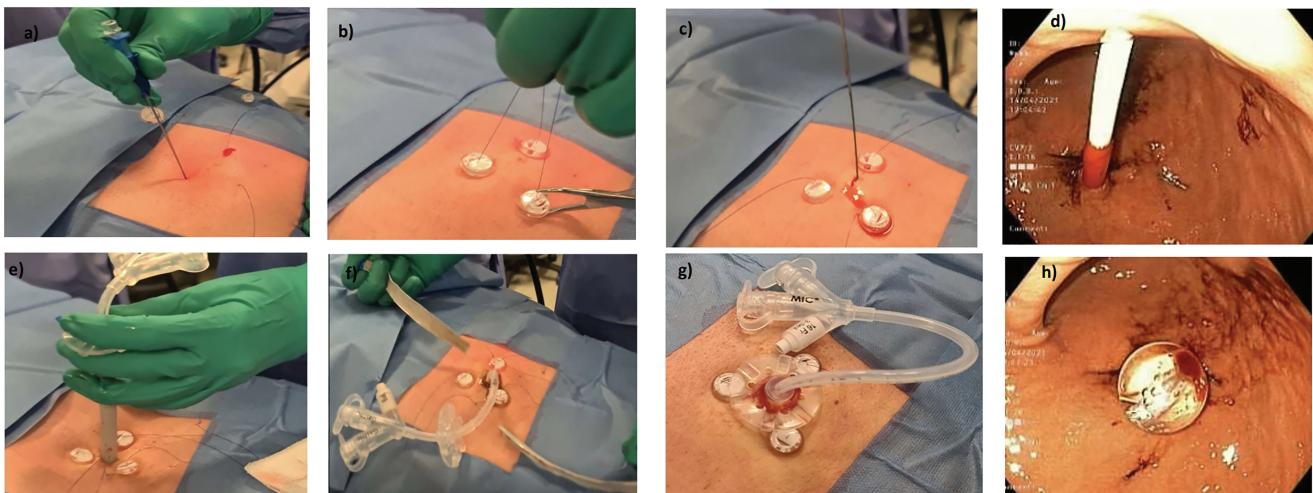
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Background and Aim: Percutaneous endoscopic gastrostomy (PEG) tubes are frequently used in patients with aerodigestive tract cancers for nutritional support. However, the conventional pull-through method of PEG insertion is associated with infection and tumor implantation at the PEG site. Direct or transabdominal gastrostomy technique avoids tube contamination with the tumor and the oral flora and has been shown to have lower rates of infectious complications and tumor seeding. It can be performed with radiological or endoscopic guidance, but the endoscopic method is underutilized in Australia. We aimed to present our single-center experience and provide a stepwise guide of the direct percutaneous endoscopic gastrostomy technique to promote its use in Australia.

Methods: Patients who underwent direct gastrostomy insertion with endoscopic guidance between December 2016 and December 2020 were included. Patient and tumor characteristics, procedural data, and post-procedural complications were retrospectively collected from medical records. **Results:** Twenty-six patients underwent direct PEG insertion (mean age 64 years and 20 male) during the study period. Success rate of tube placement was 100%. Twenty-four cases were performed under conscious sedation (24/26, 92%) over a median procedure time of 21 min (interquartile range 11 min). One case of PEG-site infection was observed. There were no other procedure-related complications. **Conclusion:** Direct endoscopic percutaneous gastrostomy is safe and efficacious and should be considered by endoscopists and referring clinicians as a valid option for patients with aerodigestive tract cancer in need of nutritional support.

Keywords: gastrostomy, gastropexy, head and neck cancer, oesophageal cancer

Figure 1: Step-by-step guide to placing a direct percutaneous endoscopic gastrostomy tube



a) A suitable PEG site is identified on the abdominal wall using transillumination and direct pressure conductance. Three introducer needles loaded with T-fasteners are punctured through the gastric wall and b) the strings pulled gently to bring the stomach up against the abdominal wall to create a gastropexy. The three T-tags are clipped closed. c) 18-gauge introducer cannula inserted into the stomach and a guidewire is introduced into the stomach through this cannula. d) The cannula is then removed, and a serial dilator is introduced over the guidewire (endoscopic view) and e) the 24Fr PEG tube introduced through the last dilator once the wire and smaller internal dilators are removed. The internal balloon is inflated with 5-10mL of water to secure the gastrostomy tube. f) The dilator tube is split and withdrawn from the stomach, leaving the PEG tube in situ. g) The external PEG bumper is moved to the abdominal wall, and the strings from T-fasteners are cut. h) Endoscopic view of the gastric body showing the inflated balloon.

PP-0237 Safety, efficacy, closure techniques, and medium term outcomes of endoscopic full thickness resection: A decade long experience from a tertiary care center

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Background and Aim: Endoscopic full-thickness resection (EFTR) is a novel minimally invasive technique for resection of muscularis propria tumors of GI tract. This study reports medium-term results of EFTR from a single center. **Methods:** Prospective database of patients with GI-SETs undergoing EFTR over 10 years (2011–2021). Evaluation – endoscopy, endoscopic ultrasound (EUS), CT scan. Inclusion – encapsulated, endophytic lesions, without invasion. Exclusion – exophytic lesions, invasion, coagulopathy, surgically unfit. All procedures performed using CO₂ insufflation, HD endoscope with distal hood. Submucosal elevation followed by dissection to expose SET. Encapsulated SET resected with intact capsule from muscle layer. Resultant defect closed endoscopically. **Results:** N = 47 (M:F – 32:15), mean age – 56.8 years (range: 22–83), comorbidities – 31/47; presentation – Abdominal pain – 21 (44%), GI bleed – 16 (34%), incidental – 7 (14.8%), others – 5. All lesions arising from MP layer. Location – Stomach – 31 (65.9%), duodenum – 8 (14%), rectum – 3 (6.3%), jejunum – 1, colon – 4. Mean diameter – 31 mm (range 8–70), median procedure time – 130 min (IQR 88–160), median defect closure time – 13 min (IQR 8–26), median hospital stay 4 days (IQR 3–6). Technical success – 44 (93%). En bloc resection – 100%. R0 resection – 37/44 (84%). Intracorporeal morcellation – 7 (15.9%), GIST – 4, Schwannoma – 3. Adverse events – 3 (6.3%, surgery – 1). Failure – 3 (6.3%; extra-serosal/exophytic). Histopathology – GIST 22 (46.8%), NET 9 (19.1%), leiomyoma 5 (10.6%), schwannoma 3 (6.3%), others – 8 (17%). Defect closure – 42 (95.5%; TTS clips – 20 [42.5%], OTS clips – 11 [23.4%],

omentum patch + clips – 4 [8.5%], endoscopic suturing – 3 [6.3%], endoloop + clips – 7 [14.8%]); no closure – 2. Mortality – Nil. Median follow up – 33.6 months (IQR 15–47) in 42/44 (95.5%) – no recurrence. **Conclusion:** EFTR is safe and effective for treatment of GI-SETs and provides optimal en bloc and R0 resection rates. Secure closure of resultant defect is recommended. At medium-term follow-up, 96% patients were disease-free.

Keywords: EFTR, full thickness resection, subepithelial tumor, SET

PP-0238 Per oral endoscopic myotomy for achalasia: A Taiwanese single-center experience

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Background and Aim: Endoscopic treatment of achalasia includes endoscopic botulinum toxin injection, endoscopic pneumatic dilations (PD), but surgery owns longer durability. Per oral endoscopic myotomy (POEM) carries high expectations with good short and mid-term report and only minor morbidity in Western and Eastern countries outside Taiwan. The purpose of this study is to report a 2-year clinical outcome and safety of POEM among a prospective registered achalasia cohort in southern Taiwan. **Methods:** We retrospectively analyzed 22 prospective registered patients who received POEM for achalasia, adhered and completed 2-year regular follow-up studies between July 2015 and December 2020 from Kaohsiung Chang Gung Memorial Hospital, Taiwan. **Results:** Twenty-two of achalasia patients (8 males and 14 female) were enrolled into this study (male/female: 8/14, mean age: 45.0 years). All 22 patients had received high-resolution manometry (HRM) to diagnose and classify the phenotype. Fifteen patients were diagnosed as type I achalasia and 7 as type II by Chicago classification. Clinical remission rates were 100%

at 3 months, 6 months, 1 year and 95.5 at 2 years. Four patients who recurred after previous PD were successfully treated with POEM with clinical remission. Three patients had fever after POEM. Two patients (9.1%) had gastroesophageal reflux disease (GERD) after POEM procedure.

Conclusion: In conclusion, POEM is an effective and safe treatment of choice for achalasia with 95.5% of 2-year clinical remission in this Taiwanese study. Post POEM GERD is low in current study but the concern for potential GERD needs long-term follow-up reports to further clarify especially with larger scale quality studies.

Keywords: POEM, achalasia, GERD

Tables. Clinical outcome of Peroral endoscopic myotomy (POEM)

	Before POEM	Post POEM (3m)	P value	Post POEM (1y)	Post POEM (2y)
Body mass					
index (kg/m^2 , mean \pm SD)	19.8 \pm 4.02	22.83 \pm 4.00	<0.0001		
LES pressure					
(mmHg, mean \pm SD)	33.00 \pm 14.19	20.1 \pm 6.7	<0.0001	27.7 \pm 14.52	24.2 \pm 10.04
Eckardt score (mean \pm SD)	8.8 \pm 2.11	0.7 \pm 0.87	<0.0001	0.86 \pm 0.91	1 \pm 0.75
Abbreviations: LES: Lower esophagus sphincter					

PP-0239 A colonic motility study in patients with obstructive sleep apnea (OSA)

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Background and Aim: Studies reported the association of OSA and bowel symptoms. However, colonic motility in OSA patients has not been explored. **Methods:** Female participants without functional GI disorders underwent synchronous polysomnography and colonic manometry (16 sensors solid-state catheter, 5 cm interval) after bowel preparation. Data were compared between OSA (apnea-hypopnea index, AHI \geq 10) and non-OSA (AHI < 10). **Results:** Twelve subjects (6 OSA and 6 non-OSA) were analyzed. OSA patients were older and had higher AHI than non-OSA (age 62 \pm 2 vs 59 \pm 1, AHI 20.8 \pm 7.3 vs 5.0 \pm 3.2, p < 0.05). During sleeping, a pooled colonic motility index/minute from ascending

colon to rectum in the OSA was significantly higher than non-OSA (317.0 \pm 114.1 vs 198.3 \pm 32.0 mmHg*s, p < 0.001) while the numbers of low amplitude propagating contractions and periodic retrograde rectal activity duration were not significantly different. During 2-H after standard meal, a pooled colonic motility index/minute in the OSA group was significantly higher than non-OSA (566.5 \pm 304.9 vs 434.6 \pm 181.7, p = 0.03) (Figure 1). No significant differences in number and propagation distance of high-amplitude propagated contraction in response to awakening between groups. Non-OSA group had low sleep efficacy and high arousal index, which were not different from OSA group (sleep efficacy 82.7 \pm 10.4 vs 78.7 \pm 5.7%, arousal index 20.7 \pm 8.1 vs 20.5 \pm 7.1, p > 0.05). AHI significantly correlated with motility index during sleeping (r = 0.67, p = 0.02) and 2-H postprandial (r = 0.48, p = 0.02). **Conclusion:** This preliminary study demonstrated OSA patients had higher colonic motility index both during sleep and awake period than non-OSA without differences in the motility pattern. This finding provides the mechanistic insight of daytime bowel symptoms in OSA patients.

Keywords: colonic manometry, colonic motility, IBS, sleep apnea, OSA

PP-0240 Proportion and burden of functional gastrointestinal disorders in secondary care

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Background and Aim: Functional gastrointestinal disorders (FGIDs) are common disorders in the community, involving more than 40% of population worldwide. FGIDs are known to cause a significant impact on quality of life and healthcare burden. However, its impact in a secondary care setting is less well known. **Methods:** A retrospective study of consecutive adults with luminal gastrointestinal diseases in a secondary healthcare clinic was conducted. Differences in the prevalence and epidemiology of FGID patients were explored. Healthcare utilisation of common FGIDs was further evaluated. **Results:** Data on a total of 1206 patients were analysed. The prevalence of FGIDs was 36.7% (n = 442). FGID subjects were significantly older and there were more females amongst them compared to non-FGID subjects [median age: 67 (52–75) years vs 62 (43–72), p < 0.001; female gender: 61.8%, n = 273 vs 50.4%, n = 385; p < 0.001]. Functional dyspepsia (FD) was the commonest FGID in the study population (36.9%, n = 163), followed by IBS (30.3%, n = 134). Patients with FD were associated with a high healthcare burden (43.7%, n = 104, vs 28.9%, n = 59; p = 0.001), whilst patients with IBS and other FGIDs were associated with a lower healthcare burden (IBS: 25.2%, n = 60 vs 36.3%, n = 74, p = 0.012 ; other FGID: 0%, n = 0 vs 3.9%, n = 8, p = 0.002). On multivariate analysis, only FD (OR = 1.906, p = 0.001; AOR = 1.996, p = 0.020) was found to be significantly associated with a high healthcare burden after adjustment for potential confounders. **Conclusion:** FGIDs are not the most common gastrointestinal disease seen in secondary care in Malaysia. Amongst FGIDs, FD was the most frequently treated, and it was associated with the greatest healthcare burden.

Keywords: functional GI disorders, burden, secondary care

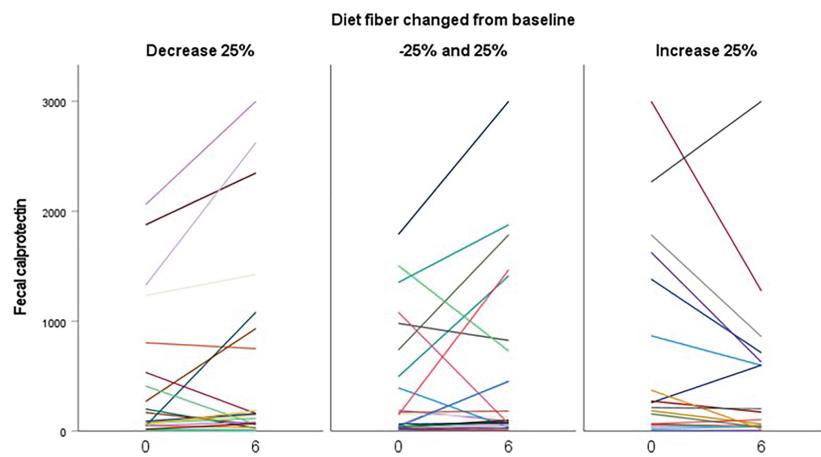
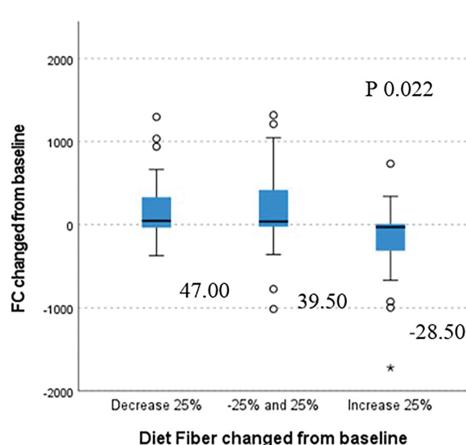
PP-0241 Effect of dietary fibers in IBD patients with clinical remission

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Background and Aim: Dietary fibers may help decrease inflammation in inflammatory bowel disease (IBD) by improving microbial dysbiosis, but data are limited. This study investigated the effect of a semi-vegetarian diet and fiber intake on intestinal inflammation in clinically quiescent IBD patients. **Methods:** We performed a prospective interventional cohort study in patients with clinically quiescent IBD. At enrollment, clinical information, dietary intake, inflammatory markers, and fecal microbiota were recorded. Dietary intake was assessed by an experienced nutritionist using pictures of food, a dietary questionnaire, and patient interviewing. The nutritionist advised the participants to intake a semi-vegetarian diet and increase dietary fiber consumption. At 6 weeks, the changes in clinical symptoms, dietary intake, inflammatory markers, and fecal microbiota were recorded. A significant change of fiber intake was defined if the fiber intake was changed more than 25% from the baseline. **Results:** Sixty-one IBD patients, including 23 Crohn's disease and 38 ulcerative colitis, were enrolled. At baseline, the patients were categorized into three groups based on the amount of fiber intake. The group with the lowest fiber intake had lower hemoglobin levels and higher fecal calprotectin levels than the other groups. At the 6-week visit, 19, 22, and 20 patients significantly increased-, did not substantially change-, and decreased fiber intake, respectively. A clinical flare was found in one patient in each group ($P = 0.994$). The median fecal calprotectin change from baseline was -28 (IQR -356 to 12) mg/kg of feces in the group increase fiber intake, which was significantly lower than the level in the group with stable fiber intake (39.5 , IQR -24 to 417) and decrease fiber intake (47.00 , IQR -35 to 331.5), respectively. **Conclusion:** Low fiber consumption was significantly associated with higher disease inflammation at baseline and significantly increased fiber intake was significantly associated with more decrease of fecal calprotectin in this cohort.

Keywords: dietary fibers, IBD



PP-0242 Increased risk of pyogenic liver abscess after endoscopic sphincterotomy for treatment of choledocholithiasis

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Background and Aims: Endoscopic sphincterotomy (ES) abolished the barrier between hepato-biliary system and duodenum and might be at risk of pyogenic liver abscess (PLA). We aimed to identify the association factors of PLA in patients who underwent endoscopic retrograde cholangiopancreatography (ERCP) procedures for treatment of choledocholithiasis. **Methods:** This study was based on the Chung Gung Research Database (CGRD) between January 1, 2001, and December 31, 2018. Those who had an International Classification of Diseases, Ninth and Tenth Revision (ICD9 and ICD10) codes of choledocholithiasis and received ERCP were enrolled. After strict exclusions, 11697 patients were further divided into the endoscopic sphincterotomy (ES) group ($n = 7111$) and other ERCP group ($n = 4586$) for analysis. **Results:** Patients receiving ES had significantly higher rate of PLA than that of other ERCP group (5-year cumulative incidence 2.4% versus 1.7% ; 10-year cumulative incidence 3.9% versus 3.2% , log-rank $p = 0.0177$). Aging, male gender, surgery for hepato-pancreato-biliary system and hepato-biliary malignancy were significant association factors of PLA. On multivariate analysis, the ES increased the risk of PLA (adjusted hazard ratio [aHR]: 1.49 ; 95% CI, 1.12 – 1.98 ; $p = 0.0058$), but decreased the risks for acute pancreatitis (aHR: 0.72 ; 95% CI, 0.60 – 0.85 ; $p = 0.0002$) and cholangitis (aHR: 0.91 ; 95% CI, 0.84 – 0.99 ; $p = 0.0259$). There was no significant difference about

recurrent choledocholithiasis between groups. **Conclusion:** This study demonstrated a significant risk of PLA after patients receiving ES compared with other ERCP group. We should also carefully monitor the association factors of PLA after ERCP treatment of choledocholithiasis including aging, male gender, surgery for hepato-pancreato-biliary system, and hepato-biliary malignancy.

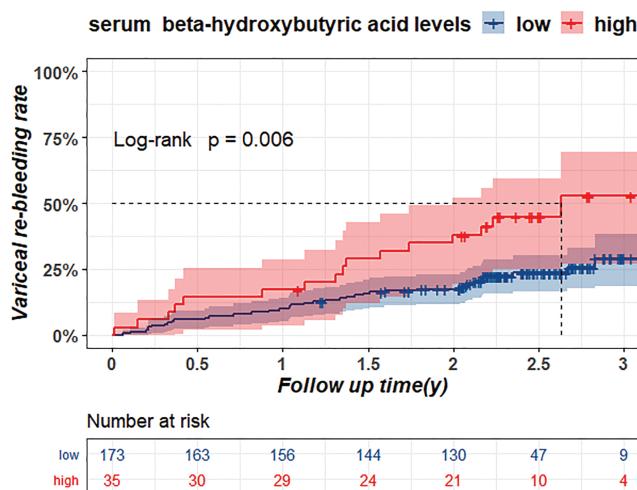
Keywords: pyogenic liver abscess, endoscopic sphincterotomy, choledocholithiasis, endoscopic retrograde cholangiopancreatography

PP-0243 Role of beta-hydroxybutyric acid as the predictor for variceal rebleeding in patients with cirrhotic variceal bleeding

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Background and Aim: Cirrhosis is an increasing cause of death worldwide. Variceal bleeding is the most severe complication associated with cirrhosis-related mortality. Our aim was to investigate the prognostic values of beta-hydroxybutyric acid in predicting variceal rebleeding and other cirrhosis-related complications in cirrhotic patients with a history of variceal hemorrhage. **Methods:** From December 2016 to December 2018, 208 patients who had a history of cirrhotic variceal bleeding were enrolled. The optimal cutoff value of beta-hydroxybutyric acid for the recurrence of variceal hemorrhage was determined by Youden. **Results:** The median follow-up time for variceal re-bleeding was 818 days. The multivariate analysis indicated that beta-hydroxybutyric acid was the independent prognostic factors of 3-year variceal re-bleeding rate (HR: 2.19, 95% CI: 1.43–3.36, $P < 0.001$). Its cutoff value for 3-year variceal re-bleeding was 0.195 µg/mL. The patients were divided into high and low groups based on the cutoff value ($n = 35$ vs 173). Kaplan–Meier analysis showed that patients with high beta-hydroxybutyric acid levels had increased 3-year re-bleeding rate (52.70% vs 29.09%, $P = 0.006$). Besides, elevated beta-hydroxybutyric acid were associated with increased proportion of liver cancer (20.00% vs 7.51%, $P = 0.025$) and portal hypertension (53.75 vs 31.42%, $P = 0.016$). **Conclusion:** Beta-hydroxybutyric acid were associated with increased



variceal re-bleeding rate and proportion of cirrhosis-related complications in patients having experienced cirrhotic variceal bleeding.

Keywords: cirrhosis, beta-hydroxybutyric acid, variceal blee, portal hypertension

PP-0244 Analysis of endoscopic submucosal dissection for early gastric neoplasm: A single center experience

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Background and Aims: Endoscopic submucosal dissection (ESD) has developed as a curative treatment for patients with early gastric neoplasm. However, the complexity of ESD varies with the characteristics of lesion. This study is conducted to investigate the complexity of ESD for early gastric neoplasm. **Methods:** A total of 54 patients who diagnosed as early gastric neoplasm are enrolled in this study. A total of 60 lesions are undergone ESD between August 2010 to October 2020 at Kaohsiung Chang Gung Memorial Hospital. **Results:** Among the 54 patients and 60 gastric lesions, 95% achieve en bloc resection and 4% develop local recurrence during the follow up, respectively. 6 cases have procedure related complications (10%), including 5 delayed bleeding needs endoscopic hemostasis and 1 Mallory–Weiss tear. Based on the pathology reveals submucosal layer invasion, 2 cases receive additional surgical intervention. The 1-way analysis of variance for mean time and mean speed (cm²/min) of ESD identifies decreasing time ($p < 0.001$) and increasing speed ($p = 0.003$) during the 11-year period. Further independent *t*-test reveals lesion size more than 10 cm² have significance on ESD speed ($p = 0.015$), while the Paris classification II influences the procedure time ($p = 0.021$) and speed ($p = 0.002$) both. The endoscopic ultrasound (EUS) exam before ESD has a good prediction in mucosal lesion (sensitivity = 0.83); however, a poor detection in submucosal invasion (specificity = 0.33), separately. **Conclusion:** ESD is an effective treatment of early gastric neoplasm with a 95% en bloc resection rate. The EUS exam has a good prediction in mucosal gastric neoplasm.

Keywords: endoscopic submucosal dissection, early gastric neoplasm

PP-0245 Liver: MAFLD

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Background and Aim: MAFLD is the Leading Cause of Advanced Liver Fibrosis—Analysis from a 2.5-year series of Liver Elastographic Studies from a Private Medical Centre in Malaysia. This study is a retrospective review of all liver elastographic studies performed in a private hospital from November 2018 to May 2021 to investigate the causes of liver fibrosis in the region. **Methods:** All liver elastographic studies were performed using Echosens machine model Fibroscan 502 Touch, S/N F611100032, manufactured in 2010. All studies were performed by trained personnel who has acquired necessary training prior to performing the studies. All patients underwent at least 2 h of fasting prior to elastographic studies. For liver fibrosis studies, a reading of IQR/med of 30% or below is taken for the results to be valid. The cut-off point taken for advanced fibrosis is 15 kPa and above. The etiology of the advanced liver fibrosis was then extracted from reviewing the clinical notes. Definition of Metabolic Associated Fatty Liver Disease (MAFLD) was based on diagnostic criteria

proposed by Eslam et al. Liver steatosis is defined by CAP score of more than 248 dB/m as per Karlas *et al.* **Results:** From the 787 studies extracted during the study period, there were 369 (46.9%) of male, 232 (29.5%) of female and 186 (23.6%) of unknown gender. The median age was 46 years old (range: 13 to 84 years). 33 (4.2%) studies were excluded from analysis due to an IQR/med of higher than 30%. From the remaining 754 studies, 91 (11.9%) studies were found to fulfil the criteria for advanced fibrosis F4. On reviewing the etiology of liver fibrosis after excluding 9 studies (9.9%) with no data, it was found that 29 (35.4%) had fibrosis secondary to MAFLD, 11 (37.9%) cases being the only cause for liver fibrosis and 18 (62.1%) cases being a co-factor for liver fibrosis, 27 (32.9%) had chronic hepatitis B, 20 (24.4%) had chronic hepatitis C, 13 (15.9%) had liver malignancy, 11 (13.4%) were due to alcoholism, 3 (3.7%) were associated with cardiac cirrhosis and 13 (15.9%) had unknown causes of liver fibrosis. Among the patients with advanced liver fibrosis, 43 (52.4%) were found to be associated with significant liver steatosis by Karlas *et al.* **Conclusion:** The study was the first to investigate the causes of liver fibrosis based on a local cohort in the state of Pahang, Malaysia. It highlighted the significance of MAFLD as either the sole or co-factor in the etiology of advanced liver fibrosis in the region. The limitation of the study being falsely high fibrosis score in patients with high liver transaminases.

Keywords: MAFLD, liver elastography, fibroscan, liver fibrosis, liver cirrhosis

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PP-0246 Effects of the COVID-19 pandemic on the gastrointestinal cancer stage at diagnosis in Japan

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Background and Aim: The COVID-19 pandemic has delayed consultations, possibly leading to the diagnosis of gastrointestinal cancer at advanced stages. The present study aimed to evaluate the gastrointestinal cancer stage at diagnosis before and during the COVID-19 pandemic. **Methods:** Design: A retrospective study of patients diagnosed between January 2016 and December 2020. Setting: Two tertiary Japanese hospitals. Participants: Patients from a hospital-based cancer registry were included if they had newly diagnosed gastrointestinal cancer (esophageal, gastric, colorectal, pancreatic, liver, and biliary tract cancers). Exposure: The pre-COVID-19 period was defined as January 2017 to February 2020, and the COVID-19 period was defined as March to December 2020. Outcome: Monthly numbers of newly diagnosed cancer patients were aggregated, classified by stage, and compared. **Results:** The study evaluated 5,167 patients, including 4,218 and 949 patients in the pre-COVID-19 and COVID-19 periods, respectively. No significant differences in mean age or sex ratio were observed for the various cancers. During the COVID-19 period, significant decreases were observed in the numbers of newly diagnosed gastric cancer ($30.63 \pm 6.62/\text{month}$ vs. 22.40

$\pm 5.85/\text{month}$, $P < 0.001$) and colorectal cancer ($41.61 \pm 6.81/\text{month}$ vs. $36.00 \pm 6.72/\text{month}$, $P = 0.025$). Significant decreases were also observed in the proportions of newly diagnosed Stage I gastric cancer ($21.55 \pm 5.66\%$ vs. $13.90 \pm 5.99\%$, $P < 0.001$), Stage 0 colorectal cancer ($10.58 \pm 3.36\%$ vs. $7.10 \pm 4.10\%$, $P = 0.008$), and Stage I colorectal cancer ($10.16 \pm 3.14\%$ vs. $6.70 \pm 2.91\%$, $P = 0.003$). No significant increases were observed for esophageal, gastric, pancreatic, liver, or biliary tract cancers. A significant decrease was observed for Stage II colorectal cancer ($7.42 \pm 3.06\%$ vs. $4.80 \pm 1.75\%$, $P = 0.013$), and a significant increase was observed for Stage III colorectal cancer ($7.18 \pm 2.85\%$ vs. $12.10 \pm 2.42\%$, $P < 0.001$). **Conclusion:** During the COVID-19 pandemic, significantly fewer patients were diagnosed with Stage I gastric and colorectal cancers. Thus, the number of screening-detected cancers may have decreased, and colorectal cancer may have been diagnosed at advanced stages.

Keywords: COVID-19, gastrointestinal cancer, staging, screening, Japan

PP-0247 Recurrent rectal bleeding in solitary rectal ulcer syndrome coexistence with IBD in cerebral palsy

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Background and Aim: Solitary rectal ulcer syndrome (SRUS) is an uncommon disease, characterized by combination of symptoms, clinical findings and histological abnormalities. Clinicians had difficulties in diagnosis because of similarities characteristic with IBD. Cerebral palsy (CP) had motor impairment secondary to non-progressive neuropathological abnormalities in the developing brain including digestive tract neural control. **Methods:** Female, 19 years old presented with recurrent rectal bleeding since 3 months. She also experienced abdominal pain, prolonged straining, feeling of incomplete and difficult defecation. She attempted to remove impacted stool by rectal digitation. She was diagnosed as cerebral palsy with Gross Motor Classification System class III. **Results:** Colonoscopic



examination showed two shallow rectal ulcers, diameter 18×24 mm and 6×8 mm, located 10 cm from anal verge, well demarcated, covered by yellowish slough. The adjacent mucous membrane was hyperemia. 3 months later, she had rectal rebleeding and colonoscopic examination showed erosion and ulcer with diameter 8×10 mm, located 8 cm from anal verge. Hemoglobin level was 7.0 g/dL (hypochromic microcytic) with increasing of faecal calprotectin (191.4 $\mu\text{g}/\text{g}$). Histopathological examination revealed fibromuscular obliteration in the lamina propria and extension of muscle fiber between cryptans, PMN cells and lymphocytes. **Conclusion:** Coexistence of SRUS and IBD is rarely happened in one patient. CP had lack of synchrony between central, autonomic and enteric nervous system on digestive tract that induced prolonged and difficulty of defecation. The comprehensive management including patient education, behavioural modification with biofeedback therapy, high fiber diet, mesalazine suppository and sucralfate enema. Response therapy was not effective because of the CP condition.

Keywords: solitary rectal ulcer syndrome, IBD, cerebral palsy

PP-0248 Bioenergetic dynamics modulated by cytochrome c oxidase subunit 5B predicts prognosis of patients with colorectal cancer

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Background and Aim: Bioenergy is indispensable for cell survival and growth under normal physiological condition. Increasing evidences had demonstrated that shifting bioenergy generation source from oxidative phosphorylation (OXPHOS) to aerobic glycolysis was frequently observed in different kinds of cancers, including in colorectal cancers (CRCs). Previously, cytochrome c oxidase subunit 5B (COX5B) has been identified as a promising modulator of bioenergetic alteration in certain types of cancers. However, the prognostic role of both COX5B and bioenergetic alteration in CRCs remain unknown. **Methods:** Totally 126 CRCs patients-derived fresh tissues, including tumorous and nontumorous parts, were retrieved and used for assessing bioenergetic dynamics using seahorse assay and COX5B expression utilizing western blot analysis. The clinicopathological factors of these CRCs patients were also reviewed and statistically analyzed. In vitro cell-based assays were employed to understand the role of COX5B expression in bioenergetic alteration and cell growth in CRCs cells. **Results:** Among all the CRCs patients included, those with higher tumorous/nontumorous (T/N) ratio of COX5B expression had poorer clinical outcomes, compared to those with lower T/N ratio [$p = 0.022$ for overall survival (OS) and 0.039 for disease-free survival (DFS)]. Moreover, those with higher COX5B T/N ratio correlated with higher oxygen consumption rate (OCR, $p = 0.040$), indicator of OXPHOS activity, but unchanged extracellular acidification rate (ECAR, $p = 0.146$), indicator of

aerobic glycolysis, in tissues from CRCs patients. Higher OCR was further observed associated with poorer survival rates in CRCs patients ($p = 0.026$). In vitro cell-based assays supported that COX5B modulated OXPHOS activity and promoted CRCs cell proliferation. **Conclusion:** Dysregulation of COX5B impacted on cellular bioenergetic alteration and may thereby control cell proliferation and influence clinical outcomes of CRCs patients. Those with both higher OXPHOS and aerobic glycolysis activities may have poorer clinical outcomes.

PP-0249 Endoscopic ultrasound-guided fine needle biopsy (EUS-FNB) in the diagnosis of intra-abdominal tuberculosis (TB)

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Background and Aim: Intra-abdominal tuberculous lymphadenitis can disguise under the cloak of various malignancies, such as pancreatic cancer and lymphoma, thus making it a diagnostic challenge. Therefore, it is essential to obtain sufficient samples for tissue diagnosis. The advent of novel EUS FNB needles have paved the way for superior tissue acquisition, obviating the need for repeat procedures and more invasive diagnostic modalities. **Methods:** This is a case series of 12 patients from a single centre with intra-abdominal lymphadenopathy diagnosed on CT imaging who underwent an EUS-guided biopsy between April 2020 to March 2021. **Results:** Mean age of the patients was 46.83 years old (SD 16.65), of which 7 (58%) were females. The most common presenting complaint was weight loss, 10 (83%), and the least common complaint was fever, 4 (33%). Interestingly, all patients presented with anemia (median 10.3 g/dL, range 3.3–11.9) and hypoalbuminemia (mean 26.67 unit, SD 5.74). In 4 patients (33.3%), biopsy was obtained from more than 1 site. Granulomas were identifiable in biopsy specimens of all patients with 2 of them being positive for GeneXpert. There were no reported complications and none of the patients required a repeat procedure in our study. Final diagnosis was based on combined clinical presentation, radiological findings and EUS FNB results. Abdominal TB poses a considerable diagnostic challenge owing to the lack of specific symptoms and absence of specific diagnostic test. Although modalities such as CT may hold special diagnostic value in the presence of TB related abdominal lymphadenopathy, imaging findings are not always disease specific. Nodes with low-density centers and calcification, although characteristic of TB, are not pathognomonic. Thus, acquisition of a tissue sample is critical for an accurate diagnosis. **Conclusion:** EUS-FNB is a safe and minimally invasive modality for diagnosing TB in patients with intraabdominal lymphadenopathy.

Keywords: endoscopic ultrasound, fine needle biopsy, intraabdominal lymph nodes, TB

Table 1 : Patient that underwent EUS-guided FNB of intra abdominal lymph nodes.

No	Age	Gender	Presenting complaints	Site of biopsy	HPE	Complication
1.	22	F	Abdominal pain, Jaundice.	Hilar node	Granuloma	Nil
2.	44	F	Abdominal pain, Jaundice, weight loss.	Para aortic	Granuloma	Nil
3.	32	M	Abdominal pain, Jaundice, weight loss.	Hilar node and liver lesion.	Granuloma (GeneXpert : positive)	Nil
4.	65	F	Abdominal pain, Jaundice, weight loss.	Hilar node	Granuloma	Nil
5.	30	F	Abdominal pain, weight loss.	Coeliac and periportal node	Granuloma (GeneXpert : positive)	Nil
6.	70	M	Fever, weight loss.	Liver lesion, periportal, coeliac node.	Granuloma	Nil
7.	49	F	Abdominal pain, weight loss.	Peripancreatic node.	Granuloma	Nil
8.	60	F	Fever, Abdominal pain, weight loss.	Hilar node	Granuloma	Nil
9.	58	M	Fever, weight loss.	Periportal and Hilar node.	Granuloma	Nil
10	66	M	Weight loss	Peripancreatic node.	Granuloma	Nil
11	31	M	Abdominal pain, Jaundice.	Peripancreatic node.	Granuloma	Nil
12	34	F	Fever, weight loss.	Peripancreatic node.	Granuloma	Nil

PP-0250 Risk factors and response treatment for early hepatocellular carcinoma: A large population-based study

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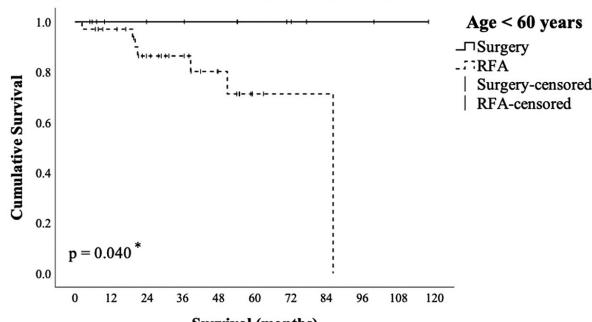
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Background and Aim: Risk factors and response treatment of early hepatocellular carcinoma (HCC) are essential to improve survival outcome. This study aimed to investigate prognostic factors, prognosis, and treatment outcome of early HCC. **Methods:** This was a large retrospective study of patients diagnosed with very early- and early-stage HCC in Thammasat University Hospital, Thailand, between January 2009 and January 2019. The patients were followed up until October 2020 or death. **Results:** A total of 236 patients with mean age of 62.0 ± 10.8 years were included. Male gender is a preponderance (67.4%). The leading etiology

of chronic liver diseases were chronic hepatitis B virus (HBV) infection (43.2%). In total, 81 (34.4%) and 155 (65.7%) patients were classified into Child-Pugh A and B, respectively. Survival rates of all patients were 89.3% at 1 year and 34.7% at 5 years. As demonstrated in Figure 1, overall survival of early HCC patients aged < 60 years who underwent surgical hepatectomy provided better survival outcome than those who underwent RFA evaluated by log-rank test ($p = 0.040$). In a subsequent multivariate analysis using a Cox proportional hazards model, age > 60 years (hazard ratio (HR) 2.45, 95% CI 1.06–5.68, $p = 0.037$), and Child-Pugh B cirrhotic patients (HR 2.56, 95% CI 1.29–5.06, $p = 0.007$) were independently associated with poor overall survival, while patients with chronic HBV infection (HR 0.30, 95% CI 0.12–0.74, $p = 0.009$) was associated with better overall survival. **Conclusion:** Surgery might be an appropriate curative treatment for early HCC patients especially who were younger than aged 60 years. Decompensated cirrhotic patients without chronic HBV infection was related to poor clinical outcome.

Keywords: hepatocellular carcinoma, early stage, treatment

Figure 1. Kaplan-Meier curve of early HCC patients aged <60 years stratified by treatment modalities.



PP-0251 Clinical features and overall survival of females with hepatocellular carcinoma: A population-based study in high prevalence area of hepatitis B infection

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Background and Aim: Hepatocellular carcinoma (HCC) has caused more than 200 000 female deaths annually. This study aimed to investigate clinical features and provide prognostic factors for female patients with HCC. **Methods:** We conducted a retrospective cohort study of female HCC at Thammasat University Hospital, Thailand, between January 2009 and January 2019. Patients' data including baseline characteristics, clinical presentation, laboratory results, cancer staging, and treatment outcome retrieved from medical database were extensively reviewed. **Results:** A total of 187 female HCC patients were included (mean age of 65.7 ± 11.9 years). Most patients (94.6%) had cirrhosis. All patients were divided into younger group (age < 65 years) and older group (age ≥ 65 years). The most common pre-existing chronic liver disease were chronic hepatitis B in younger group (54.9% vs 26.6%, OR 3.36, 95% CI 1.79–6.31, $p < 0.001$), while nonalcoholic steatohepatitis (NASH) was commonly found in older group (41.5% vs 12.2%, OR 5.11, 95% CI 2.34–11.12, $p < 0.001$). The older group had HCC diagnosed at more advanced stage (37.0% vs 23.2%, $p = 0.049$, OR 1.94, 95% CI 1.00–3.78), while the younger group had significantly higher overall 2-year survival rate than the older group (65.0% vs 45.5%, $p = 0.03$). In multivariate analysis using logistic regression, abdominal pain (OR 9.89, 95% CI 2.85–34.38, $p < 0.001$), ascites at presentation (OR 2.77, 95% CI 1.11–6.92, $p = 0.03$), ruptured hepatoma (OR 14.68, 95% CI 12.60–83.09, $p = 0.002$), advanced stage (OR 9.74, 95% CI 1.89–50.26; $p = 0.007$), and hypoalbuminemia (serum albumin <3 g/dL) (OR 4.67, 95% CI 1.62–13.50, $p = 0.004$) were significantly associated with poor survival rate. **Conclusion:** HCC affected large number of females and were diagnosed at advanced stage with grave prognosis. Abdominal pain, ascites, ruptured HCC, advanced stage, and serum hypoalbuminemia were associated with poor prognosis. Early detection of HCC and prompt treatment in patients at risk could result in better survival outcome.

Keywords: clinical features, outcomes, females, hepatocellular carcinoma

PP-0252 Clinical outcomes of endoscopic submucosal dissection for early esophageal neoplasms: A single-center experience in south Taiwan

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Background and Aim: Endoscopic submucosal dissection (ESD) is accepted as the major treatment modality for early gastrointestinal neoplasm including the esophagus. It is an advanced endoscopic procedure and poses technically difficult and risky. We aimed to analyze the clinical outcomes of ESD for early esophageal neoplasms in our hospital, retrospectively.

Methods: From June 2011 to October 2020, 80 patients with the diagnosis of early esophageal neoplasm and received ESD procedure are enrolled in this study. All patients underwent chromoendoscopy with narrow-band imaging and Lugol staining before ESD for peripheral margin detection. Endoscopic ultrasound was also performed for invasion depth evaluation before ESD. **Results:** A total of 101 lesions in 80 patients were enrolled and 3 patients with 3 lesions were loss follow-up. 71 patients were men (92.2%). The mean age was 58.1. **Conclusion:** ESD is a successful and relatively safe treatment for early esophageal neoplasms. Larger tumor size ($\geq 10 \text{ cm}^2$) and circumference of the lumen ($\geq 3/4$) should be aware of post-ESD stricture.

PP-0253 Endoscopy for superficial oropharyngeal and hypopharyngeal squamous cell carcinoma under general anesthesia: A useful procedure to detect multiple synchronous cancers

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Background and Aim: Image-enhanced endoscopy can detect superficial oro-hypopharyngeal squamous cell carcinoma (SCC). However, satisfactory and reliable endoscopy of the pharyngeal region is challenging. Endoscopy under general anesthesia (GA) during transoral surgery (TOS) occasionally reveals multiple synchronous lesions undetected on preoperative endoscopy. Thus, this retrospective study aimed to determine the lesion detection capability of endoscopy under GA for superficial oro-hypopharyngeal SCC. **Methods:** We included consecutive 63 patients who underwent TOS for superficial oro-hypopharyngeal SCC at our hospital during April 2005–December 2020. The primary endpoint was to compare lesion detection capability between preoperative endoscopy and endoscopy under GA. Other endpoints included comparing clinicopathological findings (tumor location, macroscopic type, color, tumor diameter, invasion depth, and tumor thickness) between lesions detected using

preoperative endoscopy and those newly detected using endoscopy under GA. **Results:** We analyzed 58 patients (85 lesions). The mean number of lesions per patient as detected using endoscopy with white light imaging/narrow-band imaging was 1.17 (95% confidence interval [CI]: 1.05–1.29) for preoperative endoscopy and 1.47 (95% CI: 1.29–1.63) for endoscopy under GA. Endoscopy under GA helped detect more lesions than preoperative endoscopy ($P < 0.001$, McNemar test). A significantly higher percentage of lesions exhibiting the same color as the surrounding nonneoplastic mucosa were detected using endoscopy under GA than using preoperative endoscopy (Table). The mean tumor diameter and tumor thickness were significantly smaller in lesions detected using endoscopy under GA than in those detected using preoperative endoscopy (Table).

Conclusion: Endoscopy under GA for superficial oro-hypopharyngeal SCC was helpful in detecting multiple synchronous lesions.

Keywords: squamous cell carcinoma, oropharynx and hypopharynx, superficial cancer, general anesthesia, transoral surgery

PP-0254 Triptolide induce liver injury via modulation of gut microbiota and bile acid metabolism

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Background and Aim: Triptolide (TP) is major component of the traditional Chinese medicine Tripterygium wilfordii Hook, which commonly used in the treatment of various autoimmune-related diseases such as rheumatoid arthritis, skin diseases and kidney diseases. However, its side effects including hepatotoxicity and nephrotoxicity severely limit clinical application. Recently, gut microbiota was proved to play an important regulatory role in many liver diseases. Therefore, this study aimed to elucidate the role and mechanism of gut microbiota in TP-induced liver injury.

Methods: The differences in the structure and composition of the gut microbiota between patients with liver injury induced by TWH and normal controls were assessed by 16S rRNA amplicon sequencing. The role of Lactobacillus rhamnosus(LGG) in TP-induced liver injury was determined by fecal bacteria transplantation(FMT) and single bacteria gavage experiment. The changes of bile acid profiles in TP-induced liver injury mice were analyzed by targeted metabolomics sequencing. **Results:** The results of 16S rRNA sequencing showed that the structural composition of gut microbiota of the patients with liver injury induced by TWH was significantly different from that of the normal control population, the diversity of the gut microbiota in former was significantly decreased, and the abundance of LGG was significantly decreased. Furthermore, it was found that LGG and its bile salt hydrolase played an important role in the TP-induced liver injury in mice by FMT and LGG gavage experiment. Targeted metabolomics study of fecal bile acid profile in mice showed that the proportion of conjugated bile acids was significantly increased in TP-induced liver injury mice, of which the T β -MCA was the most prominent. Gavage with LGG could reduce the proportion of conjugated bile acids. **Conclusion:** TP can reduce the activity of BSH by reducing the abundance of LGG and increase the level of conjugated bile acid T β -MCA, which in turn leads to liver injury.

Keywords: drug-induced liver injury, triptolide, gut microbiota, Lactobacillus rhamnosus, bile acid

Table. Comparison of clinicopathological findings between lesions detected using preoperative endoscopy and those detected using endoscopy under GA

	Lesions detected by preoperative endoscopy	Lesions detected by endoscopy under GA	P-value
Tumor location			
Oropharynx / Hypopharynx	12 / 56	1 / 13	0.327 ¹
Oropharynx	1 / 6 / 4 / 1	0 / 0 / 0 / 1	0.114 ¹
(Superior wall / Posterior wall / Anterior wall / Lateral wall)			
Hypopharynx	5 / 2 / 49	2 / 0 / 11	0.635 ¹
(Posterior wall / Posterior / Pyriform sinus)			
Macroscopic type			
Elevated type / Flat type / Depressed type	29 / 29 / 10	5 / 9 / 0	0.186 ¹
Tumor color on endoscopic images			
(Reddish / Same / Whitish)	54 / 3 / 11	8 / 4 / 2	0.013 ¹
Tumor diameter of resected specimens, mean\pmSD, mm			
17.5 \pm 10.5	7.4 \pm 3.6	<0.001 ²	
Histological invasion depth			
Intraepithelial layer / Subepithelial layer	46 / 22	11 / 3	0.419 ¹
Tumor thickness of resected specimens, mean\pmSD, μm			
453.8 \pm 443.3	246.5 \pm 119.7	0.002 ²	

SD, standard deviation; GA: general anesthesia

¹Fisher's exact test, ²Student's t-test

PP-0255 Anatomical distribution of colorectal cancer in northern malaysia: A 10-year registry-based study

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Background and Aims: Colorectal cancer (CRC) is the third most common cancer worldwide with a high mortality rate at the advanced stages. Its pathogenesis depends on the anatomical location of the tumor and differs between right side and left side of the colon. Tumors in the proximal colon (right side) and distal colon (left side) exhibit different molecular characteristics and histology. Mounting evidence shows that the anatomical location of tumors dictates the responses of colorectal cancer (CRC) patients to the conventional adjuvant chemotherapy, as well as their chances of having an early diagnosis and survival. There have been several studies reporting the proximal tumor shift, especially in Western countries. Nevertheless, the information on this aspect of CRC remains limited in developing countries. In the present study, we determine whether such trends in the subsite distribution of colorectal cancer could be confirmed in Northern Malaysian CRC patients. **Methods:** To determine the anatomical distribution of CRC in northern Malaysia. **Results:** This was a 10-year cross-sectional study, with the findings generated from the National Cancer Patient Registry – Colorectal Cancer (NCPR-CC). The CRC patients included in this study were those who (i) sought care from any of the 21 public and private hospitals located in northern Malaysia (Perlis, Kedah and Penang), (ii) were enrolled in the NCPR-CC between 1 January 2008 and 31 December 2017, and (iii) had the anatomical location of their tumors documented. **Conclusion:** Of the 4705 patients included in the study, 4062 (86.3%) were above 50 years age. Tumors were most commonly located in the left side of the colon (86.0%), followed by the right side (11.8%) and both sides (2.2%). Left-sided CRC took place in 87.4% and 85.8% of the patients above and below 50 years of age, respectively. The anatomical location of tumors did not significantly vary across age groups ($p = 0.274$).

Keywords: colorectal cancer, Northern Malaysia, proximal tumour, distal tumour, anatomical distribution

PP-0256 Determining etiology of AKI in cirrhotics using fractionated excretion of urea as a bedside tool: Single centre prospective study

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Background and Aim: Acute kidney injury (AKI) is associated with a high mortality in cirrhotics. It is imperative to diagnose and identify the mechanism of AKI quickly and institute therapy to maximize the potential for reversal. Fractionated excretion of urea (FeUrea) is a promising bedside tool used for the differential diagnosis of AKI in patients with cirrhosis. Using international validated and accepted values for FeUrea as stated below, we set out to identify etiology of AKI between acute tubular necrosis (ATN), hepatorenal syndrome (HRS-1) and pre-renal azotemia (PRA). ATN vs non-ATN: The optimal cut-off is 33.41%. A value greater than 33.41% predicted ATN with 100% sensitivity and 85% specificity. PRA vs HRS: The optimal cut-off point is 21.35% A value is less than 21.35% predicted HRS-1 with sensitivity of 91% and specificity of 61%. **Methods:** A prospective analysis was performed in patients ($n = 62$) with cirrhosis and ascites with AKI from November 2020 until April 2021. AKI was defined

according to KDIGO guidelines. Using admission values of serum urea, serum creatinine, urine creatinine and urine urea, FeUrea was calculated as follows: [(urine urea ÷ serum urea) ÷ (urine creatinine ÷ plasma creatinine)] × 100%. **Results:** We had a total of 62 patients studied but only 35 met the inclusion criteria. 23 were Child–Pugh score (CPS) B and remaining were CPS C ($n = 12$). Based on FeUrea cut off points we found that 54.3% with AKI had PRA ($n = 19$), 25.7% were HRS ($n = 9$) and 20% were ATN ($n = 7$). There was also no statistical significance seen between gender and AKI ($p = 0.18$) and etiology of cirrhosis with AKI ($p = 0.78$). **Conclusion:** We find that FeUrea is an under-recognised tool used to diagnose the etiology of AKI quickly in a clinical setting. From our data, we observe that majority of AKI was PRA and not HRS/ATN.

Keywords: cirrhosis, kidney, hepatorenal, urine, ascites

	Pre Renal Azotemia (n=19)	HRS Type 1 (n=9)	ATN (n=7)	p- value
Gender , n(%)				
Male	15 (79)	6 (66.7)	5 (71.4)	
Female	4 (21)	3 (33.3)	2 (28.6)	0.18
Etiology (n %)				
HEP C	5 (26.3)	3 (33.3)	4 (57.1)	
HEP B	3 (15.8)	0 (0)	1 (14.3)	
NAFLD	5 (26.3)	3 (33.3)	1 (14.3)	
AIH	1 (5.26)	0 (0)	0 (0)	0.78
ALCOHOL	3 (15.8)	3 (33.3)	0 (0)	
OTHER	2 (10.5)	0 (0)	1 (14.3)	

PP-0257 Impact of small intestinal bacterial overgrowth on patients with irritable bowel syndrome

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Background and Aim: Small intestinal bacterial overgrowth (SIBO) is prevalent in irritable bowel syndrome (IBS), but its impact on IBS is unknown. This study aimed to explore SIBO association with IBS and the impact on symptom severity and health-related quality of life (HRQOL). **Methods:** Consecutive adults who had glucose breath testing were included. IBS was diagnosed based on the Rome III criteria. SIBO status was determined using breath test following American College of Gastroenterology guideline. **Results:** A total of 136 subjects were recruited (mean age 45 years old, 77% females, 58% Malay, 87% non-smoker, 54% had obesity, 16% had diabetes mellitus, 19% on regular proton pump inhibitor/PPI and 29% had abdominal/pelvic surgery). Amongst the study population, 49.2% ($n = 67$) and 22.1% ($n = 30$) were diagnosed with IBS and SIBO respectively. The characteristic of subjects with and without SIBO were similar. There was no statistical significant difference on SIBO status amongst subjects with and without IBS (23.9%, $n = 16$ vs 20.3%, $n = 14$; $P = 0.614$). On the contrary, higher proportion of IBS with diarrhea predominant (IBS-D) subjects had SIBO compared to non IBS-D subjects (34.1%, $n = 14$ vs 16.8%, $n = 16$; $P = 0.026$). Amongst subjects with IBS, majority (38.8%, $n = 26$) had moderate IBS severity (IBS-symptom severity score/IBS-SSS of 175–300). The presence of SIBO was significantly associated with severe IBS (IBS-SSS of >300), compared to the absence of SIBO (54.5%, $n = 6$ vs 17.9%, $n = 10$; $P = 0.017$). On multivariate analysis, SIBO was independently associated with severe IBS, OR 15.20 (2.17–106.25, $P = 0.006$), in addition to regular PPI usage, OR 8.68 (1.25–60.51, $P = 0.029$). Furthermore, IBS subjects with SIBO was associated with poorer HRQOL, compared to those without SIBO (mean EQ-

5D: 0.75 0.16 vs 0.82 0.19; $P = 0.046$). **Conclusion:** IBS-D is significantly associated with SIBO. The presence of SIBO is independently associated with severe form of IBS. Additionally, IBS subjects with SIBO had poorer HRQOL.

Keywords: IBS, SIBO, symptom severity, quality of life, hydrogen breath test

PP-0258 Effect of gut microbiota and PNPLA3 polymorphisms on lean and obese nonalcoholic fatty liver disease

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Background and Aim: Nonalcoholic fatty liver disease (NAFLD) is commonly associated with obesity but also found in non-obese individuals. The PNPLA3 variant (rs738409) is by far the most important genetic determinant of NAFLD. To date, there is no study exploring the differences and associations between the gut microbiota and PNPLA3 on the lean and obese NAFLD patients. We aim to evaluate the association between gut microbiota and lean and obese NAFLD, while considering the role of PNPLA3 variants. **Methods:** This is a prospective study at Kaohsiung Chung Gung memorial hospital, Taiwan, from December 2019 and November 2020. We recruited 35 lean NAFLD patients, 70 obese NAFLD patients, and 35 healthy individuals. Fecal samples were collected to analyze the V4 region of the 16S rRNA gene for intestinal bacteria composition. **Results:** The indices of alpha-diversity were not significant different among three groups. The partial least squares discriminant analysis (PLS-DA) showed that there was a significant separation between obese NAFLD and lean NAFLD or health individuals. Subjects with obese NAFLD showed a lower Firmicutes to Bacteroidetes (F/B) ratio compared with lean NAFLD ($p = 0.038$). One phylum, 26 genera and 11 bacterial species resulted differentially abundant among health group and NAFLD groups. Although the frequencies of PNPLA3 GG+GC were significant different in health individuals, lean and obese NAFLD, respectively (54.3%, 82.9%, and 72.9%, $p = 0.027$), no significant alterations in diversity between groups stratified by PNPLA3 G and C alleles. **Conclusion:** Lean and obese NAFLD patients have a different gut microbiota composition compared with health individuals, which was not associated with PNPLA3 polymorphisms.

Keywords: gut microbiota, PNPLA3, fatty liver

PP-0259 Systematic review and meta-analysis of risk scores in prediction for the clinical outcomes in patients with acute variceal bleeding

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Background and Aim: Acute variceal bleeding (AVB) is a life-threatening condition that needs risk stratification to guide clinical treatment which risk systems could reflect the prognosis more accurately remains controversial. We aimed to conduct a meta-analysis of the predictive value of GBS, AIMS65, Rockall (clinical Rockall score and full Rockall score), CTP, and MELD. **Methods:** PubMed, Web of Science, Embase, Cochrane library, WANGFANG, and CNKI were searched. 28 articles were included in the study. The Meta-DiSc software and

MedCalc software were used to pool the predictive accuracy. **Results:** Concerning in-hospital mortality, CTP, AIMS65, MELD, Full-Rockall, and GBS had a pooled AUC of 0.824, 0.793, 0.788, 0.75 and 0.683, respectively. CTP had the highest sensitivity of 0.910 (95% CI: 0.864–0.944). AIMS65 had the highest specificity of 0.774 (95% CI: 0.749–0.798). For follow-up mortality, MELD, AIMS65, CTP, Clinical Rockall, Full-Rockall, and GBS showed a pooled AUC of 0.798, 0.77, 0.746, 0.704, 0.678, and 0.618. CTP has the highest specificity (0.806, 95% CI: 0.763–0.843). GBS had the highest sensitivity 0.800 (95% CI: 0.696–0.881). As for rebleeding, no score performed particularly well. **Conclusion:** CTP had an AUC of 0.824 in-hospital mortality (with the highest sensitivity of 0.910) and 0.746 in follow-up mortality (with the highest specificity of 0.806), showing it was superior over other risk scores in identifying AVB patients who were at high risk of death in hospital and who were at low risk of death within follow-up.

Keywords: risk score, acute variceal bleeding, prognosis, meta-analysis

PP-0260 Chronic liver disease and COVID-19: Does having fatty liver disease matter?

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Background and Aim: Chronic liver diseases (CLD), including non-alcoholic fatty liver disease (NAFLD), and obesity have been associated with adverse outcomes in COVID-19 patients. We aimed to compare the clinical characteristics, laboratory investigations and outcomes of COVID-19 patients with CLD between NAFLD and non-NAFLD groups.

Methods: A retrospective single-centre study of COVID-19 patients with CLD admitted to the National Centre for Infectious Diseases Singapore from 29th February to 2nd May 2020 was performed. The aetiology of CLD was obtained from medical records. Peak (highest value obtained during admission) ALT and ALP were analysed. **Results:** 16 CLD patients (9 NAFLD and 7 non-NAFLD) were identified. 62.5% of patients had abnormal liver function tests during admission with a higher peak ALT in the NAFLD group (84U/L vs 38U/L; $p = 0.042$). The 30-day temporal patterns of laboratory investigations between the two groups were mostly similar (Figure 1). More patients in the NAFLD group required anti-viral

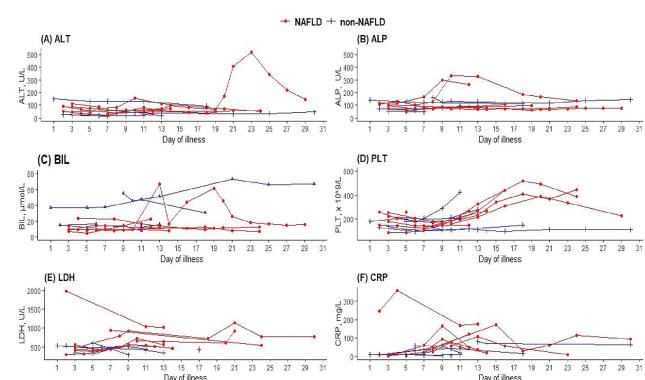


Figure 1. Temporal patterns of laboratory investigations of COVID-19 patients with chronic liver disease. (A) ALT, (B) ALP, (C) BIL, (D) PLT, (E) LDH, (F) CRP

ALP, alkaline phosphatase; ALT, alanine aminotransferase; BIL, bilirubin; CRP, c-reactive protein; LDH, lactate dehydrogenase; PLT, platelet

medications (66.7% vs 0%; $p = 0.011$) and had hyperlipidaemia (88.9% vs 28.6%; $p = 0.035$), though body mass index (BMI) was similar in both groups (24.3 kg/m^2 vs 24.2 kg/m^2). 2 patients (both NAFLD) required intubation and intensive care unit (ICU) admission. 1 of the 3 cirrhotic patients (non-NAFLD) decompensated but none required ICU admission. **Conclusion:** Our results show that COVID-19 patients with NAFLD have higher peak ALT levels and run a more severe clinical course. In Asians, NAFLD regardless of weight may have poorer prognostic implications. We advocate that patients with NAFLD should be closely monitored for COVID-19 disease progression and simple measurements of waist circumference and sagittal abdominal diameter may have prognostic value.

Keywords: COVID-19, chronic liver disease, fatty liver disease, liver cirrhosis

PP-0261 Stringent screening strategy leads to significant risk reduction of tuberculosis in patients with inflammatory bowel disease receiving anti-TNF therapy: A real world cohort analysis from a TB endemic region

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Background and Aim: Anti tumor necrosis factor (anti-TNF) therapy use in patients with inflammatory bowel disease (IBD) leads to increased risk of tuberculosis (TB) reactivation, especially in the TB endemic regions. The present study evaluated the effect of stringent screening strategy and latent tuberculosis (LTB) prophylaxis on TB reactivation in a cohort of IBD patients from northern India. **Methods:** Among the 6802 patients registered at IBD Clinic at AIIMS New Delhi between January 2005 and October 2020, 168 (UC: 64; CD: 104) received anti-TNF therapy. Patients with IBD who were initiated on anti TNF

therapy after January 2019 were subjected to a stringent screening criteria (history of past TB, CT chest showing evidence of old TB, IGRA, TST) and subsequent chemoprophylaxis. A cohort comparison of patients initiated on anti TNF therapy after January 2019 and prior to that (January 2005 to January 2019) was done to evaluate for risk reduction of TB following the stringent screening strategy. **Results:** One hundred sixty-eight patients (64 UC/104 CD; mean age at disease onset-29

Conclusion: In TB endemic regions, there is a high rate of TB reactivation with anti TNF therapy. However, this risk can be significantly mitigated with stringent LTB screening and LTB prophylaxis.

Keywords: TB reactivation, inflammatory bowel disease, anti-TNF therapy, latent TB prophylaxis, stringent latent TB screening

PP-0262 Compound volvulus, a rare cause for acute abdomen

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Background and Aim: Compound volvulus, known as ileo-sigmoid knotting, twisting of the ileum around the base of the sigmoid or vice versa, is a very rare cause for acute intestinal obstruction. In such a situation, urgent operative intervention is needed to reduce morbidity and mortality when compared to a simple volvulus. **Methods:** Here, we describe a 70-years old previously unevaluated male patient who admitted with sudden onset abdominal pain with clinical features suggestive of intestinal obstruction for 2 days duration. On examination, his abdomen was distended with tenderness over the right lower abdomen. X-ray abdomen showed absent rectal gas with dilated large bowel loop in RIF (right iliac fossa) region (Figure 1) and multiple dilated small bowel loops. **Results:** The patient underwent emergency exploratory laparotomy which showed type III compound volvulus, gangrenous ileal loop, and a gangrenous sigmoid loop. Right hemicolectomy and sigmoid colectomy were performed followed by exteriorization of distal ileum and proximal left colon as two separate stomas since the patient was unstable during the intraoperative period.

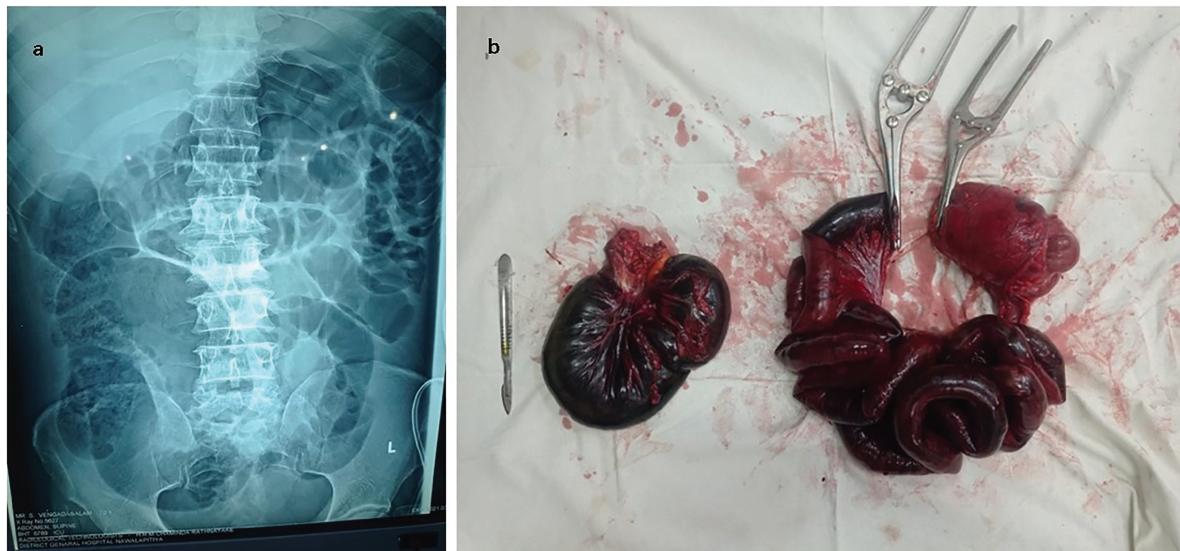


Figure 1

a – X-ray showing dilated bowel loops in the RIF and absent rectal air. **b** – Resected sigmoid loop and distal ileal loop with caecum.

Conclusion: High degree of clinical suspicion is necessary for early diagnosis. Compound volvulus can be classified into four types depending on the mechanism of formation of the knot in between the ileum and the sigmoid. The presence of the gangrenous bowel at the time of surgery leads to high mortality. Though this is a very rare entity, clinicians should consider compound volvulus as an important differential in patients presenting with acute abdomen.

Keywords: compound volvulus, ileo-sigmoid knotting, intestinal obstruction, acute abdomen

PP-0263 Comparison of laparoscopic entry techniques: Experience from a general surgical department of a tertiary care center

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Background and Aim: Both open and closed methods are commonly used to achieve pneumoperitoneum in laparoscopy. Entry technique is selected based on the intraabdominal organ of interest, anticipation of adhesions, available facilities and the surgeon preference. Appropriate technique and the location of ports plays an important role in the overall ease of progression and the ergonomic experience of the surgical team. Here, we present our experience in using different laparoscopic entry techniques. **Methods:** This is a retrospective study, conducted over 1-year period from April 2019 to April 2020. Demographic data, type of surgery, entry technique and complications were analyzed. All patients undergoing laparoscopic surgeries were included in the study. **Results:** Total of 228 patients, aged 13 to 75 years with a mean age of 44.1 were included. Fifty three percent of them ($n = 121$) were females. Majority of patients had undergone elective surgeries (69.2%) while 70 patients underwent urgent procedures. Commonest elective procedure was laparoscopic cholecystectomy ($n = 66$) followed by hernia surgeries ($n = 34$), colorectal surgeries ($n = 22$) and upper gastrointestinal surgeries ($n = 18$). Most common location for initial access was at the umbilicus using open technique (89.4%). Twenty-one patients (9.2%) underwent direct trocar technique (DTT). All DTT entries were for laterally placed ports in patients with virgin abdomens. Only 3 (1.3%) patients underwent close technique at Palmer's point. No major complication that hindered progression was recorded in all groups. **Conclusion:** Open technique was favored while DTT has shown to be safe and feasible techniques in selected patients specially when laterally placed ports are required.

Keywords: laparoscopy, entry technique, open technique, direct trocar technique

PP-0264 Common bile duct (CBD) stenting as a bridge to increase complete CBD clearance with ERCP (endoscopic retrograde cholangiopancreatography), experience from a tertiary care surgical unit in Sri Lanka

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Background and Aim: CBD stones primarily occur as a complication of gall stone disease. Primary CBD stones can form in the presence of a CBD stricture or a choledochal cyst. Main stay of duct clearance is ERCP.

Difficult bile duct stones can lead to failed ERCP, septic complications and increased need for surgical exploration. **Methods:** We retrospectively evaluated our experience in management of CBD stones over 1 year period from March 2020 to March 2021. All patients who underwent ERCP for CBD stones were included in the study. **Results:** Out of 173 patients who underwent ERCP during the study period, all patients who had CBD stones (50.8%) were included in the study ($n = 88$). They had ages ranging from 19 to 81 years with male to female ratio of 0.93. Cannulation was successful in 86% of the cases. Out of CBD stone patients who had successful cannulation, 38 patients (43.2%) had complete duct clearance in the first attempt while 33 patients (37.5%) who had difficult bile duct stones underwent CBD stenting in the first attempt. Eighty-five percent of stented patients had subsequent complete duct clearance raising the total stone clearance rate with ERCP alone to 75%. Patients with large stones, >3 stones, juxta-papillary diverticula, impacted stones and cholangitis were considered as difficult stones. Four patients required pancreatic duct stenting for inadvertent pancreatic cannulation while 3 patients developed post ERCP pancreatitis. Two patients with duodenal perforation and one patient with massive bleeding from sphincterotomy site underwent surgical exploration. Twenty-one patients (23.8%) who had failed cannulation or failed stone extraction via ERCP underwent CBD exploration. **Conclusion:** CBD stenting is a key therapeutic option when dealing with difficult CBD stones. It can facilitate subsequent duct clearance with ERCP alone preventing the need for CBD exploration.

Keywords: ERCP, common bile duct stenting, choledocholithiasis, CBD exploration

PP-0265 Diagnostic yield of endoscopic ultrasound guided fine needle aspiration versus fine needle biopsy: A single centre study

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Background and Aim: There has been numerous published data comparing the diagnostic yield of endoscopic ultrasound guided fine needle aspiration versus fine needle biopsy. This retrospective study was done to compare the yield of EUS FNA vs FNB, and to look at characteristic of lesions for which both procedures were done and their results. **Methods:** All EUS reports of patients who underwent either FNA or FNB for the first time January 2020 to March 2021 (15 months) and their respective histopathology (HPE) reports were reviewed. 121 patients' data were reviewed and analyzed using SPSS. **Results:** 44 patients (36.4%) underwent EUS FNA and 77 patients (63.6%) underwent EUS FNB. Definitive diagnosis was obtained in 113 patients (93.4%) overall. 41 out of 44 (93.1%) patients who underwent EUS FNA and 72 out of 77 (93.5%) patients who underwent EUS FNB obtained a definitive diagnosis. There was no statistical significance in the difference of diagnostic yield between EUS FNA vs FNB. In patient who underwent EUS FNA, 29 (70.7%) confirmed a solid organ malignancy, 5 (12.2%) were benign/reactive lesions, 3 (7.3%) were granulomatous inflammation suggestive of tuberculosis, 2 (4.9%) were IPMN and 2 (4.9%) were Neuroendocrine Tumours (NET). In those whom underwent EUS FNB, results of the HPE confirmed a solid organ malignancy for 37 patients (51.4%) and 4 patients (5.5%) were diagnosed with lymphoma. 10 (13.8%) had benign/reactive lesions, 5 (6.9%) had cystic pancreatic neoplasms, 6 had granulomatous inflammation suggestive of tuberculosis, 4 (5.5%) had NET, 4 (5.5%) had GIST and 2 (2.7%) had leiomyoma. **Conclusion:** Both EUS FNA and FNB had equally high diagnostic yield in this study.

PP-0266 The correlation of thrombocytopenia with grading of esophageal varices among Cambodian cirrhotic patients, a single center experience

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Background and Aim: Portal hypertension in liver cirrhosis can lead to the formation of esophageal varices (EVs) which have the greatest clinical impact because their rupture results in upper GI bleeding that can be fatal. Thus, endoscopic screening for EV in cirrhotic patients is essential. However, in a setting where endoscopic accessibility is limited such as in Cambodia, selecting high-risk patients for screening is crucial. the correlation between thrombocytopenia and the presence of EVs was established. Herein, we aim to evaluate its utility among our patients. **Methods:** We conducted a retrospective study of 291 cirrhotic patients hospitalized and receiving gastrscopy in a major tertiary hospital in Phnom Penh, Cambodia, within a period of 2 years. Clinico-biological characteristics and the endoscopic results were collected. The cut-off value of platelet in predicting the presence and high-risk EVs, as well as their performance characteristics, were determined using ROC curve. **Results:** The patient's age varied between 19 and 86 years old, with the mean age of 58.92 ±11.8 years old, and sex ratio F:M (1:1.5). Viral hepatitis was the most common etiology of liver cirrhosis (HCV and HBV, 37.8% and 36.4, respectively). 235 (80.8%)patients had EVs on the index of endoscopy. Choosing the platelet value if 125giga/l as a cut-off resulted in a 90.2% sensitivity and 71.9% specificity for the presence of EVs. Whereas, the platelet count of 82.25 giga/l was a cut-off in predicting high-risk EVs with 84.5% sensitivity and 60% of specificity. **Conclusion:** Based on our finding, thrombocytopenia has an acceptable accuracy in selecting patients in need of endoscopic screening for EVs. Combination with other parameters if available is suggested for better accuracy.

Keywords: liver cirrhosis, portal hypertension, esophageal varices, platelet count

PP-0267 A single centre study on quality indicators for endoscopic retrograde cholangiopancreatography (ERCP)

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Background and Aim: Endoscopic retrograde cholangiopancreatography (ERCP) is an advanced endoscopic procedure that has been used in clinical practice for more than four decades. It is commonly used for the diagnosis and treatment of biliary and pancreatic diseases. It is a technically demanding endoscopic procedure requiring a considerable amount of training to be performed safely. We report a retrospective study on quality indicators by measurement of common bile duct cannulation rate and associated factors, stenting in cases of biliary obstruction and severe complication in a single

training centre. **Methods:** Clinical data of patients who underwent ERCP from January 2020 to March 2021 (15 months) were reviewed. In total, data of 729 patients were reviewed and then analyzed using SPSS. **Results:** Overall successful cannulation of the common bile duct (CBD) was 94.7% ($n = 690$). Of the 39 (5.3%) failed cases, 14 were successfully cannulated on second attempt. Cannulation success rate for non-tumor cases was 95.3% ($n = 651$ out of 683) and for tumor cases was 84.8% ($n = 39$ out of 46). Pre-cut sphincterotomy was performed for 5% ($n = 37$) and success rate was 70.3% ($n = 26$). A pancreatic duct stent was inserted for 8.4% of cases ($n = 61$). 98.7% ($n = 443$ out of 449) of cases with biliary obstruction were successfully stented with either plastic or metallic biliary stents after successful CBD cannulation. These included patients with benign biliary strictures, malignant strictures and obstructions and patients with biliary stones in whom stone extractions were not attempted or partially cleared. Post procedurally, 0.5% ($n = 4$) of patients developed severe pancreatitis and 0.4% ($n = 3$) had perforation. Two were wire perforation and one was perforation due to stent migration. **Conclusion:** All quality indicators in this retrospective observational study was in keeping with or higher than the expected level based on the Performance measures for ERCP: European Society of Gastrointestinal Endoscopy (ESGE) Quality Improvement Initiative.

PP-0268 A multicentre study on the endoscopic management of bile duct injury

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Background and Aim: Endoscopic retrograde cholangiopancreatography is usually the first-line treatment for the majority of bile duct injury. Commonly, sphincterotomy with or without stenting of the common bile duct is done. There are no published data on the outcome of endoscopic management of bile duct injury. This retrospective study was done to look at the types of injury, endoscopic management and outcome of bile duct injury in two centres in Malaysia. **Methods:** ERCP reports and files of patients who were referred for ERCP for bile duct injury from January 2019 to Feb 2021 were reviewed. In total data of 27 patients were reviewed and then analysed using SPSS. **Results:** Strasberg Type A injury was the most common cause of bile leak with 19 of the patients (70.4%) classified as such endoscopically. 1 patient (3.7%) had Strasberg Type D and 2 patients (7.4%) had injury to the duct of Luschka. The type of leak was not specified in 5 patients (18.5%). CBD stenting with straight biliary plastic stents were performed for 25 (92.6%) of the patients and sphincterotomy alone was done for 1 patient (3.7%) who had very minimal contrast leak. 1 patient required surgical intervention and no endoscopic intervention was done. 17 out of 27 of these patients have had a repeat ERCP 3–4 months after initial ERCP for reassessment of the bile duct injury. All patients' leak resolved and on repeat ERCP (100%). One patient developed a CBD stricture which required balloon dilatation and re-stenting of the CBD. The remaining 9 patients awaiting their repeat ERCP appointment were all discharged well. **Conclusion:** ERCP with sphincterotomy and stenting has good outcomes for patients with bile duct injury with a very high rate of resolution of leakage

PP-0269 Factors affecting late complications of percutaneous endoscopic gastrostomy tube replacement

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Background and Aims: Late complications associated with percutaneous endoscopic gastrostomy (PEG) tube in patients without malignancies are common occurrences. We aimed to identify risk factors associated with PEG complications after first PEG exchange. **Methods:** Information on patients who underwent PEG exchange were retrospectively collected from electronic medical records between January 2015 and November 2020. PEG exchange was scheduled every 6 months. Medical records were

reviewed longitudinally from the first PEG exchange date until the first complication event, death, or the end of the study. Potential risk factors were tested using Cox proportional hazard. **Results:** A total of 116 patients (mean age 80.5 ± 17.6 years, 52.6% male) were enrolled with a 12 (4–23) months median follow-up. The indications were mostly neurologic disease (89.7%). Non-balloon PEG was used in 93 (80.2%) patients with balloon-type in 23 (19.8%) patients. Late PEG complications developed in 35 (30.2%) patients with a median time of 9 (4–23) months. In the multivariate analysis, the PEG complication rate was significantly higher in patients with balloon-type PEG tube (HR 5.54; 95% CI, 2.55–12.05; $p < 0.001$) and also showed significantly higher cumulative incidence of developing complications (54.9% vs 12.8% at 1 year and 76% vs 22.8% at 2 years, $p < 0.001$). The most common complication was PEG dislodgement ($n = 14$, 40%) caused by inner balloon rupture or deflation (22.9%).

Conclusion: Late onset of PEG tube-associated complications is a common problem. The significant factor associated with PEG tube complication was balloon-type PEG placement.

Keywords: endoscopic gastrostomy, PEG, PEG complications, late complications

PP-0270 The gastric corpus mucosa presented with dilated sub-epithelial capillaries under NBI endoscopy could predict severe corpus inflammation and increase risk of the presence of corpus-predominant gastritis index (CGI) in *H. pylori*-infected patients

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Background and Aim: Corpus-predominant gastritis index (CGI) is an early and reversible pathologic marker to diagnose high *H. pylori*-related gastric cancer (GCA) risk. The assessment of CGI relies on multiple biopsy to score chronic and acute inflammation according to the updated Sidney system. This study aimed to investigate if the corpus mucosal images studied by high resolution narrow band image (NBI) endoscopy could help to predict more severe gastric corpus inflammation and the presence of CGI. **Methods:** We enrolled *H. pylori*-infected patients over the age of 20 with dyspepsia and received endoscopy. Topographic biopsies according to the updated Sidney system were performed for each patient. With the high-resolution NBI endoscope (Olympus EVIS CV 290 system), the gastric corpus mucosal surface features were recorded and compared with

the updated Sidney system inflammatory scores of the site. **Results:** Totally we enrolled 52 *H. pylori*-positive patients with the mean age 56.7 ± 10.6 . Under NBI endoscopy, patients with dilated sub-epithelial capillaries observed on the corpus mucosa had higher inflammatory scores at both corpus ($p = 0.002$) and high corpus near cardia ($p = 0.005$) than the other patients. Patients with the presence of dilated sub-epithelial capillaries of the corpus mucosa under NBI were also associated with the increase of CGI risk (OR 4.2, 95% CI 1.3–13.7, $p = 0.023$) compared with other patients (Table 1). **Conclusion:** The corpus mucosal pattern under NBI could help to predict severe corpus inflammation and the presence of CGI

Keywords: CGI, corpus inflammation, NBI endoscopy, gastric cancer risk, *Helicobacter pylori*

PP-0271 Comparison between seromarkers and transient elastography for assessment of significant liver fibrosis in NAFLD patients

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Background and Aim: Transient elastography is very sensitive non invasive tool to assess liver fibrosis in NAFLD patients. But it is costly and not widely available. There are also seromarkers (APRI & FIB-4) for ruling out significant liver fibrosis. This study intends to compare between seromarkers and transient elastography result for assessment of significant liver fibrosis (SF) in NAFLD patients. **Methods:** This was an observational cross sectional study done in Sheikh Russel National Gastroliver Institute & Hospital from April 2019 to December 2019. One hundred and eleven patients were selected by non-random sampling. Demographic, clinical and biochemical data were obtained. Liver fibrosis was assessed by transient elastography. Aspartate transaminase (AST) to platelet ratio index (APRI) & FIB-4 score was compared among the non-significant fibrosis (FO-F1) & significant fibrosis (F2-F4) patients. **Results:** The total number

Table 1. The gastric corpus mucosa presented with dilated sub-epithelial capillaries under NBI endoscopy could predict higher corpus inflammation and risk of CGI in comparison with those without in *H. pylori*-infected patients.

<i>H. pylori</i> -infected patients	Dilated sub-epithelial capillaries	Others	<i>p</i>	OR (95% CI)
Parameters N (%)	capillaries			
Age (yr)	57.6±10.2	55.5±11.2	0.693	
Gender (F: M)	15 (63): 13 (38)	12 (50): 12 (50)	1.000	1.2 (0.4-3.4)
Inflammation scores[†]	(N= 28)	(N= 24)		
corpus				
1	1 (4)	2 (8)	0.002	
2-3	1 (4)	10 (42)		
4-6	26 (93)	12 (50)		
Inflammation scores	(N= 27) [‡]	(N= 24)		
high corpus near cardia				
1	4 (15)	9 (38)	0.005	
2-3	4 (15)	9 (38)		
4-6	19 (70)	6 (25)		
CGI	(N= 28)	(N= 24)		
Presence	21 (75)	10 (42)	0.023	4.2 (1.3-13.7)
Absence	7 (25)	14 (58)		

[†] The inflammation scores were assessed by the sum of acute inflammatory score and chronic inflammatory score according to the updated Sidney system.

[‡] The biopsy sample of the high corpus of one patient is missed.

of study population was 111, among them 39 (35.14%) had significant liver fibrosis (KPa > 7.2; F2 to F4) and 72 (64.86%) had non significant fibrosis (KPa < 7.2; F0 to F1). There was significant difference in between SF and non-SF groups in terms of mean serum ALT, AST, albumin and platelet count. APRI and FIB-4 were significantly higher in SF group. APRI had better accuracy (area under the receiver operating characteristics curve = 0.925) than FIB-4 (0.885) in ruling out SF. **Conclusion:** Seromarkers are comparable to transient elastography in assessment of significant liver fibrosis in NAFLD patients. Among them APRI is more accurate in determining significant fibrosis.

Keywords: transient elastography, NAFLD, significant fibrosis, non significant fibrosis, seromarkers

PP-0272 Cholecystectomy is associated with a lower risk of colorectal adenoma in patients with nonalcoholic fatty liver disease

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Background and Aim: Nonalcoholic fatty liver disease (NAFLD) is known to increase the risk of colorectal adenoma (CRA). Cholecystectomy has been demonstrated to promote NAFLD development. However, the association between NAFLD comorbid with cholecystectomy (NAFLD-cholecystectomy) and risk of CRA remains unknown. Therefore, we investigated whether cholecystectomy is associated with CRA in NAFLD and non-NAFLD subjects. **Methods:** Data from 384 subjects aged 30–65 years old between January 2016 and December 2020 were collected retrospectively. All subjects underwent colonoscopy and abdominal ultrasound or computed tomography (CT) for verification of NAFLD in the absence of other secondary causes. Advanced CRA was defined as an adenomatous polyp greater than 10 mm in diameter and/or with villous histology and/or with high-grade dysplasia or adenocarcinoma. Patients were allocated to four groups, namely, non-NAFLD cohort: (1) control subjects and (2) cholecystectomy patients, and NAFLD cohort: (3) NAFLD patients and (4) NAFLD-cholecystectomy patients. **Results:** NAFLD-cholecystectomy patients ($N = 43$) had a lower prevalence of CRA (16.28% vs 39.30%, $P = 0.004$) and advanced CRA (9.30% vs 23.38%, $P = 0.039$) than NAFLD patients ($N = 201$). However, the prevalence of CRA and advanced CRA was comparable between cholecystectomy ($N = 45$) and control ($N = 95$) subjects (28.89% vs 20.00%, $P = 0.242$ for CRA and 15.56% vs 8.42%, $P = 0.202$ for advanced CRA). No significance was observed in the maximum diameter and number of CRA in NAFLD ($P = 0.668$ and 0.360, respectively) and non-NAFLD group ($P = 0.518$ and 0.196, respectively). Multivariable logistic regression analysis revealed that cholecystectomy was associated with a decreased risk of CRA in NAFLD (odds ratio [OR], 0.259; 95% confidential interval [CI], 0.096–0.699; $P = 0.008$), but not in non-NAFLD cohort (OR, 1.636; 95% CI, 0.595–4.495; $P = 0.340$). **Conclusion:** Cholecystectomy is significantly associated with a decreased risk of CRA among patients with NAFLD, but not in non-NAFLD patients. Further studies are warranted to verify this association and explore the potential mechanisms.

Keywords: cholecystectomy, nonalcoholic fatty liver disease, colorectal adenoma

PP-0273 Frequency of post-endoscopic retrograde cholangiopancreatography acute pancreatitis in an academic hospital of Bangladesh

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Background and Aim: There are limited data on the frequency of post-ERCP pancreatitis from the resource constraint country like Bangladesh. Hence, we have conducted a prospective study to determine the frequency of PEP and the factors associated with its occurrence.

Methods: This prospective observational study was carried out in the Gastroenterology Department of Dhaka Medical College & Hospital, Dhaka, Bangladesh, on the consecutive patients who underwent ERCP. PEP was diagnosed according to consensus definition. Serum lipase was done in all patients before procedure and 24 h after procedure or earlier if patient developed abdominal pain. **Results:** Total 168 patients were included [mean age 46.97]. **Conclusion:** Around 10% patients had developed PEP. 50%, 44% and 6% patients developed mild, moderate and severe PEP, respectively. Pancreatic duct contrast injection was the risk factor for PEP.

Keywords: ERCP, post-ERCP pancreatitis, cholangitis, bleeding

PP-0274 Nested allele-specific multiplex polymerase chain reaction (PCR) method development for the irritable bowel syndrome (IBS)-related gene polymorphisms detection

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Background and Aim: Irritable bowel syndrome (IBS) is a common disorder with a complex and generally unknown pathogenesis. Studying the irritable bowel syndrome (IBS)-related genetic polymorphisms will help to intervene and guide the decision-making in the management of IBS patients. Therefore, it is crucial to have an efficient, accurate and robust method to investigate the genes related to the syndrome. The aim of the study is to develop a nested allele specific PCR for detection of four genes and five SNPs related to IBS, namely, tryptophan hydroxylase 1 (TPH1); rs211105 & rs4537731, tryptophan hydroxylase 2 (TPH2); rs4570625, sodium voltage-gated channel alpha subunit 5 (SCN5A); rs1805124, and G protein subunit beta 3 gene (GNB3); rs5443. **Methods:** Genomic DNA was extracted from blood using commercial DNA extraction kit. Primers specific at the 3'-end for the polymorphic sites were designed. A two-step PCR method was developed. In the first PCR, specific region of the genes (TPH1, TPH2, SCN5A and GNB3) were amplified. The products were then used as a template in the second PCR. Sanger sequencing was performed to validate the test results. **Results:** Bands that correspond to the amplified product of interest have been obtained. The method was reproducible and specific when used to genotype healthy volunteers. The

amplified sequences showed 100% homology to the TPH1, TPH2, SCN5A and GNB3 reference sequence. **Conclusion:** The developed methods were found to be simple, specific and reproducible for simultaneous detection of SNPs in TPH1 (rs211105 & rs4537731), TPH2 (rs4570625), SCN5A (rs1805124) and GNB3 (rs5443). By understanding the ethnic discrepancies and its potential effects to the inconsistent medical treatment in IBS, the determination of related gene polymorphisms is highly recommended prior to its clinical manifestations.

Keywords: IBS-related genetic polymorphism, TPH1 gene, TPH2 gene, SCN5A gene, GNB3 gene

PP-0275 Evaluation of literature searching tools for curation of MMR gene variants in hereditary colon cancer

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Background and Aim: Pathogenic variants in the mismatch repair (MMR) genes are the drivers of Lynch syndrome; optimal variant interpretation is required for the management of suspected and confirmed cases. The International Society for Hereditary Gastrointestinal Tumours (InSiGHT) provides expert classifications for MMR variants for the US National Human Genome Research Institute. **Methods:** We described the nature of discordance amongst 80 variants that require updating by InSiGHT for ClinGen by comparing their existing InSiGHT classifications with various submissions for each variant on the US National Centre for Biotechnology Information. **Results:** 916 articles were returned by both methods. Mastermind averaged four relevant articles per search compared to Google Scholar. **Conclusion:** For a sample of variants with varying discordant interpretations, Mastermind was able to return a more relevant and unique literature search. Google Scholar retrieved information that Mastermind did not, supporting a conclusion that Mastermind could play a complementary role in literature searching for classification.

Keywords: genetics, cancer, artificial intelligence

PP-0276 Clinical manifestations and endoscopic findings in different patterns of esophageal hypomotility disorders

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Background and Aim: Esophageal hypomotility is a common motility disorder detected on high resolution manometry (HRM), but the severity of this condition has not been clearly defined. The present study describes the clinical symptoms and endoscopic findings of patients with mild and severe esophageal hypomotility disorders and factors associated with endoscopic lesions. **Methods:** We conducted a cross-sectional study on Vietnamese patients performed HRM at the Institute of Gastroenterology and Hepatology between March 2018 and May 2020. Data on clinical symptoms and endoscopic findings including erosive esophagitis graded based on Los Angeles classification (LA) and Barrett. **Results:** Among 3830 patients recruited, the percentage of normal motility, absent contractility, severe IEM, mild IEM, and fragmented peristalsis were 41.8%, 4.1%, 32.3%, 21.7%, and 0.1%, respectively. Regurgitation,

vomiting, nausea, dysphagia, and feeling stuck at the throat were significantly higher in absent contractility comparing to the others. On endoscopy, 44.4% of patients had erosive esophagitis with the predominance of LA grade A esophagitis (41.0%); 1.1% and 4.3% of patients had long and short segment of Barrett. **Conclusion:** The main clinical manifestation of esophageal hypomotility disorders are reflux symptoms. LES hypotension and overweight are associated with severe erosive esophagitis and Barrett.

Keywords: esophageal hypomotility disorder, high resolution manometry

PP-0277 10-year incidence, clinico-demographic profile and mortality of young-onset colorectal cancer in northern Malaysia

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Background and Aim: While opportunistic colorectal (CRC) cancer screening is highly recommended for the individuals above 50 years of age in Malaysia, the information on the young-onset CRC is limited. To determine the 10-year incidence, clinico-demographic profile and mortality of young onset CRC in northern Malaysia. **Methods:** This was a cross-sectional study based on the National Cancer Patient Registry- Colorectal Cancer (NCPR-CC). The data were obtained from 21 public and private hospitals located in 3 states in peninsular Malaysia. All the CRC patients diagnosed at the age below 50 years between 1st January 2008 and 31st December 2017 and captured by the NCPR-CC were included in the study. Both the incidence and mortality were calculated in relation to the mid-year young population (<50 years of age) of the three states, and were expressed as age-standard rates (ASRs; per 100 000). The changes in trends for the incidence and mortality over the 10-year period were also assessed using the time-series analysis. **Results:** Of the 893 young CRC patients diagnosed between 2008 and 2017, the majority were male (50.4%), of Malay ethnicity (50.7%) and non-smokers (33.0%). Only 5.4% of them recorded a positive family history. The 10-year ASRs for the incidence and mortality were, respectively, 25.23 and 12.17 per 100 000. However, there was no significant change in the trend for either the incidence or mortality over the 10-year period. **Conclusion:** While non-communicable diseases emerge as a public health concern in Malaysia, the findings of this study call attention to the young-onset CRC in Malaysia and the need to improve the awareness of the disease.

Keywords: Colorectal cancer screening, cross sectional multicentre stud, young age CRC onset

PP-0278 Refusal of stool-based colorectal cancer screening and associated factors in Kedah state, Malaysia

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Background and Aim: The uptake of colorectal cancer (CRC) screening using the immunochemical faecal occult blood test (iFOBT) remains sub-optimal in public healthcare (PHC) centres across Malaysia. To explore the extent, associated factors and reasons of refusal of iFOBT in Kedah state, Malaysia. **Methods:** This was a multi-center cross-sectional study undertaken at 58 PHC centers. The information of the socio-demographic and clinical characteristics of patients who were offered the iFOBT in the first quarter of 2019, together with their acceptance of the test, was gathered.

The factors associated with the refusal of iFOBT were also explored using the logistic regression analysis. **Results:** The patients ($n = 920$) were mainly female (52.4%) and had a mean age of 58.7 ± 10.6 years. Refusal of iFOBT took place in 32.2% of them. The test was more likely to be refused by those who did not have hypertension (adjusted OR: 3.33; 95% CI: 2.44, 4.54) or diabetes (adjusted OR: 1.99; 95% CI: 1.42, 2.77); did not show symptoms of CRC (adjusted OR: 3.15; 95% CI: 1.26, 7.89); had the offer made either by medical assistant (adjusted OR: 2.44; 95% CI: 1.71, 3.49) or a nurse (adjusted OR: 2.41; 95% CI 1.65, 3.51); and were active smokers (adjusted OR: 1.74; 95% CI: 1.22, 2.47). The common reasons of the refusal included "feeling not ready for the test" (21.6%) and "feeling healthy" (14.9%). **Conclusion:** The stool-based CRC screening had been refused by approximately one-third of the individuals seeking care from PHC centers in the state, calling for efforts to promote the public awareness of the disease.

Keywords: refusal of stool iFOBT, cross sectional multicentre stud, one third refusal, public awareness

PP-0279 The course of gastritis in children with a hereditary predisposition to peptic ulcer disease

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Background and Aim: Currently, the problem of stomach diseases in children is relevant. The age of formation of stomach pathology in adults is the childhood period of life, which is represented mainly by gastritis. Gastritis with further progression is the morphological basis of diseases such as peptic ulcer disease. To study the features of clinical manifestations and blood cytokines in gastritis in children with a hereditary predisposition to peptic ulcer disease. **Methods:** In the Asian part of Russia (Siberia), 3343 schoolchildren aged 7–17 years were examined. 463 children with gastrointestinal complaints underwent esophagogastroduodenoscopy with biopsy of the gastric mucosa. In accordance with the Sydney classification, the morphological diagnosis of gastritis was carried out. Diagnostics of *Helicobacter pylori* in biopsy sections was carried out after staining according to Giemsa. Cytokine concentrations in blood serum (IL-2, IL-4, IL-8, IL-18, IL-1 β , IFN- γ , TNM-?) were determined by ELISA. The significance of differences in traits was analyzed using the Mann–Whitney test. The studies were approved by the ethics committee and the consent of the patients and their parents was obtained. **Results:** Children with a hereditary predisposition to peptic ulcer disease with gastritis more often have dyspeptic manifestations ($p < 0.001$). It was found that in children with a familial predisposition, gastritis proceeds with the involvement of the systemic level of cytokine regulation (expression of IL-4, $p = 0.020$; IFN- γ , $p = 0.001$). Moreover, in children with *H. pylori* infection, the cytokine regulation of the inflammatory process is specific (TNM-? expression, $p = 0.048$). **Conclusion:** The features of the course of gastritis in children with a familial predisposition to peptic ulcer disease have been established, and they can be considered markers of the unfavorable course of the pathology.

Keywords: children, peptic ulcer, gastritis, hereditary predisposition, cytokines

PP-0280 Association of gastroesophageal reflux disease and erosive and ulcerative lesions of the stomach and duodenum in children of Siberia

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Background and Aim: Gastroesophageal reflux disease (GERD) and peptic ulcer disease in children's populations are not widespread, the urgency of the problem of diseases of the digestive system in children lies in the fact that this is the age of their appearance in most adults. To study the relationship between GERD and erosive and ulcerative lesions of the stomach and duodenum in children of Siberia. **Methods:** Children aged 7–17 years in the Asian part of Russia were examined: the Republic of Tuva (1535 children), Evenkia (1369 children) and Buryatia (790 children). GERD was diagnosed by the presence of heartburn based on international consensus in the pediatric population. Esophagogastroduodenoscopy (283 children in Tyva, 110 in Buryatia and 205 in Evenkia) was performed by random selection for children with gastrointestinal complaints. The studies were approved by the ethics committee and the consent of the patients and their parents was obtained. **Results:** The prevalence of GERD among schoolchildren in Siberia was 6.4%. Indicators in the Republic of Tuva were 9.5%, which is higher than among schoolchildren in Buryatia (4.1%; $p = 0.0001$) and Evenkia (4.2%; $p = 0.0001$). In the Republic of Tuva, there was a tendency to an increase in the erosive form of GERD. The destructive process of the gastric and duodenal mucosa was diagnosed in 10.7% of those examined (in 15.5% of schoolchildren of the Tyva Republic, compared with 7.3% in children in Buryatia ($p = 0.0297$) and 5.9% in Evenkia ($p = 0.0009$)). In children with erosive and ulcerative lesions, the comorbidity of esophageal lesions was more often determined. **Conclusion:** In children of Siberia, there is an association of erosive and ulcerative lesions of the stomach and duodenum with GERD, the severity of which has territorial characteristics.

Keywords: children, gastritis with erosions, peptic ulcer, GERD

PP-0281 Validation of ABCR and ART scores for predicting overall survival of hepatocellular carcinoma patients treated by transarterial chemoembolization at Hanoi Medical University Hospital

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Background and Aim: Validation of ABCR and ART score for predicting overall survival and re-treatment of hepatocellular carcinoma patient treated by conventional transarterial chemoembolization at Ha Noi Medical University Hospital. **Methods:** From January 2018 to December 2020, 30 consecutive HCC patients, mainly with the viral-induced disease, were treated with TACE. Using a regression model on the predictive variables of our population, we validated two scores designed to help for predicting overall survival. **Results:** In the multivariate analysis, three prognostic factors were associated with overall survival: BCCLC and AFP (>200 ng/mL) at baseline and absence of radiological response. These factors were included in a score (ABCR, ranging from -3 to +6) which correlates with survival and identifies three groups. The ABCR score was validated and proved to perform better than the ART score in distinguishing between patients' prognoses. **Conclusion:** The ABCR and ART scores are simple and clinically relevant indexes, summing several prognostic variables endorsed in HCC. An ABCR score \geq of 4 and ART \geq of 1.5 before the second TACE identify patients with dismal prognosis who may not benefit from further TACE.

Keywords: ABCR, ART, overall survival of ABCR and ART

PP-0282 Association of blood leptin with clinical and morphological manifestations of gastritis depending on body mass index in children without obesity

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Background and Aim: The influence of obesity on the pathology of the stomach was established; the pathogenetic link of which is considered to be hyperleptinemia. To study the association of leptin in the blood with the clinical and morphological manifestations of gastritis in children with normal and overweight body mass index. **Methods:** 46 children were examined in a gastroenterological hospital, in whom gastritis was morphologically confirmed. Children are presented in 2 groups: with normal body weight (group 1, $n = 31$), overweight (group 2, $n = 15$). All underwent gastroscopy with biopsy sampling and determination of *Helicobacter pylori*, determination of leptin in the blood by the enzyme immunoassay method. The studies were approved by the ethics committee, and the consent of the patients and their parents was obtained. **Results:** An increase in the level of leptin was revealed in children of group 1 in the presence of dyspepsia (2.2 (0.1–8.4) ng/mL in comparison with 0.1 (0.1–0.1) ng/mL in children, who had no dyspeptic complaints; $p = 0.0443$). The relationship of leptin with the presence of destructive changes in the gastric mucosa, gastritis activity and *Helicobacter pylori* has not been established. In children of group 2, no association of leptin with clinical and morphological manifestations of gastritis was revealed. In children of group 2, there was no increase in leptin levels in the presence of dyspepsia. At the same time, in children of group 2, the level of leptin was significantly higher than in children of group 1. **Conclusion:** In children with increased body weight, gastritis proceeds in conditions of hyperleptinemia, since its level in the blood depends on the volume of the body's adipose tissue. The role of leptin in dyspepsia in children with normal body weight is leveled with an increase in the amount of adipose tissue.

Keywords: leptin, dyspepsia, gastritis, children, body mass index

PP-0283 Fatty liver index, hepatic steatosis index and triglyceride glucose index for predicting hepatic steatosis in NAFLD

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Background and Aim: Non-alcoholic fatty liver disease (NAFLD) is considered as one of the most frequent liver diseases in this century. This condition crippled individual increasing risk of both morbidity and mortality. The gold standard of NAFLD is liver biopsy. However, there were non-invasive method such as assessment of hepatic steatosis such as fatty liver index (FLI), hepatic steatosis index (HSI) and triglyceride glucose index (TyG). Best method to replace invasive method is to assess controlled attenuation parameter (CAP). To provide CAP to all patients were impractical and expensive. Therefore, this study is aimed to use simple screening tools to assess hepatic steatosis. **Methods:** A cross sectional retrospective study conducted on outpatient hepatology clinic. The diagnosis of NAFLD based on abdominal ultrasonography expertise of radiologist combined with CAP by Fibroscan. Patient then went through scoring using FLI, HIS and TyG. Inclusion criteria were patient diagnosed with NAFLD. Criteria exclusion were patients with hepatitis B, C and cirrhosis hepatitis. The patient's blood was examined in a central laboratory at hospital. Data

analysis were done using spearman analysis. **Results:** This study included 31 confirmed NAFLD patients. The subjects consist of 16 men (51%) and 15 (49%) women. Average age was 53 (31–75) years old. Patients with diabetes mellitus type 2 in 19% of the patients. CAP median 277 (203–369), FLI median 78.67 (15.86–98.75), HSI median 38.39 (30.13–63.15) and TyG median 4.84 (4.52–5.66). From Spearman's analysis, there was a positive correlation on FLI and HIS with CAP ($r = 0.48$, $p = 0.006$ and $r = 0.357$, $p = 0.049$). No correlation between TyG with CAP ($r = 0.169$, $p = 0.365$). **Conclusion:** FLI and HIS can be used as simple screening tools to assess hepatic steatosis to avoid invasive diagnostic without clear indication. FLI and HIS can be included to non-invasive method of assessment of hepatic steatosis in patients with NAFLD. While TyG need further assessment.

Keywords: nonalcoholic fatty liver disease, controlled attenuation parameter, fatty liver index, hepatic steatosis index, triglyceride glucose index

PP-0284 Epidemiology of chronic hepatitis B in Hospital Serdang

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Background and Aim: Chronic hepatitis B infection represents a major global health problem worldwide with substantial morbidity and mortality due to complications such as liver cirrhosis and hepatocellular carcinoma despite existing vaccination, screening and treatment in Malaysia.

Methods: Retrospective data collection based on patient under follow up at Hospital Serdang Hepatology clinic. **Results:** A total of 192 individuals are under clinic follow up. Out of these 121 are male patients, and 91 of them are female. Chinese and Malays are almost same in numbers in our CHB clinic follow up, followed by Indians and others. 27% of patients within age 40–49 and followed by 23% of them within age of 50–59. Youngest age within 10–19 and oldest age group with 80–89. 129 of individuals have no known risk factors 36 individual have family history of chronic hepatitis B. Most of our patient are eAg negative patients and noncirrhotic group of individuals. Out these individuals 61.9% of patients not on treatment for CHB. **Conclusion:** Most of patients our cirrhotic patients are under treatment.

Keywords: CHB in Hospital Serdang

PP-0285 *Helicobacter pylori* and familial factors

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Background and Aim: Factors influencing the prevalence of *Helicobacter pylori* in the population in regions with a high incidence of stomach cancer are important. To assess the impact of large families, education and parental employment status on *Helicobacter pylori* in children from a territory with a high prevalence of stomach cancer. **Methods:** The influence of family factors on the prevalence of *Helicobacter pylori* in children aged 7–17 years (123 Caucasians, 147 Mongoloids–Tuvinians) in the Republic of Tyva (South Siberia) was studied. The highest incidence of stomach cancer in Russia is found in Tuva. *Helicobacter pylori* is defined morphologically. The study groups were formed by the method of random selection from among children with gastrointestinal complaints during a cross-sectional clinical examination of 1535 schoolchildren. Statistical processing was carried out using the chi-square test and logistic regression analysis, calculating the odds ratio (OR) and 95% confidence interval (CI). The studies were approved by the ethics committee, and the consent of the patients and their parents was obtained. **Results:** A high prevalence

of *Helicobacter pylori* among Mongoloids was established: 66.7% (43.1% in Caucasians; 2.64 (1.61–4.33), $p = 0.001$). In the population of Caucasians, a positive effect was found on the level of infection of the mother's higher education (0.33 (0.11–0.96), $p = 0.043$) and her social status (working profession: 3.87 (1.33–11.29), $p = 0.014$). Father's education and employment status did not play a significant role. In the population of Mongoloids, and the relationship between the studied factors and *Helicobacter pylori* was not revealed. **Conclusion:** Ethnic features of the influence of family factors on the infection rates of schoolchildren have been established.

Keywords: *Helicobacter pylori*, children, population, family factors

PP-0286 The external validation of ABC score in upper and lower gastrointestinal bleeding in Asian population

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Background and Aim: The latest proposed risk stratification system, ABC score, demonstrated high performance for predicting outcome in both upper and lower gastrointestinal bleeding (UGIB, LGIB). Nevertheless, the application of this score in clinical practice was limited. We aim to validate performance of ABC score for 30-day mortality prediction in Asian population. **Methods:** Retrospective and prospective data of consecutive patients presented with UGIB and LGIB from 2011 to March 2020 were collected. Age, blood tests (blood urea nitrogen, serum albumin and serum creatinine), comorbidities (mental status, presence of cirrhosis, underlying malignancy and American Society of Anesthesiology score) and 30-day mortality were reviewed. The score performance was measured among low- (0–3), medium- (4–7) and high-risk (8–14) groups. The area under receiver operating characteristic (AUROC) curves were evaluated for both sites of bleeding. **Results:** Total of 2620 patients (2119 UGIB and 501 LGIB) were included. The 30-day mortality was 5.6% for UGIB and 2.9% for LGIB. The mean ABC score in Thai cohort was higher than those from UGIB in Europe (5 vs 4.5) and LGIB in United Kingdom (4 vs 2.6). Thai cohort contained larger proportion of high-risk patients, but the mortality rate in this group was lower. When compared to prior cohorts, the score showed to have moderate performance in Thai cohort (0.81 vs 0.74 in UGIB and 0.84 vs 0.74 in LGIB). **Conclusion:** Previous data showed that ABC score had outstanding performance to predict 30-day mortality in both UGIB and LGIB patients. However, the score ability was lower when apply in Asian population

Keywords: ABC-score, upper gastrointestinal bleeding, lower gastrointestinal bleeding, risk stratification, mortality

Table 1. Discriminative abilities for ABC score in 30-day mortality prediction among low, medium and high risk groups

	Development cohort	Validation cohort		Siriraj cohort	
		Europe	UK	Thailand	LGB
Bleeding site	UGIB (n=3,012)	UGIB (n=4,019)	LGB (n=2,336)	UGIB (n=2,119)	LGB (n=501)
Mean ABC score (95%CI)	3.5 (0.9)	4.5 (1.10)	2.6 (0.7)	5 (0.10)	4 (0.9)
AUROC (95%CI)	0.86 (0.84–0.89)	0.81 (0.78–0.83)	0.84 (0.79–0.89)	0.74 (0.69–0.78)	0.74 (0.65–0.84)
Low risk (ABC 0–3)	1498(56)	1369(40)	1275(71)	793(37.4)	207(41.3)
Mortality, n (%)	11(0.7)	14(1)	7(0.6)	16(2.0)	1(0.5)
Sensitivity	60%	43%	73%	13%	7%
Specificity	94%	94%	84%	62%	58%
PPV	99%	99%	99%	92%	95%
NPV	15%	12%	7.6%	2%	1%
Medium risk (ABC 4–7)	904(34)	1538(45)	453(25)	940(44.4)	221(44.1)
Mortality, n (%)	84(9.3)	107(7)	28(6.3)	52(5.5)	9(4.1)
Sensitivity	-	-	-	44%	6%
Specificity	-	-	-	56%	56%
PPV	-	-	-	6%	4%
NPV	-	-	-	94%	98%
High risk (ABC 8–14)	267(10)	519(15)	56(3.1)	386(18.2)	73(14.6)
Mortality, n (%)	91(34)	129(25)	10(18)	51(13.2)	5(6.8)
Sensitivity	49%	52%	22%	43%	33%
Specificity	93%	88%	97%	83%	86%
PPV	34%	25%	18%	13%	7%
NPV	96%	96%	98%	96%	98%

PP-0287 Features of the cytokine regulation of the inflammatory process in the gastric mucosa in children

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Background and Aim: It is assumed that there are ethnic features of the cytokine regulation of the inflammatory process in the gastric mucosa in children. To study the association of blood cytokine levels with clinical and morphological manifestations in gastritis in children of Mongoloid and Caucasian populations. **Methods:** Children (57 Mongoloids and 32 Caucasians) in Siberia (Russia), who underwent gastroscopy with biopsy sampling, were examined. Gastritis was diagnosed in accordance with the Sydney classification. Cytokines in blood serum (IL-2, IL-4, IL-8, IL-10, IL-1 β , IFN- γ and FNO-?) were determined by ELISA. The age groups were analyzed: 7–11 years old and 12–17 years old. The significance of differences in traits was analyzed using the Mann–Whitney test. The

studies were approved by the ethics committee and the consent of the patients and their parents was obtained. **Results:** In Mongoloids with gastritis in the presence of dyspeptic complaints, IL-10 was increased in blood serum compared with Mongoloids without complaints ($p = 0.0253$) and Caucasians with dyspepsia ($p = 0.0157$). In the age groups of children, no association of cytokines with dyspepsia was noted. In Caucasians, 7–11 years old, an increase in pro-inflammatory IL-8 was observed with the activity of grade 2–3 gastritis both in the antrum ($p = 0.0485$) and in the body of the stomach ($p = 0.0485$). Whereas in young Mongoloids, with a high activity of gastritis in the body, the level of anti-inflammatory IL-4 was increased ($p = 0.0189$). In Mongoloids, with age, there was a decrease in IL-1 β in gastritis with high activity in both parts of the stomach. **Conclusion:** The associations of the cytokines IL-4, IL-8, IL-1 β , which regulate various links of immunity, with clinical and morphological manifestations in gastritis in children, obviously indicate the ethnic characteristics of the immune response in gastritis.

Keywords: population, children, gastritis, cytokines

PP-0288 Clinico-epidemiological profile and clinical outcomes of caustic ingestion patients referred for endoscopy and admitted at a tertiary hospital

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Background and Aim: In the setting of caustic substance injury, quick assessment of severity of GI injury according to endoscopic and physical examinations can lead to improved treatment and prognosis. This study aimed to determine the clinical and epidemiological characteristics seen in patients with history of caustic ingestion. **Methods:** This is a descriptive cross-sectional study reviewing 3-year data of 72 patients with caustic substance ingestion, and underwent esophagogastroduodenoscopy within 24 h. Demographic data, caustic substance type, contact time, amount ingested, clinical manifestations, post-corrosive complications, and endoscopic findings were gathered and analyzed. **Results:** Seventy-two (72) patients were included, with mean age of 32, majority (73.6%) in the 19–35 age group; About half (56.9%) were single, male (56.9%) and unemployed (48.6%). Alkali was the most common type of ingested substance (59.7%), with sodium hypochlorite ranking highest. Almost all (97%) were brought to the ER within 0–12 h decreasing the need for specialized care and 65 (90.7%) of the patients were discharged improved. Most cases were intentional (87.5%), with vomiting (51.3%) as the most common presenting manifestation. Zargar classification grade 1 in esophagus ($n = 22$, 43.1%) and stomach ($n = 28$, 43.1%) were the most common EGD findings. Post-corrosive complications in 9 patients on their follow-up after three months are as follows: esophageal or antral stricture ($n = 5$), grade 1 mucosal injuries ($n = 2$), erosive gastritis ($n = 1$), mid-esophageal ring ($n = 1$) and perforation ($n = 1$). **Conclusion:** The degree of mucosal injury in the esophagus and the stomach were noted to be significantly associated with the outcomes, wherein higher-grade injuries needed surgical intervention or may have resulted to death. Endoscopy is an effective modality to plan initial treatment and to predict patients who are at risk of poorer outcomes, which guides management and treatment in caustic ingestion patients.

Keywords: caustic substance ingestion, corrosive, esophagogastroduodenoscopy, endoscopy

PP-0289 Diagnostic performance of mac-2-binding protein glycosylation isomer (M2BPGi) to assess liver stiffness in chronic hepatitis C patients with chronic kidney disease on hemodialysis

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Background and Aim: Chronic kidney disease patients on hemodialysis (CKD on HD) are prone to experience liver function deterioration due to hepatitis C virus infection. Hence, the assessment of liver fibrosis becomes crucial. Nevertheless, liver biopsy as the gold standard for liver stiffness measurement has several limitations when being used for hemodialysis patients. Thus, this study aimed to evaluate the diagnostic performance of serum mac-2-binding protein glycosylation isomer (M2BPGi) to assess the liver stiffness measurement in chronic hepatitis C patients CKD on HD. **Methods:** 102 chronic hepatitis C CKD on HD patients, 48 CKD on HD patients, and 48 healthy control were recruited for this study. Serum M2BPGi was collected before the HD procedure, while transient elastography assessment was performed after the HD procedure. Pearson correlation analysis was conducted to assess the correlation between serum M2BPGi level and transient elastography results. The optimum cut-off of M2BPGi levels for detecting significant fibrosis and cirrhosis was calculated by ROC analysis. **Results:** The level of serum M2BPGi among chronic hepatitis C CKD on HD patients was moderately correlated with transient elastography ($r = 0.447$, $P < 0.001$). The median of serum M2BPGi level was the highest in chronic hepatitis C CKD on HD patients, followed by CKD on HD and healthy control (2.190 COI, 1.260 COI, and 0.590 COI). Furthermore, the median level of serum M2BPGi increased according to the severity of liver fibrosis: 2.020 COI for significant fibrosis and 5.065 COI for cirrhosis with optimum cut-off value 2.080 COI and 2.475 COI, respectively. **Conclusion:** Serum M2BPGi could be a simple and reliable diagnostic tool to evaluate cirrhosis in chronic hepatitis C CKD on HD patients, especially when transient elastography assessment cannot be used nor available.

Keywords: chronic hepatitis C, chronic kidney disease, hemodialysis, M2BPGi

PP-0290 Accuracy of mac-2-binding protein glycosylation isomer (M2BPGi) to assess liver stiffness in the treatment naïve chronic hepatitis C patients in Indonesia

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Background and Aim: Liver fibrosis assessment is important in the decision-making regarding the long-term prognosis of chronic hepatitis C patients and the efficacy of antiviral therapy. However, liver biopsy as the gold standard method to assess liver fibrosis has several limitations due to its invasiveness and problematic diagnostic performance. Mac-2-

binding glycosylation isomer (M2BPGi) was recently found to be a novel biomarker to measure liver stiffness measurement. Hence, this study aimed to evaluate the diagnostic performance of M2BPGi to assess significant fibrosis and cirrhosis in treatment naïve Chronic Hepatitis C patients and 48 healthy controls. Pearson correlation analysis was performed to assess the correlation between the level of serum M2BPGi and Transient Elastography result. ROC analysis was conducted to find the optimum cut-off values of serum M2BPGi to assess significant fibrosis and cirrhosis. **Results:** The level of serum M2BPGi was strongly correlated with the transient elastography and was significantly higher among the chronic Hepatitis C patients ($r: 0.708, p < 0.001; 0.590 \text{ COI vs } 4.130 \text{ COI}, p < 0.001$). The level of serum M2BPGi also increased according to the degree of liver fibrosis: 2.985 COI for significant fibrosis and 8.785 COI for cirrhosis. ROC analysis found that the optimum cut-off values for diagnosing significant fibrosis was 1.820 COI (AUC: 90.8%) and for diagnosing cirrhosis was 3.770 (AUC: 89.3%). **Conclusion:** Serum M2BPGi could be an alternative modality to assess liver fibrosis in chronic hepatitis C patients as the result is equivalent to transient elastography. Moreover, serum M2BPGi could be useful for liver fibrosis assessment in the area with limited resources in which transient elastography is unavailable or in other conditions where transient elastography cannot be used.

Keywords: chronic hepatitis C, mac-2-binding protein glycosylat, transient elastography, liver fibrosis

PP-0291 Factors related with complications after *N*-butyl-2-cyanoacrylate (glue) injection for the treatment of gastric varices

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Background and Aim: Gastric variceal bleeding is one of the serious complication of liver cirrhosis. The treatment such as endoscopic guided injection of *N*-butyl-2-cyanoacrylate (Histoacryl®) is effective but associate with serious complications. This study aims to evaluate the factors related with complication of endoscopic injection of Histoacryl® for the treatment of bleeding gastric varices. **Methods:** We retrospectively studied cases with gastric variceal hemorrhage who were treated with Histoacryl® injection from July 2011 to May 2019. The patients' endoscopic findings, complications, rebleeding rate, and 3-month mortality were reviewed. **Results:** A total of 115 patients with mean age of 57.3 ± 9.0 (32–78) years old, and 64.3% male were studied. The patients were classified as Child–Pugh class A in 80.9%, B 18.3% and C 0.9%. Endoscopic finding was GOV1 in 31 (27%), GOV2 in 39 (33.9%) and IGV1 in 45 (39.1%) patients. The amount of total histoacryl mixture for injection in each episode was 2.47 ± 1.0 mL. Complications were 3.5% sepsis and 0.9% pulmonary embolism. 3 months after injection, mortality was seen in 7 patients (6.1%), and 15 patients (13%) had rebleeding. The 3-month rebleeding was associated with low

hemoglobin (9.1 versus 11.2 g/dL, $p < 0.001$), delayed endoscopic treatment (>24 h) ($p = 0.016$) and rebleeding during admission ($p = 0.007$). By multivariate analysis, 3-month rebleeding significantly correlated with low hemoglobin level (OR = 1.39, $p = 0.024$). 3-month mortality was significantly correlated with Child–Pugh score class B (OR = 54.65, $p = 0.004$) and 3-month rebleeding (OR = 25.21, $p = 0.017$). **Conclusion:** Complications after histoacryl injection including infection, pulmonary embolic and re-bleeding could be seen in 3.5%, 0.9%, and 13% of patients, respectively. Anemia is associated with increased risk of re-bleeding in 3 months. Patients with compromised liver and had re-bleeding in 3 months are associated with increased 3-month mortality.

Keywords: gastric varices, glue injection, complication

PP-0292 Factors associated with ESBL producing and non-ESBL producing *Escherichia coli* infection in patients with biliary tract infection

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Background and Aim: Biliary tract infection is common and associated with high prevalence of septicemia and mortality. Timely proper antibiotics administration is crucial for disease outcome and survival. With increasing incidence of drug resistant organisms, especially *Escherichia coli*, factors associated with drug-resistant organisms causing cholangitis are important to guide proper antibiotic use. This study aims to identify predictive factors of ESBL producing *Escherichia coli* cholangitis compare with non ESBL producing strain from bile culture. **Methods:** This is a retrospective study which collected data of patients with biliary tract infection from 1 January 2015 to 31 December 2019. The patients over 18 years old with confirmed cholangitis with *Escherichia coli* infection ESBL producing and non ESBL producing by bile culture were studied. **Results:** Among 225 cases of biliary tract infection, *Escherichia coli* ESBL was identified in 118 of infected patients (52.4%). We included 64 (54.2%) female and age ranges between 66.0 ± 16.97 years old. ERCP was performed in 117 patients and percutaneous transhepatic biliary drainage tube was inserted in 63 patients. Risk of *Escherichia coli* infection ESBL producing included history of endoscopic retrograde cholangiopancreatography (ERCP) (OR 2.323), and history of exposure to cephalosporins (OR 3.637), on the contrary, history of percutaneous biliary drainage was not associated with increased risk of ESBL producing organism ($p = 0.239$). The presence of ESBL strain was associated with septic shock higher level of alkaline phosphatase and a longer period of hospital stay (9.3 versus 13.5 days, $p = 0.001$). **Conclusion:** The risk factor of *Escherichia coli* infection ESBL producing is history of endoscopic retrograde cholangiopancreatography (ERCP), and history of receiving cephalosporins. In such group of patient, using antibiotics with activity against ESBL might be a better initial candidate for initial treatment.

Keywords: biliary tract infection, *Escherichia coli*, ESBL

PP-0293 Sucralose exposure in early life exacerbates gut dysbiosis of offspring through inducing paneth cell defects

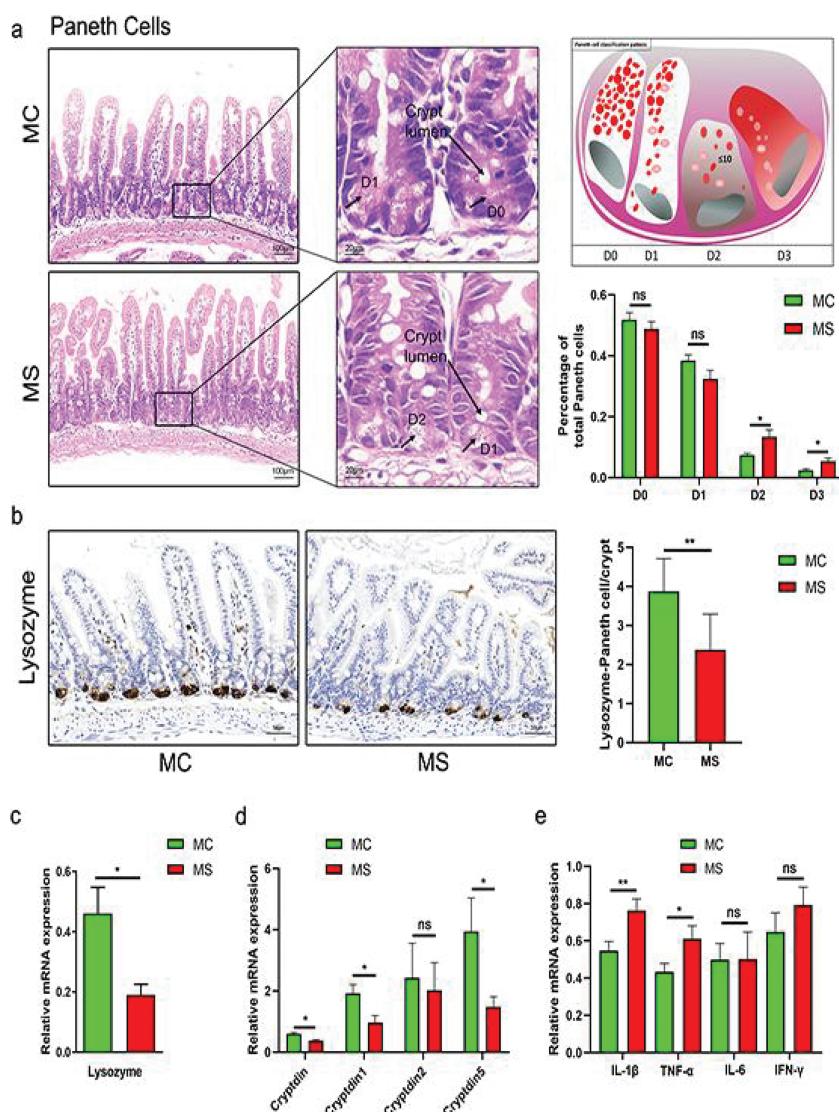
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Background and Aim: Researches have demonstrated that sucralose exposure in early life alters the gut microbiota of offspring at weaning and predisposes the offspring to develop obesity, non-alcoholic fatty liver disease and metabolic syndrome later in life. However, the underlying mechanism remains unclear. Paneth cells are considered to be one of the critical factors to influence the gut microbiota. This study was aimed to investigate whether sucralose exposure in early life induces Paneth cells defects, thus exacerbating gut dysbiosis of offspring. **Methods:** C57BL/6 female mice were divided into maternal sucralose (MS) group and maternal control

water (MC) group during pregnancy and lactation. The offspring mice were all fed a normal diet without sucralose after weaning until adulthood. The weight gain, intestinal development, small intestinal inflammation, number of Paneth cells and levels of antimicrobial peptides (AMPs) in 3-week-old offspring mice were measured. The gut microbiota at both 3- and 8-week time points were assessed by 16S rRNA sequencing. **Results:** MS inhibited intestinal development, increased the expression of proinflammatory cytokines in the small intestine of 3-week-old offspring mice. The number of Paneth cells and secretion of AMPs such as cryptdins and lysozyme were obviously reduced in MS group. MS disturbed the composition and diversity of gut microbiota in 3-week-old offspring mice. The relative abundance of pro-inflammation associated bacteria significantly increased in MS group, while anti-inflammation associated microbiota decreased. Interestingly, such dysbiosis continued into adulthood. **Conclusion:** Sucralose exposure in early life could exacerbate gut dysbiosis in offspring mice through inducing Paneth cell defects

Keywords: sucralose, early life, gut microbiota, Paneth cell, antimicrobial peptides



PP-0294 Safety and efficacy of en bloc cold snare polypectomy for colorectal polyps < 10 mm in size: Interim analysis

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Background and Aim: Colonoscopic polypectomy has been shown to reduce the risk of colorectal cancer and mortality. There is a range of endoscopic resection techniques available for the removal of polyps depending on its size, morphology and location. Cold snare polypectomy (CSP) has become the standard resection method for small colorectal polyps (< 10 mm) as it is effective and avoids the risks associated with electrocautery which includes perforation and delayed postpolypectomy bleeding. **Methods:** We performed a prospective analysis of 119 patients with 271 polyps who underwent cold snare polypectomy (CSP) using a dedicated cold snare for polyps < 10 mm at Queen Elizabeth Hospital, Sabah between February 2020 and April 2021. All analyses were performed using R version 4.0.5. **Results:** Median age of the patients was 64 years old (range 26–89), most of whom were males, 79 (66%). The median number of polyps resected per patient were 2 (range 1–16). The three most common polyp sites were sigmoid colon, 90 (33%), cecum, 48 (18%), and transverse colon, 42 (16%). The median size of polyp was 4 mm (range 2–10). Morphologically, the commonest polyps encountered were Paris IIa, 165 (61%) and Paris IIs, 101 (37.3%). 7 of the polyps resected had bleeding complications with 2 (28.6%) of them arising from inflammatory polyps. It was addressed with either hemoclip application or STSC (snare tip soft coagulation). In the group that encountered bleeding complications, the median age of the patients and the polyp size were 62 years old (range 26–62) and 6 mm (range 3–12), respectively. We achieved 100% complete resection rate in all our subjects. **Conclusion:** Cold snare polypectomy is a safe and effective technique for resection of polyps < 10 mm. In the event of post polypectomy bleeding, standard devices can be successfully used to achieve hemostasis.

Keywords: cold snare polypectomy, colorectal polyps, postpolypectomy bleeding

PP-0295 Statin use in patients with non-alcoholic fatty liver disease: A single centre report on safety profiles and patients

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Background and Aim: Statin treatment for patients with non-alcoholic fatty liver disease (NAFLD) is often indicated to reduce overall cardiovascular risk. Nevertheless, there may be reluctance to initiate statins in those with NAFLD due to safety concerns. We aimed to identify the short-term outcome of initiating statin on patients with NAFLD as well as the incidence of drug-induced liver injury (DILI) at our centre. **Methods:** A retrospective, cross-sectional study was performed on all patients with NAFLD who were initiated on statin at our gastroenterology specialist clinic in 2019. Serum alanine aminotransferase (ALT) and total bilirubin (TB) levels recorded before and after statin treatment initiation were analysed. DILI was defined according to Hy **Results:** There were 285

patients with NAFLD at our clinic who were started on statin in 2019. Of these, 149 (52.3%) were female with a mean age of 58.1 years and an average body mass index (BMI) of 26.4 kg/m². The majority were Malays (202, 70.9%) followed by Chinese (59, 20.7%) and Indians (24, 8.4%). Type 2 diabetes mellitus was present in 247 (86.7%), while 251 (88.1%) had hypertension. Using the ACC/AHA classification for statins, 182 (64.2%) were on high-intensity statin dosages. DILI was observed in 18 (6.3%) patients. Initiation of statin improved ALT in 260 (91.2%) of patients, with a median reduction of 21.7% (IQR 24.9). Lipophilic statin use had 33× higher odds of ALT reduction vs hydrophilic type statins ($p = 0.003$). During multiple logistic regression analysis, BMI was shown to be a significant factor for improvements in ALT and TB (both $p < 0.001$). **Conclusion:** Monitored statin usage in patients with NAFLD is generally safe with a low incidence of DILI. In our study, lipophilic statins (e.g., simvastatin and atorvastatin) were more effective in improving serum ALT levels.

Keywords: NAFLD, statin

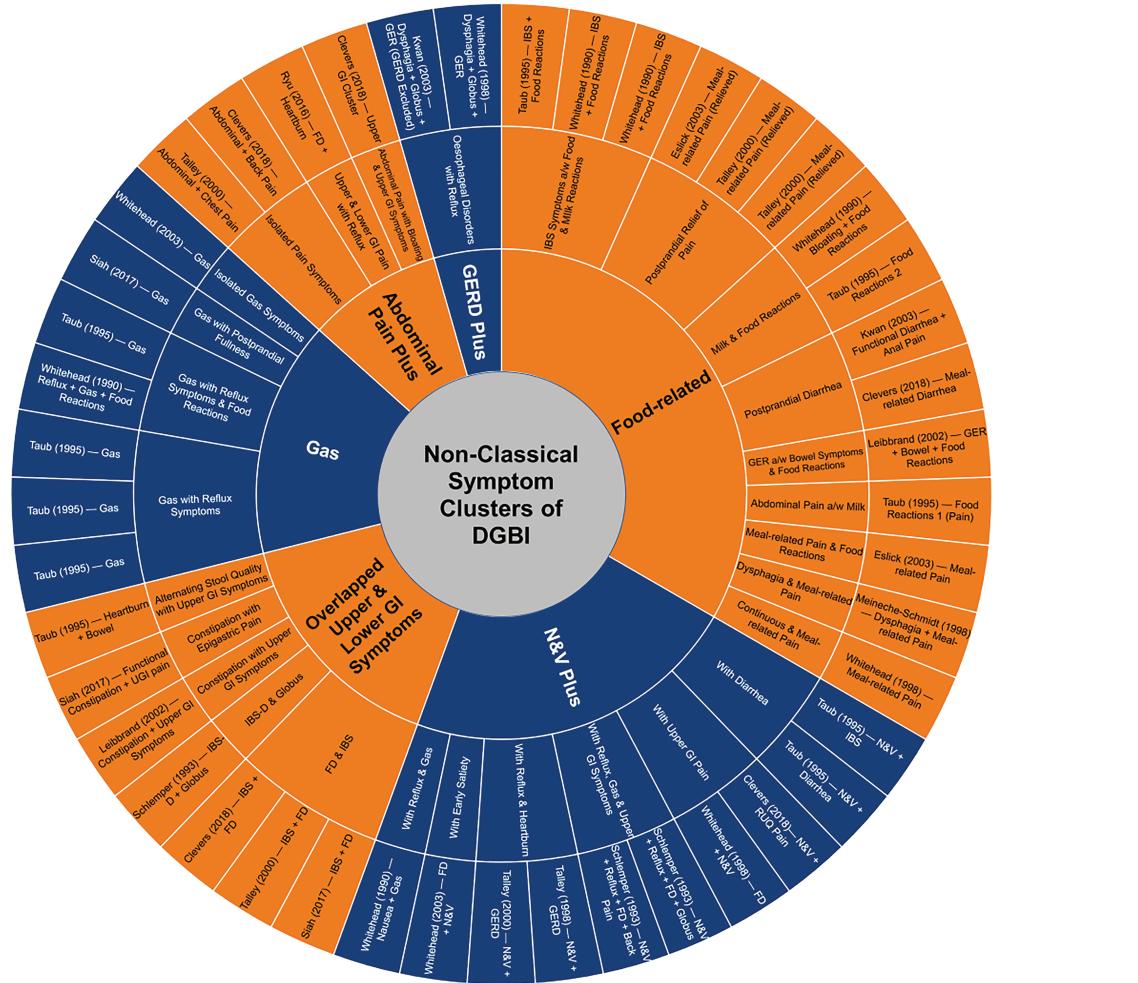
PP-0297 Non-classical symptom clusters of disorders of gut-brain interactions (DGBI) identified by factor analysis: A systematic review

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Background and Aim: Disorders of gut-brain interaction (DGBI), formerly known as functional gastrointestinal disorders (FGIDs), are syndromes characterized by a combination of long-term gastrointestinal complaints. The Rome criteria define specific DGBI by distinct symptom categories. However, overlaps between these categories are well-recognised and population-based studies have identified varying degrees of discordance from the Rome system. We aimed to consolidate data on non-classical symptom clusters from studies across the globe to provide greater clarity regarding the clinical reality of DGBI. **Methods:** A systematic review was conducted with a search across four bibliographic databases for population-based studies employing factor analysis to map DGBI symptom clusters in clinical and community samples. **Results:** 1364 abstracts were identified, 48 articles reviewed, and 16 articles included. We found 42 non-classical symptom clusters unaccounted for by the classical Rome Criteria. We organised them into six main symptom-based groups: food-related (gastrointestinal symptoms temporally-related to meals); gas (characterised by belching and flatulence); overlapped upper & lower GI symptoms (characterised by coexisting upper GI and bowel symptoms); abdominal pain plus (predominant pain symptoms); N&V plus (predominant nausea and vomiting symptoms); and GERD plus (predominant oesophageal symptoms). **Conclusion:** Our findings illustrate the ubiquity of overlapping and non-classical symptom clusters, lending support to an increased consideration of population-based clusters. The non-classical symptom clusters also highlight potential for biomarker information, as well as dietary and extra-intestinal factors in supplementing the diagnosis of gut-brain interaction disorders

Keywords: DGBI, functional GI disorders, FGID, symptom clusters, Rome diagnostic criteria



PP-0298 Colorectal cancer in a tertiary hospital in indonesia: Incidence in the young age and associated factors

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Background and Aim: Early-onset colorectal cancer (CRC) incidence under the age of 50 has been increasing worldwide. However, epidemiological data of early-onset CRC especially in developing countries are still limited. This study aims to evaluate the prevalence, socio-demographics, clinical and histopathological features, and risk factors associated with early-onset CRC patients in Indonesia. **Methods:** This retrospective study

collected data from medical records of patients diagnosed with CRC at Gastrointestinal Endoscopy Center, Cipto Mangunkusumo National General Hospital, Jakarta, during 2008 to 2019. The subjects were classified into early-onset (diagnosed at 18–49 years old) and late-onset (diagnosed at \geq 50 years old) CRC. The findings among both groups were analyzed using chi-square test. **Results:** Of 495 CRC patients confirmed by histopathological results, 205 patients (41.4%) were early-onset CRC cases while 290 (58.6%) were late-onset. 53.7% early-onset CRC patients were male and 89.8% had adenocarcinoma histopathological subtype. 78% early-onset CRC patients had left-sided tumors, with rectum (41%) and rectosigmoid (17.6%) being the most common sites. Abdominal pain was the most frequent symptom found in early-onset CRC (55.6%), significantly higher compared to late-onset CRC (43.8%). Early-onset CRC cases were more likely to be underweight (34.6%), and 9.3% were suspected with hereditary non-polyposis colorectal cancer (HNPCC), both variables were significantly higher than late-onset CRC. However, no difference was found in terms of parental nor other family history of CRC. **Conclusion:** Most patients with early-onset CRC were male, had left-sided tumors and histopathologically showed adenocarcinoma. Greater proportion of early-onset CRC patients were presented with abdominal pain, categorized as underweight and suspicion of HNPCC.

Keywords: colorectal cancer, early-onset, epidemiology, risk factors

Table 1 Comparison of early-onset and late-onset CRC patients in Gastrointestinal Endoscopy Center, Cipto Mangunkusumo National General Hospital, Jakarta, during the period of 2008-2019

Variables	Early-onset CRC n (%)	Late-onset CRC n (%)	Total subjects n (%)	p
495 (100)				
Age at diagnosis				
<50 years old	205 (41.4)			
18-29	26 (5.3)			
30-39	62 (12.5)			
40-49	117 (23.6)			
≥50 years old		290 (58.6)		
50-59		135 (27.3)		
60-69		95 (19.2)		
70-79		52 (10.5)		
80-89		8 (1.6)		
Gender				
Male	110 (53.7)	162 (55.9)	272 (54.9)	
Female	95 (46.3)	128 (44.1)	223 (45.1)	
Clinical manifestations				
Diarrhea	46 (22.4)	83 (28.6)	129 (26.1)	
Constipation	69 (33.7)	94 (32.4)	163 (32.9)	
Abdominal pain*	114 (55.6)	127 (43.8)	241 (48.7)	0.010
Hematochezia	99 (48.3)	150 (51.7)	249 (50.3)	
Weight loss	72 (35.1)	97 (33.4)	169 (34.1)	
Associated risk factors				
Parental history of CRC	8 (3.9)	4 (1.4)	12 (2.4)	
Other family history of CRC	6 (2.9)	8 (2.8)	14 (2.8)	
Suspicion of FAP	4 (2.0)	6 (2.1)	10 (2.0)	
Suspicion of HNPCC*	19 (9.3)	12 (4.1)	31 (6.3)	<0.05
BMI*				
Underweight	71 (34.6)	58 (20.0)	129 (26.1)	<0.001
Normoweight	71 (34.6)	101 (34.8)	172 (34.7)	
Overweight and obese	63 (30.7)	131 (45.2)	194 (39.2)	

PP-0299 CagA strains of *Helicobacter pylori* and associated gastritis in schoolchildren

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Background and Aim: To study the prevalence of CagA strains of *Helicobacter pylori* and to assess the activity of associated gastritis in schoolchildren of the Mongoloid and Caucasian populations of southern Siberia. **Methods:** The prevalence of CagA strains of *Helicobacter pylori* was studied by the ELISA method in 218 schoolchildren (106 Caucasians and 112 Mongoloids) out of 1064 children living in the Republic of Tyva (southern Siberia, an area with a high incidence of stomach cancer). At the same time, 59 Mongoloids and 72 Caucasians underwent gastroscopy with biopsies from the antrum and the body of the stomach. Gastritis was diagnosed in accordance with the Sydney classification. The age groups were analyzed: 7–11 years old and 12–17 years old. The studies were approved by the ethics committee, and the consent of patients and their parents was obtained. **Results:** Among Mongoloids, CagA-seropositive children accounted for 54.5%, among Caucasians: 39.6% ($p = 0.03$). An increase in the prevalence of CagA strains with age in a particular ethnic group was not observed. The inflammatory process in the antrum of the stomach in CagA-positive Caucasians was characterized by higher activity, regardless of age. This was not noted among the Mongoloids. In CagA-positive schoolchildren of both ethnic populations, gastritis of the gastric corpus was more active with age. **Conclusion:** The main infection with CagA by *Helicobacter pylori* strains of Mongoloids and Caucasians is observed up to 12 years of age. The course and progression of CagA *Helicobacter pylori*-associated gastritis is mediated by the influence of genetic (ethnic) characteristics of the human body.

Keywords: CagA *Helicobacter pylori*, children, population, gastritis

PP-0300 Overview on mismatch repair (MMR) protein expression in colorectal cancer in Hospital Sultanah Bahiyah Alor Setar (HSBAS): Correlation between clinicopathologic features and abnormal mmr protein expression

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Background and Aim: Colorectal adenocarcinoma (CRC) is one of the commonest cancers worldwide, and 12–15% result from deficiency in DNA mismatch repair (MMR), giving a phenotype called microsatellite instability (MSI). MSI tumours develop either from germline mutation in MMR gene or sporadic epigenetic inactivation. They have more favourable prognosis than microsatellite stable tumours and are often resistant to 5-FU-based chemotherapy. MSI tumour-related clinicopathologic features include young age (<50 years), proximal colon, abundant tumour-infiltrating lymphocytes (TILs), mucinous morphology and poor tumour differentiation. **Methods:** Clinicopathologic information was obtained from records of 201 patients who underwent bowel resection for CRC at HSBAS from year 2017 to 2019. Cases with one or more MSI tumour-related clinicopathologic features were selected. Due to common late presentation in our local population (based on Malaysian National Cancer Registry), patient selection was extended to up to 60 years of age. Immunohistochemistry (IHC) for MLH1, PMS2, MSH2 and MSH6 proteins were performed on paraffin embedded tumour tissue. **Results:** There were a total of 201 CRC

subjects and 202 tumours during this period (one patient had two synchronous carcinomas). MMR protein IHC tests were performed on 115 cases that fit the criteria. There were 75 patients <60 years of age, 51 right-sided tumours, 15 with mucinous tumour morphology, 7 with poorly differentiated tumours, 3 with abundant TILs and 1 with signet-ring morphology. Twenty-three cases (11.4%, 23/202) demonstrated loss of expression of either one or two MMR proteins in the tumour, with a majority (65.2%) showing combined MLH1 and PMS2 loss, followed by MSH2 and MSH6 loss (17.4%). Four cases had loss of single protein (4.3% each). **Conclusion:** MSI tumours were detected in 11.4% of CRC in HSBAS, using combined clinicopathologic features and abnormal MMR protein expression by IHC test method. Further investigations are needed to differentiate sporadic MSI tumours from Lynch syndrome.

Keywords: mismatch repair (MMR), colorectal cancer, microsatellite instability (MSI)

PP-0301 Endoscopic management of gastric varices: Efficacy and outcomes of gluing with N-butyl-2-cyanoacrylate among Cambodian population: A single-center experience

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Background and Aim: Gastric variceal bleeding (GV) is the second complication of portal hypertension after esophageal variceal bleeding, with an even higher mortality rate due to its severity and its requirement of more advanced management. The efficacy and safety of endoscopic *N*-butyl-2-cyanoacrylate (cyanoacrylate) glue injection were introduced decades ago and have become standard management. We illustrated here our first experience of this technic among Cambodian patients. **Methods:** We reviewed retrospectively 50 patients who underwent endoscopic injection of *N*-butyl-2-cyanoacrylate solution mixed with lipiodol, for GV bleeding, in a tertiary hospital, in Phnom Penh, Cambodia, within a period of one and half year. Our primary outcome was the initial hemostasis. We reported as well the complication rate including mortality rate. **Results:** Of 50 included subjects (F = 23, M = 27, mean age = 58.5 years old) 27 (54%) was Child-Pugh B, and 16 (32%) C, and 16% was diagnosed of HCC. 28% of patients required emergency endoscopic for glue injection due to hemodynamic instability. The most common form of GV was IGV-1 (44), followed by IGV-2 (3), GOV-a (2), and 1 duodenal variceal. Initial hemostasis was achieved in all cases. 38 (76%) patients had complete 6 months endoscopic follow-up. The global mortality rate was 24%, including 4 cases related to GI bleeding. No evidence of serious procedure-related complications such as pulmonary embolism occurred. **Conclusion:** To our best knowledge, we reported the first experience on the management of GV bleeding using endoscopic *N*-butyl-2-cyanoacrylate (cyanoacrylate) glue injection, in Cambodia. This technic was safe and effective on achieved immediate hemostasis. The high mortality rate in our finding could be explained by the high prevalence of advanced cirrhosis and lack of global management on their liver cirrhosis.

Keywords: gastric variceal bleeding, endoscopic glue injection, liver cirrhosis, Cambodia

PP-0302 Crossing syndrome: Features of the association of gastroesophageal reflux disease with dyspepsia syndrome in children

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Background and Aim: Information about the intersection of GERD and dyspepsia syndrome in childhood and adolescence is limited. To study the prevalence of gastroesophageal reflux disease (GERD) and its intersection with dyspepsia syndrome in children in ethnic populations of the Asian part of Russia. **Methods:** The transverse method was used to study the prevalence of GERD and its intersection with dyspepsia syndrome in schoolchildren aged 7–17 years of Caucasian and Mongoloid populations in the regions of Siberia (Russia): in the Republic of Tyva (1535 children), Buryatia (790 children), Evenkia (1369 children). Diagnosis of GERD was carried out in accordance with the child's consensus on pathology. Dyspepsia syndrome was diagnosed in accordance with Rome III. Statistical processing was carried out using the chi-square test. The studies were approved by the ethics committee, and the consent of patients and their parents was obtained. **Results:** The prevalence of GERD was 6.4%. Indicators in Tuva (9.5%) were higher than in Buryatia (4.1%; $p = 0.0001$) and Evenkia (4.2%; $p = 0.0001$). Schoolchildren with GERD in 77.1% had dyspeptic complaints. In Tyva, these indicators were 72.6%, in Buryatia: 90.6%, in Evenkia: 68.4%. An increase in the frequency of intersection of GERD with dyspepsia was noted in the examined Mongoloids ($p = 0.0008$). In the territories, there were differences of this association in ethnic populations. In Tuva, Mongoloids with GERD had manifestations of dyspepsia in 79.3%, Caucasians in 61.1%; in Buryatia, the indicators were 92.3 and 83.3%, respectively; in Evenkia 63.2% and 71.1%. **Conclusion:** In Siberian schoolchildren, the prevalence of overlapping GERD with dyspepsia has regional and ethnic characteristics.

Keywords: GERD, dyspepsia, population, children, crossing syndrome

PP-0303 A study of long-term outcomes of surgery for corrosive esophageal strictures

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Background and Aim: Studies comparing the long-term outcomes of colonic *versus* gastric conduit reconstruction are lacking. Hence, we analyzed the long-term outcomes and quality of life (QOL) of patients of corrosive esophageal stricture who underwent either colon or gastric conduit reconstruction at our institution, in the past. **Methods:** Patients of corrosive esophageal stricture who underwent surgery at our Institution and were eligible for at least 5 years follow-up were included in the study. Symptoms, alimentary satisfaction and quality of life were assessed by telephonic interview, questionnaires (WHO BREF, SF-36) and in person. Patients who consented were also assessed with an oral Barium contrast study. **Results:** 56 patients underwent surgery (esophageal resection = 29; bypass = 27),

and reconstruction with either colon (18) or gastric conduit (38). Short term results (complications) were comparable in resection *versus* bypass and between colon *versus* gastric conduit reconstruction groups. Most common procedure related complications were pulmonary (23%). Long-term outcomes were assessed in 29 patients available for long-term follow-up (Colon: 14, *versus* gastric: 15, conduits). These groups were comparable with regard to demographics and esophageal resection *versus* bypass. Median follow up was 112 months (IQR, 79–140) (colon conduit, 127 months; gastric conduit, 104 months). We found no difference in the QOL (SF 36 survey and WHO BREF score). Overall, 86% patients were free of dysphagia and regurgitation (similar in both groups). Alimentary satisfaction scores were also comparable, 9 and 8.7 ($p = 0.91$). Both group of patients reported significant nutritional improvement: before and present BMI was, gastric group 15.8 and 20; colon group 14.4 and 18.4 (kg/m^2). **Conclusion:** Long-term QOL and alimentary satisfaction were excellent and comparable after both colon and gastric conduit reconstruction. Considering the inherent complexity of colonic interposition, a gastric conduit reconstruction may be a preferred choice when a healthy stomach is available for reconstruction in these patients.

Keywords: corrosive oesophageal stricture, colonic conduit, gastric pull up, long term quality of life

PP-0304 Development and validity of a traditional asian diet instructional booklet

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Background and Aim: The health benefits of traditional Asian diet may be associated with enrichment of beneficial microbes and its by-products. The aim of study was to develop and validate a dietary instruction booklet as an interventional tool for a clinical trial. **Methods:** First, a dietary instructional booklet was developed for the traditional Asian diet. Development was based on literature review and expert opinion. Secondly, the booklet would then undergo content and face validation. A questionnaire to assess four domains (understanding, feasibility, translating key message into practice and acceptance) would be administered to experts of related fields for content validity. For face validity, the booklet was assessed for clarity and comprehension. Content validity index (CVI) and face validity index (FVI) would then be calculated. A CVI/Average and FVI/Average > 0.8 would be considered good validity. **Results:** For content validity, eight experts were invited (2 dietitians, 2 nutritionists, 1 public health physician, 1 nurse, 1 linguistic teacher, 1 microbiologist) and had completed the questionnaire. For face validity, out of 40 invites, 30 healthy adults (age 18–40 years, females 60%) had completed the survey. The CVI/Average ranged

from 0.88 to 1.0 and the FVI/Average ranged from 0.97 to 1.0. **Conclusion:** The newly developed dietary tool has a satisfactory level of content and face validity.

Keywords: traditional Asian diet, dietary tool, validity

PP-0305 Outcomes of patients with chronic hepatitis C and hepatocellular carcinoma treated with direct-acting antivirals: Real-world experience

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Background and Aim: Recent studies have reported decreased sustained virologic response (SVR) rate after direct-acting antivirals (DAA) treatment in patients with chronic hepatitis C (CHC) and hepatocellular carcinoma (HCC). However, well-controlled studies on DAA among this population are limited. Herein, we demonstrated real-world data in a tertiary referral hospital in Bangkok, Thailand. **Methods:** Data of patients with HCC between 2016 and 2021 were retrospective reviewed. We evaluated DAA treatment and clinical outcomes in patients with CHC and HCC. Kaplan–Meier curve and Cox proportional hazard analysis were used to assess survival. **Results:** Among 480 patients with HCC, 104 patients had CHC (21.6%) and 45 of whom received DAA therapy. The mean age was 60.1 ± 7.5 years and 73.3% were male. The mean HCV viral load was $5.7 \pm 0.8 \text{ logIU/mL}$ with genotype 3 predominance (55.6%). Most of patients (55.6%) received sofosbuvir/velpatasvir. Median follow-up time was 32 months (interquartile range: 15.5–53 months). Overall SVR rate was 80%. Comparing between patients in SVR and non-SVR group, there were no significant differences in HCV genotype, DAA regimen, Child–Pugh class, tumor staging, MELD, ALBI grade, and HCC treatment (Table 1). Active HCC was associated with lower SVR rate (adjusted odds ratio, 6.19; 95% CI 1.12–34.32). Patients who achieved SVR had significant higher 1-year and 2-year survival rate than those who failed treatment ($p < 0.001$). **Conclusion:** In real-world setting, 80% of patients with CHC and HCC achieved SVR after DAA therapy, which potentially had a positive impact on overall survival. Deferring DAA therapy until the complete response of HCC should be considered as optimal strategy to improve SVR rate in this population

Keywords: hepatocellular carcinoma, hepatitis C, direct-acting antivirals, sustained virologic response, survival

Table 1 Baseline characteristics of patients with CHC and HCC between SVR and non-SVR group

	SVR (n=36)	Non-SVR (n=9)	p-value
Age (years)	59.6±7.2	61.8±8.6	0.436
Male (%)	26 (78.8%)	7 (77.8%)	0.736
HCV RNA (logIU/mL)	5.7±0.9	5.5±0.6	0.439
HCV genotype (%)			0.646
1	15 (41.7%)	3 (33.3%)	
3	19 (52.8%)	6 (66.7%)	
6	2 (5.6%)	0 (0%)	
DAA (%)			0.472
SOF/DAC	5 (13.9%)	0 (0%)	
SOF/LED	12 (33.3%)	3 (33.3%)	
SOF/VEL	19 (52.8%)	6 (66.7%)	
Timing of DAA (%)			0.024
During active HCC	13 (36.1%)	7 (77.8%)	
After CR of HCC	23 (63.9%)	2 (22.2%)	
AFP (ng/mL)	5,624.9±2,571	104.1±252.7	0.528
Child-Pugh class (%)			0.112
A	30 (83.3%)	6 (66.7%)	
B	5 (13.9%)	1 (11.1%)	
C	1 (2.8%)	2 (22.2%)	
BCLC staging (%)			0.175
0	3 (8.3%)	0 (0%)	
A	16 (44.4%)	1 (11.1%)	
B	12 (33.3%)	5 (55.6%)	
C	4 (11.1%)	3 (33.3%)	
ALBI grade (%)			0.449
1	3 (8.3%)	2 (22.2%)	
2	28 (77.8%)	5 (55.6%)	
3	4 (11.1%)	2 (22.2%)	
MELD score	9.2±1.6	9.8±2.2	0.402
TB (mg/dL)	1.2±0.7	1.4±0.9	0.413
AST (U/L)	91.6±58.6	105.3±72.7	0.552
ALT (U/L)	79.1±48.7	101.8±96.7	0.319
Albumin (g/dL)	3.4±0.5	3.1±0.7	0.261
INR	1.20±0.12	1.20±0.14	0.994
First treatment (%)			0.522
Surgery	5 (13.9%)	0 (0%)	
RFA/MWA	8 (22.2%)	1 (11.1%)	
TACE	22 (61.1%)	7 (77.8%)	
Systemic therapy	1 (2.8%)	1 (11.1%)	
Survival rate			<0.001
1-year	80.6%	66.7%	
2-year	66.7%	44.4%	

SOF: sofosbuvir, DAC: daclatasvir, LED: ledipasvir, VEL: velpatasvir, CR: complete response,
RFA: radiofrequency ablation, MWA: microwave ablation, TACE: transarterial chemoembolization

PP-0306 Frequency, location and histological nature of gastric polyp in Bangladeshi population

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Background and Aim: Gastric polyps encompass a spectrum of pathologic conditions that can vary in histology, neoplastic potential, and management. Gastric polyps are important as some have malignant potential. The malignant potential depends on the histological type of the polyp.
Methods: Six hundred forty-two (483 patients from Shaheed Suharawardy Medical College Hospital, 86 patients from Sheikh Russel National Gastroliver Institute and Hospital and 73 patients from Dhaka Medical College Hospital) symptomatic patients of abdominal pain, discomforts, chest pain, anorexia, anaemia and vomiting underwent upper GI endoscopy from July 2019 to December 2019 over a period 6 months were studied. All patients had at least one gastric polyp, as confirmed by histological examination. Each patient had only one examination and were analyzed on the basis of their location, size, type and histopathological findings.

Results: Among 642 endoscopies, 28 (4.36%) cases were found gastric polyps. Mean age of the study population was 46.6. **Conclusion:** Frequency of gastric polyp is 4.36%. Commonest location is fundus and stomach body. Most common histological nature of polyps is fundic gland polyp and hyperplastic polyp.

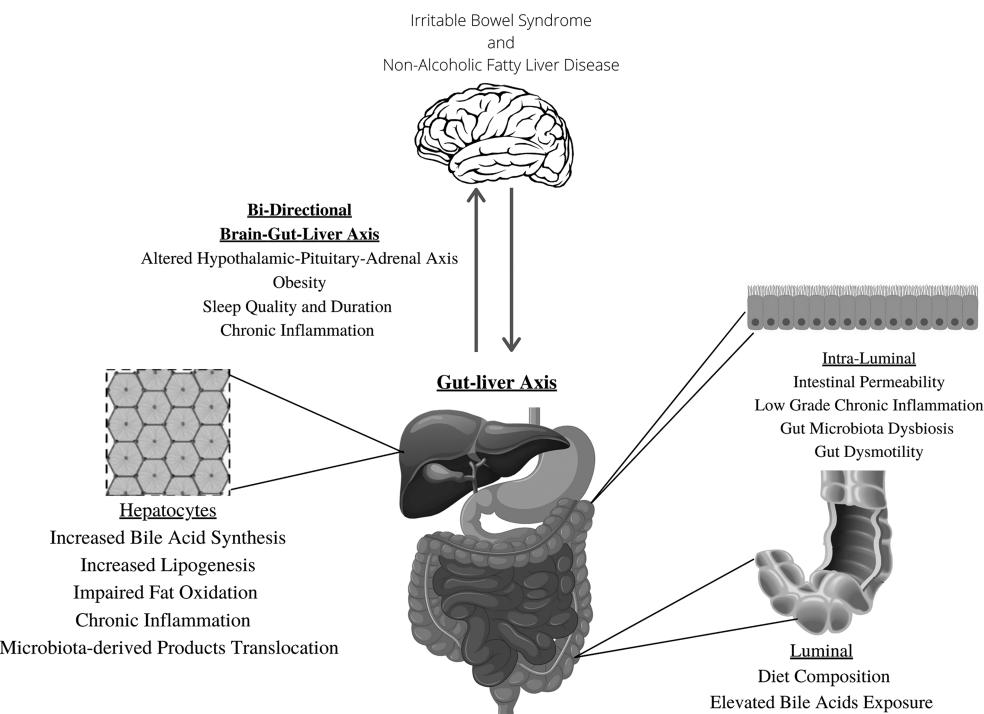
Keywords: gastric polyp, fundic gland polyp, hyperplastic polyp, inflammatory polyp, adenoma, adenocarcinoma

PP-0307 Associations between irritable bowel syndrome (IBS) and non-alcoholic fatty liver disease (NAFLD): A systematic review

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Background and Aim: Irritable bowel syndrome (IBS) is associated with obesity and metabolic syndrome. IBS and non-alcoholic fatty liver disease (NAFLD) are highly prevalent entities worldwide and may share similar



mechanisms including gut dysbiosis, impaired intestinal mucosal barrier and immune system activation. We aimed to systematically review their association according to the PRISMA guidelines. **Methods:** PubMed, EMBASE and Cochrane Database of Systematic Reviews were searched for relevant papers. Manual searches were also performed, with authors contacted for additional data. **Results:** Five studies were included. Both IBS and NAFLD subjects had significantly more metabolic risk factors like hypertension, obesity, dyslipidaemia and diabetes. Our review showed that 23.2% to 29.4% of NAFLD patients had IBS. IBS was significantly higher in NAFLD patients compared with patients without NAFLD (23.2% vs 12.5%, $p < 0.01$). A higher proportion of IBS patients had NAFLD (65.8% to 74.0%). IBS patients were three times more likely to have NAFLD compared with non-IBS patients ($p < 0.001$). One study showed a significant correlation between the severity of IBS and NAFLD. The proportion of NAFLD subjects with IBS increased with NAFLD severity. We discussed the possible mechanisms linking IBS and NAFLD (Figure 1). **Conclusion:** Further prospective studies are warranted to evaluate the relationship and shared pathways between IBS and NAFLD, potentially leading to development of future therapeutics.

Keywords: irritable bowel syndrome, nonalcoholic fatty liver disease, gut dysbiosis, obesity, gut-liver axis

PP-0308 EUS guided trans-duodenal drainage of pancreatic fluid collections improves liver functions

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Background and Aim: Pancreatic fluid collection (PFC) located around pancreatic head may present with biliary obstruction. Biliary decompression by endoscopic retrograde cholangiopancreatography (ERCP) is technically challenging and has risk of adverse events. Endoscopic ultrasound (EUS) guided drainage of (PFC) is standard of care. In this cohort study, we aimed to see the effect of EUS guided trans-duodenal drainage of PFC on liver function tests. **Methods:** Data of patients who underwent trans-duodenal drainage of PFC from May 2019 to April 2021 were collected prospectively. EUS guided drainage was performed using plastic or metal stents. Technical success and clinical success (resolution of symptoms, improvement in liver function tests) were analysed. **Results:** Total of 267 patients had EUS guided drainage of PFC during the two-year period. 31 patients underwent trans-duodenal drainage (males 26, mean age 34.7). **Conclusion:** EUS guided trans-duodenal drainage is safe and effective in the management of PFC with biliary compression as it improves the symptoms and altered liver function tests without need of ERCP guided biliary intervention.

Keywords: pancreatic fluid collections, walled off necrosis, pancreatic pseudocyst, transduodenal drainage, liver function tests

PP-0309 Diagnostic yield of colonoscopy for lower gastrointestinal symptoms: A single-center experience.

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Background and Aim: Lower gastrointestinal symptoms can be due to either organic or functional pathologies. Colonoscopy is the referent modality in making diagnosis which leads to appropriate managements. A single center study conducted outpatient clinic in Cambodia resulted in 10% of organic lesions. Colorectal cancer (CRC) is the most concern finding among all organic lesions, more than 50% was diagnosed in the late stage among Cambodian patients. We aim to investigate the prevalence of organic lesions detected by colonoscopy in a public referral center in PhnomPenh (PP), Cambodia. **Methods:** The study is a cross-sectional study including 2113 patients, aged >18 years old, received complete colonoscopy at GI department, Khmer-Soviet Friendship Hospital, from January 2016 to December 2019, in PhnomPenh, Cambodia. The report included the endoscopic findings as well as the available histological finding. The baseline characteristics of patient were described as well. **Results:** Among all included patients (mean age of 51 years, F = 51.8%), 1079 (51.1%) patients had organic lesions. The dominant organic lesion was colorectal tumor (580 cases, 27.5%), followed by inflammatory lesions (263 cases, 12.4%) and polyps (202 cases, 9.6%) respectively. Adenocarcinoma was diagnosed in 427 cases (73.62%, F = 56.23%) of colorectal tumor finding. Moreover, unspecified colitis was illustrated in the majority of inflammatory lesions (129 cases, 49.0%) and hyperplastic polyp was the most frequent histological type (74 cases, 36.6%) among all polyp resected. After univariate analysis, the predictive factors for organic lesions were patient from outside PP, chief complaint of rectal bleeding, chronic diarrhea, mucous in stool, abdominal mass and anemia. While patient from PP, or with chief complaint of chronic constipation, suspected IBS, chronic abdominal pain and screening, tend to have normal colonoscopic finding. **Conclusion:** The findings demonstrated a high frequency of lower gastrointestinal organic lesions among patients requested for colonoscopy in public referral hospital. Moreover, colorectal tumor was the most common diagnosis among all organic finding. Consequently, the need of CRC screening should be cautiously prioritized.

Keywords: organic lesions, rectal bleeding, colorectal cancer (CRC), adenocarcinoma (ADK), colorectal cancer screening

PP-0310 Climate change in Australia: Impacts of high rainfall on gastrointestinal infections. A review of Australian literature

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Background and Aim: Global rise in temperature has changed, and will continue to alter, the pattern of rainfall. High and low rainfall events have been linked to an increase in gastrointestinal infections in many countries. This review aims to explore the association between high rainfall and gastrointestinal infections in Australia by conducting a systematic search of

existing literature. **Methods:** A search was conducted using Ovid MEDLINE with keywords for high rainfall events, gastrointestinal infections, and specific pathogens. Studies were included if they were conducted in Australia and explored a link with gastrointestinal infections or associated GI symptoms. Animal studies, studies with non-gastrointestinal infections and those that did not explore the link were excluded. **Results:** Altogether 113 studies were identified of which 18 were included and 95 were excluded based on the exclusion criteria. The studies were heterogeneous in their characteristics with variability evident in the type of study, study region, rainfall measure, type of analyses, pathogen studied and data source. Several different definitions of high rainfall were used ranging from use of meteorological data through to seasonal patterns and flooding events. Most studies were conducted in Queensland followed by Victoria, South Australia, and Western Australia. Leptospirosis and Cryptosporidiosis were the most frequently identified infections followed by Salmonellosis, Campylobacter, Clostridium difficile, Burkholderia pseudomallei and Norovirus. Most studies examined showed high rainfall to be linked with an increase in gastrointestinal infections ($n = 13$), 4 studies showed an inverse relationship and 2 showed no association. **Conclusion:** Current literature indicates an association exists between rainfall and gastrointestinal infections in the Australian context. Future research should build on the limited literature across the region. Reduction in the heterogeneity of studies by agreeing on definitions and methodology will help plan public health and infrastructure responses to the anticipated increase in extreme rainfall events as the climate warms.

Keywords: rainfall, precipitation, gastrointestinal infection, review, Australia

PP-0311 Correlation between neutrophil-lymphocyte ratio, platelet-lymphocyte ratio, and controlled attenuation parameter to measure hepatic steatosis in NAFLD

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Background and Aim: Non-alcoholic fatty liver disease (NAFLD) is becoming a serious concern for its potential progression to end-stage liver disease. The gold standard for diagnosing and staging fibrosis in NAFLD patients is a liver biopsy, but it is invasive. Hepatic steatosis is also an inflammatory process. Neutrophil-lymphocyte ratio (NLR) and platelet-lymphocyte ratio (PLR) could be essential measures of systemic inflammation, as it cost-effective and could be calculated easily compared to controlled attenuation parameter (CAP). This study aimed to evaluate the correlation between NLR, PLR, and CAP in NAFLD patients.

Methods: We did cross sectionally study in 35 patients with NAFLD based on the CAP value in transient-elastography. Data of the patients are taken from hepatology clinic in Kandou General Hospital Manado, Indonesia, from February to April 2021. We excluded patients with other hepatic diseases, including drug-induced liver injury, autoimmune, viral hepatitis, alcoholic liver diseases, as well as patients with hematological and oncological diseases and acute infection. CAP was done by Fibroscan®. Hematological indices (NLR, PLR) were measured in each patient. Data were analyzed using Pearson dan Spearman. **Results:** Thirty-five (35) patients with NAFLD based on CAP measurement were included. The average age was 31 ± 2.6 (26–36) years. The mean CAP was 310 ± 36 (213–363) db/m. Mean NLR was 1.87 ± 0.70 (0.76–3.69). It has no

correlation between NLR value and hepatic steatosis ($r = 0.158, p = 0.338$). Mean PLR was 127.17 ± 26.66 (82.10–213.66), PRL was also not significantly correlated with CAP ($r = 0.129, p = 0.482$) in hepatic steatosis. **Conclusion:** NRL and PLR showed no correlation with CAP in steatosis NAFLD patients. Both the NLR and PLR cannot be used as predictive factors for liver steatosis in NAFLD patients in the primary care setting.

Keywords: liver steatosis, NAFLD, neutrophil to lymphocyte ratio, platelet to lymphocyte ratio

PP-0312 Impact of novel motorized spiral enteroscopy in patients with small bowel pathologies: A single center cohort study

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Background and Aim: Currently available methods of deep enteroscopy have its own strengths and limitations. Recently, a novel motorized spiral enteroscope (MSE) (Olympus Medical, Japan) has become available, but data on its clinical utility remain scarce. We aim to evaluate the clinical impact of MSE in patients with suspected small bowel pathologies.

Methods: Consecutive patients with suspected small bowel pathology based on clinical presentation, imaging or capsule endoscopy findings indicated for deep enteroscopy were included. Patients with intestinal obstruction, gastroesophageal varices, severe GI tract inflammation were excluded. Outcome measures include diagnostic yield, technical success (successful advancement of MSE beyond ligament of Treitz for antegrade MSE, or successful advancement proximal to the ileocecal valve for retrograde MSE), depth of maximum insertion (DMI) (reaching the target lesion or lack of further MSE advancement despite spiral overtube rotation), insertion time to DMI, TER, and adverse event rate. **Results:** 22 MSE (11 antegrade and 11 retrograde) were performed in 16 patients (mean age 62.9 ± 16.9 , 50.0% male) between June 2019 and March 2021. The technical success rate was 100%. Overall diagnostic yield was 68.2% (antegrade 63.6%, retrograde 72.7%). Biopsies or endotherapies were performed in 72.8% of procedures. Median DMI was 395 cm (170–560) and median insertion time to DMI was 62 min (25). **Conclusion:** In this study, MSE was found to be effective for diagnostic and therapeutic deep enteroscopies with high technical success, high TER and a relatively short procedure time.

Keywords: motorized spiral enteroscopy, small bowel

PP-0313 Transcatheter arterial embolisation for bleeding small bowel gastrointestinal stromal tumour: A case report and 20 years

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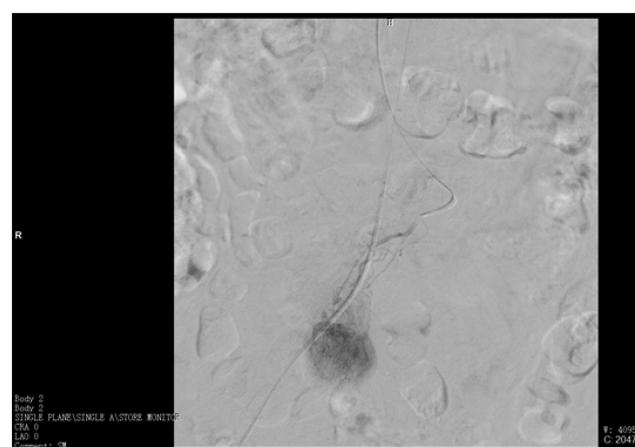
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Background and Aim: Gastrointestinal stromal tumour (GIST) is the commonest primary gastrointestinal mesenchymal tumour. Data paucity exists regarding the management of bleeding small bowel GIST and the outcome of management with transarterial embolization (TAE) due to its rarity. We present a case of bleeding jejunal GIST and 20 years' systematic

review, evaluating the role of TAE to inform practice. **Methods:** A systematic literature search was conducted on five databases—Scopus, Proquest, Pubmed, Ovid Medline and Google Scholar with MESH terms ‘Gastrointestinal Stromal Tumour’, ‘Embolisation’, ‘Duodenal’, ‘Jejunal’ and ‘Ileal’.

Results: Between 2001 and 2020, 21 articles were identified, describing 49 patients with bleeding small bowel GIST treated with TAE. TAE was the primary method of haemostasis in 71.4% (35/49) patients, 24.5% (12/49) of patients utilized TAE as a secondary method of haemostasis following failed endoscopic intervention. The overall clinical success rate of TAE in haemostasis was 91.8% (45/49). Complications occurred in 8.2% (4/49) of patients after embolization. 95.9% (47/49) underwent definitive surgery for tumour resection with favourable outcomes. In two patients, tumour size reduction was seen following TAE use. The choice of embolic material remains inconclusive and operator-dependent. **Conclusion:** TAE is effective with low rates of complication in treatment of bleeding small bowel GIST. Anaemia was not associated with failed TAE, contrary to previous literature. The potential role of TAE to reduce tumour vascularity and size, thus improving surgical and oncological outcome, warrants further study.

Keywords: gastrointestinal stromal tumour, small bowel, transarterial embolization, tumour shrinkage, neoadjuvant



PP-0314 Difference of metabolic panel in steatosis and non steatosis chronic hepatitis B

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Background and Aim: Obesity and dyslipidemia are capable of inducing hepatic steatosis. Chronic hepatitis B patient with liver steatosis were increased by the number approximately 14% to 70% of cases. By conducting this study, we aim to see the difference of metabolic panel in steatosis and non steatosis with chronic hepatitis B patient. **Methods:** This is a cross-sectional retrospective analytic study conducted on chronic hepatitis B patient at hepatology clinic Prof. Dr. R. D. Kandou General Hospital, from December 2020 to March 2021. Inclusion criteria: ages more than 18 with HBsAg positive results, exclusion criteria: patient with hepatitis C and HCC. Metabolic panel parameter consists of total body mass index (BMI), total cholesterol, HDL, LDL, triglyceridemic, and fasting

blood sugar (FBS). Hepatic steatosis criteria were measured with controlled attenuation parameter (CAP) by Fibroscan®. CAP result divided into 2 groups with cutoff 222 db/m, no steatosis group CAP 0–222 db/m, steatosis group CAP >222 db/m. Data were analyzed with *t* test. **Results:** This study included 92 patients with 74 males (80.43%), 18 females (19.57%). 49 patients (53.2%) have CAP ≤ 222 db/m and 43 people (46.8%) have CAP > 222 db/m. Based on *t* test, there are significance difference between BMI, triglyceridemic, HDL and FBS of steatosis and non-steatosis group respectively [21.35 (3.73) vs 24 (5.38); *p* = 0.046, 114.50 (32.50) vs 132.50 (40); *p* = 0.027, 52 (14.75) vs 41.50 (23.50); *p* = 0.008, 91.0 (15.75) vs 112.0 (32); *p* = 0.001]. There are no significance differences between, total cholesterol, LDL, of steatosis and non-steatosis group, respectively [185.50 (35.75) vs 182 (35.75); *p* = 0.969, 117.20 (21.17) vs 115.77 (24.55); *p* = 0.764]. **Conclusion:** There is significant difference of body mass index, triglyceridemic, HDL and FBS level in patient with chronic hepatitis B between steatosis and non-steatosis group.

Keywords: hepatitis B, lipid profile, BMI, FBS, hepatic steatosis

PP-0315 The host and bacterial factors predicting eradication failure of high-dose dual therapy in the first-line treatment of *H. pylori* infection

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Background and Aim: High-dose dual therapy has recently become one of the hot issues in the treatment of *H. pylori* infection because the novel therapy is able to achieve a high eradication rate and also can avoid the use of unnecessary antibiotics. However, what are the risk factors affecting eradication outcome of the new eradication therapy remains unclear. To investigate the host and bacterial factors predicting eradication failure in the first-line treatment of *H. pylori* infection by of high-dose dual therapy. **Methods:** From August 2018 to October 2020, 236 *H. pylori*-infected patients receiving first-line eradication therapy with 14-day high-dose dual therapy (rabeprazole 20 mg and amoxicillin 750 mg q.i.d for 14 days) in a clinical trial were prospectively assessed for drug adherence and adverse effects at the end of week 2. Post-eradication *H. pylori* status was examined by urea breath test 6 weeks after the end of treatment. To determine the independent factors affecting the treatment response, 16 host and bacterial

parameters (including age, gender, smoking, alcohol consumption, type of gastrointestinal disease, CYP2C19 genotype, drug adherence, and antibiotic resistances) were assessed by univariate and multivariate analyses.

Results: Intention-to-treat analysis showed that 31 out of 236 infected participants failed to eradicate *H. pylori* by 14-day high-dose dual therapy. Univariate analysis demonstrated that amoxicillin resistance of *H. pylori* (*P* = 0.019) and poor drug adherence (*P* = 0.017) were the risk factor related to eradication failure. The patients harboring amoxicillin-resistant strains had a lower eradication rate than those harboring sensitive strains (40.0% vs 87.6%). Additionally, patients with poor drug adherence had a lower eradication rate than those with good adherence (40.0% vs 87.9%). Multivariate analysis revealed that only amoxicillin resistance was the independent risk factors predicting eradication failure with an odds ratio of 12.0 (*P* = 0.008; 95% confidence interval: 1.9). **Conclusion:** Amoxicillin resistance is an independent risk factor predicated eradication failure in the first-line treatment of *H. pylori* infection by high-dose dual therapy.

Keywords: *Helicobacter pylori*, high-dose dual therapy, first-line treatment

PP-0316 Prevalence of malnutrition in patients with hepatocellular cancer

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Background and Aim: Malnutrition in HCC is multifactorial. Oedema, ascites and hypoalbuminemia in liver disease can make nutritional assessments difficult. We evaluated the baseline prevalence of malnutrition in HCC using different tools: Subjective Global Assessment (SGA), Malnutrition Universal Screening Tool (MUST), Mini Nutritional assessment (MNA) and Nutritional Risk Screening-2002 (NRS2002) and anthropometry. **Methods:** Untreated patients with HCC were accrued on an IRB approved study. Demography, clinical features and disease status was noted. Nutritional assessments were performed by trained dieticians. **Results:** Of 100 patients accrued (mean age 56.7 years, 84 males, 52 with HBV and 13 with HCV infection), 77 had cirrhosis (Child A-41, B-26 and C-10), and 32 had decompensation at presentation. The BCLC stage was 0-1, A-7, B-32, C-48 and D-12 in patients. 21 patients had metastatic disease, common sites being lung (*n* = 7), lymph nodes (*n* = 9) and bone (*n* = 3). 86 patients had an ECOG-PS of ≤1. Treatments planned were up-front surgery-12, RFA-2, trans-catheter therapies- 24, palliative chemotherapy-43 patients and best supportive care-25 patients. The body mass index (BMI) < 18.5 (underweight) and ≥25 (obese) was seen in 19 and 14 patients, respectively. A low mid arm circumference (MAC) suggestive of undernutrition was seen in 30 patients. However, the prevalence of malnutrition using the SGA was 81%. 59 patients were SGA B (moderately malnourished) and 22 patients were SGA C (severely malnourished). MNA classified 31 patients malnourished and 62 patients at risk of malnutrition. Using screening tools MUST and NRS2002, 76% and 64% of patients were at risk of malnutrition, respectively. However, no significant relationship was found between the ECOG-PS, BCLC stage, presence of metastatic disease and cirrhosis with SGA (*p* > 0.05). **Conclusion:** Malnutrition is present in 80% patients with HCC. Anthropometric measures may underestimate its prevalence. Different nutritional screening tools should be validated in prospective studies to find out the best tool in HCC.

Keywords: HCC, malnutrition, SGA

PP-0317 Retrospective analysis of characteristics, indications and outcomes of ERCP in a tertiary referral center of Saudi Arabia

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Background and Aim: Endoscopic retrograde cholangiopancreatography (ERCP) is an advanced endoscopic procedure that is an essential tool in the management of pancreaticobiliary diseases. In Arab world, there is limited data available on the indications and outcomes of ERCP. Therefore, we aimed to report the characteristics of patients, indications and outcomes of ERCP in Saudi Arabia. **Methods:** We retrospectively looked at ERCP procedures done at a tertiary referral center covering the western region of Saudi Arabia from August 2018 till July 2020. Data were collected from the hospital's electronic patient record and endoscopy database. **Results:** Of 1001 ERCP's performed, full data were available on 712 procedures on 581 patients that were included in final analysis. Mean age was 53.1. 404 (56.7%) were female. All ERCPs were performed by certified consultants, with therapeutic intention. Sphincterotomy was performed in 563/581 (96.9%) patients who underwent first-ever ERCP. The commonest indication of ERCP was confirmed or suspected choledocholithiasis (52.6%), followed by replacement or removal of a biliary stent (15.7%), 55 (7.7%) for suspected ascending cholangitis, 54 (7.5%) for acute biliary pancreatitis and 15 (2%) for suspected sphincter of oddi dysfunction. The commonest finding among all patients was choledocholithiasis in 57.9%, debris in 15.2% and biliary stricture 14.8 %. The commonest complication was pancreatitis 22/712 (3.1%) followed by post-sphincterotomy bleeding 16/712 (2.2%) and perforation 9/712 (1.2). The bleeding was controlled by endoscopic intervention in 4/16 (25%) and 1/16 (6.2%) patient underwent surgery. 2/712 (0.28%) patients had procedure-related mortality, one secondary to post-procedure pulmonary embolism and the other because of complicated perforation. The deeper CBD cannulation rate was 98.2% (570/581). **Conclusion:** Our study results revealed that ERCP performed in Saudi Arabia has similar indications and findings as compared to international literature. ERCP is successful in achieving the therapeutic objective with complication rates consistent with published literature.

Keywords: ERCP, bleeding, pancreatitis, perforation

PP-0318 Endoscopic and histopathological characteristic of colorectal polyps: A retrospective review

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Background and Aim: Colorectal cancer was prevalent especially in developing countries. Adenocarcinoma represent almost 95% of colorectal malignant tumor. Early detection of colorectal polyp was important to

prevent its progression to colorectal cancer. This study aimed to describe endoscopic findings of colorectal polyp and its correlation with histopathological characteristics. **Methods:** Retrospective study of patients >18 years old with colorectal polyp and underwent colonoscopy procedure in Gastrointestinal Endoscopy Centre Cipto-Mangunkusumo Hospital during the period of 2018–2020. Association between histopathological findings with age, polyp characteristics and location were analyzed using χ^2 test and unpaired t-test. **Results:** Out of 238 patients, mean-aged was 56.5 ± 13.9 years old. 56.3% patients are male. Most patients (51.7 %) had adenomas, whereas inflammatory and hyperplastic polyps were detected in 38.7% and 15.1% retrospectively. Solitary polyp was the most common findings (59.7%). Sesile polyp was detected in 81.5% patients. Endoscopically, colitis was found in 31.5% patient with colonic polyp. Based on polyp location, 70.2% polyp were detected in left colon (rectosigmoid-descending) and 45.5% in right colon (transverse colon, ascending colon, and caecum). 47.1% of polyps detected at rectosigmoid, 27.7% at descending colon, 18.1% at transverse, 26.9% at ascending, and 11.3% at caecum. Based on location there were no association between location and histopathological features. Inflammatory polyps are common in right colon (43% vs 35.1%, $p = 0.23$), hyperplastic polyps in left colon (18% vs 8%), and adenoma in left colon (53.9% vs 46.5%, $p > 0.05$). High-grade dysplasia was common in right colon (11.2% vs 9.2 %, $p > 0.05$). Among patients with colitis, adenoma, inflammatory and hyperplastic polyps were detected in 44%, 46.7%, and 16.0% retrospectively. Advanced age was associated with adenomas ($p = 0.04$), but there were no association between advanced age, inflammatory polyp, hyperplastic polyps and the number of polyps. **Conclusion:** This study contributes to understanding characteristics of colonic polyps. Polyps was more common in left colon. Advanced age was associated with adenoma polyp.

Keywords: colorectal polyps, histopathology, polyp location

PP-0319 Assessment of failure to achieve SVR12 in HCV patients treated with direct acting anti-viral drugs (DAA)

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Background and Aim: Sustained virological response (SVR) rates have markedly increased to more than 90% since the use DAA therapies in HCV infected patients. In Malaysia, combination of sofosbuvir (SOF) and daclatasvir (DAC) ± ribavirin (RBV) has been the main DAA treatment since 2018. SVR12 is defined as undetectable HCV RNA level using a sensitive assay at least 12 weeks after completing HCV therapy. To describe rates of SVR and characterize factors associated with failure to achieve SVR12 in a single centre. **Methods:** A retrospective cohort study of HCV patients treated with DAA was conducted at Hospital Kuala Lumpur. Adult patients diagnosed with HCV and treated from June 2018 to June 2020 identified from database. Data were collected on patient demographics, comorbid conditions, and SVR results from patient's medical manual and electronic records. **Results:** Out of 350 patients treated, 256 completed treatment and returned for their SVR assessment. Overall, SVR12 was achieved in 95.7%. 11 did not achieve SVR12 despite being compliant based on assessment performed during follow up visit. Baseline characteristics for both groups was shown in Table 1. 4 out of 11 were CPS A liver cirrhosis and 2 were pegylated interferon experienced. All 11 had co-morbidities and combination of diabetes mellitus and hypertension were the commonest ($n = 6$) followed by history of cancer ($n = 2$). 7 patients were on polypharmacy. **Conclusion:** Older age, male gender, higher viral load and presence of comorbidities were associated with lower rates of SVR12.

Table 1: Baseline characteristics for patients who achieved SVR12 and failed SVR12

Patients' characteristics	SVR12 achieved (n=245)	Failed SVR12 (n=11)
Mean age	49.5± 13.721	52.5 ± 9.922
Gender		
Male	168 (68.6)	10 (90.9)
Female	73 (31.4)	1 (9.1)
Races		
Malay	143 (58.4)	3 (27.3)
Chinese	69 (28.2)	5 (45.5)
India	33 (13.5)	2 (18.2)
Others	0 (0)	1 (9.1)
Stage of liver disease		
Cirrhotic	38	4
Not cirrhotic	125	7
Unknown	72	
Genotype		
1a	18	2
1b	33	1
3	102	7
Others	2	0
Unknown	90	0
Mean HCV RNA	1,903,599.11 iu/ml	10,533,952.80 iu/ml

Keywords: hepatitis C, failed SVR, sofosbuvir, Hospital Kuala Lumpur, dactatasvir

PP-0320 Retrospective analysis in scoped patients for chronic anaemia in Gastroenterology Unit Serdang Hospital in 2020

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Background and Aim: Oesophagastroduodenoscopy(OGDS) and colonoscopy are common procedures in chronic anaemia patients to rule out occult bleeding. Early diagnosis of the anaemia causes by endoscopy prevent unnecessary blood transfusions and related complications. It also helps in early detection of gastrointestinal lesions and promptly commencement of treatment for underlying causes of anaemia. The objective of this study to detect gastrointestinal lesions which contribute to chronic anaemia in particular time period as mentioned in our centre. **Methods:** Retrospective data collection from patient clinical notes and daycare scope book Serdang Hospital in 2020. **Results:** 55 patients with chronic anaemia were analysed with OGDS. Among 55 patients, 44 patients proceeded with colonoscopy. 60% (N = 33) patients were males and 40% (N = 22) were females. 74% (N = 41) patients ≥50 years old, 26% (N = 14) patients <50 years old. 66.7% (N = 37) of study population have co-morbidities such as diabetes mellitus, hypertension, ischaemic heart disease (IHD), cerebrovascular disease (CVA) and others. 33.3% (N = 18) of patients were on anticoagulants or antiplatelets during their referrals. 5.4% (N = 3) were presented with healed gastric ulcer on OGDS, 56.4% (N = 31) were gastritis, reflux oesophagitis, hiatal hernia, etc. whereby 38.2% (N = 21) were normal findings on OGDS. 74% (N = 41) had history of transfusion prior to scope.

43% (N = 19) were normal findings on colonoscopy. 4.5% (N = 2) of colonoscopy study population has malignant lesions and referred for surgical intervention. 22.7% (N = 10) patients had benign lesions like tubular and hyperplastic adenoma need surveillance colonoscopy depends on degree of dysplastic. **Conclusion:** More than 1/3 of the OGDS and colonoscopy findings in this study were normal, and it might be due to small sample size. More than 2/3 of the patients in this study were 50 years old and above and with multiple co-morbidities who were indicated for bidirectional scopes. Early detection cause of chronic anaemia due to gastrointestinal tract occult bleeding may prevent unwanted transfusion especially ulcerous and malignant lesions.

Keywords: anaemia, OGDS, colonoscopy, Serdang

PP-0321 Association of neutrophil-lymphocyte ratio (NLR) and severity of acute pancreatitis

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Background and Aim: Leukocytosis in acute pancreatitis (AP) often correlates with severe cases and increased mortality rates. Interleukin-6, a cytokine that plays a major role in regulating the inflammatory response in AP, is observed to be lower in Filipinos. Thus, neutrophil-lymphocyte ratio (NLR) may be more reliable in predicting AP severity. The BISAP score is a simple prognosticating system for AP that is well-studied and validated. This study aims to determine relationship of NLR as to length of stay, severity, mortality, and BISAP scores of patients with AP admitted at the De La Salle University Medical Center. **Methods:** Ninety (90) subjects were included in the analysis. Demographic and clinical data were gathered including age, gender, length of stay (in days), vital signs, etiology of AP, blood urea nitrogen (BUN, mmol/L), and white blood cell (WBC) with differential count. Records were also reviewed to determine severity of AP according to the 2012 Atlanta classification. **Results:** Hospital stay was significantly shorter in mild AP. The most common etiology of AP is gallstones, compatible with global epidemiology. BUN levels and BISAP scores were significantly higher among moderately severe and severe AP (Table 1). NLR values were higher in moderately severe to severe AP patients but have weak correlation with length of stay, severity of AP, and BISAP score using Spearman rank correlation. The relationship of increased NLR values with in-hospital mortality was insignificant. **Conclusion:** This study found that severe classifications of AP have significantly longer hospital stay, increased BUN levels, and higher BISAP scores. Although increased NLR values was observed with more severe AP, this study found that it had weak correlation with length of stay, severity, and BISAP scores. Relationship of increased NLR values with in-hospital mortality was found to be insignificant. Future studies with a larger population is recommended.

Keywords: acute pancreatitis, neutrophil-lymphocyte ratio

Table 1. Demographic and clinical profile of the patients

	Total (n=90)	Mild AP (n=57, 63%)	Moderately Severe to Severe AP (n=33, 37%)	P-value
Frequency (%); Mean + SD; Median (IQR)				
Age	47.51 + 16.19	47.16 + 15.18	48.12 + 18.04	0.787
Sex				0.662
Male	45 (50)	30 (52.63)	15 (45.45)	
Female	45 (50)	27 (47.37)	18 (54.55)	
Length of hospital stay	5 (4 to 8)	4 (4 to 6)	7 (5 to 12)	<0.001
Heart rate	82 (74 to 90)	82 (73 to 88)	82 (76 to 92)	0.357
Respiratory rate	20 (17 to 21)	20 (19 to 20)	20 (20 to 22)	0.020
Temperature	36.4 (36.2 to 36.7)	36.4 (36.2 to 36.7)	36.5 (36.1 to 36.7)	0.468
Etiology				0.322
Gallstone	51 (56.67)	34 (59.65)	17 (51.52)	
Metabolic	27 (30)	14 (24.56)	13 (39.39)	
Biliary	12 (13.33)	9 (15.79)	3 (9.09)	
BUN (mmol/L)	4 (3.8 to 5.4)	4 (3.4 to 4)	5.3 (4.2 to 8.5)	<0.001
Highest BISAP				<0.001
0	41 (45.56)	33 (57.89)	8 (24.24)	
1	26 (28.89)	18 (31.58)	8 (24.24)	
2	19 (21.11)	6 (10.53)	13 (39.39)	
3	3 (3.33)	0	3 (9.09)	
4	1 (1.11)	0	1 (3.03)	
Baseline CBC				
WBC	12.3 (10 to 16.3)	11.9 (9.8 to 15.5)	12.8 (10.8 to 16.6)	0.139
Neutrophils	83 (76 to 88)	82 (76 to 89)	84 (78 to 86)	0.907
Lymphocytes	12 (7 to 17)	12 (7 to 17)	10 (6 to 16)	0.603
NLR	6.31 (3.8 to 14.67)	6.92 (4.47 to 12.9)	8.4 (4.94 to 13.67)	0.621
Disposition				0.132
Expired	2 (2.22)	0	2 (6.06)	
Discharged	88 (97.78)	57 (100)	31 (93.94)	

PP-0322 Clinical characteristics and endoscopic features of superficial non-ampullary duodenal epithelial tumors

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Background and Aim: Evaluate the clinical and endoscopic features of patients with superficial non-ampullary duodenal epithelial tumors (SNADETs). **Methods:** This is a retrospective chart review study on 104 945 patients who underwent EGD in Kaohsiung Chang Gung Memorial Hospital, Taiwan, between January 2013 to May 2020. A total of 625 patients with histologically confirmed SNADETs were recruited and analyzed by dividing them into two groups according to the pathologist reports: non-neoplastic group, $N = 467$, 74.7% and neoplastic group ($N = 158$, 25.3%). **Results:** Among the 467 non-neoplastic SNADETs, 301 were inflammatory polyps (64.5%), 138 heterotrophic gastric mucosa (29.6%), 41 hyperplastic polyp (8.8%), 1 lymphangiectasia (0.2%) and 1 Brunner's gland (0.2%). For the other 158 neoplastic SNADETs, 124 of them were adenomatous lesions: low to moderate grade dysplasia (LMD) ($n = 78$, 49.3%), high grade dysplasia (HGD) ($n = 11$, 6.96%), and superficial adenocarcinoma (SAC) ($n = 35$, 22.2%). The other 34 non-adenomatous were all malignant lesion: Gastrointestinal stromal tumor ($n = 2$, 1.27%), lymphoma ($n = 9$, 5.70%), neuroendocrine tumors ($n = 9$, 5.70%), and metastatic carcinoma ($n = 14$, 8.86%). Among the 124 adenomatous lesions, a significantly greater number of HGD and SAC were

found in the older patients ($p = 0.017$), tumor diameter >5 mm ($p = 0.001$), solitary ($p = 0.005$), as well as predominantly red color ($p < 0.001$) and macroscopic appearance of depressed type ($p = 0.047$). Multivariate logistic regression analysis revealed that tumor size (OR = 5.811; 95% CI: 1.220–27.676; $p = 0.027$), red-color (OR = 5.306; 95% CI: 2.102–13.391; $p < 0.001$) were the independent risk factors for HGD and SAC. ROC analysis revealed 19 mm as optimal cut off value with AUC: 0.84. The combination of reddish color and tumor size >2 cm model showed the accuracy of endoscopic diagnosis of malignant SNADETs is 0.80. **Conclusion:** This study suggested that SNADETs were mostly benign lesions. However, the combination of reddish color and tumor size >2 cm would be a promising model to predict HGD and SAC in this patient cohort.

Keywords: duodenal tumors, histology, endoscopic features

PP-0323 Endoscopic findings among patient with *Helicobacter pylori* infection: A case-control study

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Background and Aim: Endoscopic features associated with *Helicobacter pylori* (*H. pylori*) infection may be different based on ethnicity and geographic factor. The categorization of gastritis SITES and severity is

important because it can be a predictor for complication like peptic ulcer or gastric cancer. The aim of this study is to obtain endoscopic features patients with *H. pylori* in urban population of Jakarta. **Methods:** This was an age- and sex-matched case-control study on 30 patients with *H. pylori* positive and 30 patients with *H. pylori* negative from histopathological result who undergone upper gastrointestinal endoscopy in Cipto Mangunkusumo National Hospital in 2017. The endoscopic diagnosis was categorized into esophagitis, superficial gastritis, erosive gastritis, peptic ulcer, and neoplasm. Sites of gastritis and ulcer were categorized into fundus, corpus, antrum, and duodenum. **Results:** The average age of patient was 49 years with predominant males compared to females (60% vs 40%). Batak ethnic increase risk *H. pylori* infection (100% vs 37.5%) ($p < 0.001$). Gastritis corpus and antral superficial were significantly higher in patient with *H. pylori* negative (33.3% vs 3.3% and 66.7% vs 20%) ($p < 0.005$). Esophagitis, pangastritis, and neoplasm were found higher in *H. pylori* positive (73.3% vs 56.7%, 56.7% vs 43.4%, and 6.9% vs 3.3%) ($p > 0.05$). Corpus and duodenal ulcers were seen more in *H. pylori* infection although there was no significant difference. **Conclusion:** Superficial gastritis was significantly higher in patient with *H. pylori* negative. Severe forms of gastritis were more common in *H. pylori* positive. However, there was no significant difference.

Keywords: gastritis, *Helicobacter pylori*, upper gastrointestinal endoscopy

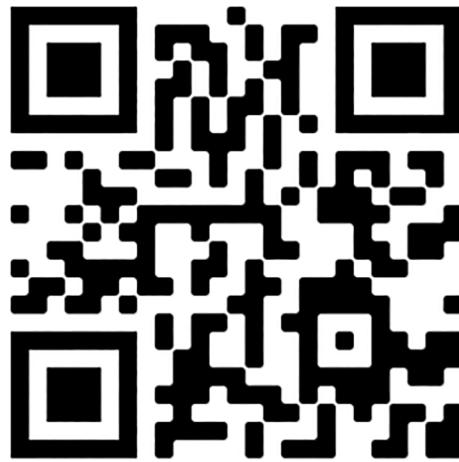
PP-0324 Guided release of a breath (GRAB)

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Background and Aim: UBTs are normally performed in the hospital under the guidance of trained technicians. However, COVID-19 has reduced access to within-hospital UBTs. Self-conducted UBTs at home by patients have been suggested as an alternative. This study aims to compare the efficacy of written *versus* video instructions in performing unsupervised UBT well. **Methods:** In the first arm of this prospective study, 20 consecutive first-time UBT patients were randomized to receive either written or video instructions. Competency for self-conducted UBTs were determined by an observer assessing their technique for 5 key steps and scored upon 5. In the subsequent study, a second enhanced video was created learning from common pitfalls from the first study and tested on a separate group of 10 patients. **Results:** There was no difference in the completion rate at 30% but there was a lower mean score 2.3 versus 3.9 ($p = 0.29$) for written versus video group respectively. The most common errors found were mixing up the steps and no inflation of the bag, all of which were addressed in the enhanced video. The enhanced video group had a higher completion rate of 60%. There was a significant difference between enhanced video and written instruction (mean score of 4.6 *versus* 2.3; $p = 0.04$). Older participants and those less educated had a lower completion rate. **Conclusion:** Video instructions can enhance the successful collection of a breath during UBT and should therefore be considered for use to improve both completion and accuracy of self-conducted UBTs at home

Keywords: urea breath test, *Helicobacter pylori*, medical technology



Enhanced UBT Video

PP-0325 Effect of treatment on esophageal epithelial barrier function and inflammation in eosinophilic esophagitis

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Background and Aim: Eosinophilic esophagitis (EoE) is a chronic inflammatory esophageal disease accompanied by Th2 cytokines and impaired esophageal barrier. Mast cells infiltration may be correlated to persistent symptoms in EoE patients. However, the barrier function of esophagus and mast cell infiltration before and after treatment in EoE patients remains unknown. Here, we aimed to show the time course of esophageal epithelial barrier and mast cell infiltration, as well as chemokines in EoE patients before and after treatment. **Methods:** Biopsy specimens from eleven healthy control and eleven patients with EoE before and after treatment were analyzed. Hematoxylin and eosin staining was used to evaluate infiltration of eosinophil. The permeability of tight junctions in esophageal epithelium was assayed using surface biotinylation. Immunohistochemical staining was performed to examine CD117 positive mast cell. Gene expression of calpain-14, eotaxin-3 and filaggrin was evaluated by quantitative reverse transcription-polymerase chain reaction. **Results:** Esophageal epithelial infiltration of mast cells, and permeability were significantly elevated in EoE patients. The expression of calpain-14 and eotaxin-3 mRNA was significantly upregulated, and filaggrin was significantly decreased in EoE patients. Some post-treatment EoE patients receiving histologic remission with normal eotaxin-3 and filaggrin had elevated permeability, increased mast cell infiltration and increased level of calpain-14. Other post-treatment EoE patients achieving histologic remission had normal permeability, eotaxin-3, filaggrin and low mast cell infiltration, but calpain-14 remained abnormal. **Conclusion:** Increased permeability of esophagus in EoE patients was with mast cell infiltration. Eosinophils, eotaxin-3 and filaggrin become normal level before the decrease of esophageal epithelial permeability with no infiltration of mast cell.

Keywords: eosinophilic esophagitis, calpain-14, eotaxin-3, mast cell

PP-0326 Comparing tolerance of unsedated peroral esophagogastroduodenoscopy using traditional endoscope vs ultraslim endoscope in patients with Mallampati classification III and IV: A prospective randomized trial

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Background and Aim: Patients with Mallampati class III and IV are at risk for difficult endotracheal intubation because of poor laryngopharyngeal view. We aimed to investigate the tolerance of unsedated traditional endoscope *versus* ultraslim endoscope in patients with Mallampati classification class III and IV. **Methods:** Using a randomized trial design, patients with Mallampati classification III and IV were assigned to either ultra-slim (US) or traditional (T) endoscope. EGD tolerance was prospectively assessed in three ways: 1) Gag reflex assessed by the endoscopist during procedure, 2) post-procedural patient satisfaction assessed by questionnaire and 3) the degree of change in post-procedure vital signs. Intolerance was defined based on two out of the three abovementioned criteria. Statistical significance was defined by $P < 0.05$. **Results:** The differences in the change of vital signs, gag reflex and patient satisfaction in the US group versus T group were $P = 0.718$, $P < 0.001$ and $P < 0.001$, respectively. Further sub-analyses have shown that US was more tolerable (change of vital signs, gag reflex and patient satisfaction) than T among women ($P = 0.583$, $P < 0.001$, $P < 0.001$), patients with a previously satisfied endoscopic experience ($P = 0.901$, $P < 0.001$, $P < 0.001$) and an endoscopic duration of less than 7 min ($P = 0.622$, $P < 0.001$, $P < 0.001$). **Conclusion:** Ultra-slim endoscope is preferred over traditional endoscope in un-sedated patients with Mallampati III and IV especially in women, patients with a previously satisfied endoscopy experience and an endoscopic duration of less than 7 min.

Keywords: Mallampati classification, ultraslim endoscope, randomized control trial, esophagogastroduodenoscopy

PP-0327 E-health versus standard care in inflammatory bowel disease management: A systematic review and meta-analysis

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Background and Aim: The increasing incidence and prevalence of inflammatory bowel disease (IBD), has fuelled the need for innovative models of care. We aimed to compare the effectiveness of e-health interventions with standard care in management of IBD. **Methods:** We searched Medline, Embase, PubMed, CINAHL, PsychInfo, Clinical trials registry and Cochrane databases for randomised controlled trials published in the English language until November 2020, comparing e-health interventions to

standard care for patients with IBD. Primary outcomes included difference in disease activity and percentage of patients in clinical remission at the end of follow up. Secondary outcomes included differences in quality of life (QoL), IBD-knowledge and rate ratios (RR) for endoscopic procedures, total healthcare encounters, corticosteroid use, and IBD related hospitalisation or surgery. RevMan 5.4 was used for data analysis. **Results:** Nine studies ($n = 1841$; 991 e-health and 850 controls) were identified. There was no statistically significant difference between the mean disease activity scores for UC [standard mean difference (SMD) 0.22, 95% confidence interval (CI): -0.04 to -0.48] and CD (SMD 0.02, 95% CI: -0.18 to -0.22) in the e-health and standard care groups and no statistically significant difference in the percentage of patients in clinical remission at the end of follow up between both groups (OR -1.05, 95% CI: 0.76–1.45). Higher QoL (SMD 0.19, 95% CI: 0.05–0.34) and IBD knowledge (SMD 0.25, 95% CI: 0.12–0.37) scores were noted in the e-health group compared to standard care. There were no statistically significant differences noted in the RR for endoscopic procedures, total healthcare encounters, corticosteroid use, and IBD related hospitalisation or surgery between both groups. **Conclusion:** E-health interventions are comparable with standard care for impact on disease activity, remission, endoscopy utilisation, total healthcare encounters, corticosteroid use, and IBD related hospitalization or surgery. QoL and IBD related knowledge were higher in the e-health compared to the standard care group.

Keywords: e-health, inflammatory bowel disease, telemedicine, telehealth

PP-0328 Hepatitis B surface antigen loss with peginterferon alfa-2a plus tenofovir: 48th week analysis

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Background and Aim: Nucleos(tide) analogue therapy, such as tenofovir (TDF), has been widely used for chronic hepatitis B treatment management and has shown to be sufficient for viral load suppression. However, its role in attaining the targeted therapy, which is HBsAg loss with or without seroconversion, has shown to be limited. In contrast, chronic hepatitis B treatment using Peg-IFN alfa 2A has been proven to suppress HBsAg levels significantly with a shorter treatment duration. Nevertheless, the usage of Peg-IFN alfa 2A as monotherapy has not demonstrated a significant effect to achieve the targeted therapy. Hence, the study aimed to assess Peg-IFN alfa 2A when being added to TDF monotherapy to achieve HBsAg loss.

Methods: In a retrospective cohort, all patients with HBsAg level >100 IU/mL after undergoing TDF monotherapy for at least a year were recruited for the study. Then, 24 patients were given Peg-IFN alfa 2A 180 mcg once a week for 48 weeks along with the daily TDF consumption. Moreover, 29 patients who continued TDF monotherapy were also recruited as the control group. HBsAg loss with and without seroconversion was assessed at the 48th week of the follow-up. **Results:** The proportion of HBsAg loss and HBsAg seroconversion at the 48th week of follow up were significantly higher in the Peg-IFN alfa 2A + TDF group than monotherapy (HBsAg loss: 12.5% vs 0%, $p < 0.001$, HBsAg seroconversion: 8.3% vs 0%, $p < 0.001$). Moreover, a greater HBsAg decline had been shown in the PG-IFN alfa 2A + TDF group when compared to TDF monotherapy ($-0.82 \log 10$ IU/mL vs $-0.21 \log 10$ IU/mL, $p < 0.005$). **Conclusion:** Peg-IFN alfa 2A + TDF therapy for 48 weeks has shown to have better efficacy to achieve HBsAg loss and HBsAg seroconversion than TDF monotherapy.

Keywords: chronic hepatitis B, pegylated interferon alfa 2A, tenofovir, HBsAg loss, HBsAg seroconversion

PP-0329 Regulated gene analysis of noble irreversible electroporation using microarray

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Background and Aim: Irreversible electroporation (IRE) is a newly developed ablative technique that removes target lesions by using an electric field in cells and tissues. However, the mechanism at the gene level of IRE is not yet elucidated. Therefore, this study aims to analyze the genes that operates after ablation as a mechanism of IRE. **Methods:** We experimented total six rats. Three among them were stimulated with 2000 V/cm, two of them were with 3000 V/cm and one of them were no treatment. Microarray analysis was performed on stomach tissue obtained from each group for gene expression trend. In particular, the common motif of the promoter region of overexpressing genes was analyzed. **Results:** Through this investigation, we analyzed UUUUU genes (4959) and DDDDD genes (7519) and found 9 Motifs in the UUUUU genes. Overall, activated ribosome, spliceosome, oxidative phosphorylation, neuroactive ligand-receptor interaction and proteasome related transcription data were confirmed through the gene analysis. Especially, up-regulated UPP1 gene was found. In the contrast, CHRNA4 gene was found to be down-regulated in the IRE group using the western blot. **Conclusion:** Electroporation suggest that electroporation can be used to control the expression of genes with specific motifs inserted into the promoter. Further study would be necessary to confirm whether the gene inserted into the promoter of the motif shows up-regulation actually.

Keywords: electroporation, microarray, gene, western blot

PP-0330 Single centre experience of EMR

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Background and Aim: Endoscopic mucosal resection (EMR) is a specialised technique for resection of precancerous large polyps and flat lesions. In Hospital Kuala Lumpur, this service has been continued despite the Covid pandemic as these lesions are high risk for malignant change. **Methods:** Endoscopy reports, histopathology reports (HPE) and case files of patients who underwent EMR from September 2019 to April 2021 (20 months) were retrospectively reviewed. A total of 23 procedures were reviewed. **Results:** Median size of lesion was 25 mm (range 15 to 90 mm). 10 cases (43.5%) were right sided colonic lesions and 13 cases (56.5%) were left sided lesion. 10 cases (43.5%) were documented as Paris Ia lesion, 7 (30.4%) as Paris Ips, 1 (4.3%) as Paris Ip, 1 (4.3%) as Paris IIa and 4 (17.4%) as LST-G (lateral spreading tumor-granular). En bloc resection was done for 21 cases (91.3%). Piecemeal resection was done for 2 cases (8.7%). Tubular adenoma with low grade dysplasia was the most common HPE findings with 8 cases (34.7%). 5 cases (21.7%) were reported as tubular adenoma with high grade dysplasia, 2 (8.7%) as sessile serrated adenomas with dysplasia, 4 (17.4%) as tubulo-villous adenoma with low grade dysplasia and 1 (4.3%) hyperplastic polyp. 3 (13.0%) patients had adenocarcinoma and all 3 had clear margins of resection. Deep mural injury (Sydney classification) occurred in 4 cases (17.4%); 2 in DMI class I, one each in class II and III. All had endoscopic treatment immediately with successful outcome. None of the cases had clinically significant bleeding or perforation. There was recurrence for 1 patient and had successful endoscopic treatment. **Conclusion:** Our experience shows EMR is safe and an effective modality for treatment of advanced polyps.

PP-0331 Demographics and characteristics of endoscopically diagnosed malignant lesions in a single centre

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Background and Aim: With the advent of colorectal screening programme, endoscopic resection of pre malignant lesions have reduced the disease burden. However, there are still many cases of which malignancy is diagnosed endoscopically on colonoscopy itself. This retrospective study was done to review demographic data, site of lesions and histopathological (HPE) of those lesions. **Methods:** Colonoscopy and HPE reports of patients who were endoscopically diagnosed as colorectal carcinoma from January 2020 to February 2021 were reviewed. Data of 137 patients were then analyzed using SPSS. **Results:** Of the 137 patients, 62.8% ($n = 86$) were male and 37.2% ($n = 51$) were females. 89.8% ($n = 123$) were above 50 years and 10.2% ($n = 14$) were 50 and below. Racial distribution is as follows: 49.6% ($n = 68$) Malays, 29.9% ($n = 41$) Chinese, 19.0% ($n = 26$) Indians and 16.6 ($n = 2$) others. The most common indications were for suspected malignancy at 31.2% ($n = 43$) and lower gastrointestinal bleeding at 28.5% ($n = 39$). Other indications included Iron Deficiency Anaemia 11.7% ($n = 16$), altered bowel habits 8.0% ($n = 11$), CRC screening 9.5% ($n = 13$), abnormal imaging 2.2% ($n = 3$), previous colorectal cancer 2.2% ($n = 3$) and polyp surveillance 1.5% ($n = 2$). Right sided lesions seen in 19% ($n = 26$) of patients and 81% ($n = 109$) on the left side. In 39.6% ($n = 53$) of the patients, lesion was obstructing the lumen. 87.6% ($n = 120$) were diagnosed as colorectal adenocarcinoma and 5.1% ($n = 7$) had metastatic carcinoma. HPE was reported dysplasia in 6.9% ($n = 9$). Although not statistically significant ($p = 0.3$), there was a higher percentage of Indians with right sided disease at 26.9% compared to Chinese 19.5% and Malays 16.2%. There was also higher percentage of patients aged 50 and below with right sided disease (28.6%) compared to age above 50 with right sided disease (17.8%) ($p = 0.5$). **Conclusion:** Although left sided colorectal cancers were more common, Indians and younger aged patients have a slight preponderance for right sided disease. Studies with larger sample size are needed to establish significance.

PP-0332 Association of types of periampullary diverticulum and types of extrahepatic bile duct stones: A cross-sectional study

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Background and Aim: Periampullary diverticula are associated with an increased incidence of choledocholithiasis. There are different types of diverticula based on its location relative to the major papilla, and there are different types of bile duct stones. This study aims to determine the relationship between the types of diverticula and the types of duct stones.

Methods: This is a cross-sectional study of 380 patients with choledocholithiasis and who underwent ERCP from February 2015 to October 2020. Official reports and videos were reviewed. Outcome measures include types of periampullary diverticula using the Li-Tanaka classification and types of bile duct stones; t-test, chi-square, goodness of fit tests were used for data analysis. **Results:** There were 275 patients with no diverticula and 105 patients with diverticula. Type III (papilla ≥ 1 cm outside the diverticulum margin) was most common (42.85%). There was significantly

different age between the groups ($p < 0.001$) with Type IVa (2 diverticula with papilla < 1 cm outside the margins of at least one) having the highest mean age of 67.45 ± 15.9 years. There was also significant difference in failed cannulation ($p < 0.01$) with Type IVa having 27%. Though there was no significant difference in duct diameters, duct stone numbers, and duct stone sizes, Types I (intradiverticular papilla not adjacent to the margin) and IIa had larger duct diameters (1.7 ± 0.71 cm and 1.54 ± 0.55 cm, respectively), more multiple duct stones (50% and 75%, respectively), and larger duct stone sizes (1.3 ± 0.85 cm and 1.56 ± 0.75 cm, respectively). There was significant difference in the types of stones with Type IVa having 71% brown stones, $p = 0.018$. **Conclusion:** Type of periampullary diverticulum may influence the type of stone in the extrahepatic bile duct, with Type IVa having the highest proportion of brown stones. Type IVa was also associated with failed cannulation and older age.

Keywords: periampullary diverticulum, choledocholithiasis, bile duct stones

PP-0333 Clinical characteristics and outcomes of Covid-19 patients with gastrointestinal manifestations seen in a tertiary hospital: A retrospective, cohort study

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Background and Aim: Patients with Coronavirus Disease 2019 (COVID-19) usually have respiratory symptoms. However, some patients present with gastrointestinal (GI) symptoms. Studies on the association of clinical outcomes and GI symptoms are conflicting. Attention to non-typical symptoms like digestive symptoms is important for extensive identification, efficient quarantine protocols and ultimate control of COVID-19 transmission for public benefit and safety during this pandemic. Findings can also contribute to the present data among Filipinos. **Methods:** In this retrospective, single-center, cohort study, data from 348 adults, confirmed-COVID-19 patients admitted in Manila Doctors Hospital from March 1, 2020, to August 31, 2020, were reviewed including demographic profile, disease severity and clinical outcomes. **Results:** Of the 348 patients, 38.5% had gastrointestinal symptoms. Diarrhea was the most common symptom (50%). Patients with GI symptoms were older (54.42 ± 17.92 vs 47.7 ± 17.49 , $p < 0.01$), had higher values of AST (44.1 ± 57.39 vs 32.1 ± 39.2 , $p = 0.017$), ALT (57.23 ± 67.92 vs 44.72 ± 43.95 , $p = 0.029$), creatinine (166.19 ± 325.43 vs 99.8 ± 158.32 , $p = 0.014$), BUN (6.59 ± 10.21 vs 4.49 ± 5.92 , $p = 0.015$), and quantitative CRP (17.12 ± 41.33 vs 7.08 ± 23.38 , $p = 0.005$), low procalcitonin (0.32 ± 0.6 vs 0.8 ± 2.85 , $p = 0.009$) and albumin (25.85 ± 14.89 vs 20.14 ± 17.33 , $p < 0.01$), and more cases of bilateral pneumonia (63% vs 50%, $p = 0.006$). These patients had moderate ($p = 0.003$) and critical ($p = 0.049$) severity on admission. During hospitalization, however, those with gastrointestinal symptoms had higher cases of critical illness (28% vs 21%, $p = 0.0480$), but no statistical difference in death (19% vs 14%, $p = 0.1510$) compared to those without gastrointestinal manifestations. **Conclusion:** Gastrointestinal manifestations are common in COVID-19. GI symptoms are associated with moderate and critical disease but were not associated with death.

Keywords: COVID-19, SARS-CoV-2, gastrointestinal manifestations, gastrointestinal symptoms

PP-0334 Efficacy of hybrid endoscopic submucosal dissection with SOUTEN in gastric lesions: An ex vivo porcine model basic study

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Background and Aim: Hybrid endoscopic submucosal dissection (ESD) that comprises mucosal incision and partial submucosal dissection followed by snaring in a planned manner, has been developed for endoscopic resection of gastrointestinal tumors to overcome the technical barrier of ESD. The superiority of hybrid ESD with SOUTEN, a single multifunctional device, over conventional ESD remains unclear. To determine whether and how hybrid ESD was superior to conventional ESD in an ex vivo porcine model basic study. **Methods:** Sixteen endoscopists participated in this basic study in August 2020 at Kyushu University, performing 32 procedures each for hybrid ESD and conventional ESD. Mock lesions (10–15 mm, diameter) were created in the porcine stomach. Treatment outcomes were compared between two groups. In addition, factors associated with difficulty in ESD were also investigated. **Results:** Total procedure time of hybrid ESD was significantly shorter than that of conventional ESD (median: 8.3 min vs 16.2 min, $p < 0.001$). Time, speed, and injection volume were more favorable in hybrid ESD than conventional ESD (time, 5.2 min vs 10.4 min, $p < 0.001$; speed, 43.7 mm²/min vs 23.8 mm²/min, $p < 0.001$; injection volume, 1.5 mL vs. 3.0 mL, $p < 0.001$), although no significant differences in those factors were observed between both groups during mucosal incision. There was also no significant difference between both groups in the en bloc/complete resection rate and perforation rate (complete resection, 93.8% vs. 87.5%, $p = 0.67$; perforation, 0% vs 3.1%, $p = 1$). Selection of conventional ESD as the treatment method was significantly associated with difficulties during ESD (odds ratio = 10.2; highest among factors). **Conclusion:** Hybrid ESD with SOUTEN improves the treatment outcomes of gastric lesions. It also has the potential to reduce medical costs since SOUTEN is a single multifunctional device that is inexpensive.

Keywords: endoscopic mucosal resection, hybrid, stomach neoplasms, treatment outcome, animal experimentation

PP-0335 Presence of hypertension or diabetes mellitus are associated with higher fibrosis-4 (FIB-4) index among malaysian patients with fatty liver

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Background and Aim: FIB-4 is a simple non-invasive fibrosis scoring based on routine laboratory parameters with comparable performance to liver biopsy. Our aim was to determine any association between severity of liver disease using FIB-4 and metabolic comorbidities hypertension, diabetes mellitus (DM) and dyslipidemia. **Methods:** A retrospective study on

patients diagnosed with fatty liver based on ultrasound or controlled attenuation parameter, attending a tertiary liver centre. Those with coexisting liver condition which could result in steatosis were excluded. Data collected from medical record, and metabolic disorders identified based on the local guidelines. FIB-4 was calculated and classified into low (<1.3), intermediate (≥ 1.3 and <2.67) or high (≥ 2.67) risk for advanced fibrosis. **Results:** 130 subjects were included, mean age 54 ± 12.5 years, 55% were male and mean alanine aminotransferase (ALT) 47 ± 26 U/L. Majority (91.5%, $n = 119$) were overweight (body mass index, BMI ≥ 23). Metabolic disorders were found singularly DM (57.6%, $n = 72$), hypertension (56%, $n = 70$), dyslipidemia (63.2%, $n = 79$); and in combinations DM + hypertension (40%, $n = 50$), DM + dyslipidemia (41.6%, $n = 52$), hypertension + dyslipidemia (43.2%, $n = 54$), DM + hypertension + dyslipidemia (31.2%, $n = 39$). 55.4% ($n = 72$) had low FIB-4, while 27.7% and 16.9% had intermediate and high. Subjects with hypertension or DM had significantly higher FIB-4 than those without. Similar findings were also seen in patients with dual or triple comorbidities (Figure 1). 91% ($n = 20$) with high FIB-4 had either hypertension or DM, 68% had both. No significant correlation seen between FIB-4 and dyslipidemia, ALT, BMI or gender. **Conclusion:** Our findings suggest MAFLD patients with metabolic comorbidities, in particular DM and hypertension whether singularly or combination, might be prone to severe fibrosis, therefore require closer monitoring. A prospective outcome study is needed.

Keywords: MAFLD, fatty liver, FIB-4, diabetes mellitus, hypertension

Metabolic comorbid(s)	FIB-4 index (mean \pm SD)		p value
	Without	With	
DM	1.20 \pm 0.89	1.72 \pm 1.02	0.003
Hypertension	1.21 \pm 0.87	1.73 \pm 1.03	0.004
Dyslipidemia	1.33 \pm 1.03	1.60 \pm 0.97	0.153
DM + hypertension	1.24 \pm 0.88	1.87 \pm 1.04	<0.001
DM + dyslipidemia	1.32 \pm 0.96	1.75 \pm 1.00	0.017
Hypertension + dyslipidemia	1.29 \pm 0.91	1.77 \pm 1.05	0.007
DM + hypertension + dyslipidemia	1.32 \pm 0.93	1.89 \pm 1.03	0.003

Figure 1: FIB-4 index comparing subjects with comorbidities and those without

PP-0336 Eosinophilic gastroenteritis: A report of 2 cases with different presentations

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Background and Aim: Eosinophilic gastroenteritis is an uncommon inflammatory disease of the gastrointestinal tract. It, however, is one of the most important primary eosinophilic gastrointestinal disorders, with various gastrointestinal manifestations. We are reporting 2 cases of eosinophilic gastroenteritis which presented with different complaints to our centre. **Methods:** Case report **Results:** Case 1: A 23-year-old gentleman, presented with diarrhoea and colicky abdominal pain for 6 weeks. He has no alarming symptoms such as fever, weight loss or rectal bleeding. He underwent OGDS and colonoscopy, which appeared normal with random biopsies taken. Histopathology report showed that there were increased eosinophil infiltration (>40 cells per high power field) in duodenal, terminal ileum and all parts of colonic biopsies. His absolute eosinophilic count was $5.74 \times 10^9/L$. The diagnosis of eosinophilic enterocolitis was made and prednisolone 40 mg daily started with tapering dose later on. He improved tremendously after 10 days and currently having once a day normal stool. Case 2: A 27-year-old gentleman, presented with ascites and abdominal discomfort for 3-week duration, associated with loss of appetite and weight. Patient also complained of constipation with occasional loose stool. He didn't have any vomiting, fever or rectal bleeding. Paracentesis sample showed eosinophilic effusion, with eosinophilia on full blood count ($19.96 \times 10^9/L$). Enteroscopy showed grossly normal mucosa with mild erythema at some areas in duodenum and jejunum. Histological evaluation demonstrated significant eosinophilic infiltration in the lamina propria (>40 cells per high power field), and a diagnosis of eosinophilic enteritis was made. Prednisolone was started at a dose of 40-mg OD, and he was seen 2 weeks later in our clinic where his symptoms disappeared completely. **Conclusion:** The clinical presentation of eosinophilic gastroenteritis varies. We presented 2 cases with different complaints, from ascites to chronic diarrhoea, respectively. Corticosteroids are the mainstay of therapy.

Keywords: colitis, eosinophilic gastroenteritis

PP-0337 Caustic injury during the COVID-19 pandemic: A single center experience

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Background and Aim: Incidence rate of caustic substance ingestion varies with nation. In our institution, there was a noted rise in the number of these cases. At the start of the COVID-19 pandemic, 16 cases of caustic ingestion were recorded. **Methods:** We present two interesting cases of caustic injury with varying presentations and management. Our first case is a 38 years old male who accidentally ingested 20 mL of lye water. Our second case is a 22 years old female who ingested 300 mL of muriatic acid. **Results:** Urgent EGD of the first case showed edema of epiglottis, edematous, friable ulcers with exudate at the proximal esophagus and circumferential ulceration at the distal esophagus. The gastric mucosa was edematous, erythematous with areas of scattered eschars from proximal to distal body. Multiple ulcers with black discoloration were seen from the proximal to distal body. Post EGD, patient developed Epiglottitis, an emergency tracheostomy was done and was eventually discharged after decannulation. Urgent EGD of the second case, showed friable mucosa, circumferential ulcers, whitish exudates and areas of bleeding at the entire length of the esophagus. The stomach had poor distensibility, contractility, the entire gastric mucosa was friable with extensive necrosis and blackish gray exudates. During admission, patient developed pneumoperitoneum and underwent Emergency exploratory laparotomy, gastrectomy, esophagectomy, cervical esophagostomy, and tube jejunostomy and tracheostomy. Intraoperatively, gross spillage of gastric contents, perforation on the fundus and necrotic material scattered to the omentum, with focal necrosis of pancreatic tail and left posterior diaphragm near the left crux. Patient was managed at the ICU and was discharged. **Conclusion:** Caustic ingestion is a serious medical problem with varying clinical presentations and a complicated course. Current treatments strive to treat immediate injury and prevent complications. With the unpredictable nature of these injuries there is a need for more definitive research into treatment

Keywords: caustic injury, lye water, muriatic acid, esophagectomy



PP-0338 Country-wide differences in metabolic risk factors and severity of nonalcoholic fatty liver disease (NAFLD) in India

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Background and Aim: India is a vast country with heterogeneous population characteristics. The aim of the present study was to analyze the country-wide differences in metabolic risk factors and severity of NAFLD.

Methods: In the interim analysis of an ongoing real-life study [Indian Consortium on NAFLD (ICON-D)] done at 27 months, 32 participating centers were divided into 4 zones [north zone (NZ), south zone (SZ), east zone (EZ) and west zone (WZ) as per the state of origin of the patients (Table)]. Data were analyzed for the metabolic risk factors and liver disease severity based on transient elastography (Fibroscan) and liver histology. Patients

Baseline characteristics	North Zone (n=1904)	East Zone (n=1190)	South zone (n=582)	West zone (n=523)	P value
Male: Female N=4199	1196:708	771:419	363:219	343:180	.475
Mean age (Years) N=4199	44.15 ± 12.30	43.77 ± 11.43	47.96 ± 13.30	47.42 ± 13.17	.001*
BMI data available N=4192(99.8%)	1902 (45.3%)	1190 (28.3%)	582 (13.8%)	518 (12.3%)	.001*
Mean Body weight (Kg) N=4192	75.43 ± 12.88	70.06 ± 10.95	73.36 ± 14.24	76.45 ± 25.03	.001*
Mean BMI (Kg/m ²) N=4192	28.01 ±7.71	26.61 ± 3.54	27.79 ± 5.39	28.84 ± 10.2	.001*
Lean N=440(10.5%)	175 (9.2%)	146 (12.2%)	81 (13.9%)	38 (7.3%)	.001*
Overweight N=736(17.5%)	316 (16.6%)	217 (18.2%)	83 (14.3%)	72 (13.9%)	.558
Obese N=3245(77.4%)	1405 (73.8%)	824 (69.2%)	409 (70.2%)	406 (78.3%)	.001*
Waist circumference data available N=4067(96.8%)	1790 (44.01%)	1190 (29.2%)	573 (14%)	514 (12.6%)	.001*
Mean waist circumference (cm) N=4067	96.34± 10.38	95.12 ± 8.03	92.47 ± 47.92	92.24 ± 11.48	.001*
Central obesity N=3182 (78.2%)	1473 (82.3%)	956 (80.3%)	416 (72.6%)	337 (65.6%)	.001*
Type 2 DM data available N=2969(70.7%)	1201(40.4 %)	1056 (35.6%)	346 (11.6%)	366 (12.3%)	.001*
Type 2 DM N=1574(52.3%)	646 (53.7%)	422 (39.9%)	260 (75.1%)	221(60.3%)	.001*
Hypertension data available N=4161(99%)	1870(44.9 %)	1190(28.6%)	580(13.9%)	521(12.5%)	.001*
Hypertension N=1893(45.08%)	895(47.8 %)	421(35.3%)	324 (55.8%)	253 (48.5%)	.001*
Serum Triglycerides (TG) data available N=3370(80.2%)	1516(44.9 %)	1047(31%)	399(11.8%)	408(12.1%)	.001*
Abnormal TG N=1849 (54.86%)	914(60.2 %)	506(48.3%)	196(49.1%)	233(57.1%)	.001*
Serum HDL data available N=3124(74.4%)	1300(41.6 %)	1049(33.5%)	400(12.8%)	375(12%)	.001*
Abnormal HDL N=1732(55.4%)	772(59.3 %)	547(52.1%)	227(56.7%)	186(49.6%)	.001*
Metabolic syndrome (≥3 risk factors) N=1630(38.8%)	750(39.3 %)	470(37.88%)	225(38.6%)	185 (35.3%)	.375
Fibroscan data available	1283	896 (33.6%)	210 (7.9%)	277	.001*

were categorized as lean, overweight, obese and centrally obese based on BMI and waist circumference cut-offs for Asians. Metabolic risk factors and metabolic syndrome was defined as per ATP III criteria with modified waist for Asians. Liver stiffness measurement (LSM) measured on Fibroscan ≥8 kPa was defined as significant fibrosis and ≥12.5 kPa as cirrhosis. Liver histology was graded and staged as per NAFLD activity score. The study had ethical approval at respective centers and patients gave informed consent. **Results:** Of 4199 patients with NAFLD [mean age 45 ± 12.4 years, males 2851(67.89%)], real-life data on anthropometry, metabolic risk factors, metabolic syndrome, transient elastography (Fibroscan) and liver histology was available in variable number of patients across 4 zones of the country and showed significant differences in metabolic risk factors and severity of liver disease (Table). **Conclusion:** Patients with NAFLD in different parts of India have differences in metabolic risk factors and liver disease severity.

Keywords: fatty liver, NASH, hepatic steatosis, cirrhosis, fibroscan

PP-0339 The usefulness of endoscopic ultrasound-fine needle aspiration in the grading of pancreatic neuroendocrine neoplasms

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Background and Aim: Pancreatic neuroendocrine neoplasms (pNENs) are relatively rare but the number of patients have been increasing in recent years, partly due to improved diagnostic equipment. Metastasis is one of the poor prognostic factors, but even pNENs smaller than 5 mm can metastasize, so surgical resection is considered even for small tumors. Prediction of metastasis is possible by grading tissue specimens, and if accurate grading is possible by preoperative endoscopic ultrasound-guided fine needle aspiration (EUS-FNA), overinvasive surgery may be avoided. The accuracy for EUS-FNA grading is not clear. Therefore, we examined the accuracy of

EUS-FNA for grading of pNENs. **Methods:** A retrospective analysis of pNENs that underwent EUS-FNA at our institution from April 2018 to September 2020 was performed. Age, gender, lesion location, maximum diameter, surgical status, final diagnosis, and grading were analysed. **Results:** 43 pNENs underwent EUS-FNA during this period, with 20 males and a median age of 60 years (IQR 51-70 years). The lesion sites were the head in 17 cases, the body in 15 cases, and the tail in 11 cases, with median maximum diameter of 12 mm (IQR 9.5-25 mm). To date, 26 cases have been operated on. The diagnosis rate of NETs by EUS-FNA was 76.7% (33/43), and the breakdown of grading was 27 cases of G1, 5 cases of G2, and 1 case of mixed adenoneuroendocrine carcinoma. Of these, the grading accuracy was 86.4% (19/22). Of the three cases in which grading was not accurate, two had tumors larger than 50 mm and one had a small tumor of 10 mm in size. **Conclusion:** It is important to keep in mind that EUS-FNA in pNENs may not be able to accurately grade small lesions and relatively large pNENs.

Keywords: neuroendocrine neoplasms, EUS-FNA, grading

PP-0340 Prevalence of malnutrition among patients with COVID-19 in a tertiary hospital

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Background and Aim: The ESPEN guidelines highlighted the need for diagnosis and treatment of malnutrition in COVID-19 as it can improve both short- and long-term outcomes. The study aims to evaluate the prevalence of malnutrition among COVID-19 patients admitted in a tertiary hospital. **Methods:** The study was a prospective cross-sectional study done in a tertiary hospital. All patients diagnosed to have COVID-19 were included in this study. Subjective Global Assessment and Nutritional Risk Screening were used to assess the prevalence of malnutrition. Mann-Whitney U test and chi-square test were used to compare the demographics and nutritional status. Association among variables was assessed using chi-square test or Fisher. **Results:** 86 patients were prospectively enrolled in the study. The overall prevalence of malnutrition was 61.63 % based on NRS and 76.58% (58.14% mild, 17.44% severe) based on SGA. Patients with malnutrition were noted to have a significantly lower BMI, albumin, creatinine and more severe COVID-19 infection (p value <0.05). There were no noted associated comorbidities that contributed to malnutrition as well as no association with mortality. **Conclusion:** In this study, we noted a high prevalence of malnutrition at 61.63% and 76.58% in COVID-19 inpatients according to NRS and SGA criteria. Considering this high prevalence, nutritional support in COVID-19 care is noted to be an essential element

Keywords: nutrition, COVID-19, prevalence

Table 1. Prevalence of malnutrition among COVID-19 patients based on SGA and NRS (n=86)

	Prevalence (95% CI)
NRS	
Malnourished	61.63% (28.60-49.18%)
SGA	
Mildly malnourished	58.14% (47.35-68.20%)
Severely malnourished	17.44% (10.72-27.10%)

PP-0341 Point shear wave elastography is helpful in prognosticating patients with alcohol related patients with ACLF defined by APASL definition

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Background and Aim: Various prognostic scores are available for ACLF. The aim of the present study was to evaluate the utility of point shear wave elastography (pSWE) in predicting severity, organ failure and day-28 and day-90 mortality in patients with alcohol related ACLF. **Methods:** In a prospective study (January 2019 to February 2020), pSWE was done at their presentation in 102 patients with alcohol related ACLF as per APASL, CANONIC and combined (APASL + CANONIC) definitions to predict the baseline severity, organ failure and 28-day and 90-day mortality. **Results:** In the APASL ACLF group ($n = 46$, males = 45, mean age = 42.65 ± 8.92), baseline pSWE correlated with AARC score ($r = 0.371$, $p = 0.01$) but not with the presence and number of organ failures. pSWE at the baseline in the APASL ACLF group also predicted the 28-day (cut off of 31.35 kPa, AUROC-0.983, $p < 0.001$, diagnostic accuracy of 95.65%) and 90-day (cut off 26.5 kPa, AUROC-0.915, $p = 0.003$, diagnostic accuracy 82.61%) mortality. In the CANONIC group ($n = 26$, males = 26, mean age = 44.27 ± 10.09), baseline pSWE neither correlated with baseline severity nor with organ failures. Also, baseline pSWE in the CANONIC group did not predict the 28-day (AUROC-0.670, $p = 0.438$) and 90-day mortality (AUROC-0.705, $p = 0.101$). Similar to CANONIC group, in the combined ACLF group as well ($n = 30$, males = 30, mean age = 40.57 ± 9.5), baseline pSWE neither correlated with baseline severity nor with organ failures and did not predict the 28-day (AUROC-0.531, $p = 0.786$) and 90-day mortality (AUROC-0.562, $p = 0.550$). **Conclusion:** Baseline pSWE is helpful in predicting the severity, 28-day and 90-day mortality in patients with alcohol related ACLF as defined by the APASL definition but not in those having ACLF as per CANONIC and combined (APASL + CANONIC) definitions.

Keywords: ACLF, CANONIC, organ failure

PP-0342 Correlation APRI and FIB-4 score with liver stiffness using transient elastography in chronic hepatitis B

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Background and Aim: It is reported that 24 billion populations have been exposed to the hepatitis B virus. Untreated hepatitis B can lead to fibrosis and even cirrhosis of the liver. Transient elastography has been used for non-invasive measurement for detecting liver stiffness. AST to Platelet Ratio Index (APRI) and Fibrosis-4 (FIB-4) scores are non-invasive scoring that are often used to detect liver stiffness in hepatitis B. By conducting this study; we aim to use non-invasive scoring to see the correlation of liver stiffness using APRI and FIB-4 scores in patients with hepatitis B compare to transient elastography result. **Methods:** A cross-sectional retrospective analytic study by looking at Hepatitis B patient medical record who came

to hepatology clinic Prof. Dr. R. D. Kandou General Hospital. Inclusion criteria: hepatitis B patients with ages more than 18 based HBsAg positive results, exclusion criteria: patient with hepatitis C, hepatocellular carcinoma (HCC), alcoholic liver disease (ALD), and non-alcoholic fatty liver disease (NAFLD). Laboratory results such as aspartate aminotransferase (AST; upper limit 33 U/L), alanine aminotransferase (ALT), and thrombocyte count result for calculating APRI and FIB-4 score. Statistical analysis using Spearman's test with the significance of $p < 0.05$. **Results:** This study included 40 patients with 10 males (25%), 30 female (75%). 16 patients (40%) have kPa ≤ 8 , 24 patient (60%) have kPa > 8 . APRI score median 0.65 (0.20–8.20), FIB4 score median 2.51 (0.32–22.99) and kPa score mean 15.69 ± 2.17 . From Spearman's test there's positive correlation APRI dan FIB-4 score with liver stiffness in hepatitis B patient ($r = 0.415$, $p = 0.008$ and $r = 0.455$, $p = 0.003$). **Conclusion:** There is positive correlation between APRI and FIB-4 score with liver stiffness in hepatitis B. APRI and FIB-4 score can be used as non invasive scoring tools for liver stiffness in hepatitis B.

Keywords: hepatitis B, APRI, FIB-4, liver stiffness

PP-0343 Feasibility and potential of urinary miR-21-5p as a non-invasive biomarker for detection of colonic polyps

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Background and Aim: Colorectal cancer is a silent and deadly disease, where it takes years to develop until the first symptom shows. If presented at a later stage, treatments will be more expensive and risky, and patient outcome is mostly poor. Early detection is indeed the best prevention measure, feasible through public health program such as health screening. Despite the advantage it offers, the screening uptake for colorectal cancer is still low, due to reason such as unpleasant and inconvenience in sample taking, for example, stool-based iFOBT. There is a need for a better alternative and we foresee the urinary microRNA as an ideal candidate for the disease biomarker. In this pilot study, we demonstrated the potential of urinary microRNA as a biomarker to differentiate individuals with and without colonic polyps. **Methods:** Differential expression of urinary miR-21-5p was compared in 24 individuals ($n = 12$, without colonic polyps; $n = 12$, with colonic polyps) using relative real-time polymerase chain reaction. Independent samples *t*-test was applied to compare mean difference of miR-21-5p expression levels between two groups. Area under the curve (AUC) was determined using simple logistic regression. **Results:** Individuals with colonic polyps exhibit significantly lower expression level of urinary miR-21-5p compared to those without colonic polyps ($p = 0.011$, 95% CI = 0.46, 3.17). The ROC curve distinguished patients with colonic polyps with AUC = 0.833 (95% CI = 0.663, 1.0). **Conclusion:** The deregulated urinary miR-21-5p shows the potential of urinary microRNA in differentiating individuals with and without colonic polyps and could serve as a novel non-invasive tool in colorectal cancer screening.

Keywords: colorectal cancer screening, urinary microRNA, non-invasive biomarker, real-time PCR

PP-0344 Wilson disease (WD) in Malaysia: A multicenter study on the diagnostic features, treatment and long-term outcome

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Background and Aim: WD is an autosomal recessive disorder due to defect in gene ATP7B. It affects the copper metabolism and lead to copper retention in various organs such as the central nervous system, liver and eyes. There is limited data on the long-term outcome of WD in Malaysia.

Methods: This is a retrospective and prospective, multicentre study involving patients diagnosed to have WD base on Leipzig score 3 from 1996 through 2020. Data were extracted from the medical notes. **Results:** Of the 82 WD patient, 31 (37.8%) were male. The median duration from first presentation to diagnosis was 3 months (IQR = 8). The median age of diagnosis was 18.5 years old (IQR = 14.3). The ethnic distribution was as follow: Malay 23 (28%), Chinese 46 (56.1%), Indian 8 (9.8%), and others 5 (6.1%). Twenty (24.4%) patients have family history of WD. The initial presentation were 36 (43.9%) hepatic disease, 17 (20.7%) Fulminant Wilson Disease (FWD), 13 (15.9%) family screening, 12 (14.6%) neuropsychological symptoms, 2 (2.4%) hepatic and neuropsychological symptoms. Fifty-four (65.9%) have Kayser Fleischer ring. Seventy (85.4%) were found to have serum ceruloplasmine $< 0.2 \mu\text{mol/L}$. After initiation of first line treatment with Penicillamine in 62 (75.6%), penicillamine plus zinc in 12 (14.6%), and trientine in 1 (1.2%), 45 (54.9%) patients required switch of treatment. The baseline median Child–Pugh score (CPS) and MELD-Na score was 8 (IQR = 5.5) and 17 (IQR = 14.5), respectively. Till December 2020, 55 (67%) were alive and the median CPS and MELD-Na score were 6 (IQR = 2) and 12 (IQR = 19), respectively. The mortality rate for FWD was 58.8% within 1 month. Overall, non-cirrhotic patients have a better survival compared to cirrhotic WD. **Conclusion:** Overall, Wilson disease patients who received adequate treatment have a good long term outcome. Early recognition and diagnosis of Wilson disease is important as it allows adequate treatment and improves the mortality.

PP-0345 Mechanisms of bloating and abdominal distension (B/D) on the development of gastroesophageal reflux (GER)

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Background and Aim: Short-chain fatty acids, the product of fermented carbohydrate in the colon had been reported to increase transient lower esophageal sphincter frequency. Whether there is an association between B/D and GER is not known. **Methods:** 282 consecutive GERD patients who had 24-H impedance-pH monitoring during off therapy were retrospectively analyzed and compared the reflux parameters between patients with 1) bloating and distension (B+/D+), 2) bloating without distension (B+/D-) and 3) no B/D (B-/D-). Subjects with major esophageal

motility disorders or skipped meals during the test were excluded. **Results:** Demographic characteristics, symptom severity, acid exposure time, and prevalence of positive pH tests were not different between groups ($p > 0.05$). B+/D+ groups had postprandial reflux frequency increase progressively from breakfast to dinner [2 (1–5) vs 4 (1–7) vs 6 (2–9) times/2 h; $p < 0.05$ breakfast vs dinner]. Patients with bloating both with and without distension (B+/D- and B+/D+) had higher supragastric belching/24 hours than B-/D-, $p < 0.05$. Moreover, 13 patients (52%) with B+/D- and 11 patients (37.9%) in B+/D+ had supragastric belching/24 h more than normal value compared none in B-/D- ($p < 0.001$). **Conclusion:** B/D was associated with different GER mechanisms. An increase of postprandial reflux frequency from breakfast to dinner may indicate a colonic fermentation accumulation after meals intake was shown in GERD patients who had bloating and distension whereas supragastric belching may play a role in those with bloating with or without distension

Keywords: bloating, abdominal distension, gastro-esophageal reflux, supragastric belching

	B-/D- (n=27)	B+/D- (n=25)	B+/D+ (n=29)	P-value
Gender, M: F	8:19	6:19	7:22	0.87
Age, year	51.3±13.1	49.4±13.3	47.6±12.3	0.57
BMI, kg/m ²	23.3±4.5	23±2.9	22.5±4.1	0.56
hiatal hernia, n(%)	5(18.5%)	7(28%)	6(20.1%)	0.70
global symptom severity, (0-10)	6.2±2.3	7±2.4	7.1±2	0.17
Reflux severity score (1-3)	2±0.8	2.3±0.6	2.2±0.7	0.27
%Acid exposure time	0.7(0.2-2.4)	0.9(0.45-3)	0.4(1-1.4)	0.18
Positive pH monitoring, n(%)	3(11.1%)	2(8%)	2(6.9%)	0.81
Total number of reflux (times/24 hours)	32(19-42)	31(18.5-50)	21(12.5-41.5)	0.47
Postprandial refluxes (times/2 hours)				
Morning	3(2-6)	5(2-8)	2(1-5) ^B	0.17
Lunch	5(1-8)	5(4-8)	4(1-7)	0.16
Dinner	5(2-8)	6(5-11)	6(2-9) ^B	0.26
Total SGB (with and without following refluxes) (times/24 hours)	3(1-7)*, **	14(8-18)*	7(2-17)**	0.001
High SGB frequency (>13 times/24 hours), n(%)	0(0%)*, **	13(52%)*	11(37.9%)**	<0.001
Total SGB induced refluxes (times/24 hours)	2(0-3)	3(1-5)	3(1-7)	0.18
Postprandial SGB induced reflux (times/2 hours)				
Morning	0(0-0)	0(0-1)	0(0-1)	0.33
Lunch	0(0-1)	0(0-1)	0(0-1)	0.58
Dinner	0(0-1)	0(0-1)	0(0-2)	0.41

^B p<0.05 post breakfast vs post dinner ,

*p<0.05 B-/D- vs B+/D-, **p<0.05 B-/D- vs B+/D+,

Data expresses as mean±SD or median (interquartile range), p-value across groups were calculated by KRUSKAL WALLIS test

PP-0346 Clinical profile and outcome of colonoscopy in elderly patients: Experience of tertiary care hospitals in Karachi, Pakistan

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Background and Aims: To determine the clinical profile and outcomes of colonoscopy in patients aged ≥ 50 years presented in tertiary care hospitals, Karachi, Pakistan. **Methods:** It was a retrospective cohort study and we enrolled all patients of aged ≥ 50 years who had colonoscopy from July 2012 to August 2020 at the department of Gastroenterology of Jinnah Postgraduate Medical Center and National Medical Center, Karachi. Patients with incomplete records were excluded from the study. **Results:** A total number of 2299 patients were enrolled in the study, in which 1218 (53%) were male and 1081 (47%) were female. Mean age was 63. **Conclusion:** In our population, the most common finding in patients aged ≥ 50 who underwent colonoscopy was internal haemorrhoids followed by polyps, diverticulosis and CRC. The percentage of CRC in our population was found to be 6.5% which is increased from the previous studies.

Clinical profile and outcome of colonoscopy in elderly patients: Experience of tertiary care hospitals in Karachi, Pakistan
Haris Ahmed¹, Nazish Butt¹, Haris Altaf¹, Amanullah Abbasi², Lubna Kamani²

Colonic mass in different age groups N=148

Age group	Frequency	Percentage %
50-60	63	42.6
61-70	46	31.1
>70	39	26.3

Table-01, Colonic mass in different age groups.

PP-0347 Overview on the usage of biologics in gastroenterology unit of hospital sultanah aminah Johor Bahru

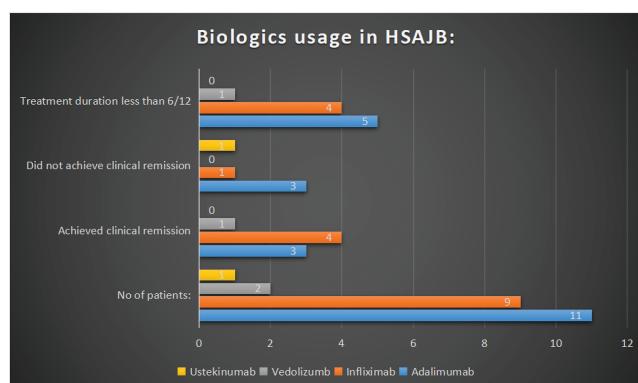
Authors: BALAKRISHNAN ASHA GAYATHERI, MS FIRDAUS

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Background and Aim: Biologic therapies are treatment for people with moderate to severe Crohn. **Methods:** This is a retrospective analysis to determine the number and type of biologics used for the year 2020 till April 2021. Data were collected from patient. **Results:** A total of 24 patients received biologics. 9 patients received infliximab (37.5%). 11 patients received adalimumab (45.8%). 1 received ustekinumab (4.16%) and 2 received vedolizumab (8.33%). 8 of the patients on biologics (33.3%) achieved and attained clinical and endoscopic remission. 10 of the patients (41.6%) just started on biologics (treatment duration less than 6 months). 5 patients (20.8%) did not achieve remission. 2 patients (8.33%) will be switching to a different class of biologics. 1 patient (4.1%) required an increase dosage while another had been referred to the surgical team. 1 patient developed tuberculosis as a side effect and treatment had to be put on halt. All patients were negative for hepatitis B and C. 9 of the patients (37.5%) are of Indian and Malay ethnicity. 5 of the patients (20.8%) are of Chinese

ethnicity. 8 of the patients (33.3%) are females and 16 of the patients (66.6%) are male. As for the distribution of age 10 patients (41.6%) are between the age 15 to 24 years. 5 (20.8%) are aged with 25–34 years and 9 (37.5%) are aged with 35–50 years. 2 of the patients (8.3%) had an indeterminate Tb quantiferon but a subsequent MTB gene expert was negative. 19 of the patients (79%) were under the hospital allocation, 5 of the patients (20.8%) received sponsorship. **Conclusion:** Initially, biologics were prescribed much later in the course of the disease, but this paradigm has changed with the increasing availability of evidence that suggest early use of biological agents. Also, the focus of the treatment has shifted from mere supportive or symptomatic to more therapeutic and curative. The use of biologics is integral and imperative for moderate to severe IBD. Needless to say, the cost of biologics is definitely a challenging aspect in Malaysia

Keywords: IBD, ulcerative disease, Chron's disease, biologics, usage



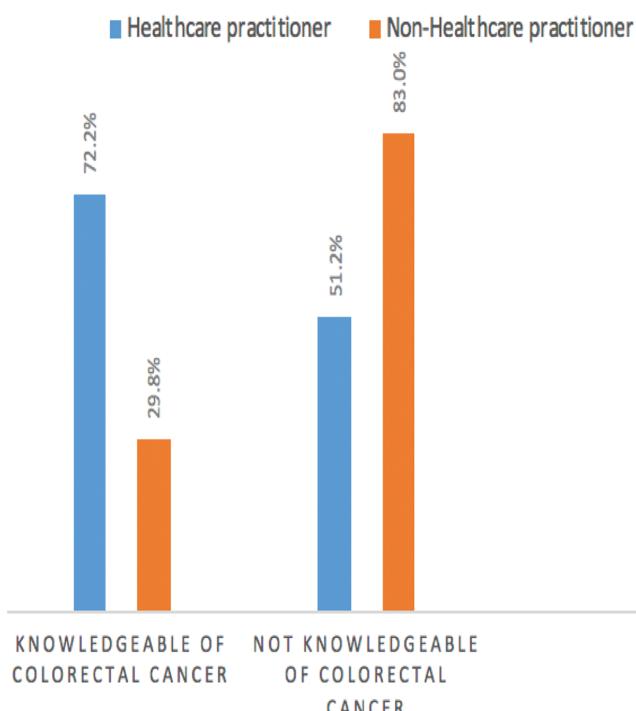
PP-0348 Awareness of CRC among individuals attending a tertiary oncology center in the western region of Kingdom of Saudi Arabia

Authors: YASER MEERALAM¹, ADANAN ALZANBAGI¹, ABDULAZIZ TASHKANDI¹, EMAD TASHKANDI², ABDULWAHAB NEYAZI¹, ABDULLAH AL MOSHADAQ¹, MOHAMED HEFNY¹, HESHAM AL HALWAGY¹, MOHAMMED SHARIFF¹, SAAD ZAHRANI¹

Affiliations: ¹Digestive and Liver Disease and Advanced Endoscopy, King Abdullah Medical City, ²Department of Medicine, College of Medicine, Umm Al-Qura University, Makkah, Saudi Arabia

Background and Aim: Colorectal cancer (CRC) is the third most common cancer in the world. The Kingdom of Saudi Arabia (KSA) is a low-risk country for CRC; however, the incidence of CRC is increasing and ranks first among men and second among women. **Methods:** A cross-sectional questionnaire based observational study. In a face-to-face interview, consenting individuals filled in multiple-choice questions including demographics and level of education. **Results:** A total of 358 participants completed the survey. 59% of respondents were postgraduates with 51% females. Majority (53%) were not aware of the screening age with more than one-third believing its done at start of symptoms. The awareness of risk factors was low with only 18% believing family history and young age at CRC were a risk. 47% were unaware of the symptoms of CRC. 86% believed that CRC could be cured and 26% believed incidence of CRC was high. Knowledge of colorectal cancer was significantly higher among male and healthcare practitioner. We did not find age to be significant predictor for knowledge related to colorectal cancer. **Conclusion:** In

RELATION OF PROFESSION TO KNOWLEDGE



this cohort, the awareness of CRC was low despite high level of education with inaccurate knowledge about symptoms, risk factors and screening. The study is limited due to the sample size and selected population

Keywords: colorectal, cancer, survey, awareness

PP-0349 Profiling of inflammatory cytokines in patients with caustic gastrointestinal tract injury

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Background and Aim: Study of inflammatory cytokines in patients with caustic substances injury of gastrointestinal tract is sketchy. **Methods:** This prospective study enrolled 22 patients admitted to Chang Gung Memorial Hospital between March and October 2018. All patients underwent esophagogastroduodenoscopy in 24 h. Mucosal damages were evaluated according to Zagar's modified endoscopic classification scheme. Patients were categorized into two subgroups, as mild ($<2b$, $n = 11$) or severe ($\geq 2b$, $n = 11$) group. **Results:** The neutrophil count was higher in severe than mild group ($P = 0.032$). Patients in mild and severe groups exhibited significantly higher circulating inflammatory cytokines compared with those of healthy control, including interleukin 2, interleukin 5, interleukin 8, interleukin 9, interleukin 12, interleukin 13, interferon-gamma inducible protein-10, macrophage inflammatory protein-1 beta, regulated upon activation, normal T cell expressed and presumably secreted and tumor necrosis factor-alpha. Furthermore, the levels of interleukin 2 and tumor necrosis factor-alpha were significantly higher in patients with severe group than mild group. Although there was no difference in cumulative survival between both groups ($P = 0.147$), the severe group received more operations ($P = 0.035$) and suffered more gastrointestinal complications ($P = 0.035$) than mild group. **Conclusion:** Caustic substance ingestion produces mucosal damages and leads to excessive levels of neutrophils and inflammatory cytokines in peripheral blood.

PP-0350 A regional survey awareness of inflammatory bowel disease in the western region of Kingdom of Saudi Arabia

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Affiliations: ¹Digestive and Liver and Advance Endoscopy Center, King Abdullah Medical City, Makkah, ²Department of Medicine, Medical College, King Abdulaziz University, Jeddah, Saudi Arabia

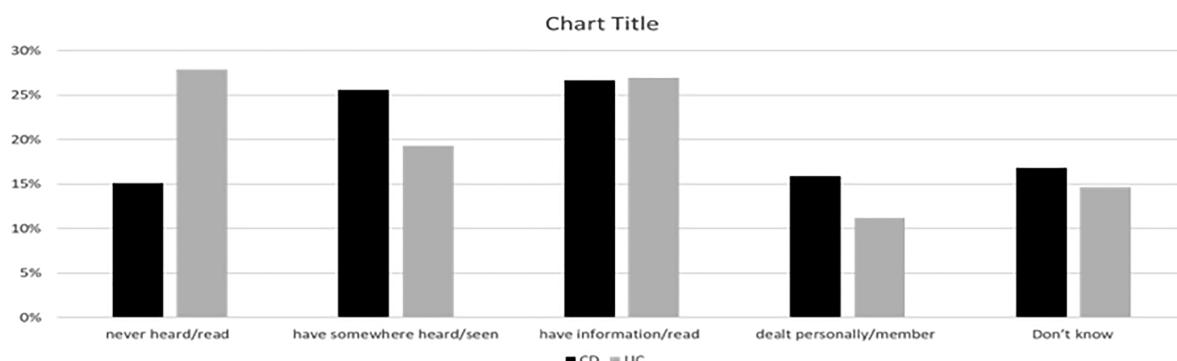
Background and Aim: Inflammatory bowel disease (IBD) is a chronic disease broadly classified into Crohn. **Methods:** A questionnaire developed based on previous study, translated into Arabic according to WHO criteria and reviewed by IBD experts was administered to the public aged above 16, through awareness programs, hospitals, community places and internet-based survey. **Results:** 640 participants completed the questionnaire with 65% having a qualification of bachelors and above. 43% and 32% had never heard or didn. **Conclusion:** Despite high level of education in our cohort, more than one third was lacking in IBD knowledge. There is a need to increase public awareness of IBD, which may help in early referrals and better outcomes

Keywords: awareness, questionnaire, inflammatory bowel disease, lack of survey

PP-0351 The etiology of upper gastrointestinal bleeding in patients presenting to a tertiary care hospital, Karachi, Pakistan

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Affiliation: Jinnah Post graduate Medical Centre (JPMC), Karachi, Pakistan

Background and Aim: To determine the frequency and etiology of upper gastrointestinal bleeding (UGIB) in patients presenting to a tertiary care hospital, Karachi. **Methods:** Study design: Prospective, observational. Location: Gastroenterology Department, Jinnah Post-graduate Medical Center, Karachi, Pakistan. Duration: 1st October 2019 to 30th September 2020. All patients aged 18 years or above, of either gender who presented to us with complaints of hematemesis, melena, or hematocchezia were included in this study. All patients underwent esophagogastroduodenoscopy to determine the etiology of UGIB after written informed consent. **Results:** A total of 536 patients were enrolled in the study, 311 (58%) were male and 225 (42%) were female. The mean age was 49 ± 13.6 years. Hematemesis 506 (94.4%) was the most frequent presenting symptom. The mean hospital stay was 2 ± 0.7 days. Among 536, 320 (59.7%) patients had Hepatitis C, 61 (11.4%) had Hepatitis B, 48 (9%) had diabetes, 33 (6.2%) had hypertension and 14 (2.6%) had IHD. Variceal bleeding 388 (71%) was seen as the main reason for UGIB. A total of 38 (7.1%) patients became died within 30 days of UGIB after the intervention. Among death 34 (24.4%) patients were aged >60 . **Conclusion:** Variceal bleeding was the most common cause of UGIB among our population. Mortality is greater in the elderly population with co-morbid as compared to the young population.



The Etiology Of Upper Gastrointestinal Bleeding In Patients Presenting to a Tertiary Care Hospital, Karachi, Pakistan.			
Syed Shayan Ali ¹ , Nazish Butt ¹ , Hafiz Haris ¹ .			
Endoscopic findings (N=536)			
		Frequency	Percentage (%)
Esophageal varices	Small	53	9.7
	Large	322	59.2
Gastric varices	OGV-I	5	0.9
	OGV-II	9	1.7
	IGV-I	32	5.9
	IGV-II	1	0.2
Peptic ulcer	Forest class Ib	1	0.2
	Forest class II-a	4	0.7
	Forest class II-b	2	0.4
	Forest class III	67	12.3
Mass	Esophageal	5	1
	Gastric	5	1
	Duodenal	5	1
Polyp	Gastric	3	0.6
	Duodenal	2	0.4
Esophagitis	LA-A	6	1.1
	LA-B	6	1.1
	LA-C	10	1.8
	LA-D	3	0.6

So it is necessary to screen every chronic liver disease patient for upper GI endoscopy to decrease the mortality and burden of hospitalization

Keywords: upper gastrointestinal bleeding, esophagogastric varices, peptic ulcer disease, chronic hepatitis C infection, chronic hepatitis B infection

PP-0352 Abdominal tuberculosis: Diagnosis and antimicrobial susceptibility of mycobacterium tuberculosis in a tertiary care hospital

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Affiliations: ¹Department of Gastroenterology, Ibn Sina Medical College, ⁴NTRL, NIDCH, Mohakhali, Dhaka, ²Department of Gastroenterology, Dhaka Medical College, ³Sheikh Russell gastroliver institute & hospital, ⁵Department of Gastroenterology, Cumilla Medical College, Bangladesh

Background and Aim: To determine the yield of various diagnostic modalities and antimicrobial susceptibility in abdominal tuberculosis patients. **Methods:** Cross sectional observational study was employed among 73 adult patients with abdominal TB (based on positive AFB culture, Gene Xpert, histopathology, ascitic fluid ADA and response to anti TB trial) met selection criteria, attended in GHPD of DMCH from May 2016 to April 2018.

Demographic profile, clinical features, family and past history of TB, laboratory & MT test, chest and abdominal imaging results, histopathology, Gene Xpert, acid fast bacilli (AFB) culture (MGIT 960) and DST reports, ascitic fluid analysis including ADA, findings of UGIT endoscopy, colonoscopy, laparotomy, abdominal site involved (intestinal, peritoneal and nodal) were collected by structured questionnaire. **Results:** Mean age was 33.90 ± 15.14 years with a range of 18–70 years. Frequent symptoms were weight loss (96.9%), abdominal pain (75%) and fever (75%). Frequent signs were anaemia (34.4%), ascites (27.9%). 8.21% patients had concomitant active PTB. Diagnostic yield were 59.6%, 46.3%, 13.7% and 94.7% respectively in histopathology, Gene Xpert, AFB culture and ADA in ascitic fluid. Basis of diagnosis were: histopathology in 46.3%, Gene Xpert in 26.02%, Positive AFB on culture in 4.7%, ADA value in ascitic fluid in 24.6% and good clinical response to therapeutic trial of anti-TB in 15.06% patients. Predominant site of involvement was intestinal in 64.3%, peritoneal in 24.6%, nodal in 9.5% and splenic abcess in 1.36% patients. Drug sensitivity pattern was analyzed in all three culture positive patients; resistance was detected in one (3.12%) of all patients and 33.33% of the patients in whom sensitivity was done) which showed multidrug resistance (MDR TB). **Conclusion:** The study result highlighted diagnostic yield of various investigation modalities including newer modalities (Gene Xpert, culture sensitivity in Bactec MGIT 960) and basis of diagnosis in abdominal TB. This study also determined the MTB culture positivity rate from tissue biopsies and demonstrated drug-resistant MTB in culture confirmed abdominal TB.

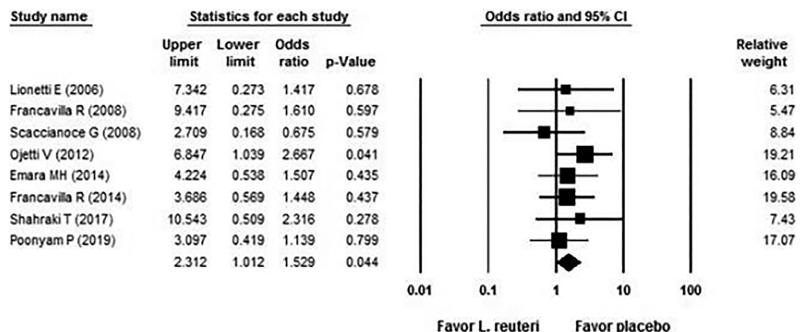
Keywords: tuberculosis, Gene Xpert, Bactec MGIT 960, Mantoux skin test

PP-0353 Comparative effectiveness of *Lactobacillus reuteri* supplementation in eradicating *Helicobacter pylori* infection: A meta-analysis of randomized controlled trials

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Background and Aim: *Helicobacter pylori* (*H. pylori*) infection is a worldwide disease causing many disease. The rate of *H. pylori* eradication therapy declined in recent decades owing to the escalating antibiotic resistance. Thus, it is needed to apply new agents to improve the efficacy of *H. pylori* eradication. *Lactobacillus reuteri* (*L. reuteri*) have been demonstrated to reduce *H. pylori* bacterial load and suppress the binding of *H. pylori* to gastric epithelialium. The aim of our research is to explore the effectiveness of *L. reuteri* supplementation for helping *H. pylori* eradication. **Methods:** A systematic search of studies on *L. reuteri* for combination in *H. pylori*



eradication was conducted up to December 2020. Our investigations were limited to randomized controlled trials (RCTs). The odds ratio of *H. pylori* eradication rate of *L. reuteri* supplementation versus placebo was treated as the primary outcome, whereas the standardized mean difference (SMD) of gastrointestinal symptom rating scale (GSRS) of *L. reuteri* supplementation versus placebo after the end of *H. pylori* eradication comprised the secondary outcome. **Results:** Among the meta-analysis included eight RCTs comprising 510 participants in total. The pooled odds ratio of *H. pylori* eradication rate in the *L. reuteri* supplementation arm compared with the placebo arm was 1.53 (Figure 1). The quantitative analysis showed a lower GSRS of *L. reuteri* supplementation versus placebo after the end of *H. pylori* eradication (SMD: -0.83; 95% CI: -1.15 to -0.51). **Conclusion:** Lactobacillus reuteri supplementation significantly give a rise to the improvement of *H. pylori* eradication therapy and reduce the incidence of gastrointestinal symptoms

Keywords: *Helicobacter pylori*, *Lactobacillus reuteri*, *H. pylori* eradication

PP-0354 Duodenal papilla morphology and ERCP cannulation difficulties, failure and complications: A cross-sectional study

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Affiliation: ¹Section of Gastroenterology and Digestive Endoscopy, Department of Internal Medicine, ²Department of Internal Medicine, ³Medical Directorate Office, Manila Doctors Hospital, Manila, National Capital Region, Philippines

Background and Aim: Different major duodenal papilla morphologies may pose various challenges in cannulation. This study aims to determine the relationship between papilla morphologies and cannulation difficulties, failure, and complications. **Methods:** This is a retrospective cross-sectional study of 347 ERCPs done at Manila Doctors Hospital from January 2017 to December 2019 on na **Results:** Among oral protrusions, small protrusion was the most difficult to cannulate (OR 1.5517, $p = 0.072$), though not significant, followed by large protrusion (OR 1.1769, $p = 0.638$) then regular protrusion. Small (OR 2.3301, $p = 0.215$) and large protrusions (OR 2.3415, $p = 0.335$) also had more failed cannulations than regular protrusions. Among papilla patterns, isolated pattern had the highest odds for difficult cannulation (OR 3.6818, $p = 0.290$), but was not significant, probably due to the low occurrence (3 patients). Unstructured pattern was the second most difficult to cannulate with an OR 2.2741 and significant $p = 0.020$, followed by gyrus, longitudinal, and annular patterns. The unstructured pattern also had the most failed cannulation (OR 4.2000, $p = 0.055$) followed by longitudinal (OR 2.8000, $p = 0.229$), gyrus and annular patterns. Isolated pattern had no failures out of 3 cannulations. Complications developed in only 12 patients with 7 post-ERCP pancreatitis (2.86%), 1 post-sphincterotomy bleeding (0.41%), 1 cholangitis (0.41%) and 3 mortalities (1.22%) (1 myocardial infarction 2 days post-ERCP and 2 septic shocks after 1–2 days despite successful ERCP drainage and antibiotics).

Conclusion: Among oral protrusions, small protrusion appears to have the highest odds for difficult and failed cannulation. Among papilla patterns, isolated and unstructured patterns had the highest odds for difficult cannulation and unstructured pattern had highest risk for failed cannulation.

Keywords: ERCP, papilla morphology, cannulation success

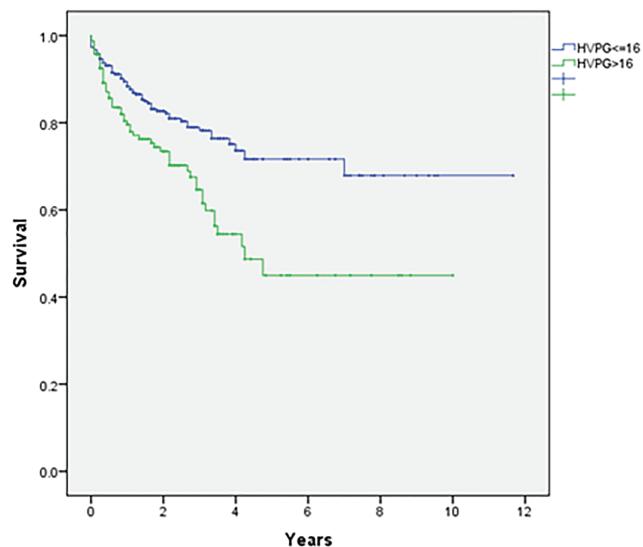
PP-0355 A hepatic venous pressure gradient exceeding 16 mmHg is associated with increased mortality in cirrhotics with portal hypertension

Authors: JPE CHANG¹, CKH CHUA², AHK THIO², QK TIOH², SN NERUKAR², JCR LIM¹

Affiliations: ¹Department of Gastroenterology & Hepatology, Singapore General Hospital, ²Yong Loo Lin School of Medicine, National University of Singapore, Singapore

Background and Aim: Hepatic venous pressure gradient(HVPG) measurement is recommended for diagnosis, risk-stratification, and prognostication of patients with portal hypertension (PH) in centres with adequate expertise. HVPG > 16 mmHg has been suggested to indicate an increased risk of mortality. The aim of our study was to validate if HVPG > 16 mmHg is associated with increased risk of death in cirrhotics with PH. **Methods:** We conducted a retrospective study of patients who underwent at least one HVPG in our centre from 2007–2021 for diagnosis, optimization of medical therapy or prognostication of PH. Subjects were divided into those with a baseline HVPG ≤ 16 mmHg or HVPG > 16 mmHg. The primary outcome was death from any cause. **Results:** The study included 527 subjects with mean age of 59.3 ± 12.1 years and 58.4% males. Cirrhosis aetiology included non-alcoholic steatohepatitis (25.0%), chronic hepatitis B (15.2%), chronic hepatitis C (6.8%), alcohol (13.3%) and cryptogenic (13.1%). Severity of cirrhosis was Child–Pugh Class A (44.2%), B (39.3%), C (5.7%). Mean HVPG was 13.8 ± 6.6 mmHg. 166 (31.5%) subjects had baseline HVPG > 16 mmHg. Over a mean follow-up period of 26.7 ± 23.4 months, 127 (24.1%) subjects died. Occurrence of death was higher in subjects with baseline HVPG > 16 mmHg compared to HVPG ≤ 16 mmHg, (32.7% vs 19.5%, $p = 0.001$ by chi-square analysis). Mean survival was poorer in those with HVPG > 16 mmHg (5.7 ± 0.5 vs 8.7 ± 0.4 years, $p < 0.001$ by Log rank comparison). **Conclusion:** Baseline HVPG > 16 mmHg is associated with increased risk of death in cirrhotic patients with PH. Assessment of HVPG in cirrhotics is clinically relevant to identify those with higher mortality risk and guide therapeutic decisions

Keywords: HVPG, portal hypertension, cirrhosis



PP-0356 The efficacy of Lactobacillus acidophilus and rhamnosus in the reduction of helicobacter pylori bacterial load and modification of gut microbiota

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Background and Aim: Probiotics use may alter the gut microbiota and may reduce antibiotics related dysbiosis after *H. pylori* eradication. However, whether probiotic is effective in the reduction of bacterial load of *H. pylori* and in the modification of gut microbiota remains unknown. We aimed to assess the efficacy of *Lactobacillus acidophilus* and *Lactobacillus rhamnosus* in the reduction of bacterial load of *H. pylori* and in the modification of gut microbiota. **Methods:** In this double-blind, randomized, placebo-controlled trial, we recruited 40 adult subjects with moderate to high bacterial load of *H. pylori* defined as a delta over baseline (DOB) value of 13C-urea breath test (13C-UBT) of 10 or greater. Eligible subjects were randomized in a 1:1 ratio to receive either probiotic containing *Lactobacillus acidophilus* and *rhamnosus* or placebo twice daily for 4 weeks. 13C-UBT was measured before treatment and weekly during treatment until 2 weeks after the end of treatment. Amplification of the V3 and V4 hypervariable regions of the 16S rRNA was done for microbiota study. This trial is registered with ClinicalTrials.gov, NCT02725138. **Results:** A total of 40 subjects were randomized to receive probiotic or placebo. DOB value was significantly lower in the probiotic group than in placebo group at the fourth week of treatment (DOB 26.0 vs 18.5, $p = 0.045$). DOB value was significantly reduced compared to baseline in the probiotic group (18.5 vs 26.7, $p = 0.001$), but not in the placebo group (26.0 vs 25.0, $p = 0.648$). However, there was no significant difference of DOB values between two groups 1 or 2 weeks later after treatment. There were no significant changes in α -diversity and β -diversity at week 4 compared to baseline in the probiotic group ($p = 0.77$ vs 0.91) and the placebo group ($p = 0.26$ vs 0.67). **Conclusion:** Although the use of *Lactobacillus acidophilus* and *rhamnosus* may reduce the bacterial load of *H. pylori*, there were no significant changes in the composition of gut microbiota.

Keywords: probiotic, *H. pylori*, gut microbiota, bacterial load

PP-0357 A review of optimal polyp description in colonoscopy reports from a single tertiary centre: An important quality indicator

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Background and Aim: Standardized documentation of polyps should include at least seven items: 1) location, 2) size, 3) morphology, 4) method of removal, 5) completeness of removal, 6) retrieval of specimen and 7) whether the specimen was sent to the pathologist. We sought to assess the completeness of polyp description in the colonoscopy reports in University Malaya Medical Centre (UMMC) with the aim of measuring our current performance against recommended guidelines. **Methods:** All colonoscopy reports in UMMC from August to October 2019 were reviewed retrospectively. All patients who underwent colonoscopy and had one or more polyps were identified. The colonoscopy report was scrutinized for completeness of polyp description. Data were analysed using Statistical Package for Social Sciences version 21 (SPSS Statistics, IBM, Chicago, IL). **Results:** A total of 522 colonoscopies were performed in UMMC from August to October 2019. There were 154 patients with polyps detected, giving a polyp detection rate of 29.5%. The mean age of the 154 patients with polyps was 68 years. The gender distribution was 54% males and 46% females. The ethnicity distribution was 60% Chinese, 22% Malay, 17% Indian and 1% others. The completeness of polyp description for the 154 patients is summarised in Table 1. **Conclusion:** Documentation of >90% was achieved for four out of the seven polyp descriptors. We have identified areas for improvement in our practice with the description on completeness of polyp removal being a cause for concern as this could have a direct impact on the development of interval cancer.

Keywords: colonoscopy, colorectal polyp, quality assurance

Table 1. Documentation of polyp descriptors in percentages.

Polyp descriptors	%
Location	99.3
Size	70.1
Morphology	84.4
Method of removal/biopsy	91.5
Polypectomy	80.5
Biopsy	11
None	8.5
Polypectomy	
Completeness of removal	42.7
Retrieval	93.5
Sent to pathology	95

PP-0358 Case series: Gastric antral vascular ectasia (GAVE) in a tertiary national hospital in Jakarta, Indonesia

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Background and Aim: Gastric antral vascular ectasia (GAVE) is an uncommon finding in esophagogastroduodenoscopy (EGD) procedure and also uncommon cause of occult gastrointestinal (GI) bleeding. Portal hypertensive gastropathy (PHG) and GAVE are characterised entities that can be associated with gastrointestinal blood loss in patients with and without cirrhosis. GAVE syndrome can be difficult to differentiate from PHG. This distinction is paramount in that PHG generally responds to a reduction in portal pressures whereas those with GAVE syndrome and coexisting portal hypertension generally do not respond to such therapy. **Methods:** We performed this retrospective review at Pusat Endoskopi Saluran Cerna Rumah Sakit Cipto Mangunkusumo Jakarta. We included all patients who had undergone EGD between 2007 and 2021. GAVE was diagnosed based on a typical endoscopic appearance. GAVE syndrome can be distinguished from PHG in that GAVE generally has more antral involvement and the classic features of GAVE syndrome including gastric ectasia, gastric dilation. Portal hypertension, liver disease and cirrhosis were diagnosed from endoscopic finding and history. Chronic kidney disease was based on laboratory finding and history. GAVE was considered symptomatic if it required treatment. All patients were treated for upper gastrointestinal bleeding (UGIB). **Results:** We included 6 patients in the study. The median age was 65.5 (range 50–74) years. Female patients were 67%. 34% diabetic and 50% hypertensive patients. 50% of patients had PHG. Cirrhotic patients were 67% and esophageal varices were 17%. Chronic kidney disease patients were 34%. GAVE was more frequently observed among patients with cirrhosis. **Conclusion:** Cirrhosis is a major risk factor for GAVE and asymptomatic GAVE.

Keywords: cirrhosis, GAVE, PHG

PP-0359 The prevalence of *Helicobacter pylori* infection in Taiwan: An updated survey from 2019 to 2020

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Background and Aim: *Helicobacter pylori* (*H. pylori*) infection is an important predisposing factor for gastric cancer and peptic ulcer. After improved public sanitation and national policy of *H. pylori* eradication, some relevant studies showed the prevalence of *H. pylori* in Taiwan seemed decreasing. However, the updated nationwide prevalence of *H. pylori* infection in Taiwan is lacking. Therefore, we aimed to assess the updated prevalence of *H. pylori* infection in Taiwan and explore possible risk factors for *H. pylori* infection. **Methods:** We recruited healthy volunteers from all of Taiwan who never received *H. pylori* eradication. The eligible adult participants received ¹³C-UBT (urea breath test), *H. pylori* stool antigen (HpSA) and serology *H. pylori* antibody (HpAb) for screening of *H. pylori* infection to find the prevalence of *H. pylori* infection in Taiwan. We also recruited children and adolescent who received ¹³C-UBT and HpSA for screening of *H. pylori* infection. **Results:** Between January 1, 2019, and December 20, 2019, a total of 1388 asymptomatic subjects were enrolled for the prevalence study, of which 291 were adolescents/children, and 1388 were adults. Using the diagnostic tool with ¹³C-UBT, we found that 25.4% (334/1317) of participants were *H. pylori*-positive subjects, including 29.5% (304/1031) for adults and 10.5% (30/286) for adolescents/children. The age-standardized prevalence of *H. pylori* infection was 30.7% in asymptomatic adults after adjustment of the population structure in Taiwan. The prevalence rates of *H. pylori* infection were 26.1%, 23.5%, 23.5% and 44.1% in Northern, Central, Southern and Eastern Taiwan, respectively. In multi-variate logistic regression analysis, male sex, elder age, live in the Eastern Taiwan, and more siblings were significantly associated with increased risk of *H. pylori* infection. **Conclusion:** This present study showed that the prevalence of *H. pylori* infection has decreased in Taiwan. The prevalence rates of *H. pylori* infection were different in different districts of Taiwan. It is advisable to develop screening and treatment protocol in various regions according to local conditions.

Keywords: *H. pylori*, prevalence , Taiwan

PP-0360 Comparison of genotypic resistance guided versus susceptibility testing guided therapy for the third-line eradication of *H. pylori*: A multicenter randomized trial

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Background and Aim: Treatment of refractory *Helicobacter pylori* (*H. pylori*) infection remains a challenge in clinical practice. However, traditional susceptibility testing is time consuming, inconvenient, costly, and the availability of this test is low. Recently, point mutations at 23S rRNA and gyrase A have been reported to be associated with clarithromycin and levofloxacin resistance. However, whether genotypic resistance guided therapy is more effective or non-inferior to susceptibility testing guided therapy remains unknown. Therefore, we aimed to compare the efficacy of genotypic resistance guided versus susceptibility testing guided therapy in the third line treatment for refractory *H. pylori* infection. We hypothesized that genotypic resistance guided sequential therapy is non-inferior to empiric therapy in the third line treatment for refractory *H. pylori* infection. **Methods:** This multicenter, open label, parallel group, randomized trial was conducted since 2017.07.20. Adult (≥ 20 years old) patients who failed from at least two eradication therapies for *H. pylori* infection will be enrolled. Genotypic and phenotypic resistances were determined in patients who failed from at least two eradication therapies by polymerase-chain-reaction with direct sequencing and E-test and agar dilution test, respectively. Eligible patients were randomized into either one of the treatment groups (A) genotypic resistance guided therapy; or (B) susceptibility testing guided therapy. Eradication status was determined by 13C-urea breath test at least 6 weeks after eradication therapy. The primary outcome was the eradication rate in the third line treatment (genotypic versus susceptibility testing guided therapy) according to intention-to-treat (ITT) analysis. The eradication rate according per protocol analysis and the adverse effects were the secondary outcomes. **Results:** We have recruited 320 patients (Figure 2). The demographic characteristics and prevalence of antibiotic resistance were not significantly different in the two treatment

groups (Table 1). The prevalence of amoxicillin, clarithromycin, levofloxacin, metronidazole, and tetracycline resistance were 16.2% (24/148), 94.6% (140/148), 75% (111/148), 67.6% (100/148), and 8.8% (13/148) in group A, respectively, and were 23.6% (35/148), 93.9% (139/148), 71.6% (105/148), 71.6% (106/148), and 10.8% (16/148) in group B, respectively. The eradication rates in group A and group B were 89.8% (141/157) and 88% (139/158) ($p=0.605$) in the ITT analysis, respectively, and were 90.4% (141/156) and 89.1% (139/156) ($p=0.709$) in the PP analysis, respectively. Genotypic resistance guided therapy is not inferior to MIC guided therapy (Figure 3). The frequency of adverse effects were 52.5% (83/158) and 56.5% (87/154) ($p=0.482$) in group A and group B, respectively. **Conclusion:** Genotypic resistance guided therapy is not inferior to susceptibility testing (phenotypic resistance) guided therapy in the third-line treatment for refractory *H. pylori* infection.

Keywords: *H. pylori*, refractory, resistance, genotypic, susceptibility testing

PP-0361 Metallic stent insertion for palliation of esophageal cancer: Single center experience from Saudi Arabia

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Background and Aim: Self-expandable metallic stents (SEMS) are increasingly used as a non-surgical alternative for palliation of advanced esophageal cancer (EC). However, there is scarcity of real-life experience on use of these stents exclusively in oesophageal cancer. The aim of this study is to evaluate the efficacy of SEMS in inoperable esophageal cancers in the western region of Saudi Arabia. **Methods:** A retrospective review of SEMS placed in a tertiary referral hospital for histological proven inoperable EC from 2016 till 2019. Demographics data, procedure success, complication, re-intervention and mortality were analyzed. **Results:** 48 SEMS were placed in 35 patients for palliation of dysphagia. Median age of patients was 68 years (range 31–95). 69% (24) patients have lower third of EC and rest have middle third. SEMS were placed successfully in all cases with symptomatic improvement. No major stent related complication seen. 28% (13) patients required re-intervention with additional SEMS placement, 9 of which were for tissue in growth and 4 for distal migration. Median survival was 114 days (range 30). **Conclusion:** SEMS is effective in palliating dysphagia in inoperable EC without major complications. Rates of tumor in-growth and migration were comparable to other studies. SEMS provides long-term palliation.

Keywords: esophagus, cancer, stent, SEMS, survival

PP-0362 A 10-year-old review of hepatic sarcoidosis in Malaysia: A monocentric observation

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Background and Aim: Sarcoidosis is a multisystem granulomatous disorder that commonly affects the lungs and rarely involves the liver. We aimed to describe the cases of hepatic sarcoidosis that were treated in University Malaya Medical Centre (UMMC) over the past 10 years. **Methods:** The electronic database of patients attending the gastroenterology clinic in UMMC from 2010 to 2020 was reviewed. Patients with biopsy proven hepatic sarcoidosis were identified, their medical records were examined, and the relevant information was extracted for statistical analysis. **Results:** There were seven patients with hepatic sarcoidosis identified. All patients were female and of Indian ethnicity. The median (IQR) age was 50 (41–58) years, and the median (IQR) duration of follow up was 6 (3–8) years. All patients presented with weight loss and had cholestatic liver injury on the serum biochemistry; liver biopsy showed presence of granulomatous inflammation in all. All but one patient was found to have lung involvement. All patients were given high-dose prednisolone post-diagnosis; four patients were treated with azathioprine; two patients with methotrexate; and two more received infliximab (Table 1). All patients did not have liver cirrhosis during diagnosis; however, 57% went on to develop liver cirrhosis despite treatment. One patient died from non-liver-related cause 3 years after diagnosis, while the rest were still alive. **Conclusion:** Hepatic sarcoidosis has a

Table 1. Summary of treatment and relevant outcomes of patients with hepatic sarcoidosis in UMMC from 2010 to 2020.

Case no.	Year	Age (years)	Pred	Aza	MTX	IFX	Cirrhosis	Remark
1	2011	47	✓	✓			✓	Myelotoxicity from aza
2	2011	50	✓	✓	✓	✓	✓	
3	2012	41	✓	✓	✓	✓	✓	
4	2013	57	✓				✓	TB in 2015 Died in 2016
5	2014	59	✓					
6	2017	29	✓	✓				
7	2019	58	✓	✓				Misdiagnosed as TB

Pred = prednisolone, aza = azathioprine, MTX = methotrexate, IFX = infliximab, TB = tuberculosis

predilection for female gender and Indian ethnicity in Malaysia with a high rate of progression to cirrhosis despite treatment.

Keywords: chronic liver disease, sarcoidosis

PP-0363 Patterns of liver injury among COVID-19 infected patients in East Avenue Medical Center

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Background and Aim: SARS-CoV-2 resulted in a pandemic leading to millions of deaths worldwide. Though studies are continuously published describing liver injury in COVID-19, local studies are lacking. We aimed to provide local data and validate relationship between severity of COVID-19 infection with alteration of liver biochemistries. Furthermore, we aimed to investigate if COVID-19 infection predisposes to drug-induced alterations of aminotransferases. **Methods:** In this retrospective cohort study, 322 admitted patients with suspected COVID-19 infection from March 2020 to August 2020 were included. Association between liver biochemistries with disease severity and clinical outcomes (intubation, ICU admission, and mortality), comparing COVID positive and negative cases, was studied. Changes in AST, ALT from baseline, and after administration of potentially hepatotoxic medications were analyzed. Correlation of liver biochemistries with inflammatory biomarkers (LDH, CRP) was also determined. **Results:** Comparing COVID positive and negative cases, parameters that were significantly different were baseline AST ($p = 0.002$), ALT ($p = 0.001$), and CRP ($p = 0.018$). Higher AST and ALT are significantly associated with disease severity (AST: $p = 0.027$, ALT: $p = 0.028$) and ICU admission (AST: $p = 0.001$, ALT: $p = 0.011$). Higher AST, ALT, and TBIL are significantly associated with intubation (AST: $p = 0.023$, ALT: $p = 0.048$, TBIL: $p = 0.035$) while AST and TBIL are significantly associated with mortality (AST: $p = 0.019$, TBIL: $p = 0.049$) (Table). There was no sufficient statistical evidence found to conclude that COVID-19 infection predisposes to drug-induced elevations of AST and ALT. Statistically significant positive correlations were observed between AST, ALT, TBIL, INR, and LDH (AST: $r = 0.574$, $p < 0.001$; ALT: $r = 0.498$, $p < 0.001$; TBIL: $r = 0.315$, $p = 0.001$; INR: $r = 0.219$, $p = 0.029$). Significant positive correlation also applies between AST, ALT, TBIL, and CRP (AST: $r = 0.427$, $p < 0.001$; ALT: $r = 0.348$, $p < 0.001$; TBIL: $r = 0.249$, $p = 0.012$). **Conclusion:** Hepatocellular type of liver injury is commonly observed in COVID-19 infection. Elevation of AST, ALT, and TBIL are associated with disease severity and poor clinical outcomes—serving as predictors of severity and prognosis.

Keywords: COVID-19, liver enzymes, liver injury

COVID	Critical Status			ICU Admission			Intubation			Mortality		
	-	+		-	+		-	+		-	+	
Laboratory Parameters	N=68	N=33	p-value	N=57	N=44	p-value	N=81	N=20	p-value	N=69	N=32	p-value
AST, U/L	70.8 ±66.1	102.5 ±116.1	0.027*	64.1 ±61.2	103.3 ±107.8	0.001*	70.3 ±62.1	125.2 ±143.3	0.023*	66.6 ±58.0	112.6 ±123.4	0.019*
ALT, U/L	43.3 ±33.5	67.3 ±56.5	0.028*	40.1 ±30.1	65.5 ±53.6	0.011*	46.2 ±36.5	71.3 ±62.3	0.048*	46.5 ±35.6	61.3 ±56.6	0.314
TBIL, µmol/L	15.7 ±24.1	15.7 ±10.9	0.194	16.1 ±26.3	15.2 ±9.7	0.064	15.4 ±22.5	17.3 ±10.7	0.035*	15.4 ±24	16.5 ±10.9	0.049*
Serum albumin, g/L	31.2 ±7.7	30.4 ±7.0	0.653	31.5 ±7.6	30.2 ±7.4	0.434	30.9 ±7.7	31.1 ±6.6	0.831	31.7 ±7.6	29.2 ±6.9	0.163
Prothrombin time, s	13.3 ±1.9	13.5 ±1.6	0.451	13.1 ±1.5	13.7 ±2.1	0.283	13.2 ±1.6	14.1 ±2.2	0.075	13.2 ±1.6	13.7 ±2.1	0.381
INR	1.1 ±0.2	1.1 ±0.1	0.390	1.1 ±0.1	1.1 ±0.2	0.311	1.1 ±0.1	1.2 ±0.2	0.041	1.1 ±0.1	1.1 ±0.2	0.306
Alkaline Phosphatase, U/L	122.4 ±57.1	128.7 ±77	0.720	123.2 ±59.2	126.1 ±70.2	0.784	124.4 ±65.6	124.6 ±58.2	0.808	127.7 ±66.3	117.6 ±58.8	0.441

PP-0364 Risk factors and clinical outcomes of post-gastrectomy sarcopenia newly developed after curative resection for gastric cancer

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Background and Aim: This study aimed to investigate the risk factors and clinical impact of newly developed sarcopenia after surgical resection on the prognosis of patients undergoing curative gastrectomy for gastric cancer (GC). **Methods:** The clinicopathological data of 573 consecutive patients with GC who underwent curative gastrectomy were reviewed. Their skeletal muscle mass and abdominal fat volume were measured using abdominal CT. **Results:** Forty-six of them (8.0%) were diagnosed with pre-operative sarcopenia. Among the 527 patients without sarcopenia, 57 (10.8%) were diagnosed with post-gastrectomy sarcopenia newly developed 1 year after curative gastrectomy. Female sex, weight loss, proximal location of the tumor, and differentiated tumor were significant risk factors of post-gastrectomy sarcopenia newly developed after curative gastrectomy. There was a significant difference in the 5-year overall survival among the preoperative sarcopenic, non-sarcopenic, and post-gastrectomy sarcopenic groups ($P = 0.017$). Especially, there was a significant difference between non-sarcopenic and post-gastrectomy sarcopenic groups ($P = 0.009$). However, there was no significant difference in the 5-year disease-free survival among the groups ($P = 0.49$). **Conclusion:** Since newly developed sarcopenia after surgical resection had an influence on the overall survival, patients with high sarcopenia risks after curative gastrectomy may require early nutritional support.

Keywords: gastric cancer, nutrition, sarcopenia, surgical resection

PP-0365 Correlational study between magnetic resonance enterography and clinical, biochemical, and double-balloon endoscopic findings in Crohn disease

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Background and Aim: Crohn disease (CD) is a chronic inflammatory condition of the small bowel with a diversity of intestinal manifestations. Global scores of activities based on symptoms, biochemical markers, and magnetic resonance enterography (MRE) have led to more objective diagnostic indices. **Methods:** A total of 80 patients with a known case of CD underwent clinical assessment using Harvey Bradshaw Index (HBI), double-balloon enteroscopy (DBE), and routine biochemical tests (C-reactive protein [CRP], fecal calprotectin [FCP]) performed as part of clinical care. DBE scoring was assessed using SES-CD, and cases sent to MRE in 6 to 12 months and the severity of disease were assessed using the Magnetic Resonance Index of Activity (MaRIA). Available data were collected, and statistical analyses were performed. **Results:** A significant moderate strong linear relationship was seen between MaRIA and SES-CD ($r = 0.63$). A strong linear relationship between MaRIA and FCP, HBI, and CRP ($r: 0.34–0.55$ with $P < 0.05$). The overall cost was reduced by half

Table 2: Correlation between MaRIA with HBI, CRP, FCP and SES-CD.

Parameters	Correlation coefficient	P-value
MaRIA and HBI	$r = 0.55$	$P < 0.001^*$
MaRIA and CRP	$r = 0.34$	$P = 0.008^*$
MaRIA and FCP	$r = 0.44$	$P = 0.001^*$
MaRIA and CRP , FCP	$r = 0.45$	$P < 0.001^*$
MaRIA and SES-CD	$r = 0.63$	$P < 0.001^*$

* $P \leq 0.05$ is significant

using HBI, FCP, CRP, and MRE without doing DBE investigation (USD 16 per MaRIA score) as compared to the alternative investigation with DBE (USD 32 per MaRIA score). **Conclusion:** MaRIA scores correlated well with the other parameters tested with significant P value within this study.

Keywords: Index of Activity, inflammatory bowel disease, MRI of small bowel

PP-0366 Inflammatory bowel disease associated advanced colorectal neoplasia in Malaysia: A multicentre retrospective review

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Background and Aim: Advanced colorectal neoplasia (aCRN) is an important complication of inflammatory bowel disease (IBD). We aimed to review and describe the occurrence of aCRN among patients with colonic IBD attending Universiti Malaya Medical Centre (UMMC) and Universiti Kebangsaan Malaysia Medical Centre (UKMMC). **Methods:** UMMC and UKMMC's IBD registry were retrospectively reviewed. All patients aged > 16 years with colonic IBD who had one or more repeat colonoscopies since the diagnosis of IBD were included and patients with aCRN were identified. Relevant demographic and clinical data were recorded and analysed using SPSS. **Results:** Out of 449 patients, 306 patients met the inclusion criteria. There were 55.9% males and 44.1% females. The ethnic distribution was 41.5% Malays, 32% Indians and 25.8% Chinese. The IBD distribution was 66% ulcerative colitis and 34% Crohn's disease. There were 12 cases (3.9%) of aCRN identified: five high-grade dysplasias and seven colorectal cancers. The clinical characteristics of the 12 cases were summarised in Table 1. The cumulative incidence of aCRN in this cohort of patients at 5, 10 and 20 years was 0.3%, 1.6% and 7.4%, respectively. **Conclusion:** In our cohort of colonic IBD patients, aCRN has a predilection for male gender, active disease and ulcerative colitis subtype. The cumulative incidence was only 0.3% at 5 years but increased by more than 20-fold to 7.4% at 20 years.

Keywords: advanced colorectal neoplasia, colorectal cancer, high-grade dysplasia, inflammatory bowel disease

Table 1. Summary of cases with IBD associated advanced colorectal neoplasia diagnosed in UMMC and UKMMC.

No.	Year of aCRN diag	Type of aCRN	Gender	Ethnicity	IBD type	Age, years	Age of IBD diag, years	Dur of dis, years	Dis status	Treatment	Outcome	Remark
1	1999	Adenoca	F	I	UC	63	40	23	Active	Surg	Dead	
2	2006	HGD	F	I	UC	49	23	26	Active	Surg	Alive	
3	2010	Adenoca/signet ring carcinoma	M	I	UC	53	41	12	Active	Surg	Dead	
4	2013	Mucinous/signet ring carcinoma	M	C	UC	45	38	7	Active	Surg	Alive	
5	2014	HGD	M	I	UC	74	50	24	Active	LTFU	Unknown	
6	2015	Adenoca	F	I	UC	56	36	20	Active	Surg	Alive	Previous total colectomy with ileorectal anastomosis
7	2016	Adenoca	M	C	UC	24	13	11	Active	Surg	Alive	Synchronous tumours, PSC & cholangioma
8	2017	Adenoca	M	M	UC	33	32	1	Active	LTFU	Unknown	
9	2017	HGD	M	M	UC	20	11	9	Active	Surg	Alive	
10	2018	HGD	M	M	CD	64	41	23	Active	Surg	Alive	Previous right hemicolectomy
11	2019	Adenoca	F	I	UC	59	48	11	Active	Surg	Alive	
12	2019	HGD	M	I	CD	39	23	16	Active	Surg	Alive	

aCRN = advanced colorectal neoplasia; diag = diagnosis; dur = duration; dis = disease; adenoca = adenocarcinoma ; HGD = high grade dysplasia; F = female; M = male; I = Indian; C= Chinese; M = Malay; surg = surgery; LTFU = loss to follow up; PSC = primary sclerosing cholangitis; cholangioma = cholangiocarcinoma.

PP-0367 Quality of life improvement and stool *Bifidobacterium* sp. enhancement in adults with inflammatory bowel disease treated by probiotic product: A systematic review and meta-analysis

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Background and Aim: Inflammatory bowel disease (IBD) is one of the most prevalence gastrointestinal disease which characterized by abdominal pain, change in bowel movement and habits. Patient with severe IBD symptoms has experience in decreased of quality of life. Probiotic strain such as *Lactobacillus* sp. and *Bifidobacterium* sp. has shown to be able to normalize bowel habits, balancing the probiotic bacterial population, and modulating neurobehavior. The aim of this study was to perform a systematic review and meta-analysis of probiotic intervention and its relevance to quality of life and total number of stool *Bifidobacterium* sp. level. **Methods:** A systematic review was performed by following PRISMA guideline. Literature search was conducted by using the PubMed database and several keyword compositions according to the Boolean operator. The article was comparing any probiotic intervention with placebo in IBD. Risk of bias assessment was done by ROBINS-I and ROB 2.0. The meta-analysis was performed by using Review Manager 5.4 software

Results: Three randomized controlled trial and one non-randomized controlled with 900 total number of participants were included as final inclusion study. The quality of life level in probiotic group has no significantly difference with placebo group after probiotic intervention (random effect, MD 5.10, 95% CI -6.89 **Conclusion:** The quality of life and stool *Bifidobacterium* sp. level did not statistically difference between probiotic and placebo group. Constipation is the most common

post-treatment symptom. The combination between probiotic and placebo can improve the clinical outcome of IBD patient

Keywords: *Bifidobacterium*, inflammatory bowel disease, quality of life, probiotic,

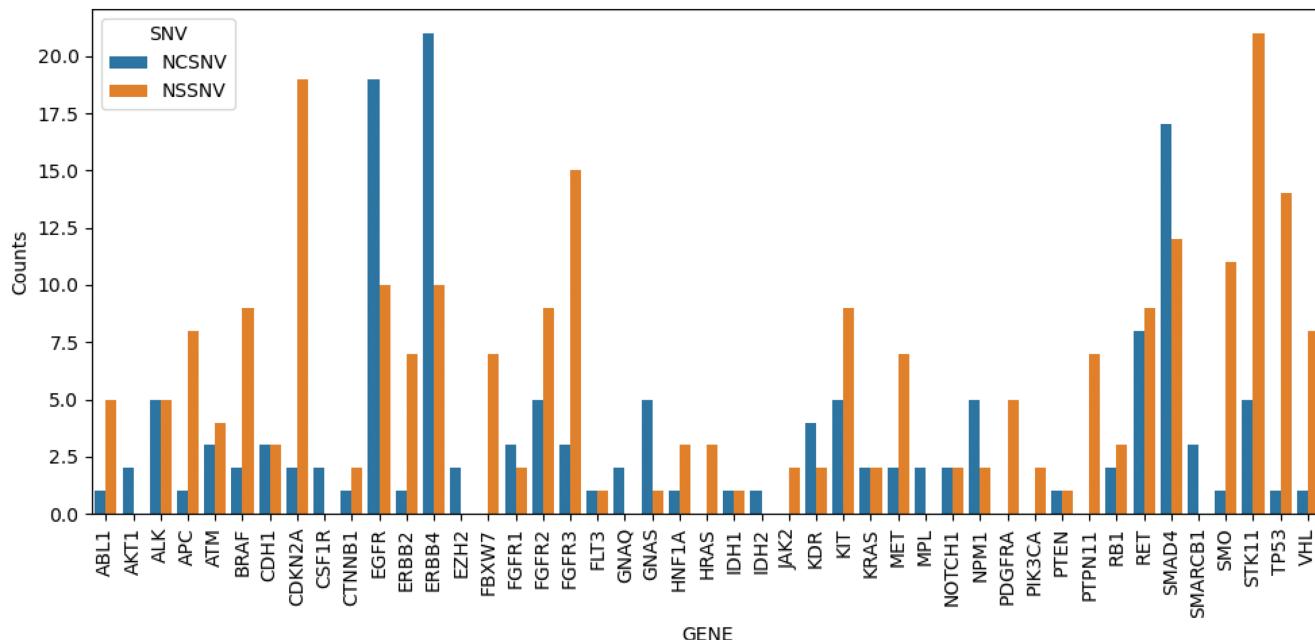
PP-0368 Genomic profiles of Indonesian colorectal cancer patients

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Background and Aim: Colorectal cancer (CRC) is one of the most commonly diagnosed cancers in the world. Genetic mutation plays an important part with CRC development. A previous study in Indonesia has indicated that genetic alteration among Indonesian CRC patients might be different with those widely known in the developed countries. This study aims to describe the genomic profiles of Indonesian CRC patients.

Methods: A total of 13 patients were recruited from May to July 2019 in this study. Tissue samples were obtained, and genomic DNA was extracted.



DNA sequencing was performed by AmpliSeq for Illumina Cancer HotSpot Panel v2 Next-generation sequencing (NGS). Genome Analysis Toolkit (GATK, v4) was used for the realignment around the variants discovered. **Results:** A total of 45 genes comprising 391 single nucleotide variants (SNVs) with depth > 10 were observed. The genes with most variants were ERBB4, EGFR, SMAD4 and STK11. Genes with most non-synonymous variants were STK11, CDKN2A, FGFR3, TP53 and SMAD4. While genes and SNVs that occurred in at least 90% of all samples consisted of a total of 43 genes comprising 286 variants. Genes with most non-synonymous SNVs were CDKN2A, STK11, TP53, FGFR3, SMO and EGFR. Of note, genes related to the chromosomal instability (CIN) pathway such as APC, KRAS, SMAD4 and TP53 also showed up in the analysis. **Conclusion:** Our finding showed that all the CRC patients in this study had genetic mutation of CIN pathway. This finding was different from previous results. Genetic mutation analysis of Indonesian CRC patients might be important for further targeted therapy and better clinical outcome in CRC.

Keywords: colorectal cancer, genetic mutation, Indonesian, next-generation sequencing

PP-0369 FAT score: A novel diagnostic score to differentiate non-alcoholic steatohepatitis (NASH) from simple steatosis

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Background and Aim: Liver biopsy is the Gold standard investigation to distinguish simple steatosis from NASH. We propose a new score which can bypass the need for liver biopsy. **Methods:** Cross-sectional study. All patients with liver biopsy proven NAFLD were taken up for the study. **Results:** Sixty-four patients were taken up for the study. Univariate analysis showed platelet count, ferritin and transaminase (ALT & AST) were predictors of NASH. AUROC of each components were plotted, and cut off was found out. This lead to proposal of a new score, FAT score (Table

1) to differentiate NASH from simple steatosis (F stands for Ferritin, A for AST & ALT and T for t in Platelet) with AUROC of 0.95. Each component carry a score of 0 or 1 and a score of more than or equal to three can predict NASH from non-NASH NAFLD with sensitivity of 76.5%, specificity of 100%, positive predictive value of 100% and negative predictive value of 78.9%. The score was validated in liver biopsy cohort of 84 patients and found out that, in validation cohort also, cut off of >3 had specificity of 100%. **Conclusion:** FAT score is a simple predictive model to differentiate NASH from non-NASH NAFLD or simple steatosis (cut off of more than or equal to 3) without liver biopsy with high sensitivity, specificity and accuracy. FAT score less than three rules out the need for biopsy. It can be used as a screening tool instead of biopsy.

Keywords: FAT score, novel diagnostic model

PP-0370 Robotic choledochal cyst excision with hepaticojejunostomy

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Background and Aim: Choledochal cyst (CDC) is an uncommon biliary disorder and its complete excision with Roux-en-y hepaticojejunostomy is the standard treatment. Herein, we present a video of total robotic excision of CDC with complete intra-corporeal reconstruction of hepaticojejunostomy. **Methods:** Patient was placed in a reverse trendelenburg position with 150 right side up. The first camera port was placed ~4 cm below the umbilicus, and other three ports were as follows: R1—left anterior axillary line ~2 cm below the subcostal margin; R2—right mid-clavicular line at the level of umbilicus; and R3—right anterior axillary line just below the subcostal margin. A 12-mm accessory port (A) was placed in between the camera port and left side robotic working port ~2 cm below the umbilicus. Robotic dissection and excision of extra-hepatic part CDC (IVa) with dilated cystic duct (VI) was performed. Subsequently, robotic Roux-en-y hepaticojejunostomy with jejuno-jejunostomy was performed. **Results:** The total operating time was

450 min with minimal blood loss. She did well in the postoperative period (POD) and was discharged 5th POD. Total thoraco-laparoscopic esophagectomy is feasible with application of NIR-ICG fluorescence which helped in identification of thoracic duct and gastric conduit perfusion. It may become a standard procedure to prevent postoperative complications.

Conclusion: Although the total operating time for CDC excision with RYHJ was relatively long, the ease of intra-pancreatic dissection of CDC and excellent cosmetic result made it an admirable approach, especially in young patients.

Keywords: choledochal cyst, robotic platform, hepatico-jejunostomy, cosmetic, minimally invasive

PP-0371 Total thoraco-laparoscopic esophagectomy with gastric conduit for esophageal cancer with application of ICG fluorescence

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Background and Aim: Indocyanine green (ICG) dye has exhibited promising results in the present surgical practice in several domains. We utilized ICG dye with near infrared (NIR) fluorescence while performing thoracoscopic mobilization of esophageal cancer and during laparoscopic gastric conduit formation in this video. **Methods:** In supine posture, a 0.5-mg/kg solution of ICG (Aurogreen, Aurolab) was injected percutaneously in the left inguinal node under ultrasound guidance. Thorax- In prone position, three standard ports were placed in the right side of thorax. Intraoperatively, esophageal disease and thoracic duct (TD) were checked with the Karl Storz OPAL1® Technology. The TD was identified after ~50 min. Thoracic esophagus along with periesophageal tissue and lymph nodes were dissected. Abdomen- Patient turned supine with reverse trendelenburg position. Pneumoperitoneum created after placing standard ports. Greater omentum, left gastroepiploic and gastric vessels were divided preserving gastro-epiploic arcade. Gastric conduit was prepared with five 45-mm endostapler (Echelon, Ethicon, J&J). ICG dye was given intravenously, and vascularity of conduit was assessed after 1–2 min. After dividing the cervical esophagus on the left side of neck, esophagus was pulled in the abdominal cavity. Gastric conduit was sutured to Ryle's tube placed in posterior mediastinum from neck and pulled up in the neck for cervical-esophageal anastomosis. **Results:** There was no postoperative chylothorax or adverse reactions from the ICG injection occurred. Patient was discharged on postoperative day 5 on oral sloppy diet and doing well after 6 months of follow up. **Conclusion:** Total thoraco-laparoscopic esophagectomy is feasible with application of NIR-ICG fluorescence which helped in identification of thoracic duct and gastric conduit perfusion. It may become a standard procedure to prevent postoperative complications.

Keywords: esophageal cancer, indocyanine green, lymphangiography, near infrared, thoracoscopic

PP-0372 Post-liver transplant metabolic associated fatty liver disease: Characteristics and predictive risk factors

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Background and Aim: Liver transplant (LT) recipients have increased risk of developing metabolic associated fatty liver disease (MAFLD). This study aims to determine the prevalence, incidence and risk factors of post-LT MAFLD. **Methods:** This is a retrospective cohort study of LT recipients from January 2008 to December 2017 from a tertiary hospital. Continuous and categorical variables were compared with *t*-test and χ^2 -test, respectively. Univariate and multivariate logistic regression was performed. Missing values were treated with multiple imputations. Data analysis was performed using R 3.6.1. **Results:** One hundred and fifty-six LT recipients were included in the study. Seventy-two (48.3%) patients developed MAFLD over 10 years with median onset at 2.83 years. Incidence rate of MAFLD post-LT was 124.87 per 1000 person-years. Post-LT MAFLD patients had higher transplant age, higher proportion of pre-LT obesity and hypertension, post-LT obesity, diabetes mellitus, NODAT, hypertension and metabolic syndrome (MetS). They also underwent more deceased donor LT and shorter cold ischemic time. On multivariate analysis, independent predictors of post-LT MAFLD were post-LT weight gain > 10%, post-LT MetS and duration from transplant (OR 2.51 95%CI 1.04–6.02, $p = 0.04$; OR 9.21 95%CI 2.59–32.68, $p < 0.001$; OR 1.28 95%CI 1.09–1.50, $p < 0.001$, respectively). Protective factor was female donor gender (OR: 0.39 95%CI 0.17–0.90, $p = 0.03$). Higher recipient age and living donor LT tended to significance ($p = 0.058$ and $p = 0.067$), respectively. **Conclusion:** MAFLD affects almost half of LT recipients. Post-LT MetS, post-LT weight gain, duration from LT and female donor are associated with MAFLD post-LT. Prevention of post-LT MetS and weight gain may be crucial in decreasing post-LT MAFLD.

Keywords: liver transplant, MAFLD, metabolic syndrome, NODAT, steatosis

Table 1. Baseline demographic, biochemical and metabolic variables of LT recipients and donors stratified by presence of MAFLD

	Overall (n=156)	Non-MAFLD group (n=77)	MAFLD group (n=72)	P value
Baseline demographics				
Age at transplant (mean (SD))	52.00 (14.03)	49.21 (16.11)	55.14 (10.08)	0.008
Gender, Female (%)	41 (26.3)	23 (29.9)	17 (23.6)	0.499
Race (%)				0.815
Chinese	104 (66.7)	49 (63.6)	51 (70.8)	
Malay	18 (11.5)	9 (11.7)	9 (12.5)	
Indian	13 (8.3)	6 (7.8)	6 (8.3)	
Others	21 (13.5)	13 (16.9)	6 (8.3)	
Pre-LT factors				
Indication for LT (%)				0.765
Hepatitis B or C	65 (41.7)	29 (37.7)	35 (48.6)	
Others	91 (58.3)	48 (62.3)	37 (51.4)	
Overweight, BMI ≥ 23 (%)	113 (72.9)	49 (63.6)	60 (83.3)	0.012
Diabetes Mellitus (%)	57 (36.5)	26 (33.8)	28 (38.9)	0.632
Hypertension (%)	63 (40.4)	26 (33.8)	37 (51.4)	0.044
Dyslipidemia (%)	33 (22.3)	16 (22.5)	17 (23.9)	1
Metabolic Syndrome (%)	83 (56.1)	39 (52.0)	43 (60.6)	0.381
ALT (mean (SD))	50.99 (64.19)	55.01 (82.12)	47.66 (39.55)	0.507
Total bilirubin (mean (SD))	135.08 (187.86)	135.64 (195.63)	123.72 (171.34)	0.703
Albumin (mean (SD))	31.49 (6.49)	31.78 (6.78)	31.24 (6.32)	0.626
PT (mean (SD))	19.89 (7.28)	18.80 (5.33)	20.11 (8.00)	0.256
MELD score (mean (SD))	17.83 (7.38)	17.53 (6.90)	18.18 (8.08)	0.689
Post-LT factors				
Overweight, BMI ≥ 23 (%)	115 (78.2)	52 (70.3)	63 (87.5)	0.019
Diabetes Mellitus (%)	89 (57.8)	37 (48.1)	49 (68.1)	0.021
New Onset Diabetes Mellitus (%)	32 (21.2)	11 (14.9)	21 (29.2)	0.059
Hypertension (%)	100 (65.4)	44 (57.1)	56 (77.8)	0.012
Metabolic Syndrome (%)	115 (79.9)	47 (65.3)	68 (94.4)	<0.001
Use of steroid at 6 month post-LT (%)	65 (55.1)	32 (56.1)	33 (54.1)	0.97
Use of steroid at 12 month post-LT (%)	33 (26.0)	17 (28.8)	16 (23.5)	0.635
Operative factors				
Type of transplant, deceased donor liver transplant (%)	65 (41.7)	42 (54.5)	20 (27.8)	0.002
Cold ischaemic time (mean (SD))	254.93 (187.06)	211.70 (185.24)	285.04 (178.89)	0.019
Warm ischaemic time (mean (SD))	48.66 (32.89)	48.74 (21.44)	48.74 (42.12)	0.999
Donor factors				
Donor age (mean (SD))	43.50 (13.58)	41.69 (12.71)	44.85 (14.63)	0.161
Donor gender, female (%)	72 (46.8)	41 (53.2)	27 (38.0)	0.091
Donor BMI (mean (SD))	24.62 (4.34)	24.16 (4.24)	25.25 (4.50)	0.13
Donor Diabetes Mellitus (%)	12 (7.7)	4 (5.2)	8 (11.1)	0.305
Donor Steatosis (%)	49 (32.0)	19 (25.3)	28 (38.9)	0.113

Abbreviations

LT = Liver transplant
 MAFLD = Metabolic associated fatty liver disease
 SD = Standard deviation
 BMI = Body mass index
 ALT = Alanine aminotransferase
 PT = Prothrombin time
 MELD = Model for end-stage liver disease

PP-0373 Evaluation of liver fibrosis and predictors of improved liver fibrosis in patients with HBV-induced cirrhosis treated with TDF

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Background and Aim: To assess the variation of shear wave velocity (SWV) and the rate of liver fibrosis improvement at 6, 12 and 18 months and identify some predictors of liver fibrosis improvement after 18 months of tenofovir disoproxil fumarate (TDF) treatment in patients with HBV-induced cirrhosis. **Methods:** Sixty-three patients with HBV-induced cirrhosis treated TDF at Thai Nguyen National Hospital from September 2017 to September 2020, determining liver fibrosis improvement with SWV measured by Acoustic Radiation Forced Imaging (ARFI). **Results:** Initial average SWV was 2.33 ± 0.49 m/s and after 18 months of treatment was 1.89 ± 0.41 m/s. The improvement of liver fibrosis level after 6, 12 and 18 months of treatment was 10%, 26% and 42%, respectively. The initial independent factors predicting improvement in liver fibrosis after 18 months of treatment, including albumin concentration > 33 g/L (OR 6.29, 95% CI: 1.23–36.12, $p < 0.01$); HBV DNA load $> 15,121$ IU/mL (OR 8.23, 95% CI: 1.81–37.81, $p < 0.01$); and SWV ≤ 1.96 m/s (OR 5.41, 95% CI: 1.51–18.89, $p < 0.01$). **Conclusion:** TDF treatment may improve the liver fibrosis in HBV-induced cirrhosis. Initial higher serum level of albumin and initial HBV DNA load and low initial lower SWV were predictors of improving liver fibrosis level.

Keywords: Acoustic Radiation Forced Imaging, HBV-induced cirrhosis, liver fibrosis, shear wave velocity, tenofovir disoproxil fumarate

PP-0375 Review of cholecystectomy for gall stones disease in recent COVID era

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Background and Aim: In time of COVID era, the focus of elective surgery was mainly cancer. Invariably, patients suffered with gall stones had their cholecystectomy postponed. We would like to review the outcome on cholecystectomy for gall stones disease in this period. **Methods:** This is a prospective observational study conducted in a tertiary hospital (Hospital Sultanah Aminah) in southern part of Peninsula Malaysia from January to April 2021. The general surgeons routinely performed cholecystectomy either in emergency and elective manner with hepatobiliary or senior consultant standby. The demographics, predictors for difficulty cholecystectomy, physiological and biochemical parameters, operative detail and outcome were collected during the study period. **Results:** There were 38 cases of cholecystectomy performed. Nearly half ($n = 17$, 44.7%) of the procedure was performed as emergency. The mean age is 47 years (22–73). Two third of the patients were female. Seven patients had ASA status 2 and above. There were 18 patients had previous admission for cholecystitis or cholangitis, 12 patients had history of bile duct stone. Senior surgeons performed the surgeries in 20 patients. There were 4 cases requiring consultant assistance. The average operating time was 127 min (SD = 53). There were 18 cases of laparoscopic cholecystectomy which 4 cases had converted. There were 2 cases of cystic stump leak and 1 case of retained bile duct stone requiring post op therapeutic ERCP. There was no death as a result of cholecystectomy. All patients discharged home with independent functional status. **Conclusion:** This review in the regional center revealed the inherent burden of gall stone disease requiring early cholecystectomy and expert care to prevent death and loss of function.

We recommend the vigilance use of difficult cholecystectomy predictors in identifying challenging cholecystectomy case for referral in center with hepatobiliary backup.

Keywords: bile duct injury, cholecystectomy, ERCP, gall stones disease

PP-0376 Prevalence, risk factors of adenomas, and the diagnostic efficacy of white light endoscopy for colorectal polyps less than 10 mm in size

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Background and Aim: This study aimed to investigate the prevalence, risk factors of colon adenomas, and the white light endoscopy (WLE) optical diagnosis in colorectal polyps measuring < 10 mm. **Methods:** A cross-sectional study was conducted at University Medical Center between September 2020 and March 2021. Consecutive adult patients with polyps less than 10 mm in size were recruited. During the colonoscopy, clinical, endoscopic characteristics of polyps were collected. Subsequently, endoscopists predicted the histology of polyps *in vivo*. Based on the surface pattern, color, and vessels, polyps were classified into two categories: non-neoplastic and neoplastic (adenoma) lesions. All polyps were then retrieved separately for blinded histological examination. Each optical diagnosis was compared to that in the final histopathology result. **Results:** The analysis included 298 patients (mean age: 58.4 ± 13.5 years; male-to-female ratio: 82:67) with 447 polyps smaller than 10 mm. Of 447 polyps, adenoma polyps comprised 55.2%. Through multivariate analysis, independent risk factors of colorectal adenoma included ≥ 50 years of age, shape (0-Is), polyp size > 5 mm, and location at the right colon with odds ratio were 2.4, 2.8, 2.4, and 1.6, respectively. The sensitivity, specificity, positive predictive value, negative predictive value, and Area Under the Receiver Operating Characteristic (AUROC) of WLE optical diagnosis were 51.0%, 93.5%, 90.7%, 60.6%, 70.0%, and 0.72, respectively. **Conclusion:** Adenomas accounted for 55.2% of the colorectal polyps (< 10 mm). Independent risk factors comprised ≥ 50 years of age, shape (0-Is), polyp size > 5 mm, and location at the right colon, and WLE optical diagnosis had a modest accuracy in colorectal polyp measuring less than 10 mm.

Keywords: adenoma, colorectal polyp, optical diagnosis, white light endoscopy

PP-0377 Surgical outcome for perforated peptic ulcer in COVID era

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Background and Aim: Despite dropping trend of elective surgeries with multiple waves of COVID cases, emergency surgeries for perforated peptic ulcer seemingly remain a key burden of surgical service. We intend to explore the outcome of perforated peptic ulcer surgery in this COVID era.

Methods: This is a prospective observational study conducted in a tertiary hospital (Hospital Sultanah Aminah) in southern part of Peninsula Malaysia from January to April 2021. The general surgeons performed emergency peptic ulcer surgery following appropriate resuscitation and preoperative COVID testing. The demographics, time to surgery, duration

of surgery, surgical findings and procedure, physiological and biochemical parameters and outcome were collected during the study period. **Results:** There were 14 stomach and 10 duodenal ulcers. The median age was 49.5 years. Majority were male ($n = 21$). The mean Charles comorbidity index (CCI) was 1.79. Half of them are smokers. The average time to surgery was 12.9 h. There were 3 ulcers larger than 2 cm. One large duodenal ulcer was managed with pyloric exclusion, gastrojejunostomy and T-tube duodenostomy. The rest of the cases were managed with primary closure with or without omental reinforcement. The average operative time was 111 min (65 to 240). There were 4 deaths resulting in 16.7% mortality rate. The cause of death was related to subsequent nosocomial infection and septic shock. There was no case of bile leak or failed repair. The higher the CCI (p value < 0.001), lower the bicarbonate (p 0.036) and higher the creatinine (p 0.30) were associated with higher risk of mortality. **Conclusion:** Emergency surgery for perforated peptic ulcer is a continuing burden despite reductions elective surgery in COVID era. Our results revealed time to surgery mostly confined to less than 24 h with comparable mortality rate. The mortalities often associated with higher CCI, acidosis and acute kidney injury.

Keywords: duodenal ulcer, gastric ulcer, perforated peptic ulcer

PP-0378 The utility of narrow banding imaging with or without dual focus mode in neoplastic prediction of small and diminutive colorectal polyps

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Background and Aim: Accurate neoplastic prediction can reduce unnecessary colorectal polypectomies and pathology-related expenses. Narrow banding imaging (NBI) and dual-focus (DF) mode have become promising innovative enhancement for recognizing neoplastic features of colorectal polyps. This study aimed to assess the performance of NBI with or without DF in neoplastic prediction of small (6–9 mm) and diminutive colorectal polyps (≤ 5 mm). **Methods:** A cross-sectional study was conducted on 517 colorectal polyps < 10 mm in diameter from 337 consecutive patients who underwent colonoscopy at the University Medical Center from September 2020 to March 2021. Each polyp was endoscopically diagnosed in three successive stages using white-light endoscopy (WLE), NBI, and NBI-DF and retrieved for histopathology assessment. The diagnostic accuracy of each modality was evaluated by reference to histopathology. **Results:** There were 301 adenomatous polyps and 216 non-neoplastic polyps. The overall accuracies of WLE, NBI, and NBI-DF in neoplastic prediction of colorectal polyps were 69.3%, 82.9%, and 89.4%, respectively ($p < 0.001$). The accuracy of NBI-DF was significantly higher than that of NBI alone in the diminutive polyp group (86.5% vs 89.6%, $p < 0.001$). In the recto-sigmoid region, the accuracy of NBI alone was not inferior to NBI-DF (91.2% vs 94.2%, $p = 0.219$). **Conclusion:** Both NBI and NBI-DF improved the real-time neoplastic prediction of small and diminutive colorectal polyps. The DF mode was especially useful in diminutive polyps.

Keywords: colorectal adenoma, colorectal polyp, dual focus, narrow banding imaging, optical diagnosis

PP-0379 Clinical characteristics and epidemiology of Crohn's disease in Karachi: A cross-sectional study

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Background and Aim: Crohn's disease (CD) is a chronic and an inflammatory bowel disease (IBD). It can cause inflammation of gastro-intestinal tract (GIT) may causes abdominal pain, diarrhea and weight loss due to malnutrition. The objective of study was to investigate the epidemiology and clinical outcomes of CD in Karachi Pakistan.

Methods: A cross-sectional study was conducted among 294 patients (180 patients with CD & 114 IBD) from 14 private clinics of Karachi, Pakistan. The study was conducted from April 2019 to March 2020. The diagnostic criteria consisted of endoscopy (to view the colon and rectum), blood profile test (for anemia & leucocyte's examination) and barium X-ray (barium enema) (to investigate upper and lower lining of small intestine). Clinical characteristics included medication and treatment outcomes.

Results: The mean age was 37.4 years (CD: 34 years, IBD: 39 years). The male/female ratio was 1:2 for CD & 1:1 for IBD. The smokers were 36%. Only 3.6% of patients had family history of bowel disease. In patients with CD, phenotype disease (48.5%) was commonly observed, and structuring type was 67% disease behavior. Para-amino salicylic acid was the preferred therapy for IBD, while immunomodulator and biologics drugs were suitable for CD. The bowel resection frequency was 40.5%, and rate of hip avascular necrosis was 2.9%. Anti-sero-prevalence was 11.3% found in hepatitis virus B. **Conclusion:** It is revealed that patients with CD had female dominance; high percentage of HBV infection and higher incidence of ileal type with poor outcomes of Crohn's disease were found.

Keywords: Crohn's disease, epidemiology, IBD

PP-0380 Histopathologic discrepancies between endoscopic forceps biopsy and endoscopic resection specimens in non-ampullary duodenal epithelial tumors

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Background and Aim: For patients with non-ampullary duodenal epithelial tumors (NADETs), endoscopic forceps biopsy results that reflect the final histopathologic results of the entire lesion are indispensable for accurate diagnosis and appropriate treatment modality selection. This study aimed to investigate the histopathologic discrepancies between endoscopic forceps biopsy and endoscopic resection specimens in NADETs and to elucidate the factors contributing to such discrepancies. **Methods:** This retrospective observational study included 105 patients (105 lesions) who underwent endoscopic resection for NADETs at the Pusan National University Hospital between May 2006 and October 2019. NADETs were classified as low-grade intraepithelial neoplasms (LGINs), high-grade intraepithelial neoplasms (HGINs), or adenocarcinomas (ADCs). Following slide reviews, the histopathologic concordance between endoscopic forceps biopsy and endoscopic resection specimens was assessed for each case. **Results:** The histopathologic discrepancy rate between endoscopic

Table 1. Comparison of the histopathologic diagnoses between pretreatment endoscopic forceps biopsy and endoscopic resection specimens

Pretreatment endoscopic forceps biopsy diagnosis	Final diagnosis of endoscopic resection specimen			
	Inflammation (n = 2)	LGIN (n = 82)	HGIN (n = 16)	ADC (n = 5)
LGIN (n = 99)	2	81	14	2
HGIN (n = 4)	0	1	2	1
ADC (n = 2)	0	0	0	2

LGIN, low-grade intrapithelial neoplasm; HGIN, high-grade intrapithelial neoplasm; ADC, adenocarcinoma

forceps biopsy and endoscopic resection specimens was 19.0% (20/105 lesions). Among the 20 diagnostically discordant lesions, up- and downgrade of the histopathologic diagnosis occurred in 17 and 3 lesions, respectively. The predominant discrepancies involved upgrades from LGIN to HGIN ($n = 14$) and upgrades from LGIN to ADC ($n = 2$). The three downgraded cases included two from LGIN to inflammation and one from HGIN to LGIN (Table 1). In the multivariate analyses, the old age (>67 years) was the only factor significantly associated with histopathologic upgrade (odds ratio 4.553, 95% confidence interval 1.291–15.939; $P = 0.018$). **Conclusion:** Considerable histopathologic discrepancies were observed between endoscopic forceps biopsy and endoscopic resection specimens in NADETs. Older age was significantly associated with these discrepancies.

Keywords: endoscopic resection, histopathologic discrepancy, NADETs

PP-0381 Correlations between integrated relaxation pressure (IRP) and esophagogastric junction contractile integral (EGJ-CI) with total acid exposure time in symptomatic gastroesophageal reflux disease

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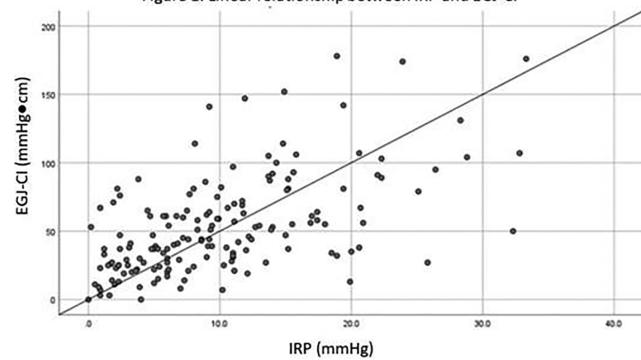
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Background and Aim: Integrated relaxation pressure (IRP) and esophagogastric junction contractile integral (EGJ-CI) are different functional measures of the native lower esophageal sphincter (LES). Our study aimed to determine the relationships between IRP, EGJ-CI and total acid exposure time (AET) in patients with symptomatic gastroesophageal reflux disease (GERD). **Methods:** Consecutive adult patients with symptomatic GERD who underwent esophageal high-resolution impedance manometry (HRIM) and ambulatory pH-impedance test (off proton-pump inhibitors) were included. Measured median IRP and EGJ-CI from HRIM and total AET from the pH-impedance test were analysed. Total AET $< 4\%$ is considered normal acid burden and $p < 0.05$ as significant. **Results:** Of 163 patients, 23.9% ($n = 39$) had AET $> 6\%$; 4.9% ($n = 8$) had AET of 4–6%; and 71.2% ($n = 116$) had AET $< 4\%$. Raised median IRP above upper normal limits (>15 mmHg) was seen in 24.5% ($n = 40$) and normal in 75.5% ($n =$

123). EGJ-CI was elevated in 39.9% ($n = 65$) (>55 mmHg·cm); 41.1% ($n = 67$) within normal limits and 19% ($n = 31$) <25 mmHg·cm. There was a significant linear relationship between median IRP and EGJ-CI ($r = 0.572$, $p < 0.001$) (Figure 1). The median IRP was lower in the AET $< 4\%$ vs. AET $\geq 4\%$ (9.40 mmHg vs. 6.95 mmHg, $p = 0.045$) but not different in the median EGJ-CI (47.0 mmHg·cm vs. 39.5 mmHg·cm, $p = 0.28$). **Conclusion:** In symptomatic GERD with native LES, the median IRP is an adequate surrogate of EGJ-CI and is correlated with total AET. The inverse relationship between median IRP and total AET may indicate the presence of a protective LES reflex in a native sphincter.

Keywords: AET, EGJ-CI, GERD, IRP, manometry

Figure 1: Linear relationship between IRP and EGJ-CI



There is a significant linear relationship between IRP and EGJ-CI.

$p < 0.001$, $r = 0.572$, $r^2 = 0.327$

PP-0383 Assess the adherence of Crohn's disease patients at clinical settings in Hyderabad, Pakistan

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Background and Aim: Crohn's disease (CD) is a chronic and inflammatory ailment of alimentary canal and caused due to the inflammatory bowel disease (IBD). CD most commonly occurred in small intestine. Crohn's disease can block the absorption of vitamin B12 and bile acids and malabsorption leads to anemia. Therapy adherence is a frequent issue in Crohn's disease. The aim of this research was to investigate inadequate adherence to oral and parenteral treatment in patients with Crohn's disease and to identify factors associated with it. **Methods:** A cross-sectional descriptive study was conducted. A total of eight clinics from the city of Hyderabad, Pakistan, were enrolled. 400 patients with Crohn's disease or inflammatory bowel disease (IBD) were selected via purposive sampling method. The study duration was 8 months. Likert scale was used to assess adherence to oral and parenteral medication, and independent variables were evaluated with inadequate adherence. **Results:** A total of 400 patients with CD or IBD were enrolled and took 50 patients from each clinic. Median age was 38.5 years (range 23–73); 48.5% were male, and the remaining 51.5% were females. Median time from diagnosis was 5 years (range 1.5–36.5). 88.4% were under treatment with only one oral medication; 51.4% of patient inadequate adherence to oral medication. Patients with CD had high risk of inadequate adherence when compared with IBD (0.62 (0.38–0.92)). 23.8% reported inadequate adherence to parenteral and subcutaneous administration was associated with inadequate adherence to parenteral (5.2(1.65–16.62)). **Conclusion:** Inadequate treatment adherence is commonly observed among patients with CD and oral medication had percentage as compared to parenteral administration.

Keywords: Crohn's disease, Hyderabad, Pakistan, IBS

PP-0385 Biological effect of gossypin on gastric system in the medicine through scientific data analysis

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Background and Aim: Herbal products have been used in the medicine for the treatment of human disorders since very early age. Gossypin is an active phytochemical of natural plant material which have anti-inflammatory, anti-oxidant, analgesic, hepatoprotective and hypoglycemic activity in the medicine. Gossypin suppressed beta-amyloid induced toxicity and mediates antinociception by modulating the amino butyric acid system.

Methods: Epidemiologic studies suggest that a diet rich in fruit and vegetables is associated with a decreased incidence of cancer and coronary heart disease mortality. In order to know the biological activities of gossypin in the medicine, here in the present investigation, numerous scientific data have been collected and analyzed through literature data analysis of various scientific research works. Biological effect of gossypin on gastric system has been investigated in the medicine through scientific data analysis various literature works **Results:** Literature data analysis revealed the biological importance and therapeutic benefit of gossypin in the medicine. Literature data analysis revealed the biological effect of gossypin on gastric

system in the medicine as it delayed the small intestinal transit. In another literature work, gossypin decreased the transport rate of nitrendipine to a greater extent in the ileum **Conclusion:** Literature data analysis revealed the biological potential of gossypin on gastric system in the medicine.

Keywords: biological effect, gossypin, gastric system, medicine

PP-0386 Biological effects of cirsiliol on the ileum: Role of scientific data analysis in the medicine

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Background and Aim: Flavonoidal compounds have been used in the medicine for the treatment of human disorders as these natural phytochemical have numerous biological potential in the medicine through effectiveness against reactive radicals, blood circulatory problem, and various form of inflammation. **Methods:** Cirsiliol were separated and isolated from one of the well known anticancer medicinal plants, that is, *Leontis nepetifolia*. Cirsiliol have been tested for their biological activities and revealed effectiveness against sedation and inflammatory responses. Here in the present investigation, numerous scientific data have been collected from various literature sources and analyzed in order to know the biological potential of cirsiliol in the medicine. Biological effects of cirsiliol on the ileum have been investigated through scientific data analysis of various literature works. **Results:** Scientific data analysis of various literature works revealed the biological potential of cirsiliol in the medicine. Literature data analysis revealed the therapeutic importance of cirsiliol in the medicine as cirsiliol produced concentration-dependent relaxation of rat isolated ileum which further signified their biological effects on the ileum. **Conclusion:** Literature data analysis revealed the biological potential and therapeutic benefit of cirsiliol on the ileum.

Keywords: biological effect, cirsiliol, gastric system, ileum, medicine

PP-0387 Biological effects of cirsimarin in various forms of inflammatory response: Role of interleukin-6, tumor necrosis factor- α and NO production in the inflammatory response through data analysis

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Background and Aim: Flavonoids have been found to be present in various plant material and their derive products. Cirsimarin also known as 4,5-dihydroxy-6,7-dimethoxyflavone is a flavonoidal compound belongs to the 7-O-methylated flavonoids and found to be present in the *Cirsium japonicum*, *Plectranthus amboinicus*, *Baccharis conferta*, *Santolina insularis* and *Ocimum sanctum*. Cirsimarin is well known for their anti-oxidant, anti-bacterial, anti-spasmodic and cyclooxygenase-1 inhibitory potential **Methods:** In the present investigation, scientific databases have been searched to collect the needed information of cirsimarin from various literature sources. Pharmacological activities of cirsimarin have been investigated in the present investigation through literature database analysis to know the anti-inflammatory potential. Effect of interleukin-6, tumor necrosis factor- α , NO production and ATP-induced caspase-1 release in the inflammatory response has been investigated through literature data analysis of different research to know the molecular mechanism of cirsimarin.

Results: Anti-inflammatory activity of cirsimarin in RAW264.7 cells has

been investigated in the literature database, and data analysis revealed that cirsimarin inhibited interleukin-6, tumor necrosis factor- α and NO production in lipopolysaccharide (LPS)-stimulated RAW264.7 cells. In another literature, database cirsimarin inhibited LPS-induced IL-6 release and ATP-induced caspase-1 release from LPS-primed cells. Cirsimarin was investigated for their anti-inflammatory activity in the edema model in the literature and revealed significant potential in the medicine. The topical anti-inflammatory activity of cirsimarin was also investigated in another literature work in mouse ear model and revealed significant potential.

Conclusion: Literature data analysis revealed anti-inflammatory activity of cirsimarin in the medicine.

Keywords: anti-inflammatory, cirsimarin, NO production, phytoconstituents, tumor necrosis factor- α

PP-0388 Protective role of eupafolin against development of better drug molecule for melanogenesis: Pharmacological importance in the medicine

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Background and Aim: Eupafolin is a pure phytochemical categorized into flavonoidal class chemical found to be present in the *Arnica chamissonis*, *Artemisia mongolica*, *Dimerostemma vestitum*, and *Eupatorium cannabinum*. Eupafolin have numerous pharmacological activities due to their anti-inflammatory, anti-oxidant, and anti-cancer activities. **Methods:** Eupafolin is one of the main phytochemical found to be present in the *Artemisia princeps*. In the present investigation, different scientific research databases have been searched to collect the needed information of eupafolin for their medicinal importance. Pharmacological data of eupafolin have been collected in the present investigation through different literature databases. Biological importance of eupafolin on melanogenesis has been investigated through literature data analysis of various scientific research works. Pharmacological activities of eupafolin have been correlated to the other pharmacological activities to get better therapeutic potential against melanogenesis. **Results:** Literature data analysis of various research works in the present investigation revealed the medicinal importance and biological application of eupafolin in the medicine and other allied health sectors. Detailed pharmacological activities of literature sources revealed their importance against numerous health complications such as inflammatory disorder and various form of cancers. In the literature database, effects of eupafolin on mouse melanoma cells have been investigated and revealed the significant effect on cellular melanin content. However, tyrosinase inhibitory activity of eupafolin has been also investigated in the scientific field. **Conclusion:** Literature data analysis of different scientific research works found that eupafolin have health beneficial potential and could be used for the development of better drug against melanogenesis.

Keywords: anti-inflammatory, biological effect, eupafolin, drug molecule, phytoconstituents

PP-0389 A study on the extrahepatic manifestations of nonalcoholic fatty liver disease

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Background and Aim: To determine the correlation between nonalcoholic fatty liver disease (NAFLD) and its extrahepatic manifestations. **Methods:** 88 nonalcoholic subjects (cases) who had altered liver echotexture on USG suggestive of fatty liver were compared with 88 nonalcoholic controls with respect to the various extrahepatic manifestations. **Results:** 61.36% of cases were obese, and the mean BMI was higher ($25.98 \pm 2.81 \text{ kg/m}^2$ vs 22.54 ± 2.31 in controls; $p < 0.001$). The incidence of co-morbidities was higher in cases (T2DM – 47.7% vs 20.4%; $p < 0.001$, SHTN – 38.6% vs 14.7%; $p < 0.001$, Hypothyroidism – 19.3% vs 6.8%; $p = 0.014$, Dyslipidemia – 26.1% vs 7.9%; $p = 0.001$). Mean HbA1c level in the cases was $7.13 \pm 2.23\%$ in comparison to $5.84 \pm 1.06\%$ in controls ($p < 0.001$). 19.3% of cases had hyperuricemia (vs 7.9% in controls; $p = 0.028$), and the mean uric acid level in cases ($5.06 \pm 1.6 \text{ mg/dl}$ vs $4.5 \pm 1.2 \text{ mg/dl}$) was higher. Cardiac manifestations like significant carotid intima media thickness (15.9% vs 5.6%; $p = 0.029$) and diastolic dysfunction (12.5 % vs 3.4%; $p = 0.026$) were also higher in the cases. The cases had more incidence of renal dysfunction (30.6 % vs 14.7%; $p = 0.012$) and had low mean EGFR ($72.2 \pm 24.6 \text{ ml/min}/1.73 \text{ m}^2$ vs $83.9 \pm 21.87 \text{ ml/min}/1.73 \text{ m}^2$). The incidence of hyperferritinemia (15.9 % vs 1.1%, $p < 0.001$), hypovitaminosis D (34.1% vs 18.1%; $p = 0.01$) and psoriasis (4.5% vs 0%; $p = 0.043$) were higher in the cases. Cases also had more incidence of RWMA, LV systolic dysfunction, atrial fibrillation, obstructive sleep apnea, polycystic ovarian syndrome and colorectal adenomas, though not statistically significant. **Conclusion:** NAFLD is a multi-system disease and should be approached with a broader and multi-dimensional approach. Early screening of NAFLD patients for various extra hepatic manifestations could help in bringing down the morbidity of NAFLD.

Keywords: extra hepatic, fatty liver, NAFLD, non-alcoholic

PP-0390 Intra-familial spread of hepatitis B virus infection in Bangladesh

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Background and Aim: The transmission of hepatitis B virus (HBV) among family members is a worldwide health problem. The presence of HBcAb (hepatitis B core antibody) and anti-HBs (hepatitis B surface antibody) indicates current or past infection who is not vaccinated. The prevalence of this is reported about 42.1% to 70.5% among family members of the chronic HBV carriers. This study was conducted to evaluate HBcAb and anti-HBs among family members of the chronic HBV infected cases in Bangladesh. **Methods:** In this cross-sectional study, data were collected from the total number of 51 chronic HBV cases and 251 members of their family by a validated questionnaire at Bangabandhu Sheikh Mujib Medical University, Dhaka, Bangladesh. Blood samples were obtained to detect HBcAb and anti-HBs from April 2016 to June 2017. **Results:** The prevalence of HBcAb and anti-HBs positivity among household members were 42.6% ($n = 107$) and 19.1% ($n = 48$), respectively. In terms of relationship, the highest prevalence of HBcAb positivity was found among the children of the index cases in comparison to the spouses who had the lowest proportion (54.2% vs. 32.3%, $P < 0.05$). The frequency of HBcAb positivity was increased by age groups. The highest prevalence of HBcAb positivity

(53.3%) was found in the age group of 51–60 years old. **Conclusion:** In the family members, the prevalence of current or past infection of HBV was greater than in the general population. It was more prevalent in the children of the index cases compared to the spouses. In this regard, it is important to consider the vertical transmission of the hepatitis B virus from mother to child. Hence, development of the public health awareness, perinatal care and childhood vaccination against HBV can reduce the prevalence of the intra-familial spread.

Keywords: anti-HBs, chronic hepatitis B, HBcAb, intra-familial, spread

PP-0391 The correlation between occupational stress and GERD among elementary teachers using GERDQ questionnaire

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Background and Aim: Gastroesophageal reflux disease (GERD) prevalence is increasing worldwide. Teaching is one of the most stressful professions. Stress can be a triggering factor and worsen the symptoms of GERD. The alteration of teaching methods is inevitable due to pandemic (COVID-19). **Methods:** This is a cross-sectional study, held in January to April 2021. This study were involving 100 teachers in Cipondoh, Kota Tangerang, whom selected by multistage cluster random sample method, and completing the questionnaire using google form application. The GerdQ questionnaire was used to diagnose GERD, while occupational stress assessed using the Teacher Stress Inventory (TSI). All possible risk factors were analysed. Results were analysed using bivariate analysis. **Results:** Seventy-six per cent of the subjects were male; most of them are 31–40 years old and have more than 5 years of experience in teaching. Most of the teachers are having a moderate occupational stress. The prevalence of GERD was 23%. The result of this study failed to indicate a significant correlation between occupational stress among the teachers and GERD. We found that the statistically significant risk factor of GERD is smoking ($p = 0.037$, OR = 11.4). Obesity, fat dietary, caffeine and (stressful) life events were not significant risk factors of GERD. **Conclusion:** We didn't find any significant correlation between teacher stress and GERD. Taking into consideration the results of this study, it seems that teachers should be recommended to stop smoking.

Keywords: GERD, occupational stress, teacher

PP-0392 Biologic exposure of short duration results in a marked reduction in cumulative surgical rates in Malaysian patients with inflammatory bowel disease

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Background and Aim: Crohn's disease (CD) is a chronic progressive disease that is associated with high surgical rates. In view of our recent practice is starting biologic therapy early, we sought to determine whether there were differences in surgical rates between patients who were exposed or not exposed to biologic therapy. **Methods:** This was a retrospective, single-centre study conducted in a tertiary centre in Malaysia. The biologic-exposed group was defined as any patient with exposure for at least 6–8 weeks. Demographics, clinical characteristics and time to significant surgical intervention (i.e. bowel resection) were recorded. and cumulative surgical rates were calculated. **Results:** A total of 158 patients were recruited: 85 from the biologic-exposed cohort and 73 from the non-biologic cohort. Baseline demography was as follows: male 56.3%,

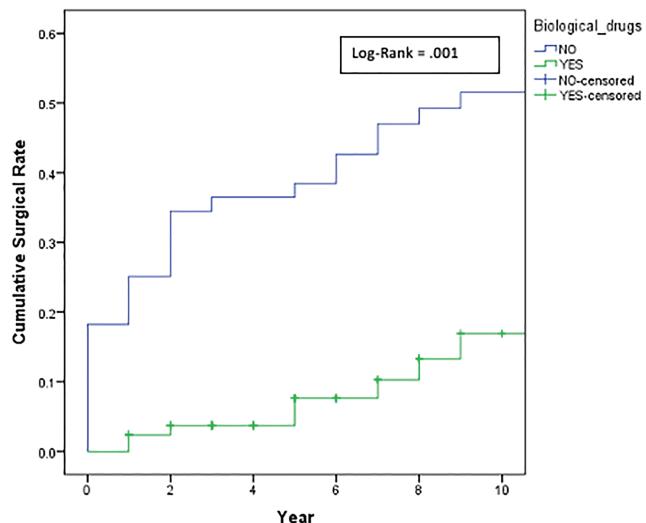


Figure 1 Kaplan -Meier graph on 10-year cumulative surgical rates.

female 43.7%; Malays 21.5%, Chinese 33.5%, Indians 43.0%. Median duration of disease was 11.9 years (1.4, 30.4). Differences seen in terms demographics, disease location and behaviour at diagnosis between the two cohorts were not significant. For the biologic group, median time to commencing therapy was 26.4 months (0.0, 165.6), and median duration of therapy was 13 months (IQR 1.5, 130.0). The biologic-exposed group had significantly lower cumulative surgical rates compared to the non-biologic group: 2.3% versus 21.9% at 1 year, 7.3% versus 31.5% at 5 years and 15.6% versus 39.7% at 10 years. **Conclusion:** Surgical rates were significantly lower in CD patients who are biologic-exposed even for a short duration. This confirms that the role of biologic therapy in altering the disease progression of CD, even in a limited resource setting.

Keywords: biologic therapy, Crohn's disease, inflammatory bowel disease, Malaysia, surgical rates

PP-0393 De-novo hepatocellular carcinoma in chronic hepatitis C patients with cirrhosis after sustained virological response to direct acting antiviral therapy

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Background and Aim: Hepatocellular carcinoma (HCC) is the fifth most common cancer worldwide. The risk of chronic hepatitis C (CHC) patients with cirrhosis developing HCC is reduced after sustained virological response (SVR) to direct acting antiviral therapy (DAA); however, a relevant risk (<1.5% [0.3–2.4%]) still remains. We study the occurrence of de-novo HCC in CHC patients with cirrhosis after SVR. **Methods:** We retrospectively reviewed the database of 547 CHC patients treated with DAA in our center from 2012 to 2019. Of these, 131 patients have liver cirrhosis and complete data at end of follow-up in December 2020. Cirrhosis is based on fibroscan > 12.5 kPa or clinical evidence of cirrhosis and portal hypertension. De-novo HCC is defined as radiological characteristic of HCC detected on CT scan/MRI at least 3 months after completion of

DAA therapy. **Results:** Majority of the cirrhotic patients were male (71%, $n = 93/131$), with median age of 54 years (48–62) and infected with HCV genotype 3 (60.3%, $n = 79$). The most common DAA used were sofosbuvir, daclatasvir with or without ribavirin. At end of follow-up, 6.9% ($n = 9$) developed de-novo HCC. The median time to HCC diagnosis was 12 months (interquartile range 12–15 months). The baseline liver stiffness measurement (LSM) is significantly higher in patients who developed de-novo HCC at 33 + 19.90 kPa compared to 23 + 8.91 kPa who did not ($p = 0.02$). **Conclusion:** CHC patients with liver cirrhosis are still at risk for HCC after achieving SVR. Regular HCC surveillance is required in this group of patients. We found that baseline LSM is significantly higher in patients diagnosed with HCC in our small sample study. This needs further studies.

Keywords: chronic hepatitis C, direct acting antiviral therapy, hepatocellular carcinoma, liver cirrhosis, sustained virological response

PP-0394 Clinical outcomes of COVID-19 patients with gastrointestinal manifestations in Indonesia: A single center study

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Background and Aim: Gastrointestinal manifestations are prevalent among COVID-19 patients. Some studies showed that COVID-19 patients with GI manifestations have worse outcomes, whereas some studies exhibited contradictory findings. The main objective of this study is to find the association between GI manifestations in COVID-19 and the patients' clinical outcomes. **Methods:** This study was conducted at Cipto Mangunkusumo National Central General Hospital from April 2020 to December 2020. Statistical analysis was performed to find the proportion of GI COVID-19, association between the presence of the GI manifestations in COVID-19 with the severity levels and the median length of hospital stay of COVID-19 patients. **Results:** There were 647 confirmed COVID-19 patients admitted to the isolation ward. The proportion of COVID-19 with GI manifestations was 34.6%. The proportion of nausea, vomiting, anorexia, diarrhea, and abdominal pain were 58%, 20%, 32.1%, 37.5%, and 25.9%, respectively. As many as 27 GI COVID-19 patients (12%) were in severe-critical condition compared to 62 non-GI COVID-19 patients (27.8%) in severe-critical condition ($p < 0.01$). The median length of stay between GI COVID-19 and non-GI COVID-19 patients were 9 versus 8 days, respectively ($p = 0.04$). **Conclusion:** The proportion of GI COVID-19 in severe-critical group was lower than non-GI COVID-19 patients, and thus, our findings emphasized that GI manifestations in COVID-19 were associated with less severe COVID-19 manifestations. The presence of GI manifestations in COVID-19 patients was associated with longer duration of stay.

Keywords: clinical outcomes, gastrointestinal COVID-19

PP-0395 The dietary inflammatory index and risk of colorectal cancer across obese and lean individuals in a hospital-based study from Malaysia

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Background and Aim: High incidence of colorectal cancer (CRC) is associated with obesity suggesting possible increased consumption of foods with high inflammatory potential that promote the inflammatory process in colon. Despite the fact that dietary choices in Asia differ markedly from those in the West, there was no study reported among Malaysian population. We aimed to examine the inflammatory impact of diet on CRC risk using the dietary inflammatory index (DII) across obese and lean individuals. **Methods:** Fifteen newly diagnosed CRC patients, 19 newly diagnosed colonic polyps' patients, and 21 healthy controls, aged 18–80 years old, were recruited from UKM Medical Centre, Malaysia. Subjects were categorized into BMI < 23 (lean) and BMI ≥ 30 (obese). DII scores were computed based on dietary intake assessed using a validated 143-item food frequency questionnaire (FFQ), categorized into tertiles (T): T1 = < -0.99; T2 = -0.99–1.56; and T3 = ≥1.56. A total of 29 food components were available from the FFQ and used to calculate DII. Logistic regression was used to estimate odds ratios (ORs) and 95% confidence intervals (CI). **Results:** The DII score ranged between -1.89 (maximum anti-inflammatory score) and +4.56 (maximum pro-inflammatory score). Mean DII scores were significantly higher in CRC patients (1.59 ± 1.58 , $P = 0.001$) and colonic polyps' patients (0.67 ± 1.51 , $P = 0.01$) compared to controls (-0.60 ± 0.84). Subjects in T3 consumed significantly higher energy intake (kcal) compared to subjects in T1 (2265 ± 285.36 vs. 1664 ± 219.81 , $P < 0.001$). Higher DII scores were associated with an increased risk of CRC (OR, 2.45 95% CI 1.56–3.50) for T3 versus T1. This association was stronger in obese subjects (OR, 3.26 95% CI 1.56–3.62 for T3 vs. T1, P trend = 0.038). **Conclusion:** These results suggest that more pro-inflammatory diets, as identified by higher DII scores, were associated with an increased risk of CRC, particularly in obese individuals.

Keywords: colorectal cancer, diet, dietary inflammatory index, inflammation, obesity

PP-0396 Anti-depressive effects of probiotics: A rodent chronic unpredictable stress model

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Background and Aim: Depression is a mood disorder characterized by persistent feeling of sadness and loss of interest. Although there are established pharmacotherapies for depression, they are still limited by various side effects. Recent studies have emphasized various health benefits of probiotics, including in mental health. In line with this, the present

preliminary study aimed to investigate the potential anti-depressive effects of probiotics in in vivo model of chronic unpredictable stress (CUS). **Methods:** Twenty-four adult male Sprague Dawley rats were grouped into six and exposed to seven different types of CUS in a random order for seven consecutive weeks, except for the control group. The treatment groups were given either probiotics (1.0×10^9 of *Lactobacillus paracecii* and *Lactobacillus acidophilus*) or escitopram (10 mg/kg) or combination of both through oral gavage for 4 weeks. The animals' body weight and anhedonia were assessed at two different time points, week 0 and week 7. Depression was assessed through forced swimming test (FST) at the end of week 7. **Results:** There was no significant difference in body weight of the rats on week 0 and week 7. The CUS group spent most of the time immobile and swam the least compared to other groups in forced swimming test (FST). Probiotics, escitopram, and combination of escitopram and probiotics significantly decreased duration of immobility and increased duration of swimming compared to CUS. After 7 weeks of exposure to CUS, sucrose consumption was significantly decreased in CUS group compared to other groups. Rats treated with probiotics, escitopram, and combination of escitopram and probiotics markedly increased consumption of sucrose in animals under CUS. **Conclusion:** Probiotics ameliorated the CUS-induced anhedonia and depression-like behaviors as good as the anti-depressive agent escitopram.

Keywords: anhedonia, chronic unpredictable stress, depression, probiotics

PP-0397 Predictive role of NUDT15 polymorphisms on thiopurine-induced myelotoxicity in Malaysian with inflammatory bowel disease

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Background and Aim: Thiopurines, thioguanine, mercaptopurine and azathioprine are widely used in the management of IBD for their steroid-sparing potential and efficacy in the maintenance of remission. However, a potential life-threatening side effect is myelotoxicity which is often due to genetic polymorphisms of TPMT gene in the Western populations and NUDT15 gene predominantly in East Asian populations. Preliminary data suggest that NUDT15 polymorphisms are also associated with myelotoxicity in our multiracial population. **Methods:** 127 IBD patients seen in the IBD outpatient clinic of University Malaya Medical Centre were recruited. Demographics and clinical data, including IBD type, weight, thiopurine exposure, dosage and adverse events, were collected.

Table 1 Demographics and clinical characteristics (n=127).

	CD	UC	IBD-U	Total	p-value
IBD Type	87 (68.5%)	37 (29.1%)	3 (2.4%)	127 (100.0%)	
Age of Diagnosis, y [Mean(±SD)]	22.37 (±12.29)	40.26 (±18.83)	33.67 (±9.61)	28.01 (±16.58)	<.001
Weight, kg [Mean(±SD)]	56.82 (±17.18)	58.95 (±13.75)	65.13 (±8.49)	57.61 (±6.18)	.625
Sex					.211
Male	53 (60.9%)	19 (51.4%)	3 (100.0%)	75 (59.1%)	
Female	34 (39.1%)	18 (48.6%)	0 (0%)	52 (40.9%)	
Race					.723
Malay	21 (24.1%)	11 (39.7%)	1 (33.3%)	33 (26.0%)	
Chinese	31 (35.6%)	12 (32.4%)	0 (0.0%)	43 (33.9%)	
Indian	35 (40.2%)	14 (37.8%)	2 (66.7%)	51 (40.2%)	
Others	1 (1.3%)	0 (0.0%)	0 (0.0%)	1 (1.3%)	
Azathioprine Exposure	76 (87.4%)	20 (54.1%)	3 (100.0%)	99 (78.0%)	<.001
Azathioprine Dosage, mg/kg [Mean(±SD)]	1.42 (±0.58)	1.38 (±0.69)	1.00 (±0.32)	1.39 (±0.60)	.256
AZA-induced Leukopenia	11 (14.9%)	4 (20.0%)	0 (0.0%)	15 (15.5%)	.643
TPMT c.460G>A, n (%)					
G/G	87 (100.0%)	37 (100.0%)	3 (100.0%)	127 (100.0%)	
G/A	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
TPMT c.719A>G, n (%)					.387
A/A	83 (95.4%)	37 (100.0%)	3 (100.0%)	123 (96.9%)	
A/G	4 (4.6%)	0 (0.0%)	0 (0.0%)	4 (3.1%)	
NUDT15 c.415C>T, n (%)					.883
C/C	76 (87.4%)	34 (91.9%)	3 (100.0%)	113 (89.0%)	
C/T	10 (11.5%)	3 (8.1%)	0 (0.0%)	13 (10.2%)	
T/T	1 (1.1%)	0 (0.0%)	0 (0.0%)	1 (0.8%)	
NUDT15 c.52G>A, n (%)					.797
G/G	86 (98.9%)	36 (97.3%)	3 (100.0%)	125 (98.4%)	
G/A	1 (1.1%)	1 (2.7%)	0 (0.0%)	2 (1.6%)	

DNA was extracted and a total of 4 single-nucleotide polymorphisms (SNPs), that is, 2 TPMT and 2 NUDT15, were analysed using Taqman SNPs Genotyping Assay. **Results:** The prevalence of TPMT c.719A>G is 3.1%, TPMT c.460G>A was 0%, NUDT15 c.415C>T was 11% and NUDT15 c.52G>A was 1.6% (Table 1). None of the leukopenic patients were associated with the TPMT polymorphisms. NUDT15 c.415C>T had a specificity of 90.7% and sensitivity of 53.8% ($p < 0.001$) (OR = 0.76 (0.02–0.29), $p < 0.001$) in predicting leukopenia, whereas NUDT15 c.52G>A had a specificity of 86.6% and sensitivity of 100.0% (2 patients). Combined analysis of both NUDT15 variants showed a sensitivity of 69.2% (OR = 29.250 (6.92–123.59), $p < 0.001$). NUDT15 c.415C>T polymorphism was also shown to be associated with early leukopenia. The polymorphisms were seen all three races (Malays, Chinese and Indians). **Conclusion:** Known NUDT15 polymorphisms accounted for the majority of thiopurine-induced leukopenia in our population, regardless of ethnicity.

Keywords: genetic polymorphism, myelotoxicity, NUDT15, thiopurine-induced toxicity, TPMT

PP-0398 Efficacy of different types of biologics to induce remission in Crohn's disease patients and the persistence of the biologics therapy

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Background and Aim: Biological therapy is an effective therapy in Crohn's disease (CD). However, there is no head-to-head comparison between biological agents. **Objectives:** (i) To compare the clinical remission rate among the different biologics, (ii) to identify the adverse events of the different biologics and (iii) to evaluate the persistence of the different biologics. **Methods:** This was a retrospective, single-centre study conducted in PPUM where we recruited CD patients who were biologic naïve. Demographic, clinical data and type of biologic used were recorded. Clinical remission at 3 and 6 months and 1 year were analysed as well as duration of treatment and duration of severe adverse events. **Results:** A total of 60 patients were included in the study. Demography was as follows: mean age 31.6 ± 8.8 years; mean disease duration 6.4 ± 4.5 years; and ethnicity Indian (50%), Chinese (31.7%) and Malay (18.3%). Colonic disease appeared to be the most common distribution, followed by ileal (30%) and ileocolonic (30%). Majority of the CD patients had non-penetrating disease (45%) and peri-anal fistula (20%). Clinical remission for Infliximab, Vedolizumab, Adalimumab and Ustekinumab were as follows: 3 months 76.3%, 44.4%, 16.7% and 65.0%; 6 months 83.3%, 33.3%, 40.0% and 66.7%; and 1 year 80.6%, 62.5%, 50.0% and not available. Infliximab had the highest remission rate at 3 months, and this was maintained throughout the 1-year treatment. Vedolizumab and Adalimumab had a low remission rate initially, but increased by 1 year. 15.8% of Infliximab patients developed severe adverse events (psoriasisiform dermatitis, tuberculosis & infusion reaction) and one case of TB on adalimumab. No adverse events were seen in the other biologics. **Conclusion:** Infliximab has the highest rate of early clinical remission and persistence compared to the other biologics but was also associated with more significant adverse events.

Keywords: biologics, Crohn's disease, inflammatory bowel disease

PP-0399 Diversity of *H. pylori* virulence factor in Sri Lanka: Comparative genomic study

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Background and Aim: *H. pylori* genome is highly diverse and correlated with geography region due to prolonged infection in human stomach. Hence, *H. pylori* genome in each country has unique features with different gastric cancer risks. Sri Lanka is a country in South Asia that separated from the mainland by the sea. This study aimed to investigate the prevalence and virulence from the genomic approach. **Methods:** A cross-sectional study including 400 dyspeptic subjects was conducted in Teaching Hospital Peradeniya Sri Lanka. After excluding 47 subjects, endoscopy-guided-gastric biopsy was obtained and cultured. Whole-genome sequencing by Illumina MiSeq was performed to make genome assembly. **Results:** The prevalence of *H. pylori* was extremely low (6.5%) based on culture, histology, and serology, and six *H. pylori* strains were successfully isolated. Pangenome analysis by Roary shown 1926 genes with 1225 genes as the core. Screening by Virulence Factor database (VFDB) and Victor database revealed that all virulence factors other than cag pathogenicity island (cagPAI) were present in all strains. However, (4/6) 66.7% of them were cagPAI negative. Meanwhile, two remaining strains have Western-type cagA with EPIYA motif ABC and a high virulence BCCC motif. The strains with cagA negative also have vacA type s2m2 and oipA "off", showing the possible association of the cagA status with other virulence factors in the genome. Core genome phylogenetic tree analysis by maximum-likelihood method showed that Sri Lanka isolates were clustered with the hpEurope and hpAsia2. The clustering of cagA and vacA phylogenetic tree was concordant with the whole genome. **Conclusion:** In conclusion, *H. pylori* infection should not be neglected despite the low prevalence of *H. pylori* in Sri Lanka.

Keywords: *Helicobacter pylori*, Virulence Factor, cagA, whole genome sequence, Sri Lanka

PP-0400 Optimal adjuvant therapy in patients with borderline resectable and unresectable pancreatic cancer who had received neoadjuvant FOLFIRINOX

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Background and Aim: With the advent of the first-line treatment for unresectable pancreatic cancer, the radical resection rate of pancreatic cancer is rising. Still, strategies regarding adjuvant therapy after neoadjuvant FOLFIRINOX treatment remain to be established. **Methods:** Data on 211 borderline resectable and unresectable pancreatic cancer who underwent resection after neoadjuvant FOLFIRINOX between Jan 2013 and Apr 2021 were retrospectively reviewed, and finally, 113 patients with borderline resectable and 31 with locally advanced pancreatic cancer were included. **Results:** The median recurrence-free survival (RFS) and overall survival (OS) were 12.95 and 23.45 months, respectively. According to proportional hazards regression analysis, adjuvant therapy with 5-FU-based regimen (relative risk (RR), 0.44 [95%CI, 0.22–0.85], $p = 0.015$), poor pathologic response to neoadjuvant therapy (RR, 2.64 [95%CI, 1.39–5.01], $p = 0.003$), poorly differentiated cancer (RR, 2.89 [95%CI, 1.13–7.37], $p = 0.026$), and R1 resection (RR, 3.13 [95%CI, 1.46–6.74], $p = 0.003$) were associated with RFS. Adjuvant therapy with 5-FU-based regimen (RR, 0.17 [95%CI, 0.05–0.61], $p = 0.06$), R1 resection (RR, 14.29 [95%CI, 4.07–50.23], $p < 0.001$), and pathologic lymph node involvement (RR, 3.48 [95%CI, 1.25–9.73], $p = 0.017$) were associated with OS. In subgroup analysis, 5-FU-based regimen was ineffective when the CAP score was 3 (RR, 0.365 [95%CI, 0.13–1.02], $p = 0.05$) or no lymph node metastasis was found (RR, 0.47 [95%CI, 0.17–1.26], $p = 0.13$) in the surgical pathology. **Conclusion:** 5-FU-based adjuvant therapy seems to be the optimal adjuvant therapy for patients who showed response to neoadjuvant FOLFIRINOX and lymph node involvement in pathology.

Keywords: adjuvant chemotherapy, FOLFIRINOX, neoadjuvant therapy, pancreatic cancer

PP-0401 Clinical, manometrical, and psychological characteristics in patients with functional heartburn overlapping with gastroesophageal reflux disease

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Background and Aim: Patients with functional heartburn (FH) have poor response to proton-pump inhibitors (PPIs), and it is crucial to distinguish FH from gastroesophageal reflux disease (GERD). However, some patients may have overlap between FH and GERD (overlap FH). Therefore, we aimed to investigate the clinical and psychological characteristics in patients with overlap FH. **Methods:** From 2014 to 2019, consecutive patients who had proved GERD but refractory symptoms despite of PPIs use ≥ 8 weeks were prospectively enrolled at a tertiary center. All patients

received validated symptom questionnaires, high-resolution impedance manometry (HRIM), and 24-h multichannel intraluminal impedance-pH testing on PPI therapy. Overlap FH was defined by the updated Rome IV criteria. Age- and sex-matched healthy volunteers were also enrolled for comparisons. **Results:** Among the 54 patients analyzed, 33 (61%) were diagnosed as overlap FH while the other 21 were found to have residual acid reflux ($n = 3$), weakly acid reflux ($n = 13$), and reflux hypersensitivity ($n = 5$). The clinical characteristics, symptom profiles, and HRIM parameters were similar between overlap FH and other GERD patients. Compared with the 32 healthy volunteers, patients with overlap FH had lower distal contractile integral values, larger peristaltic break size, and more hiatal hernia on HRIM. In patients with overlap FH, 36.4% had psychological comorbidity, and 78.4% had poor sleep quality. Overlap FH patients with normal motility had higher psychological comorbidity than those with ineffective motility disorder (58.8% vs. 12.5%, $p = 0.006$). **Conclusion:** Patients with overlap FH have similar clinical features with GERD patients, but more motility abnormalities and psychological comorbidities, and poor sleep quality than healthy volunteers.

Keywords: functional heartburn, gastroesophageal reflux disease

PP-0402 Factors associated with recurrent choledocholithiasis following endoscopic bile duct clearance

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Background and Aim: Choledocholithiasis occurs in 15% to 20% of patients with cholelithiasis, and only 10% of those develop in patients with normal gallbladder (GB). Endoscopic retrograde cholangiopancreatography (ERCP) is widely accepted for endoscopic removal of bile duct stones. Recurrence of choledocholithiasis is a late complication of it. The goal of this study was to identify factors responsible for recurrence of choledocholithiasis who underwent ERCP as well as evaluate the rate of recurrence of choledocholithiasis. **Methods:** Study was carried out in all diagnosed cases of choledocholithiasis who underwent ERCP and endoscopic sphincterotomy (EST) admitted in Department of Gastrointestinal, Hepatobiliary and Pancreatic Disorders (GHPD), BIRDEM General Hospital from October 2018 to June 2020. All recurrences of choledocholithiasis during the study period were recorded. Clinical, ERCP-related features (bile duct anatomy and stone character) and laboratory data potentially associated with common bile duct (CBD) stone recurrence were analyzed using standard techniques. **Results:** A total of 92 patients were included of which 84 patient came for follow up. Twenty-three (23) out of 84 patients (27.4%) presented with recurrent choledocholithiasis after 10.52 ± 2.54 months (Mo). Factors associated with recurrence were age (60.30 ± 12.35 vs 52.44 ± 12.69), size (diameter) of the largest CBD stone found at first presentation (19.67 ± 1.93 mm vs 9.91 ± 1.99 mm), diameter of the CBD during the first examination (22.15 ± 2.77 mm vs 11.70 ± 1.29 mm), angulation at distal CBD (121.78 ± 3.23 vs 147.02 ± 10.39), use of mechanical lithotripsy (ML) (OR = 10.029, 95%CI: 3.207–31.356) and multiple ERCP sessions (OR = 3.031, 95%CI: 1.240–7.409). Periampullary diverticula showed a trend towards significance OR = 32.571, 95%CI: 8.462–125.369). Jaundice (13.11 ± 4.70 vs 3.69 ± 2.93), prior common bile duct (CBD) stone (OR = 15.545, 95%CI: 5.225–57.197), more raised transaminases, alkaline phosphatase (Alk phos) (777.22 ± 139.38 vs 220.57 ± 115.82), gamma-glutamyl transferase (GGT) (518.52 ± 66.35 vs 152.08 ± 72.83) and total WBC count ($19,699 \pm 2503$ vs 9246 ± 2746) showed significant differences among two groups. On the contrary, duration of hospital stay, number of stones, impacted stone and gallbladder in situ did not influence recurrence. **Conclusion:** The rate of recurrence of choledocholithiasis was

27.4%. It was associated with increasing age, jaundice, prior CBD stone, multiple ERCP sessions, cholangitis, anatomical parameters (diameter of CBD, acute distal CBD angulation and juxtapapillary diverticula) and stone character (stone size and use of mechanical lithotripter) at first presentation.

Keywords: choledocholithiasis, endoscopic bile duct clearance, recurrence

PP-0403 The prognostic role of albumin-bilirubin (ALBI) grade on HCC mortality

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Background and Aim: To determine the role of albumin-bilirubin (ALBI) grade in predicting mortality among patients with hepatocellular carcinoma (HCC). **Methods:** This is a retrospective study conducted through secondary data analysis of adult patients diagnosed with HCC in two tertiary referral centers from 2007 to 2014. Descriptive analyses were conducted depending on the scale of the item. The Kaplan Meier method was utilized to estimate time-to-event data across disease staging—ALBI, Child-Pugh-Turcotte Score (CTP), and BCLC. Receiver operating curves were created to estimate the extent of discrimination among different staging systems on mortality. Level of significance was set at *p* value of <0.05.

Results: Four-hundred twenty-nine patients satisfied inclusion criteria. Baseline characteristics include mean age of 59 years old, 78% males, hepatitis B as etiology at 53%, CTP A/B/C at 45%/41%/14%, BCLC A/B/C/D at 1%/34%/49%/16%, and ALBI grade 1/2/3 at 17%/46%/37%. Median follow-up was 10 months. Kaplan Meier survival plot demonstrated higher mortality incidence among patients with greater class/grade across all staging systems overall, at 1-year and 3-year follow-up. Although not statistically significant (*p* = 0.20), ALBI performed best in predicting mortality with an overall AUC of 0.68 (CI 0.62–0.73) compared to CTP (AUC 0.67) and BCLC (AUC 0.62). ALBI also demonstrated good discrimination in determining survival among patients undergoing surgery (*p* = 0.04) and TACE (*p* = 0.08), although it was not statistically significant for TACE. **Conclusion:** ALBI, being readily available, inexpensive, and having good discriminatory property, is a reliable prognostic tool to predict mortality and may be used routinely in the approach to managing patients with liver cancer.

Keywords: ALBI, albumin-bilirubin grade, HCC, mortality, prognosis

PP-0404 The Epidemiology Study of Hepatitis C Population in Kota Bharu: Demography of Socioeconomic Status

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Background and Aim: The socioeconomic impact of chronic hepatitis C is devastating considering that significant number of those who are chronically infected will get into liver cirrhosis or liver cancer if not properly managed¹. Therefore, regular monitoring of hepatitis C (HCV)-related surveillance data is essential to be performed so that it helps to evaluate strategies to reduce the expanding HCV burden. The aim of this study was to examine trends in the demography and socioeconomic status of

the Hepatitis C population in Kota Bharu. **Methods:** A prospective, cross sectional cohort study involving confirmed Hepatitis C patient above 18 years old. The participants were recruited from Hospital University Sains Malaysia (HUSM) and Hospital Raja Perempuan Zainab II (HRPZ II). Relevant socioeconomic data were gathered from the recruited patients with confirmed Hepatitis C for further analysis. **Results:** Total of 67 patients with confirmed hepatitis C recruited from this study with the majority of them were males 55 (82%) and Malay constituted the most with 65 (97%). Figure 1 showed employment status from the study population with majority of them 39 (58.2%) were either unemployed or labourer. Figure 2 showed the detailed percentage of possible route of transmission with sharing needles among intravenous drug user (IVDU) constituted the most with 24 (40%) of the whole population with another 11 (16.4%) contracted from sexual activities. **Conclusion:** Majority of our hepatitis C patients were in the background of low socioeconomic status with exposure to high risk activity. Therefore, more attention and early intervention are needed to tackle this issue at all level of care in order to improve their standard of living and prevent this curable disease from getting worst in line with the World Health Organization's objective of eliminating global Hepatitis C by the year 2030²

Keywords: Hepatitis C, Demographic Characteristic, Kota Bharu Malaysia, Public Awareness

PP-0405 Outcomes of antenatal screening services to eliminate mother-to-child transmission of hepatitis B in Kedah state, Malaysia

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Background and Aim: As part of the triple elimination of mother-to-child transmission (EMTCT) program, antenatal screening services for hepatitis B were first introduced at the primary care level in Kedah State back in 2019. The aim of this research is to determine the prevalence of hepatitis B in pregnant women and the hepatitis B status of their children. **Methods:** This was a cross-sectional study based on the data contributed by all the seven (7) PHC centres participating in this programme. All the pregnant women seeking care from any of the PHC centres between 1 April and 31 December 2019 were included in this study. They were first tested for hepatitis B surface antigen (HBsAg) by using a rapid test kit, and those with a positive test result subsequently had their venous blood sent to nearby hospitals for a confirmatory test (quantitative viral load). The pregnant women with a confirmed diagnosis of hepatitis B were monitored closely, and their children received both immunoglobulin and the first dose of hepatitis B vaccine at birth. The HBsAg status of their children was then confirmed after nine (9) months. **Results:** Of the 4207 pregnant women undergoing the screening, 14 tested positive for hepatitis B (0.33%). Most of the pregnant women with hepatitis B were multipara (73%), housewives (40%), of Malay ethnicity (93%) and in the age range between 31 and 39 years (80%). To date, 11 of the 14 children born to mothers with hepatitis B had reached 9 months of age and tested negative for the disease. **Conclusion:** The findings suggest that screening pregnant women for hepatitis B at the primary care level would be an effective strategy to achieve EMTCT of hepatitis B in Malaysia.

Keywords: antenatal screening, hepatitis B, mother-to-child, transmission

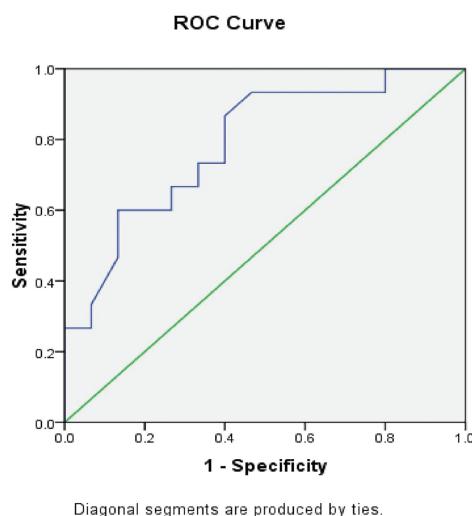
PP-0406 Predictors of survival in a cohort of advanced HCC initiated on sorafenib

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Background and Aim: Hepatocellular carcinoma with portal vein invasion and extra hepatic metastasis corresponds to Barcelona clinic liver cancer (BCLC-C). The median survival of BCLC-C is only 10 months. Sorafenib is the first-line drug for this disease group. With the advent of newer treatment modalities like immune check point inhibitors and other anticancer drugs, it's important to predict those who are likely to have inadequate response to sorafenib. We tried to find clinical and biochemical variables that can predict survival in BCLC-C HCC-treated with sorafenib. **Methods:** Prospective observational study. Clinical and biochemical variables of the patient at the time of initiation of sorafenib and at the end of 1 month after initiation were assessed. Telephonic interview was done to assess the mortality at 6 months. **Results:** 30 patients were taken up for the study. Most common etiology was HBV (33.3%) followed by Alcohol (30%). Among the variables analyzed, change in eosinophil count (Δ AEC) after 1 month of treatment was the only variable that predicted 6-month survival. AUROC was 0.789 in predicting 6-month survival (sensitivity of 67% and specificity of 77%) for a Δ AEC $> +35/\text{mm}^3$ (Figure 1). **Conclusion:** Increase in eosinophil count of $>35/\text{mm}^3$ from baseline 1 month after initiation of Sorafenib in hepatocellular carcinoma can predict 6-month survival.

Keywords: eosinophil as prognostic marker, eosinophil as survival marker, eosinophil—new emerging marker, eosinophil-sorafenib response, predictor of advanced HCC

FIGURE-1



PP-0407 Efficacy and safety of PEG 3350 vs lactulose in chronic constipation: A randomized clinical study

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Background and Aim: Constipation is a common condition. Lactulose and polyethylene glycol (PEG) are effective and safe, recommended as a first-line medication for chronic constipation (CC). **Methods:** This was a single-center, randomized, open-label, parallel-group study. Patients with CC (<3 bowel movements per 7-day period) received either 17 g of PEG 3350 or 10 g of Lactulose daily for 14 days. The primary endpoint was the number of bowel movements per 7-day period. **Results:** PEG 3350 and Lactulose are both effective, increasing the number of bowel movements per week, from 1.6 (95%, CI 1.4, 1.8) in the PEG group and 1.7 (95%, CI 1.5–1.9) in the Lactulose group at day 0; 3.7 (95% CI 3.3–4.3) PEG and 3.8 (95% CI 3.4–4.4) Lactulose in the first week; 4.2 (95% CI 3.7–4.8) PEG and 4.3 (95% CI 3.8–4.9) Lactulose in the second week, all improvements are statistically significant in the ITT population ($p < 0.001$). All constipation symptoms were improved without significant differences in laboratory findings. Adverse events (AEs) were reported more in PEG 3350 than the Lactulose group (17.6% vs. 12.7%). **Conclusion:** PEG 3350 and Lactulose are both practical to relieve CC. PEG 3350 was not inferior to Lactulose in two groups with chronic constipation. Flatulence was less frequent in the PEG 3350 than in the Lactulose group.

Keywords: constipation, Lactulose, laxative, PEG 3350

PP-0408 An evaluation of double-balloon enteroscopy in small bowel diseases: Seven years of single-center experience in Malaysia

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Background and Aim: The aim of the study was to evaluate the diagnostic and therapeutic values of double-balloon enteroscopy (DBE) in small bowel diseases (SBDs) in Malaysia. **Methods:** A retrospective evaluation of DBE procedures between January 2014 and December 2020 was performed at The National University of Malaysia Medical Centre. Demographic data along with clinical presentations, prior upper/lower endoscopy, imaging, enteroscopic and histopathological findings, complications, detection rate, and further medical and surgical management were recorded. **Results:** A total of 185 DBE procedures were performed and various SBDs were diagnosed with the overall detection rate of 74% (137/185). Majority of patients were Crohn's disease, CD (29%, 53/185) and followed by non-specific enteritis, NSE (16%, 29/185), angioectasia (14%, 25/185), neoplasia (11%, 20/185), and others (6%, 12/185).

Endoscopic argon plasma coagulation (14%, 25/185) and polypectomy (5%, 10/185) were the predominant form of intervention used and further surgical resection of SBDs performed in (9%, 17/185). Minor haemorrhage and aspiration pneumonia occurred in three patients (1.6%, 3/185). CD (75%) and NSE (71%) were commonly diagnosed at the distal jejunum whereas angioectasia (84%) and neoplasia (77%) at the proximal jejunum. The positive rate of DBE in neoplasia and CD was significantly higher than other SBDs with the prior magnetic resonance enterograph (MRE) imaging ($P < 0.05$). Commonest SBDs among patients of <50 years old were CD (87%) and NSE (76%), whereas for >50 years old, the commonest SBDs were angioectasia (67%) and neoplasia (63%). Occult gastrointestinal bleeding and unexplained anaemia were among commonest indications. **Conclusion:** Crohn's disease and non-specific enteritis were common SBDs among the young, whereas neoplasia and angioectasia were common among elderly Malaysian patients. DBE is safe and useful diagnostic and therapeutic tool to diagnosed SBDs, and prior MRE is recommended to increase the detection rate.

Keywords: double-balloon enteroscopy, small bowel diseases

PP-0409 Imaging liver biomarker cT1 in combination with BMI and age is able to predict metabolic disease status

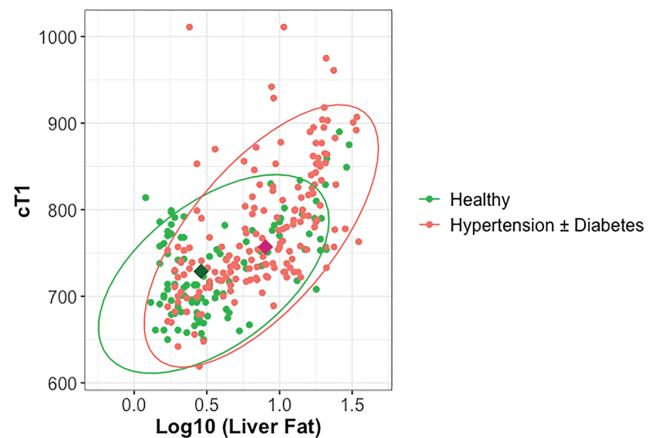
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Background and Aim: Liver disease is frequently co-prevalent in diabetes and the combination increases risk of cardiovascular events. cT1 is a quantitative magnetic resonance biomarker that can non-invasively monitor liver fibroinflammation and predict outcomes. The aim of our analysis was to characterise liver disease in patients with hypertension and identify key predictors of disease. **Methods:** Asian cohort from Singapore ($n = 109$ healthy, $n = 80$ hypertension & $n = 90$ hypertension and diabetes) was used as a training set with patients classified as either healthy or diseased, based on cT1 and liver fat data acquired with LiverMultiScan. Key predictors were identified using step-wise logistic regression. The model was cross-validated (by repeated, random removal of 20% of the dataset 10,000 times). The model was validated on Asian population of the UK Biobank (UKBB) ($n = 80$ healthy, $n = 36$ hypertension, $n = 6$ hypertension and diabetes) and then further validated on 1000 non-Asian UKBB population (500 healthy, 250 hypertension and 250 diabetes patients randomly selected, resampled 10,000 times). **Results:** A statistically significant difference in liver fat and cT1 between healthy and diseased was observed in the Singapore cohort ($p < 0.0001$), with 9% prevalence of fibrotic NASH in metabolically diseased (Figure). A composite predictor of cT1, BMI and age performed best with AUC 0.87 (0.82–0.92) in the Singapore data, AUC 0.81 (0.73–0.89) in the Asian UKBB and mean AUC 0.82 in non-Asian UKBB. **Conclusion:** cT1 is a biomarker of liver health and in combination with BMI and age acts as a good predictor of metabolic disease status.

Keywords: cT1, metabolic syndrome, MRI, NAFLD, NASH



PP-0410 Association between mucin phenotype and lesion border detection using acetic acid-indigo carmine chromoendoscopy in early gastric cancers

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Background and Aim: For successful treatment of early gastric cancers (EGCs), it is crucial to define the horizontal border of the lesion with high accuracy. Acetic acid-indigo carmine (AI) chromoendoscopy has been used to determine the horizontal border in EGCs, but this technique is less potent in certain situations. Mucin phenotype in gastric cancers refers to biological differences in precursor lesions and differences in histopathologic findings, and it might affect AI chromoendoscopy findings. We aimed to investigate the association between mucin phenotype and AI chromoendoscopy findings in EGCs. **Methods:** We prospectively evaluated 126 lesions in 126 patients with endoscopically diagnosed EGCs. Conventional endoscopy and AI chromoendoscopy findings in these lesions before treatment were prospectively analyzed. The border distinction between the lesion and surrounding mucosa was classified as distinct or indistinct on conventional endoscopy and AI chromoendoscopy, respectively. Mucin phenotypes were classified as gastric, intestinal, gastrointestinal, or null type by immunohistochemistry. **Results:** The lesion borders were distinct in 46.8% (59/126) of the lesions assessed using conventional endoscopy and in 73.0% (92/126) of those assessed with AI chromoendoscopy ($p < 0.001$). The border distinction rate of differentiated-type cancers on AI chromoendoscopy was significantly higher than that on conventional endoscopy (66/71 [93.0%] vs. 34/71 [47.9%], $p < 0.001$), but the border distinction rate of undifferentiated-type cancers on AI chromoendoscopy was not different from that on conventional endoscopy (26/55 [47.3%] vs. 25/55 [45.5%], $p = 0.848$). Compared with conventional endoscopy, AI chromoendoscopy identified borders in a significantly higher percentage of gastric, intestinal, and gastrointestinal mucin types; however, there was no difference in AI chromoendoscopy findings according to the mucin phenotype ($p = 0.271$). **Conclusion:** AI chromoendoscopy was effective in horizontal border delineation in differentiated-type EGCs, but not in undifferentiated-type EGCs. Mucin phenotype had no effect on border distinction using AI chromoendoscopy.

Keywords: acetic acid, chromoendoscopy, early gastric cancer, indigo carmine, mucin

PP-0411 The etiology of drug-induced liver injury in patients presenting to a tertiary care Hospital, Karachi, Pakistan

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Background and Aim: To determine the frequency and etiology of drug-induced liver injury in patients presenting to a tertiary care hospital, Karachi. **Methods:** An observational, cross-sectional study was conducted at Jinnah Postgraduate Medical Centre, Karachi, during the period from 1 December 2019 to 31 August 2020. Patients with either gender of any age and with documentation of liver injury secondary to any drug were eligible for inclusion in this study. Patients with concomitant other causes of liver injury were excluded. **Results:** A total number of 50 patients were enrolled in the study: 27 (54%) were male and 23 (46%) were female. Mean age of the patients was 34 ± 10.6 years. Most of the patients, 20, (40%) were in Grade-I injury. *R* value was calculated in all patients to assess the effects of drugs, and it was found to be mean 3.4 ± 1.8 . Mean alanine transaminase was 426 mg/dL, and bilirubin was 7 ± 6.2 mg/dL. Thirty-four (68%) patients had improved, and 16 (32%) patients had died. Isoflurane (70%, n35) was seen as the main reason for DILI. The etiologies of liver injury found in our study are shown in Figure 1. **Conclusion:** Isoflurane was the most common hepatotoxic drug among patients with DILI.

Keywords: drug induced liver injury, etiology, grades, isoflurane, mortality

PP-0412 Comparison of tissue quantity and diagnostic yield between two different core biopsy needles for EUS-guided tissue acquisition: 22-gauge reverse bevel versus 22-gauge franseen needles

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Background and Aim: Endoscopic ultrasound-guided fine needle aspiration (FNA) is largely being replaced by fine needle biopsy (FNB). These FNB needles have varying needle tip geometry to obtain cores of tissue and improve diagnostic yield. The current study aims to compare the tissue quantity and diagnostic accuracy obtained from the 22-gauge reverse bevel (RB) and the 22-gauge franseen (FR) needles. **Methods:** A total of 59 consecutive patients referred for EUS-FNB of lesions measuring at least 1 cm in size were prospectively recruited. Each lesion was sampled by both needles using a single pass with the order of the needle being randomized. All specimens were preserved in separate formalin containers and reviewed by two pathologists. The primary outcome was tissue length, width, surface area, volume, and the secondary outcomes were diagnostic yield, technical success, and complications. **Results:** A total of 61 solid lesions were sampled (40 pancreas, 9 lymph nodes, 7 subepithelial lesions, and 5 hepatobiliary tract). The mean size of the lesions was 26.5 ± 9.0 mm. The FR needle obtained a significantly greater length (28.27 ± 29.95 vs 13.31 ± 15.02 , $p = 0.006$), width (8.07 ± 7.56 vs 4.66 ± 5.12 mm, $p =$

Table 1

Collated outcomes of tissue quantification between both needles

	RB	FR	p Value
Tissue Length (mm)	13.31 ± 15.02	28.27 ± 29.95	0.006
Tissue Width (mm)	4.66 ± 5.12	8.07 ± 7.56	0.005
Tissue Surface Area (mm ²)	2.62 ± 3.62	6.73 ± 7.69	0.02
Tissue Volume (mm ³)	0.55 ± 1.00	1.33 ± 1.72	<0.001
Diagnostic Yield	56/61 (91.8%)	57/61 (93.4%)	0.30
Sensitivity	52/57 (91.2%)	52/56 (92.9%)	0.63
Specificity	3/3 (100%)	4/4 (100%)	1.00

0.005), surface area (6.73 ± 7.69 vs 2.62 ± 3.62 mm², $p = 0.02$) and volume (1.33 ± 1.72 vs 0.55 ± 1.00 mm³, $p < 0.001$) of tissue than the RB needle. The diagnostic yield of a single pass was high for both needles (RB 91.8% vs FR 93.4%; $p = 0.30$). Technical success was 100% for both needles, and there was no complication reported (Table 1). **Conclusion:** Despite similar diagnostic yield, the FR needle obtained twice as much core tissue compared to the RB needle. In the era of personalized cancer medicine, the need for tissue biomarker testing places the 22-gauge FR needle at a unique advantage when compared to the 22-gauge RB needle.

Keywords: endoscopic ultrasound, fine needle aspiration, tissue acquisition

PP-0413 Prevalence and clinical characteristics of irritable bowel syndrome in Taiwan: An update

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Background and Aim: Irritable bowel syndrome (IBS) is a relapsing functional bowel disorder defined by symptom-based criteria, including recurrent abdominal pain, change of bowel habits, and symptomatic relief after bowel movement. The chronic and relapsing nature of IBS has a high impact on patient's quality of life, resulting in frequent hospital visits and consumption of medical resources. We aimed to evaluate the updated prevalence and clinical characteristics of irritable bowel syndrome in Taiwan by using Rome III criteria. **Methods:** Subjects who received health examination at Health Management Center in National Taiwan University Hospital were enrolled and evaluated by using Rome III questionnaire. Five-item Brief Symptom Rating Scale and Athens Insomnia Scale were performed to evaluate the psychiatric and sleeping conditions. **Results:** From August 2019 to December 2019, we recruited 501 subjects (mean age 50.8 ± 10.5 , male 55.1%) receiving health examinations in National Taiwan University Hospital and found a 6% prevalence of IBS according to the Rome III criteria. The most common subtype is mixed-type irritable bowel syndrome (IBS-M). Compared with the control group, the IBS group had higher scores on Brief Symptom Rating Scale (BSRS-5) (4.83 ± 3.41 vs. 2.80 ± 2.82 , $p < 0.001$), suggesting a higher psychosocial stress. There was also a higher prevalence of psychiatric morbidity (10% vs. 2.5%, $p = 0.020$), as defined by the total BSRS-5 scores > 6 . The insomnia symptoms based on the Athens Insomnia Scale were also higher in the IBS group (7.35 ± 4.32 vs. 4.39 ± 3.72 , $p < 0.001$). The severity of psychiatric and insomnia symptoms was positively correlated with the frequency of abdominal pain. **Conclusion:** Irritable bowel syndrome is common in Taiwanese population. It causes large social and medical burdens. Our study suggests the pivotal role of psychiatric stress and sleep disturbance on the rising

prevalence of IBS, and multidisciplinary intervention with psychiatric consultation is necessary for IBS patient care.

Keywords: irritable bowel syndrome, Rome III criteria

PP-0414 Colorectal endoscopic full thickness resection: Early experience in a tertiary centre

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Background and Aim: Colorectal endoscopic full thickness resection (EFTR) using the full thickness resection device (FTRD) is an emerging endoscopic therapy for non-lifting adenomas and subepithelial lesions. We aim to describe our experience and examine the outcomes of EFTR

in our centre. **Methods:** All colorectal EFTR performed from 2016 to 2020 were reviewed retrospectively. Demographic data, indication of EFTR, lesion size and location were collected. Outcomes assessed include technical success, complete resection (R0), procedure time, adverse events and need for surgery. **Results:** Eleven patients were included in the study. Eight patients were male. The median age of patients was 55 years old. Three patients had recurrent/residual adenoma, and eight had rectal neuroendocrine tumours (NET). The resected specimens measured 20 mm. Mean lesion size was 8.75 mm, and mean procedure time was 33 min. All but one lesion were located in rectum. Technical success and R0 rates were 100%. One patient underwent right hemicolectomy for unsuspected T1 adenocarcinoma with deep submucosal invasion. Three patients with post-procedure bleeding were successfully treated endoscopically. No major adverse events were identified. **Conclusion:** Colorectal EFTR with FTRD for treatment of residual/recurrent colorectal adenoma and rectal NET is efficacious and safe. Further prospective studies are required to compare the outcomes of EFTR with other conventional endoscopic therapy for treatment of these lesions.

Keywords: full thickness resection, full thickness resection device, rectal neuroendocrine tumour, recurrent colorectal adenoma, residual colorectal adenoma

Table 1 Patient, colorectal lesion characteristics and outcomes following EFTR

No	Date of EFTR (MM/YYYY)	Age (year)	Prior endoscopic therapy	Indication	Location	Lesion size (mm)	Duration (mins)	Histology	Complications	Follow up colonoscopy
1	03/2016	53	Biopsy	NET	Rectum	14	56	G1 NET, no LVI	Abdominal pain	Nil
2	11/2018	58	Nil	SET	Rectum	5	20	G1 NET, no LVI	Nil	8 months (no recurrence)
3	11/2018	55	Biopsy	NET	Rectum	5	10	G1 NET, no LVI	Bleeding	Nil
4	05/2019	56	HSP	Recurrent adenoma	Rectum	12	33	Adenoma with LGD	Nil	Nil
5	05/2019	69	HSP	Residual adenoma	Ascending colon	15	79	Adenocarcinoma, 3mm submucosal invasion	Nil	N.A (Right hemicolectomy)
6	05/2020	49	CSP	Residual NET	Rectum	6	25	G2 NET, no LVI	Nil	6 months (no recurrence)
7	08/2020	51	HSP	Recurrent NET	Rectum	5	31	G2 NET, focal lymphatic invasion	Nil	Nil
8	08/2020	55	Biopsy	NET	Rectum	8	20	G1 NET, no LVI	Nil	Nil
9	09/2020	72	HSP	Residual adenoma (HGD involving margins)	Rectum	NA	27	No residual adenoma	Nil	Nil
10	10/2020	40	HSP	NET (indeterminate margins)	Rectum	NA	28	No residual NET	Bleeding	Nil
11	11/2020	75	CSP	NET (margins involved)	Rectum	NA	37	No residual NET	Bleeding	Nil

Abbreviations:

CSP Cold snare polypectomy, EFTR Endoscopic full thickness resection, HGD High grade dysplasia, HSP Hot snare polypectomy, LGD Low grade dysplasia
LVI Lympho-vascular invasion, NET Neuroendocrine tumour, SET Subepithelial tumour

PP-0415 Mass eradication of *Helicobacter pylori* infection to reduce gastric cancer for indigenous Taiwanese peoples: The program rolling-out

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Background and Aim: The life expectancy of Indigenous population in Taiwan is lower than national average by about 7.8 years. Cancer is the most important cause of death in Indigenous peoples. Specific for gastric cancer, we have implemented a mass eradication program of *Helicobacter pylori* infection to reduce this cancer health disparity. **Methods:** We invited experts from each professional area, including experts in Indigenous peoples cultural. Second, we implemented an organized screening program in Taitung County, Hualien County, Wulai District in New Taipei City,

Namasia and Maolin District in Kaohsiung City, where most of the Indigenous peoples lived in Taiwan. **Results:** We found that gastric cancer risk was higher in Indigenous peoples as compared with their non-Indigenous counterparts, about three-folds higher in risk. For them, *H. pylori* infection was also highly prevalent higher, about 60%. Those living in mountain and plain Indigenous township have higher risk of gastric cancer than those who living in the Metropolis (ORs are 2.19 [95% CI: 1.91–2.50] and 1.98 [95% CI: 1.73–2.26], respectively). Also, they have higher gastric cancer mortality with the ORs of 2.45 (95% CI: 2.03–2.95) and 2.26 (95% CI: 1.88–2.72), respectively. During 2020, there were 5064 participants in this program, with the overall positivity rate of 46.4%. Among 2608 Indigenous peoples, the positivity rate is 59.8%, whereas in 2456 non-Indigenous peoples, the positivity rate is 32.3%. For these *H. pylori* carriers, 84.1% of them have been referred to receive the anti-*H. pylori* treatment. After the first-line treatment, the retest rate was 60.1%, yielding the eradication rate of the first-line therapy of 77.9%. **Conclusion:** Mass screening and treatment of *H. pylori* infection is highly applicable in Indigenous Taiwanese communities, which can be combined with the other strategies for lifestyle modifications in order to reduce the risk of infection and re-infection.

Keywords: antibiotic, chemoprevention, health disparity, screening

PP-0416 Internet search interest of hepatitis in Indonesia: Infoveillance study

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Background and Aim: Public interest about hepatitis information can help to prevent, detect, and fight against hepatitis. Using Google Trends, we seek correlation Internet search patterns against hepatitis prevalence in 2018 and characterized public search trends for hepatitis in Indonesia. **Methods:** We evaluated relative search volume (RSV) of hepatitis based on time interest and geographical interest in Indonesia during 2018 against hepatitis prevalence from Basic Survey Ministry of Health Indonesia 2018. Pearson test was used to assess the correlation between variables. We collected “Related Topics” and “Related Queries” which included the individual search for hepatitis. Data were described using Google relative popularity. **Results:** Top three searches for the term “hepatitis” came from West Kalimantan, West Sulawesi, and South-East Sulawesi, while the highest three prevalence of hepatitis came from Papua, Middle Sulawesi, and West Sulawesi, respectively. The correlation between hepatitis RSV and hepatitis prevalence was not statistically significant ($p = 0.981$). Queries were categorized into (1) the most frequently searched concurrent terms (Top Terms) and (2) terms with the largest increase in concurrent search frequency (Rising Terms) in 2018. According to the popularity for this term, the definition, symptom, and treatment of hepatitis were the highest “three” public search trends. **Conclusion:** There is no correlation between search interest about hepatitis and hepatitis prevalence. Further studies are needed to search factor that will increase public awareness of hepatitis.

Keywords: Google Trends, hepatitis, infoveillance study

PP-0417 Association between the severity of COVID-19 and derangement of liver enzymes in patients with COVID-19 Induced Hepatitis: Meta-analysis and systematic review

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Background and Aim: COVID-19 Induced Hepatitis (CIH) has recently been recognized as a new clinical syndrome. We conducted a systematic review and meta-analysis to assess the prevalence and degree of liver injury and impaired liver biochemistry between patients with severe and non-severe COVID-19. **Methods:** An electronic search was done for PubMed, Medline, Cochrane, Google scholarly, and (Ovid) Embase databases for all the related literature published up to January 30, 2021. The data were analyzed using RavMen 5.3 statistical software. GADOUR criteria were used to identify cases of CIH. **Results:** The overall pooled data of these 17 studies with 7132 COVID-19 infected patients (severe cases, $n = 2955$; mild cases, $n = 4178$), it was demonstrated that elevated serum levels of AST (odds ratio [OR]: 2.656% confidence interval [CI]: 2.30, 2.035), with significant heterogeneity: $\chi^2 = 34.67$, $df = 16$ ($P = 0.004$); $I^2 = 54\%$, $Z = 13.53$ ($P = 0.001$), ALT (OR: 3.0839% CI: 2.6347, 3.6097), with significant heterogeneity: $\chi^2 = 48.99$, $df = 16$ ($P = 0.001$); $I^2 = 65\%$, $Z = 14.02$ ($P = 0.0001$), and total bilirubin (OR: 1.8796% CI: 1.427, 2.4597), heterogeneity: $\chi^2 = 22.15$, $df = 9$ ($P = 0.0008$); $I^2 = 59\%$, $Z = 4.48$ ($P = 0.0001$), were associated with a significant increase in the severity of COVID-19 infections. Additionally,

collective data from the random-effects model presented that lower serum levels of albumin (OR: 1.4062% CI: 1.0971, 1.8023), with slight heterogeneity: $\chi^2 = 11.58$, $df = 10$ ($P = 0.31$); $I^2 = 14\%$, $Z = 2.69$ ($P = 0.007$). **Conclusion:** COVID-19 Induced Hepatitis is common in severe COVID-19 patients. Extra care and liver support should be considered for patients with severe COVID-19 to prevent CIH. Further research should be considered to elaborate more therapeutic options.

Keywords: COVID-19, COVID-19 Induced Hepatitis, GADOUR criteria

PP-0418 Transient elastography in chronic hepatitis B patients

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Background and Aim: To determine the degree of fibrosis via transient elastography (TE) in treatment naïve patients of chronic hepatitis B.

Methods: An observational, cross-sectional study was conducted at the gastroenterology department, JPMC, Karachi, during the period from 1 December 2019 to 31 August 2020. Patients of either gender with any age, with documentation of chronic hepatitis B infection, were eligible for inclusion in the study. **Results:** A total of 68 patients were enrolled in our study. The mean age was 32 ± 13 years. 45 (66%) were male, and 23 (35%) patients were female. Most of the patients with F0–F1 fibrosis were in carrier state n23 (34%), 7 (10%) were in the immune tolerant state, 2 (03%) patients were HBeAg –ve, and 4 (06%) were HbAg +ve. Among patients with F2 fibrosis, 11 (16%) were CHB carriers, 4 (06%) were immune-tolerant, and 3 (4.4%) were CHB HBeAg –ve patients. In patients with F3 fibrosis, only one (1.5%) was in an immune tolerant state, and 4 (6%), 2 (3%), and 3 (4.4%) patients were CHB HBeAg –ve, CHB HBeAg +ve, and cirrhotics, respectively. Among patients with F4 fibrosis, 1 (1.5%) was HBeAg –ve, and 3 (4.4%) were cirrhotics. Comparison between patients with minimal and advanced fibrosis is shown in Table 1. **Conclusion:** Transient elastography is a good tool for determining the fibrosis of the liver. All patients with the diagnosis of CHB should be evaluated with TE regardless of viral load especially in patients aged ≥ 40 .

Keywords: chronic hepatitis B, degree of fibrosis, transient elastography



Transient Elastography in Chronic Hepatitis B Patients
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Comparison of Patients with minimal and advanced fibrosis

	Patients with minimal fibrosis	Patients with advanced fibrosis	P- value
Total No.	54 (79.5%)	14 (20.5%)	
Gender	Male (n33, 48.5%)	Male (n12, 17.6%)	
Mean age	29± 11 years	41 ± 15 years	0.0013
Mean viral load	102,308,095 IU/ml	3,476,497 IU/ml	0.419
Mean ALT	84 IU/L	75 IU/L	0.841

PP-0419 Social support and health-related quality of life among hepatitis C patients in Pahang, Malaysia

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Background and Aim: Hepatitis C is one of the most common causes of liver disease worldwide. Health impacts of hepatitis C are not limited to physical morbidity but include psychosocial dimensions such as quality of life (QOL), depression, anxiety, and stigmatization. In Malaysia, modifiable factors that can improve QOL among hepatitis C patients have not been adequately studied. Our study aims to test the association between social support and QOL among hepatitis C patients. **Methods:** Employing a cross-sectional design, 195 hepatitis C patients who attended Hospital Tengku Ampuan Afzan—the main public tertiary hospital in Pahang—were recruited through convenience sampling. Social support was assessed using the Duke Social Support Index (DSSI) while health-related quality of life (HRQOL) was measured by 36-item short-form survey (SF-36v2). **Results:** We found a significant positive correlation between social support and physical (95% confidence interval [CI]: 0.132, 0.406; $p < 0.05$) and mental (95% CI: 0.224, 0.490; $p < 0.05$) dimension of HRQOL. Patients with good social support scores were more likely to have better HRQOL. **Conclusion:** There is association between social support and HRQOL among our respondents. Supportive family and friends can enhance the physical, emotional, and social function of a hepatitis C patient. Health-care providers should consider the role of social support to improve hepatitis C management, through a multidisciplinary approach.

Keywords: social support, health-related quality of life, hepatitis C

PP-0420 The sensitivity of the fecal immunochemical test for detecting sessile serrated lesions with multiplicity and cytological dysplasia

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Background and Aim: Sessile serrated lesion (SSL) is a precancerous neoplasm that is not well detected by the fecal immunochemical test (FIT). However, the sensitivity of FIT for detecting the SSL with dysplasia and multiplicity remains unclear. This study aims to investigate the sensitivity of FIT for detecting SSL with dysplasia. **Methods:** We consecutively collected average-risk subjects over 45 years old who concurrently underwent screening colonoscopy and FIT from August 2010 through December 2018. The sensitivity of FIT for advanced adenoma (AA) and SSL with cytological dysplasia was calculated and compared, taking into account multiplicity, size, and other potential confounders. **Results:** Prevalence of SSL with dysplasia, multiplicity, or large size, and AA was 0.3%, 0.07%, 0.8%, and 2.6%, respectively. At cutoffs of 10-, 15-, and 20- μ g hemoglobin/g

Table 1 The risk factor of FIT positivity in sessile serrated lesions.

	Uni-variate	Multi-variate
	OR(95%CI)	aOR(95%CI)
Age	1.02(0.99-1.06)	1.02(0.98-1.05)
Male gender	0.92(0.54-1.57)	1.36(0.70-2.60)
SSL, n=		
1	1	1
2	1.30(0.49-3.46)	1.14(0.41-3.18)
≥ 3	3.60(1.23-10.50)	3.32(1.05-10.55)
Distal location	0.93(0.49-1.78)	-
Large or dysplasia	2.80(1.62-4.85)	2.28(1.26-4.11)

Adjusted by age, gender, smoking, body mass index, use of antiplatelet or non-steroid anti-inflammatory drugs.

aOR: adjusted odds ratio, SSL: sessile serrated lesion,

feces, the sensitivity of FIT was as follows: SSL with dysplasia, 20.3%, 17.0%, and 17.0%; SSL with multiplicity, 25.0%, 18.8%, and 18.8%; SSL with large size, 15.4%, 11.3%, and 9.2%; and AA, 27.4%, 23.4%, and 20.1%. The sensitivity for SSL with dysplasia and AA did not differ significantly at the cutoff of 20 μ g/g (15.3% vs. 20.1%; $p = 0.37$). Presence of dysplasia or large size {adjusted odds ratio (aOR) [95% confidence interval (CI)] = 2.28 (1.26–4.11)} and multiplicity [aOR (95%CI) = 3.32 (1.05–10.55)] were independently associated with FIT positivity (Table 1). **Conclusion:** SSL with dysplasia, large size, or multiplicity has a higher likelihood of being detectable by FIT. Further studies are warranted to clarify the effectiveness of FIT-based screening on preventing serrated CRC.

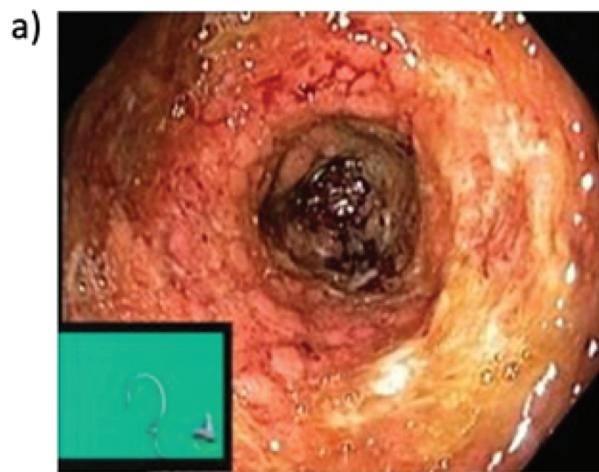
Keywords: colorectal cancer screening, sessile serrated lesion, fecal immunochemical test

PP-0421 Artefact detection improves machine learning classification of endoscopic scoring in ulcerative colitis

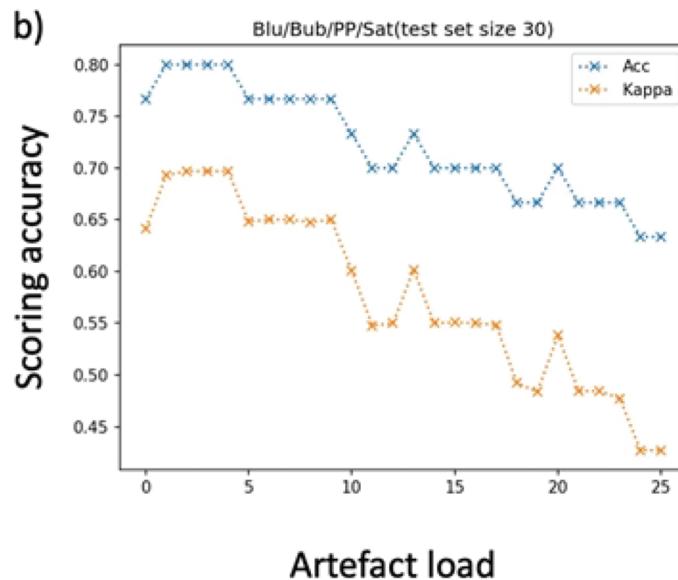
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Background and Aim: The current standard assessment of ulcerative colitis, lower gastrointestinal endoscopy, is visually interpreted and subject to inter- and intra-observer variability. While machine learning (ML) algorithms provide potential solutions, their performance depends on image quality, and image artefacts (IAs) can confound ML assessment, giving incorrect classification and shielding underlying disease. This study trained ML algorithms to predict Modified Mayo Endoscopic scores (MMES) in images and detect IAs, assessing their impact on the MMES prediction accuracy. **Methods:** Expert endoscopists assigned MMES and IA labels (blur, saturation, bubbles, graphics, text, and poor preparation) in a dataset used to train two separate ResNet152-based models to predict MMES and detect IAs. The MMES model assigns probabilities that sum to 1 for MMES scores, and the artefact model a vector independent probabilities IA labels. The sum of IA model-predicted probabilities defined a total artefact load (AL). Images were ranked from low to high AL and MMES prediction accuracy calculated for each. **Results:** The MMES model reached an accuracy of 0.72. The IA model figures, averaged over all artefact types, were sensitivity 0.63 and specificity 0.90. Figure 1 shows MMES prediction accuracies. The range of prediction accuracies for images with low AL was 0.77–0.80, whereas for high AL, the accuracy range was 0.63–0.67,



**Endoscopist MMES: 3
ML MMES: 3**



highlighting a tendency for MMES prediction accuracy to decrease with increasing AL. **Conclusion:** Our results show the accuracy of ML-predicted MMES decreases with increasing AL. This suggests that using AL to weight the confidence of MMES predictions for a given image can improve the robustness of the model.

Keywords: image artefact detection, machine learning, Mayo score, lower gastrointestinal endoscopy, ulcerative colitis

PP-0422 Assessment of hepatic fibrosis by vibration-controlled transient elastography and MR elastography have equivalent diagnostic performance, but in the assessment of hepatic steatosis, MRI PDFF methods are better than controlled attenuation parameter in obese patients

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Background and Aim: Imaging techniques including elastography has made a remarkable progress as non-invasive tests in the assessment of hepatic fibrosis and steatosis. Whether these diagnostic abilities are sufficient even in obese patients are unclear. We aimed to evaluate the diagnostic performance of vibration-controlled transient elastography (VCTE) and MRI/MR elastography to assess liver fibrosis and steatosis in obese NAFLD patients. **Methods:** This is a cross-sectional retrospective study of 163 biopsy-proven NAFLD patients who underwent both VCTE and MRI within 6 months of liver biopsy from 2014 to 2020. The diagnostic ability of VCTE including controlled attenuation parameter (CAP)

measurements, MR elastography, and MRI proton dense fat fraction (PDFF) were analyzed stratified with BMI as follows: normal (BMI < 25, n = 38), overweight (25 ≤ BMI < 30, n = 68), and obese (30 ≤ BMI, n = 57). **Results:** Both the MRE and VCTE could predict NAFLD patients with fibrosis stage ≥2, ≥3, and 4 (cirrhosis) with AUROC ≥ 0.83 in all groups categorized with BMI, showing no significant difference between the MRE and VCTE results. PDFF could predict NAFLD patients with hepatic steatosis grade ≥2 and 3 with good AUROC in all BMI groups, whereas the diagnostic ability of CAP for detecting steatosis was lower than that of PDFF in all BMI groups. With the increase of BMI, the diagnostic performance of hepatic steatosis by CAP tends to decrease compared to PDFF methods. **Conclusion:** Both MRI and VCTE provide equally good assessment of liver fibrosis, but the PDFF methods are more diagnostic for liver steatosis than the CAP in obese NAFLD patients.

Keywords: CAP, MRE, NAFLD, PDFF, VCTE

PP-0423 Targeted sequencing of phosphatidylinositol 3-kinases-related genes identified Interleukin-23 variants in colitis-associated cancer and colorectal cancer patients

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Background and Aim: Phosphatidylinositol 3-kinases (PI3K) signaling is one of the important pathways in driving the long-standing ulcerative colitis (UC) to develop colitis-associated cancer (CAC). PI3K is prominent in

promoting cancer as it regulates cells survival, differentiation, and proliferation. PI3K enzymatic activity was involved in the pathogenesis of various diseases, ranging from chronic inflammation to cancer. Thus, this study aimed to identify somatic mutations in PI3K signaling pathway-related genes among long-standing UC, CAC, and colorectal cancer (CRC) patients. **Methods:** Targeted sequencing on 13 PI3K-related genes was performed on 28 biopsies ($n = 8$ long-standing UC, $n = 1$ CAC, $n = 11$ CRC, $n = 8$ normal colorectal mucosa) using Agilent SureSelect Human All Exome V6. Genome Analysis Toolkit was used for variants analysis, and the annotations were detected by ANNOVAR. KEGG Orthology Based Annotation System 3.0 was applied for pathway analysis. **Results:** Demographic data for all samples were as follows: median age of 64 (IQR: 9) years old. Majority of the samples were Malays (75%), non-active smoker with slightly higher proportion among women (57.1%) compared to men (42.9%). Targeted sequencing has revealed 42 significant KEGG pathway and only six genes (IL12RB1, IL12RB2, IL23R, STAT1, STAT3, and STAT6) were found to be associated with the inflammatory bowel disease (IBD) pathways. A total of 35 single-nucleotide polymorphisms were discovered in those genes. Majority of the samples (78.6%) exhibited IL23R variant; rs10889677, c.*309C>A that showed positive correlation with IBD in genome-wide association study. In addition, presence of potentially damaging IL12RB1 variant; rs11575935 was observed in 21% of the samples. Structurally, the inflammatory mediators IL12RB1 and IL23R share the same IL-12p40 subunit that potentially could initiate the pro-oncogenic inflammatory pathway. **Conclusion:** This finding could provide an insight into gene mutations that correlate between inflammation with cancer risk in cytokine-induced PI3K pathway. However, further validation using functional assays will be performed to give a detailed framework of the pathway.

Keywords: colitis-associated cancer, colorectal cancer, inflammatory bowel disease, PI3K, polymorphisms

PP-0424 Risk factors of upper gastrointestinal bleeding in post percutaneus coronary intervention (PCI) patients at Dr Kariadi General Hospital Semarang

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Background and Aim: Patients suffering from coronary artery disease who undergoing PCI with coronary artery stenting require two or more thrombolytic agents to reduce the risk of stent restenosis and thrombosis. It will increase the risk of upper gastrointestinal bleeding, with relative risk up to 10% and mortality risk 1–13%. **Methods:** We had collected data from medical record patient who underwent PCI procedure from January 2015 to December 2019. We had separated these subjects as a case and control group according to the occurrence of upper gastrointestinal bleeding. Some comorbidity, the use of antiplatelet drugs, gastroprotector drugs, number and type of stents, number of PCI, history of dyspepsia, history of upper gastrointestinal bleeding, anemia, and trombositopenia at PCI procedure were compared among them. These risk factors were tested using univariate and logistic regression analysis. **Results:** From 4144 subjects who

underwent PCI procedure, there were 47 (1.1%) subjects who experienced upper gastrointestinal bleeding included as the case group. The remaining 94 subjects were taken as the control group, after adjusted for age and gender. Both of these subject groups dominated by male gender (74.5%), and the mean age was 60.71 years. The incidence of upper gastrointestinal bleeding occurs approximately 344.8 days after PCI. Univariate analysis shows that there were no significant association between all of the risk factors with upper gastrointestinal bleeding post PCI, except hypertension, multiple PCI procedure, and anemia at PCI procedure, with OR 2.566, 23.583, and 4.539, respectively. While PPI drug was a protective factor (OR 0.346, $P = 0.033$). **Conclusion:** The incidence of upper gastrointestinal bleeding post PCI increases in patients with hypertension, anemia, and multiple PCI procedure. PPI drug can reduce this incidence.

Keywords: post PCI, upper gastrointestinal bleeding

PP-0425 Influence of Lactobacillus containing cultured milk drink to depression scores in irritable bowel syndrome subjects

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Background and Aim: Irritable bowel syndrome (IBS) is commonly associated with psychiatric comorbidity. Our recent study reported over 30% of IBS patients were associated with subthreshold depression. However, the effect of probiotics on IBS with coexisting subthreshold depression is still less explored. Hence, the aim of this study was to evaluate the effects of probiotics on subthreshold depression in adults with IBS. **Methods:** Subjects with IBS (Rome IV) were recruited from the Gastroenterology Clinic at Universiti Kebangsaan Malaysia Medical Centre (UKMMC). To date, 45 patients were randomised and blinded into four groups: Group A (normal with placebo, $n = 8$), Group B (normal with probiotics, $n = 16$), Group C (subthreshold depression with placebo, $n = 9$) and Group D (subthreshold depression with probiotics, $n = 12$). Depression categories were measured using the Centre-Epidemiologic-Studies-Depression-Scale-Revised questionnaire (CESD-R). The patients were instructed to take two bottles of probiotics daily contained 109 cfu L. CASEI-01 and LA-5 for 12 weeks. Mood and depression scores were assessed using Patient-Health-Questionnaire (PHQ-9) for pre- and post-12-week intervention. **Results:** Majority (85.1%) of IBS patients were females. The highest subtype was IBS-predominant constipation (IBS-C) (53.2%), followed by IBS-predominant diarrhoea (IBS-D) and IBS-Mixed (IBS-M). Pre-treatment, both CESD-R and PHQ-9 scores were higher in subthreshold depression groups (Groups C & D). A significant reduction of CESD-R score was observed in IBS patients given probiotics (Group D) ($p < 0.05$) with improvements in PHQ-9 score. Post-intervention, serum serotonin was significantly elevated in control group (Group A) from 827.65 to 988.15 ng/dL ($p < 0.05$). IBS subjects with subthreshold depression treated with probiotics showed improved bowel frequency, in which 83.3% have less abdominal pain frequency. Only 58.3% had lower abdominal pain severity post-intervention. **Conclusion:** Supplementation of 2 × 109 cfu Lactobacillus for 12 weeks alleviates mood and depression scores in IBS with coexisting subthreshold depression. It also showed beneficial effects in relieving abdominal symptoms experienced by adults with IBS.

Keywords: IBS, irritable bowel syndrome, probiotics, subthreshold depression

PP-0426 Clinical characteristics and associated psychosocial dysfunction in patients with functional dysphagia: A study based on high-resolution impedance manometry and Rome IV criteria

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Background and Aim: Functional dysphagia (FD) is defined as an abnormal sensation of solid or liquid foods impaction when swallowing without any mucosal or structural lesion noted after serial examinations based on the updated Rome IV criteria. The pathophysiology of FD is complex and remains largely unknown. We aimed to investigate the clinical characteristics in patients with FD and its association with psychosocial comorbidities.

Methods: Consecutive patients with dysphagia and who were referred to our motility laboratory during 2014–2020 were identified. All patients were assessed according to our prospectively established protocol, including upper endoscopy, high-resolution impedance manometry (HRIM), Patient Assessment of Gastrointestinal Disorders Symptom Severity Index (PAGI-SYM), 5-item Brief Symptom Rating Scale (BSRS-5), and Pittsburgh Sleep Quality Index (PSQI). Those who were diagnosed as FD based on the Rome IV criteria were enrolled and analyzed. **Results:** A total of 96 patients with FD were analyzed. Patients with FD had a peak at the middle age of 40–60 (47.9%) and female predominant (67%). Female patients with FD had more trouble falling asleep and a higher prevalence of psychiatric comorbidities on BSRS-5 and shorter sleep duration on PSQI than male patients did. On PAGI-SYM, the severity of bloating and total scores were higher in female patients. Compared with the age and gender-adjusted healthy volunteers, patients with FD had higher BSRS-5 and PSQI scores (5.34 ± 3.91 vs. 1.84 ± 2.61 , 9.64 ± 4.13 vs. 4.77 ± 3.60 , both $P < 0.001$), but similar HRIM results. Among the FD patients, those with ineffective esophageal motility had more severe postprandial fullness than those with normal motility. **Conclusion:** Patients with FD are mostly at the middle age and female predominant. Compared with the healthy volunteers, patients with FD have similar esophageal motility but more severe sleep and psychiatric comorbidities, especially in the female subgroup.

Keywords: functional dysphagia, high-resolution manometry, psychosocial dysfunction, Rome IV, sleep disturbance

PP-0427 Post-infection functional gastrointestinal disorders following Corona Virus Disease-19: A case-control study

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Background and Aim: Since acute infectious gastroenteritis may cause post-infection irritable bowel syndrome (PI-IBS) and functional dyspepsia (FD) and the Severe Acute Respiratory Syndrome Corona Virus-2 (SARS-CoV-2) affects the gastrointestinal (GI) tract, Corona Virus Disease-19 (COVID-19) may cause PI-functional GI disorders (FGID). However, there is no published study on this yet. We prospectively studied the frequency and spectrum of PI-FGIDs among COVID-19 and healthy controls and the risk factors for its development. **Methods:** 280 patients with COVID-19 and 264 healthy controls were followed up at 1 and 3 months using translated validated Rome Questionnaires for the development of chronic bowel dysfunction (CBD), dyspeptic symptoms, and their overlap and at 6-month for IBS, FD, and their overlap. Psychological comorbidity was studied using the Rome III Psychosocial Alarm Questionnaire. **Results:** At 1 and 3 months, 16 (5.7%), 16 (5.7%), 11 (3.9%) and 24 (8.6%), 6 (2.1%), 9 (3.2%) developed CBD, dyspeptic symptoms, and their overlap, respectively; among healthy controls, none developed dyspeptic symptoms, and one developed CBD at 3 months ($p < 0.05$). At 6 months, 15 (5.3%), 6 (2.1%), and 5 (1.8%) of the 280 COVID-19 patients developed IBS, FD, and IBS-FD overlap, respectively, and only one healthy control developed IBS at 6 months ($p < 0.05$ for all except IBS-FD overlap). The risk factors for post-COVID-19 FGIDs at 6-month included symptoms, particularly the GI symptoms, anosmia, ageusia, and presence of CBD, dyspeptic symptoms, or their overlap at 1 and 3 months and the psychological comorbidity. **Conclusion:** This is the first study proving the earlier hypothesis that COVID-19 might lead to post-COVID-19 FGIDs. Post-COVID-19 FGIDs may pose a significant economic, social, healthcare burden to the world, considering the massive load of COVID-19 during this pandemic.

Keywords: COVID-19, gastrointestinal symptoms, gut-brain interaction disorders, irritable bowel syndrome, post-infection IBS

PP-0428 Challenges of management of acute pancreatitis in limited resource setting: A single center-based study in Bangladesh

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Background and Aim: Acute pancreatitis is a common and dangerous medical emergency in the practice of gastroenterology all over the world. Management of acute pancreatitis needs multidisciplinary approach with support starting from emergency to ICU. So there is a chance of mismanagement in every steps facing the physicians a challenge, especially in low resource settings. This study was intended to determine the clinicopathological profile, severity assessment, and challenges of management of acute pancreatitis in

a government laid medical college hospital to image the real scenario of management in a low resource place. **Methods:** A total of 100 patients who were admitted and diagnosed as acute pancreatitis were included in this prospective study, held in Department of Gastroenterology, Rangpur Medical College Hospital from July 2017 to July 2018. We assessed the severity of acute pancreatitis by Ranson's criteria, BISAP score, and revised Atlanta criteria. We managed all patients according to ACG guidelines for management of acute pancreatitis 2013. **Results:** Among 100 patients of acute pancreatitis, 85 of the patients were mild, whereas 13 were moderately severe and 2 had severe acute pancreatitis. The most common etiology of acute pancreatitis in our study was gall stone (15%) and biliary sludge (15%), whereas 54% were idiopathic acute pancreatitis. The most common challenges we faced were delay in hospital admission (59%) and delay in hospital diagnosis (20%). Other challenges are non-adherence of patient party and lack of investigation facility, and physician's poor knowledge about current guidelines. We were able to give early aggressive fluid to only 18% patients as per current guideline. **Conclusion:** Management of acute pancreatitis as per guideline is challenging when optimum facility is lacking. So a modified guideline for the assessment and management of acute pancreatitis should be prepared for limited resource setting.

Keywords: ACG guidelines, acute pancreatitis, challenges of management, severity assessment

Table 1: Distribution of the study subjects according to Challenges of management of acute pancreatitis (n=100)

Challenges of management	Frequency (n)	Percentage (%)
Delay in admission (>48 hrs)	59	59.0
Non-adherence of patient/party	10	10.0
Lack of investigation facility	3	3.0
Delay in hospital diagnosis	20	20.0
None	8	8.0

PP-0429 Utility of noninvasive markers in predicting disease activity in ulcerative colitis: A longitudinal follow-up study

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Background and Aim: 'Treat to target approach' is currently advocated in the management of ulcerative colitis (UC). Mucosal healing and histological remission are the targets associated with better long-term outcome, but their assessment requires invasive tests. Hence, this study was conducted to determine the utility of noninvasive biomarkers for predicting disease activity in UC. **Methods:** It was a longitudinal follow-up study conducted on newly diagnosed patients with acute UC or a relapse of preexisting UC between September 2018 and February 2020. The disease activity was assessed using clinical, Mayo endoscopic subscore (MES), and histological scores at baseline and at clinical remission. Biomarkers such as ESR, CRP, fecal calprotectin, serum NGAL, and 24-h urinary potassium were also estimated at baseline and at clinical remission. Biomarkers predicting mucosal healing (MES of 0 or 1) and histological remission (Geboes score < 3) were analyzed. **Results:** A total of 40 patients with 43 episodes of UC flare were studied. Their mean age was 35 ± 10 years. Majority had moderate to severe disease activity at baseline by clinical score (88%) and MES (93%). At clinical remission, 24-h urine potassium significantly increased while the levels of other biomarkers significantly reduced from baseline. A reduction in fecal calprotectin levels by 33.89% (AUC: 0.802, sensitivity: 0.72, specificity: 0.86) and 67.8% (AUC: 0.869, sensitivity: 0.83, specificity: 0.68) from the baseline predicted MH and histological remission, respectively. **Conclusion:** Our study confirmed that one-third to two-third decline in fecal calprotectin levels with treatment predicted mucosal healing and histological remission in UC.

Keywords: biomarker, calprotectin, histological remission, mucosal healing, ulcerative colitis

Parameter	Achieved Mucosal healing(MH), (n = 36)			No mucosal healing(n=7)		
	Baseline	Clinical remission	P value	Baseline	Clinical remission	P value
Fecal calprotectin(µg/g)	612.57 (31.- 8249.2)	147.36 (10 – 4463)	0.01*	687.7 ± 837.3	903.6 ± 650.7	0.62#
Serum NGAL(ng/ml)	35.4 (22.8 – 1077.8)	31.75 (19 – 682.6)	0.003*	129.2 ± 224.5	114.6 ± 191.3	0.32#
ESR(mm/hour)	55.03 ± 36.3	33.14 ± 22.2	0.001*	45.7 ± 39.2	37.4 ± 36.4	0.07#
CRP(mg/dl)	13.4 (0.3 -63.5)	4.84 (0.2 -61.2)	<0.001*	12.1 ± 9.4	12.5 ± 20.4	0.03#
24-Hour urine potassium(meq/day)	27(6.6 -200)	36.8(10-240)	0.002*	18.5 ± 10.5	35.6 ± 14	0.04#
Achieved histological remission (n=18)			No histological remission(n=25)			
Fecal calprotectin(µg/g)	921.3(79.4 – 8249.2)	66.26(10.01 – 1345.2)	<0.001*	335.8 (6.5 – 6702.9)	566.2 (19.8 – 4463.1)	0.58*
Serum NGAL(ng/ml)	36.04(25.6 – 1077.8)	28.49(19.08 – 682.6)	0.002*	37.1 (22.8 – 765.2)	34.4 (25.8 – 653.7)	0.13*
ESR(mm/hour)	56.11 ± 35.2	28.5 ± 17.8	0.003*	51.6 ± 38	37.6 ± 28.1	0.04#
CRP(mg/dl)	26.57 ± 22.8	13.95 ± 18.7	0.05#	11.3 (0.3 – 63.5)	4.6(0.5 – 57.1)	0.007*
24-Hour urine potassium(meq/day)	24.77 ± 12.05	47.47 ± 52.7	0.07#	21.9 (5.4 – 200)	43.3 (10- 104)	0.003*

*: Wilcoxon sign rank test, #: paired t test

PP-0430 Clinicopathological characteristics and survival of FIT interval cancers in a population colorectal cancer screening program: An analysis of cases in five institutes in Taiwan

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Background and Aim: FIT interval cancer (FIT IC) is defined as the colorectal cancer (CRC) diagnosed after negative FIT and before the next scheduled FIT test. The clinicopathological characteristics and the long-term survival of FIT IC remain elusive. This retrospective, multicenter study aims to explore the clinicopathological characteristics and survival of FIT IC in Taiwan CRC Screening Program. **Methods:** We identified patients with CRC diagnosed between 2010 and 2016 at five medical centers in Taiwan with following inclusion criteria: (1) The

subjects had receive biennial FIT for CRC screening; (2) Symptoms developed after a negative FIT; and (3) CRC was diagnosed after diagnostic colonoscopy before next scheduled FIT. Each subject's basic demographics, including gender, age, initial presentation, anatomical location and pathological subtypes, were ascertained. The follow-up time is defined as the period from CRC diagnosis to CRC-related death or the end of 2016, whichever came first. We used Kaplan–Meier curve to compare the cumulative survival of FIT IC and Cox proportional hazard model to search potential risk factors for overall survival. **Results:** A total of 318 FIT IC patients were enrolled in our cohort. Among them, 230 (74.4%) were distally located, and 109 (35.3%) were stage 0–I cancers according to AJCC definition (8th version). The median follow-up time was 26 months, and 80 patients died from CRC during the follow-up period. There is no survival difference between different genders or disease location. However, FIT IC with more invasive pathological appearance predicted a poorer outcome (HR: 3.56, 95% CI: 1.96–6.44, $p < 0.001$), whereas initial presentation with lower GI bleeding was associated with better outcome (HR: 0.53, 95% CI: 0.33–0.84, $p < 0.01$) than other symptoms. **Conclusion:** FIT ICs with pathological invasiveness predicted a poorer outcome while patients with lower GI bleeding were associated with a better FIT IC outcome.

Keywords: colorectal cancer, colorectal cancer screening, fecal immunochemical test, interval cancer

PP-0431 Gastric cancer at endoscopy: Age, gender and topographic distribution: A retrospective observational study in a Dhaka Hospital Bangladesh

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Background and Aim: Gastric cancer remains one of the most common and deadly cancers worldwide, especially among older males. The age-standardized incidence rate (ASR) of gastric cancer in Bangladesh is 5.7 per 100,000 where the reported prevalence of *Helicobacter pylori* infection rates were more than 90% in asymptomatic adults. Epidemiological data of gastric cancer are scarce in Bangladesh. The present study was aimed to know the age, gender and topographic distribution of gastric cancer among dyspepsia subjects who underwent upper GI endoscopy at a Dhaka hospital in Bangladesh. **Methods:** This is a retrospective observational study conducted by using data collected from endoscopy registry of Lab Aid Hospital—a tertiary Care Hospital at Dhaka. Data from 23,848 subjects were available for analysis during January 2016 to June 2018. In the data registry, patient's age, gender and site of lesion were available. Other than abdominal pain and/or discomfort, no other clinical details were mentioned in the registry. **Results:** Of the total 23,848 subjects, 75% were male. Of them, 202 subjects had gastric cancers at endoscopy (0.85%). Majority of the patients (65%) were in the age group 51 to >60 years with mean age of 53.7 years (SD ± 10.7). Topographically commonest site of cancer involvement was the gastric antrum (93%). **Conclusion:** In the present observational study, majority of the gastric cancer patients were old male and distal stomach (non-cardia) was the commonest site of lesion which is attributable to *Helicobacter pylori* associated disease. Only use of endoscopic diagnosis without histopathological confirmation was the important limitation of this study though evidence from different studies has shown a more than 95% concordance between endoscopic and histological diagnoses. Therefore, further study with the inclusion of all diagnostic modalities would be able to validate the present observation.

Keywords: endoscopy, gastric cancer

PP-0432 Rifaximin in the management of irritable bowel syndrome

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Background and Aim: Irritable Bowel Syndrome (IBS) is a multifactorial disorder. Endoluminal bacterial overgrowth appears to be partly responsible for its occurrence, thus becoming a therapeutic target. A poorly absorbed antibiotic, Rifaximin, has been shown to be effective in diarrhea predominant IBS (IBS-D) and mixed IBS (IBS-M). Our study aimed to assess the efficacy and safety of rifaximin in the management of these two

subtypes of IBS. **Methods:** This is a prospective, monocentric observational study involving a single group of patients. Patient recruitment was done via consultation (between September 2018 and September 2019). 71 male and female patients over the age of 18 diagnosed with IBS-D or IBS-M agreed to participate in the study. The diagnosis was based on the Rome IV criteria. Each of the patients had received Rifaximin 400mg 3 times a day (1200mg per day) for 14 days. The primary endpoint was the overall improvement of the IBS related symptoms. **Results:** The study included 71 patients, of whom 76% were women. The average age was 38 years. 56% of our patients admitted they have already taken other treatments without any success. Diarrhea and abdominal pain were the main reasons for consultation. 54% of the patients had diarrhea and 46% had IBS with alternating diarrhea and constipation. An overall improvement of the symptoms at the end of treatment was reported in 56% of patients, with a decrease in abdominal pain in 52% of patients. 4 weeks after the end of treatment, the overall improvement was maintained in 48% of patients. No severe side effects from the use of Rifaximin have been observed. **Conclusion:** Rifaximin has been shown to be very effective and safe overall in the management of IBS-D and IBS-M. Its effectiveness was observed both in the short and medium terms.

Keywords: Rifaximin, Irritable bowel syndrome, IBS-D, IBS-M

PP-0433 Formalin irrigation for hemorrhagic radiation proctitis

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Background and Aim: Radiotherapy is an essential treatment modality for pelvic malignancies such as gynecological, rectal and prostate cancer. However, the rectum is vulnerable to secondary radiation injury. The underlying causes for this type of complication include endarteritis obliterans and progressive submucosal fibrosis. The aim of our study is to assess the efficacy and safety of local formalin irrigation method in patients with hemorrhagic radiation proctitis. **Methods:** Patients received 4% formalin irrigation to the affected rectal areas. All patients were followed-up. Defecation, remission of bleeding, and other symptoms were investigated at follow-up. Patients with anorectal strictures, deep ulcerations, and fistulas were excluded. Flexible endoscopic evaluation has been performed in all patients. **Results:** Twenty-one patients (18 males, 3 females) with a mean age of 64 years were enrolled. The mean time from the end of radiotherapy to the onset of bleeding was 9.4 months. The mean duration of hemorrhagic proctitis before formalin application was 4.3 month. Patients required an average of 2.5 formalin application at 2-4 week interval. A complete resolution of symptoms was obtained in 16 patients (76%). 4 patients were offered complementary Plasma argon therapy. 1 patient has undergone surgery for massive bleeding. No complications related to the formalin treatment were observed. **Conclusion:** According to our experience, despite of the small number of our trial, formalin irrigation seems to be an effective and safe method for hemorrhagic radiation proctitis with no severe complication.

Keywords: Radiation proctitis, Formalin

PP-0434 Current strategies to eliminate Hepatitis C Virus in The North American region

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Background and Aim: An estimated 71 million people worldwide are living with chronic hepatitis C (CHC) infection, which carries the risk of progression to hepatic fibrosis, cirrhosis, and hepatocellular carcinoma (HCC). Accordingly, the World Health Organization (WHO) has set goals to eliminate this infection by 2030. There is limited data, however, which focuses on HCV in the North American region. This study aims to present and in-depth review of the epidemiology, phylogenetic genotypes and subtypes, treatment guidelines, and the prevention policies of HCV in the North American region - specifically in Canada and the United States (U.S.). **Methods:** A thorough literature search was done utilizing six databases from inception to December 2020. **Results:** In the past decade, Canada and the U.S. have reported comparable HCV prevalence rates; 0.6% and 1.0%, respectively, with males accounting for more HCV cases than their female counterparts, and with higher reported HCV rates in people aged 20-29 years and 30-39 years. There has been an increase in HCV incidence rates among peripartum American women and those with live births. Since the beginning of the 20th century, HCV GT1 and GT3 have been the predominant variants in North America. GT1 is responsible for about 59.7% and 75% of Canadian and U.S. HCV cases, respectively. Both countries utilize direct-acting antiviral drugs (DAAs) and have initiated screening and diagnostic policies in efforts to meet the WHO goals of HCV elimination. Canada has diagnosed 90% of its HCV cases successfully, and the U.S. CDC has recommended universal HCV screening until the prevalence of HCV rates are less than 0.1%. **Conclusion:** While the status of HCV is similar between Canada and the U.S., consistent adherence to the interventional strategies are required to achieve the WHO objective of viral hepatitis elimination in the North American region by 2030.

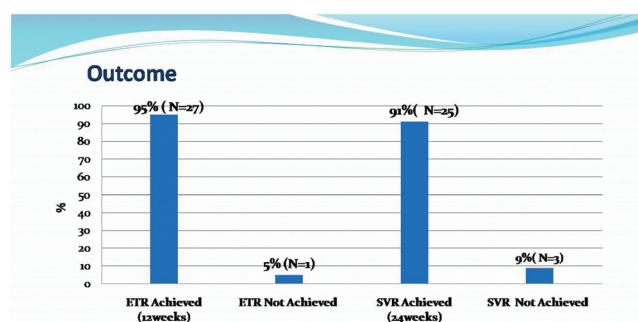
Keywords: Hepatitis C Virus, Canada, United States of America, North American Region, Chronic Hepatitis C

PP-0435 Treatment outcome of patients undergoing hemodialysis with chronic Hepatitis C on the sofosbuvir and velpatasvir regimen

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Background and Aim: Hepatitis C virus infection (HCV) is globally prevalent and off-label use of sofosbuvir and velpatasvir in patients with hepatitis c virus infection (HCV) is commonly being used in patients with severe renal disease or end-stage renal disease (ESRD) undergoing

hemodialysis but their safety profile is not well established in Pakistan. **Aims:** This study aims to determine the outcome associated with combination therapy (sofosbuvir/velpatasvir) in HCV patients with end-stage renal disease and undergoing hemodialysis. **Methods:** All HCV patients with ESRD and undergoing maintenance hemodialysis having age more than 18 years were included in our study. Study population was enrolled from Gastroenterology and Nephrology department of Jinnah Post graduate Medical Centre, Karachi ,Pakistan A structured questionnaire was used to obtain the data regarding baseline demographics & clinical profile and outcome associated with combination therapy (SOF (400 mg once daily) and VEL (100 mg once daily). Outcome was assessed at the end of treatment (week 12) and at week 24. **Results:** Final analysis was performed on 34 patients out of 122, among all, more than 91% (n = 31) of the patients have achieved sustained virological response at week 24. Treatment relapse was very low and only five patients showed treatment relapse which was statistically insignificant. The most common cause of ESRD was hypertension (44.1%, n = 15/34) and the most common side effect observed by the end of treatment was fatigue (47.1%, n = 16/34). **Conclusion:** Treatment with sofosbuvir and velpatasvir is a safe choice in achieving SVR after 24 weeks in patients with ESRD undergoing hemodialysis.



PP-0436 Gluten is well tolerated in functional gastrointestinal disorder patients who do not report gluten/wheat sensitivity

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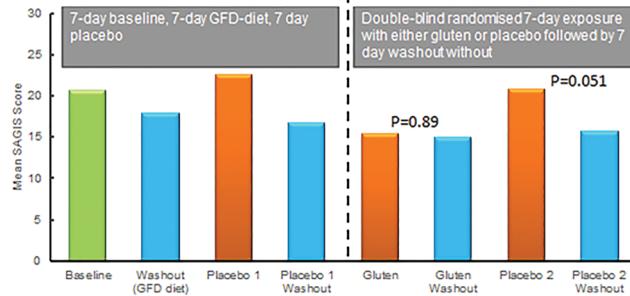
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Background and Aim: Long-term gluten/wheat restriction can be associated with nutrient deficiencies and a poorer quality diet, so exclusion of gluten is only advised if giving sufficient benefit for patients' symptoms. There is an overlap between Functional Gastrointestinal Disorder (FGID) symptoms and those associated with gluten/wheat intolerance. The aim of this study was to assess the symptom response to a double-blind administered gluten challenge (8g/day) in FGID patients who did not report wheat/gluten sensitivity. **Methods:** We studied 11 FGID patients self-reporting significant gastrointestinal symptoms without wheat/gluten sensitivity. After baseline assessment, patients adopted a strict gluten free diet for 7 weeks, reporting all GI symptoms at the end of each week. Assessments included SAGIS (Structured Assessment of Gastrointestinal

Symptoms: 22 question assessing upper and lower GI symptoms) and extra intestinal symptoms such as fatigue. In week 2, 4 and 6 patients took capsules daily (week 2: single-blind placebo capsules, weeks 4 and 6, patients: either placebo capsules or capsules containing 8g/day gluten, in a randomized fashion). **Results:** Gluten was well tolerated in our cohort ($p=0.89$; Figure 1). There was no significant difference in symptoms between the first (single-blind) placebo week and the washout ($p=0.1274$); however, there was a trend toward increased symptoms in the second placebo week as compared to the washout week after ($p=0.0510$). **Conclusion:** In FGID patients who do not self-report sensitivity to wheat/gluten, there is no symptom benefit of avoiding gluten containing products.

Keywords: Wheat Sensitivity, Gluten Sensitivity, FGID

Changes of SAGIS during an eight-week double blinded placebo-gluten exposure



PP-0437 Effect of SGLT 2 inhibitors on reducing liver enzymes: A meta-analysis

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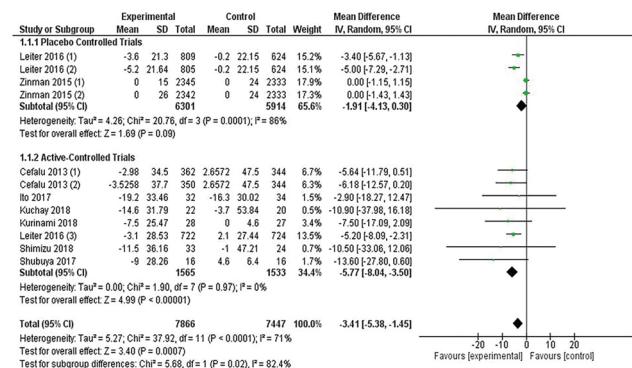
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Background and Aim: Non-alcoholic fatty liver disease (NAFLD) is a common liver disorder associated in patients with type 2 diabetes mellitus (T2DM). Aminotransferases, in particular ALT, are useful correlates of liver inflammation. Several studies were published on the effect of sodium-glucose transport protein 2 (SGLT2) inhibitors on glucose control, cardiovascular outcomes, and weight loss. However, its effect on NAFLD, specifically on aminotransferases, is still unknown. Therefore, this study aims to evaluate the effect of SGLT2 inhibitors in decreasing liver enzymes. **Methods:** The authors searched PubMed, CENTRAL, and SCOPUS, and clinical trial registries for randomized controlled trials comparing SGLT2 inhibitors with a placebo or active controls in T2DM patients. **Results:** Eight studies were included. For Alanine aminotransferase (ALT), shown in the figure, comparing with placebo and active controls showed a modest to large reduction in ALT, respectively. For aspartate aminotransferase (AST), there was a significant reduction in serum levels between the two groups ($n=15,341$; 95% CI $-2.71, -0.55$). A subgroup analysis comparing with placebo showed a modest reduction in AST ($n=12,259$; 95% CI $-2.51, 0.26$), while comparing with active controls showed a much more significant and larger reduction in ALT ($n=3,082$; 95% CI $-4.50, -1.41$). Significant overall heterogeneity was seen; hence, random effects model was applied. **Conclusion:** This suggests that in individuals with type 2 diabetes, treatment with SGLT2 inhibitors reduces liver aminotransferases, and does so in a pattern that is potentially consistent with reductions in hepatic steatosis. These findings add to the

evidence from smaller trials on the effects of SGLT2 inhibitors on direct measures of hepatic steatosis, and a potential role for this class of drugs in managing NAFLD in T2DM. Further trials should be promoted to enable an indication to be developed.

Keywords: Non-alcoholic Fatty Liver Disease, NAFLD, SGLT2 inhibitors, Liver Enzymes



PP-0438 To study the predictors of infection in asymptomatic patients with walled off necrosis in acute pancreatitis

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Background and Aim: Studies on follow up of patients with asymptomatic WON are scarce. Most of these patients are managed expectantly. This study aims to identify infection during follow up of these cases and to identify predictors of infection in these patients. **Methods:** 30 patients of acute pancreatitis with walled off necrosis from November 2018 to April 2020 were enrolled. All patients were prospectively followed and patient developing complications were analysed based on their baseline clinical, laboratory and radiological parameters to find predicting value of any variable for development of infection. Independent sample T test was used for continuous variables. Nonparametric tests were used for categorical variables. “P” value <0.05 was considered statistically significant. **Results:** 30 patients were enrolled for the study, 83.3% were males. Alcohol was the most common etiology for pancreatitis. 26.6 % patients developed infection after 72.48±16.3 days from onset of pancreatitis. Mean age of patients was 36.38±11.45 years in infection group and 28.45±7.55 years in asymptomatic group, $p=0.03$. Patients with infection were managed by drainage, either percutaneously (50%) or endoscopically, (37.5%). One patient required both modalities. Size of WON in infection group and asymptomatic group was 157.50±33.59 mm and 81.95±26.22 mm respectively, $P<0.001$. CTSI in the infection group and asymptomatic group was 9.50 ±0.93 and 7.82±1.37 respectively, $p <0.01$. CRP in infection group was 76 (56.2-91) mg/L and in asymptomatic group, 9.5 (3-16.6), $p <0.001$. Serum IL-6 and TNF-alpha levels between infection and asymptomatic group were 350 (252.5-400) pg/ml and 48.50 (10.58-62.88) pg/ml respectively, $p<0.001$ and 15 (8.12-130.25) pg/ml and 8 (8-9) pg/ml respectively, $p = 0.03$. Other parameters that were significantly different between the two groups were baseline BISAP score and percentage of pancreatic necrosis

Conclusion: Parameters like Age, BISAP score, CRP, IL-6, TNF-alpha levels, WON size and CTSI can be used to predict infection in asymptomatic WON patients

Keywords: Predictors, Infection, Asymptomatic, Walled off necrosis

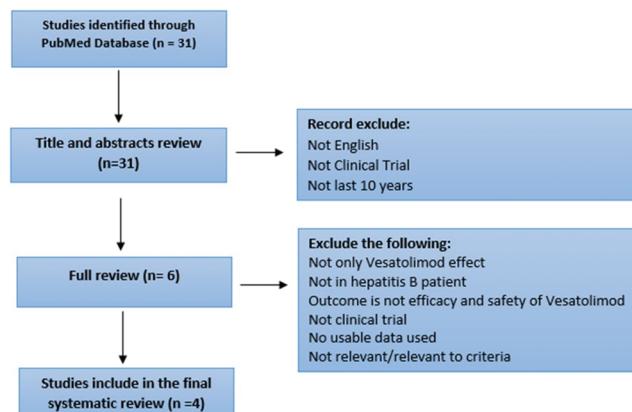
PP-0439 The efficacy and safety of a novel oral TLR7 agonist vesatolimod (GS-9620) in chronic hepatitis B patient: a systematic review

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Background and Aim: Current antiviral therapy for chronic HBV is based on pegylated interferon-alpha (PegIFN alpha) treatment. IFN therapy induce viral load suppression, but it is associated with frequent side-effects. Vesatolimod (GS-9620) is a novel oral agonist of Toll-like receptor 7 (TLR7) in development for the treatment of chronic hepatitis B. The aim of this study was to investigate the efficacy and safety of vesatolimod (GS-9620) in hepatitis B patient. **Methods:** A literature search was conducted using PubMed and capturing the data last 10 years. Terms used included for vesatolimod or GS-9620 and chronic hepatitis B. A systematic review of published studies was performed. We analyzed the efficacy and safety of vesatolimod (GS-9620) as a novel oral TLR 7 agonist in chronic hepatitis B patients. **Results:** We identified 4 studies that were included in the review. All of the study results informed that there is no statistically significant HBsAg declining on hepatitis B patients. All of the studies informed about 60% of patients experienced > 1 adverse event during the study with the majority of adverse events from mild or moderate. The most common adverse event was a headache. We found that higher Vesatolimod (GS-9620) dose associated with a greater probability of ISG15 response. Most patients did not show detectable levels of serum IFN-alpha at any time point or related symptom of systemic IFN-alpha. **Conclusion:** Vesatolimod (GS-9620) did not significantly decline the HBsAg level. It was safe and well-tolerated in patients with chronic hepatitis B due to the induction of ISG15 without significant systemic induction of IFN-alpha expression.

Keywords: Hepatitis B, Vesatolimod, TRL 7 agonist, Systematic review



PP-0440 Conservative or endoscopic drainage therapy in walled off necrotizing pancreas: Case report

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Background and Aim: Walled-off pancreatic necrosis (WOPN) is a well-circumscribed area of necrosis which occurs as a late complication of acute pancreatitis. Around 15% patient with severe acute pancreatitis will develop necrosis of the pancreatic parenchyma. Drainage and necrosectomy are required when infected, but when and how to treat sterile and asymptomatic cases is still controversial. **Methods:** Here, we present 2 cases of WOPN. The symptoms in these two cases were similar and also nonspecific (fever and epigastric pain). In laboratory test, signs of infection such as fever, leukocytosis, increased procalcitonin and C-reactive protein are found. Abdominal CT results show pancreatitis with an infected wall of necrosis around the pancreas. Both cases got conservative management with empiric antibiotic. Evaluation in the first case after administration of conservative therapy showed improvement in clinical and laboratory markers. Evaluation of the CT scan showed an improvement in the size of the walled of necrotizing pancreas with a reduced necrotic component. In the second case, 1 month after discharge, the symptom reoccurs. Laboratory test found leukocytosis and increase of pancreatic enzyme level. CT scan found Cystic pancreatic lesion with irregular wall thickening with extrapancreatic fluid collection suggestive of walled-off necrosis (WON). We decide to do endoscopic necrosectomy. The clinical outcome after endoscopic necrosectomy is excellent. **Results:** From these case illustrations, we conclude that EUS is an important diagnostic and therapeutic tool for pancreatic lesion to avoid unnecessary surgery. **Conclusion:** Management of WON includes conservative therapy, endoscopic drainage and open surgery. Conservative therapy chosen in an asymptomatic without signs of infection. Whereas in symptomatic patients can performed endoscopic drainage of the formed peripancreatic abscess. Endoscopic drainage of WOPN was developed to reduce the trauma of surgery to the vital pancreatic parenchyma. A good clinical judgment is needed.

Keywords: endoscopic drainage, EUS, pancreatitis, walled of necrotizing pancreas

PP-0441 Effects of probiotics on gut microbiome diversity in non-alcoholic fatty liver disease patients – A preliminary results

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Background and Aim: Dysbiosis, an imbalance of bacteria in the gastrointestinal tract activates more pro-inflammatory cytokines that can induce inflammation. Hence, probiotics have been suggested to enhance health outcomes in NAFLD patients. The aim of the study is to evaluate the effects of probiotics on gut microbiome composition in NAFLD patients. **Methods:** This is a randomized, double-blind, controlled clinical trial.

Twelve patients were randomly assigned into probiotics and placebo groups. Multi-strain probiotics containing six different Lactobacillus and Bifidobacterium species at the concentration of 30 billion CFU was used. The duodenal mucosa from pre and post-interventions were analyzed for gut microbiome compositions using amplicon sequencing based on V3 region of 16s rRNA. **Results:** The average mean age of recruited patients was 54 ± 13 years. The gut microbiome of the patients consists of three main prokaryotic phyla, namely Actinobacteria, Proteobacteria, and Firmicutes, with genera Anthrobacter, Streptococcus, Faecalibacterium, and Prevotella being particularly common. The placebo group showed a significant shift of gut composition (alpha-diversity: Shannon Index; $p < 0.05$, and beta-diversity: Jaccard Index; $p < 0.05$), with a pattern of decreasing bacterial diversity. Notably, we observed a significant increase of pathogenic genera Anthrobacter, Prevotella, Gemella, Granulicatella, and Allosphingosinicella among the placebo group post-6-month study (linear discriminant analysis (LDA) = range from 2.41 to 1.12; $p < 0.05$). Remarkably, the probiotics group showed stable diversity upon intervention procedures (alpha-diversity and beta-diversity showed no significant differences; $p > 0.05$). **Conclusion:** With the changes of the microbial community in the placebo group, we anticipated a potential pattern of dysbiosis among the NAFLD patients. The underlying mechanism remains obscure. Further validations with bigger samples size are required to demonstrate more substantial outcomes.

Keywords: NAFLD, Gut microbiome, 16s sequencing, Probiotics

PP-0442 Comparison of cardiovascular risk in non-alcoholic steatohepatitis patients with and without obesity

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Background and Aim: A major cause of mortality among patients with non-alcoholic steatohepatitis (NASH) is the associated cardiovascular risk. There is a lacuna in the existing literature with regard to the link between hepatic steatosis and cardiovascular risk in individuals who have obesity as compared to those without obesity. We compared the cardiovascular risk in non-obese and obese patients with NASH and assessed the relationship between cardiovascular risk and severity of NASH. **Methods:** Twenty patients (17 males, 3 females) diagnosed to have NASH with and without obesity were included. Coronary artery calcification (CAC) score was obtained for the study subjects based on cardiac CT and epicardial fat was assessed on 2D echo. Fibrosis-4 (FIB 4) scores and NAFLD fibrosis scores were calculated to estimate the severity of hepatic fibrosis. **Results:** The median CAC score of the subjects in obese group was 2.9250 (0.000-60.000) and in non-obese group was 0.0000 (0.000-10.880). The comparison of the median CAC score across the 2 groups was not found to be statistically significant ($p = 0.418$). More individuals who had cardiac risk based on CAC score were noted to have epicardial fat on echo as compared to individuals who had no cardiac risk based on CAC score and this difference was found to be statistically significant ($p=0.005$). CAC scores were found to have positive correlation with FIB 4 scores in both obese ($p=0.039$) and non-obese groups ($p=0.000$). **Conclusion:** There was no significant difference in cardiovascular risk as assessed by CAC score between obese and non obese individuals with NASH. However the severity of fibrosis according to FIB 4 score had positive correlation with cardiovascular risk according to CAC score in both groups. All patients with epicardial fat on echo had coronary calcifications and this association was found to be statistically significant.

Keywords: Coronary calcification score, Epicardial fat, Fibrosis, Metabolic syndrome, Cardiovascular risk

PP-0443 Treatment of gastrointestinal bleeding due to portal hypertension: From therapeutic endoscopy to vascular intervention and liver transplantation

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Background and Aim: Consensus Baveno V (2016) provided guidelines for the treatment of gastrointestinal (GI) bleeding due to portal hypertension. Aim: Evaluate the treatment effectiveness of 3 treatment methods: Endoscopic band ligation, transjugular intrahepatic portosystemic shunt (TIPS) and liver transplantation for cirrhotic patients with gastrointestinal bleeding due to portal hypertension.

Methods: Cirrhosis patients with gastrointestinal bleeding due to portal hypertension were divided into 3 groups: Endoscopic band ligation ($n = 178$, time: 2003-2009) at department of Gastroenterology; TIPS ($n = 64$, time: 2009-2015), at department of angiography intervention; liver transplantation ($n = 7$, time: 2017-2021), at department of B3B. Patient has complete records, clinical examination, subclinical, bleeding degree. Classification of esophageal varices according to the Japanese research society for portal hypertension. Monitoring parameters: Rate of hemostasis (success, failure) and complications after treatment.

Results: Group of endoscopic band ligation ($n = 178$): Average age: 46.8 ± 12.8 , male/female: 3.94. Child-Pugh: 92%. Severe gastrointestinal bleeding: 48.8%. Results: Rate of hemostasis (92.6%); Eradication of varices: 11.7%. Rate of rebleeding after 6 months and 12 months respectively: 12.9% and 17.4%. Group of TIPS ($n = 64$): Average age: 49.5 ± 9.4 , male/female: 8/1. Child-Pugh: 92%. Average number of GI bleeding: 5.3 ± 2.9 (1-20 times). Results: Rate of hemostasis (98.5%); rate of rebleeding (25.0%); Hepatic encephalopathy (35.9%); Mortality rate (20.3%). Group of liver transplantation ($n=7$): Average age: 43.4 ± 15.6 ; male/female: 5/2. Average number of GI bleeding: 5.3 ± 2.9 (1-20 times). Average number of ligation endoscopy: 3.9 time (3-6 times). 01 patient has applied TIPS (2018). Results: Successful liver transplant: 7/7 (100%), liver recovery in volume, stable liver function, no GI bleeding, no death and no serious complications.

Conclusion: Liver transplantation is the ideal method for cirrhotic patients with gastrointestinal bleeding due to portal hypertension.

Keywords: Gastrointestinal bleeding, portal vein, esophagogastric var, gastric varices

PP-0444 Intragastric balloon therapy in the management of obesity in Vietnam

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Background and Aim: This study aims to assess the effectiveness and complications of intragastric balloon therapy for obese patients in Vietnam (from 2008 to 2016) **Methods:** 50 obese patients were treated at Trieu An Hospital, Hochiminh City from January 2016 to December 2019. These patients have been treated with conventional weight loss methods (internal medicine, diet, medicine, exercise ...), but not effective. The patient received a clinical examination, subclinical and have indication of gastricballoon placement. We only use a Spatz balloon (Spatz Medical, Great Neck, NY, United States). The balloon was removed after 6 months of placement and we evaluated the therapeutic effect of this method **Results:** * Patient characteristics: 50 patients (34 women and 16 men). Average age: 29.9 ± 9.7 (18-

55). Average weight: 94.4 ± 17.8 kg (69-144). Average BMI was 35.6 ± 4.3 (30-48.6).^{*} Technical success rate: 50/50 (100%). Average time to perform the procedure is: 15.3 ± 4.7 minutes (12-18 minutes) * Effective treatment: The average weight loss after 01 weeks of treatment: 4.9 ± 1.6 kg (2 kg - 8 kg). Average weight loss after 6 months of treatment: 19.8 ± 9.3 kg. Six patients had abdominal pain after balloon placement and desired the balloon removed. These 6 cases were admitted to the hospital, followed by the use of antispasmodic (Buscopan) and discharged at the same day. Then, 6 cases were convinced and agreed to put the intragastric balloon in place. One case, after 3 months of treatment must take the balloon out. * Complication: After the procedure, the patients had some complications in the first week: Mild abdominal pain (96%), bloating (100%) and nausea-vomiting (82%). After 6 months of treatment, no patient has peptic ulcer, no gastroesophageal reflux disease (GERD). **Conclusion:** This study showed that placing the balloon in the stomach effectively reduces weight and reduces BMI. This is a safe, easy-to-accept and effective method of non-surgical treatment for obese patients in Vietnam.

Keywords: Gastroesophageal reflux disease, Obesity

PP-0445 Endoscopic treatment of bleeding gastric varices by N-butyl-2-cyanoacrylate (Histoacryl) injection in Vietnam: long-term efficacy and safety

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Background and Aim: Acute gastric variceal bleeding is a catastrophic problem and accounts for one of the major causes of death in cirrhotic patients. Endoscopic injection of N-butyl-2-cyanoacrylate (NBC; Histoacryl) is current recommended treatment for gastric variceal bleeding. Our study evaluated over 5 years (2014-2018) on the efficacy and safety of Histoacryl in patients with gastric variceal bleeding. **Methods:** All selective patients with gastric variceal bleeding who underwent Histoacryl endoscopic injection in three Hospital (108 central hospital and 103 hospital-Hanoi city; Cho Ray hospital –Ho Chi Minh city-Vietnam) from January 2014 to December 2018 were included in the study. The patients' endoscopic findings, initial hemostasis, rebleeding rates, complications and bleeding-related death rates were reviewed. **Results:** Out of 1087 gastric varices patients with or without esophageal varices, 243 had active bleeding gastric varices which were treated with Histoacryl injection. The mean duration of follow-up was 438.6 days (range, 1 to 2378 days). The mean age of patients was 48.3 ± 9.7 years (range, 22 to 79). There were 206 males (84.8%) and 37 females (15.2%). Twenty-five patients (10.3%) had concomitant hepatocellular carcinoma (HCC). Seventy-nine patients (32.5%) had a previous history of variceal bleeding. According to Sarin classification, 142 patients (58.5%) were GOV1, 101 patients (41.5%) were GOV2. Most of the varices were large (F2 + F3: 91.3%). The overall success rate of initial hemostasis (no recurrent bleeding within 48 hours) was 234/243 (96.3%). Haemorrhage

recurrent rate was 4.7% after 1 week, 12.8% after one month, 27.8% after six months and 35.9% after 12 months Histoacryl injection. Bleeding-related death rate was 6.8% (16/243) during follow-up. Complications included fever (9.8%), abdominal pain (6.4%), ulceration at site of injection (5.6%), sepsis (1.3%) and spontaneous bacterial peritonitis (0.8%).

Conclusion: This study indicated that sclerotherapy with Histoacryl is an effective treatment method and safe measure for patients with bleeding gastric varices

Keywords: Esophageal varices (EV), gastric varices (GV), N-butyl-2-cyanoacrylate (Histoac, gastric variceal obliteration (G, transjugular intrahepatic portos

PP-0446 Potential effects of two malaysian honey on helicobacter pylori induced gastric ulcers in animal model

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Background and Aim: Helicobacter pylori colonizes the gastric epithelial cells of at least half of the world's population, and it is an important risk factor for developing gastric diseases including chronic gastritis, gastric ulcer, and gastric cancer. Honey is a natural substance used since ancient times as medication for its antimicrobial, anti-inflammatory, and antioxidant effects. This research aimed to investigate the in-vivo efficacy of Tualang and Kelulut honey on H. pylori-induced gastric ulcers relative to triple therapy for parameters involved in the pathogenesis of gastric ulcers. **Methods:** Adult male Sprague-Dawley rats ($n=30$) were randomly divided into five groups ($n=6$) comprising (i) Control; (ii) H. pylori; (iii) Triple Therapy; (iv) Tualang Honey; and (v) Kelulut Honey. Helicobacter pylori were inoculated in all groups except the control group twice daily for seven consecutive days. After four weeks of incubation, three treatment groups (Triple Therapy, Tualang honey (2 g/kg BW), and Kelulut honey (2 g/kg BW)) were treated twice daily for 14 days after which the stomach was taken for parameters evaluations. **Results:** Macroscopic findings showed gastric erosions, while histological findings with Giemsa-stains showed colonisation of H. pylori in the gastric antrum mucosal glands in affected rats. In addition, H&E staining reveals damage to the surface of epithelium in H. pylori group. Treatment with Kelulut honey caused a significant improvement to the epithelium surface compared to Tualang honey and Triple Therapy groups. H. pylori increases the gastric acidity, inflammatory mediators (IL-1 β , IL-4, IL-6, TNF- α) and pro-oxidants (MDA, iNOS, and NO) which was significantly inhibited by Tualang honey and Kelulut honey treatment. Both honey also prevented the reduction of antioxidant enzymes (SOD and GPx) ($p<0.05$) following H. pylori induction. **Conclusion:** These findings suggests that Tualang and Kelulut honey have an antiulcer potential against H. pylori-induced gastric ulcers via its anti-bacterial, anti-inflammatory, and antioxidant activities.

Keywords: Helicobacter pylori, Tualang honey , Kelulut honey, gastric ulcers, inflammation

PP-0447 Investigating a role for pancreatic dysfunction in functional dyspepsia

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Background and Aim: While functional dyspepsia (FD) is used to label dyspepsia in the absence of organic disease, micro-organic changes including H pylori gastritis, duodenal immune activation, and dysbiosis are increasingly recognized. Limited studies suggest pancreatic dysfunction as a possible pathophysiology for dyspepsia. **Methods:** We explored the existence of pancreatic dysfunction by systematically measuring serum lipase and amylase, and recording risk factors such as medications, alcohol and fatty food consumption, and gallbladder disease, in consecutive patients fulfilling FD criteria. **Results:** We interpreted the data using a normal distribution curve and z-table analysis to find out the percentage of FD patients with high normal to mildly elevated amylase or lipase levels. Of 73 patients, 24.8% had amylase levels more than 110 U/L, 33.7% had lipase levels more than 50 U/L. Gallbladder disease was present in 23.3% of FD patients and alcohol was consumed on 1 day a week or more in 9.6% of FD patients. **Conclusion:** Mild pancreatic dysfunction may be a possible pathophysiology for dyspepsia. Outcomes from patients who received treatment with pancreatic enzymes may give further evidence to support this.

Keywords: Dyspepsia , Pancreas, Functional , Amylase, Lipase

PP-0448 Development and validation of the comprehensive endoscopy satisfaction tool (CEST)

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Background and Aim: Patient-reported experience measures (PREMs) are used to capture specific quality aspects of health services. Gastrointestinal endoscopic procedures are high volume services, and a variety of factors influence the patient experience. There is a lack of specific, validated instruments to capture various domains that shape the patients' experience with endoscopic services. The aim was to develop and validate a PREM for gastrointestinal endoscopy (the Comprehensive Endoscopy Satisfaction Tool (CEST)) that captures relevant domains influencing a patient's experience with this service and identify factors that shape satisfaction.

Methods: After an environmental scan and structured literature review, focus groups with patients were conducted to identify relevant factors that influence the patient experience within gastrointestinal endoscopy. Following an initial validation in 101 patients undergoing routine endoscopies, the instrument was tested in >500 patients and patient satisfaction monitored over a three-year timeframe. In addition, influence of age, gender and education level on global self-reported satisfaction was explored using the Wilcoxon signed ranks test. Linear regression was performed to ensure questions within the domains were related to the domain's overall score, and that these were related to overall patient satisfaction. The internal consistency of items within each domain was assessed using the Cronbach α coefficient. **Results:** The final version included 26 specific items plus four global ratings for pre-procedure, experience on the day of procedure, post-procedure care, and infrastructure. Additionally, a global rating of the overall experience and an open question for the most important reason for the global satisfaction rating was included. Of the sociodemographic factors, only younger age was associated with lower satisfaction. **Conclusion:** The CEST as a PREM captures patient experience with endoscopic services, allows services to identify domains that adversely impact on patient experience and provides a valuable tool for evidence-based approaches to optimise the patient experience with endoscopic services.

Keywords: Patient satisfaction

PP-0449 Vonoprazan based triple and high dose dual therapies are effective in the primary eradication of h.pylori infection- an interim analysis

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Background and Aim: We compared between vonoprazan based triple therapy with amoxicillin and clarithromycin of 7 days (V-STT-1), vonoprazan based triple therapy of 14 days (V-STT-2) and vonoprazan based dual therapy with high dose amoxicillin (V-HDDT) for 14 days for eradication of H pylori. **Methods:** This is a prospective, randomized open label comparative study. All patients recruited at endoscopy who has proven H pylori infection were randomized into 3 treatment groups comprising of; V-STT-1: Vonoprazan 20mg b.i.d + Amoxicillin 1g b.i.d + Clarithromycin 500mg b.i.d for 1 week; V-STT-2: Vonoprazan 20mg b.i.d + Amoxicillin 1g b.i.d + Clarithromycin 500mg b.i.d for 2 weeks; and V-HDDT : Vonoprazan 20mg b.i.d + Amoxicillin 1g t.i.d for 2 weeks. Follow up on successful eradication using either C13-UBT or endoscopic biopsies were done after 4 weeks post treatment. **Results:** In this interim analysis, 200 patients were recruited. The mean age was 49.6 (± 16.4) years and 55.0% were males. 12.5% of them were active smokers and 8.5% were active drinkers. The eradication rates in the intention to treat (ITT) and per protocol (PP) analysis were similar in all 3 groups. The results are shown in Table 1. There were no major side effects, however bitter taste was the most common minor side effect seen in V-STT-1 (29.4%) and V-STT-2 (32.8%) while none were seen in V-HDDT group. **Conclusion:** Vonoprazan based therapy (both triple and dual) is shown to be safe and efficacious in eradicating H pylori. V-HDDT appears to have fewer side effects.

Keywords: Vonoprazan, H Pylori Eradication, Dual Therapy, Triple Therapy, Amoxicillin

Table 1: Eradication Rates of V-STT-1, V-STT-2 and V-HDDT

Eradication (%)	V-STT x 1 week	V-STT x 2 weeks	V-HDDT x 2 weeks	p-value
ITT analysis	59/68 (86.7%)	59/64 (92.2%)	60/65 (88.2%)	STT 1 week vs STT 2 weeks: p=0.398 STT 1 week vs HDDT 2 weeks: p=0.401 STT 2 week vs HDDT 2 weeks: p=0.590
95% C.I.	0.86 - 2.05	0.35 - 1.48	0.34 - 1.43	
PP analysis	59/65 (90.8%)	59/60 (98.3%)	60/62 (92.3%)	STT 1 week vs STT 2 weeks: p=0.107 STT 1 week vs HDDT 2 weeks: p=0.328 STT 2 week vs HDDT 2 weeks: p=0.518
95% C.I.	0.91 - 2.20	0.13 - 1.54	0.23 - 1.56	
	2 defaulters; 2 non-compliance	2 defaulters; 2 non-compliance	3 non-compliance	

PP-0450 Trends in incidence rates of achalasia in western Australia after the introduction of high-resolution manometry: A 8-year epidemiological study

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Background and Aim: The incidence rates of achalasia in adult patients were reported ranging from 2.2 to 2.9 cases person-years in recent studies. There are limited studies that have investigated the trends in incidence rates of achalasia solely identified by High-Resolution Manometry (HRM). We aim to determine trends of incidence rates, the distribution of subtypes, and characteristics of achalasia patients in Western Australia (WA). **Methods:** A retrospective epidemiological study was conducted with prospectively collected data from 1 April 2012 and 31 December 2019 at Royal Perth Hospital (RPH), a tertiary hospital in Perth, WA. RPH is the sole provider of HRM in WA. Adult patients aged ≥ 18 years with a definite diagnosis of achalasia based on HRM findings were included. Age-standardised rates (ASRs) of overall and subtype-specific achalasia incidence were computed with 95% Confidence Interval (CI) using the 2001 Australian standard population. Crude incidence rates (CRs) by sex were also calculated. Trends were tested by Kendall's tau b at a statistical significance level of 0.05. **Results:** A total of 227 new cases of achalasia were found, with median age at diagnosis of 54 years (Interquartile range: 38-69 years). The lowest ASR was 0.8 cases (95% CI: 0.4-1.1) per 100,000 person-years in 2012, while the highest ASR was 1.5 cases (95%CI: 1.0-2.0) per 100,000 person-years in 2016. The trend in ASR of type II incidence increased over the eight years (p=0.025), but not in the overall and other subtypes. Sex-specific CRs were not significant in the trend. The most common subtype of achalasia was Type II (62.6%), followed by type III (26.4%) and type I (11.0%). **Conclusion:** This study found that the increasing trend in type II achalasia incidence rates was significant after the introduction of HRM in WA. A longer study period will be required to determine the trends in the other subtypes of achalasia.

Keywords: Achalasia, Epidemiology, High-Resolution Manometry, Age-standardised incidence

PP-0451 Clinical outcome and adverse events of endoscopic ultrasound (EUS) guided hepaticogastrostomy : Early report from Indonesian tertiary centre

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Background and Aim: Endoscopic ultrasound-guided biliary drainage considered as an advanced method to relieve biliary obstruction use when endoscopic retrograde cholangiopancreatography failed. There are two drainage route via transduodenal extrahepatic and transgastric intrahepatic. Several study suggest intrahepatic approaches with ultrasound-guided hepaticogastrostomy (EUS-HGS) as the first choice. However, the procedure is complex and still limited. In this report, clinical outcomes and adverse events of EUS-HGS presented. **Methods:** This is a retrospective descriptive study. Data was extracted from Cipto Mangunkusumo National Central General Hospital EUS Registry, from 2018-2020. Six cases of EUS-HGS were found and described. **Results:** There are 6 cases of EUS-HGS performed between 2018-2020, consists of 3 female and 3 male. Age range from 42 to 69 years old. Three of them diagnosed with pancreatic head mass, two with hepatico-jejunostomy anastomosis obstruction, and the other diagnosed with multiple hepatic nodule. EUS-HGS were done due to unidentified ampulla and difficult cannulation. Five of them using plastic stents and one patient with obstruction CBD using self-expandable metal stents (SEMS). Technical outcome was 100%. Clinical outcome were successful in 5 cases (83.3%). One patient developed peritonitis after the procedure. **Conclusion:** EUS-HGS is a promising procedure for biliary drainage. Further studies needed in order to determine the clinical outcome and adverse event of EUS-HGS.

Keywords: EUS, Endoscopic ultrasonography, hepaticogastrostomy, EUS-HGS, biliary drainage

PP-0452 Concordance between fibroscan® and aspartate aminotransferase-to-platelet ratio index (APRI) using different cut-off values in 603 Asian adults with chronic hepatitis C virus (HCV) with no or compensated cirrhosis in Thailand and Malaysia

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Background and Aim: Non-invasive tests for liver fibrosis based on blood indices and imaging techniques are important in the management of viral hepatitis. In resource-constrained settings, availability of FibroScan® is limited, hence identification of reliable APRI cut-off value to diagnose cirrhosis would be useful for HCV elimination programs. **Methods:** To determine a reliable APRI cut-off value, we retrospectively analyzed the concordance between FibroScan® and APRI in baseline data in adults with chronic HCV with no or compensated cirrhosis enrolled in an open label phase II/III, multicenter trial to assess the efficacy, safety, tolerance, and pharmacokinetics of ravidasvir plus sofosbuvir. The presence of cirrhosis was determined either by a FibroScan® result >12.5 kPa or by an APRI >2 in the absence of a valid FibroScan® result. Non-cirrhotic and cirrhotic subjects were assigned to receive 12 and 24 weeks of treatment, respectively. **Results:** Of the 603 subjects enrolled, 4 had invalid FibroScan® results. Of the remaining 599 subjects, 441 (74%) had concordant results and 158 (26%) had discordant results: 149 (25%) had FibroScan® >12.5 kPa but APRI ≤2, and 9 (1%) had FibroScan® ≤12.5 kPa but APRI >2. The sensitivity of APRI with cut-off value of 2 was 37% and the specificity 98%. Using a cut-off value of 1 for APRI, 486 (81%) had concordant results and 113 (19%) had discordant results: 55 (9%) had FibroScan® >12.5 kPa but APRI ≤1, and 58 (10%) had FibroScan® ≤12.5 kPa but APRI >1. The sensitivity of APRI with cut-off value of 1 was 77% and the specificity 84%. **Conclusion:** Using a cut-off value of 2 for APRI resulted in good specificity but poor sensitivity as compared to FibroScan®. Decreasing the APRI cut-off value to 1 greatly improved sensitivity while maintaining adequate specificity, and therefore may be a better option for countries looking for simplification of cirrhosis assessment and treatment assignment.

Keywords: Hepatitis C virus, FibroScan®, APRI, concordance, cirrhosis

PP-0453 Risk of vancomycin-resistant enterococci in patients with primary sclerosing cholangitis treated with oral vancomycin

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Background and Aim: Primary Sclerosing Cholangitis (PSC) is a rare condition and antimicrobial therapy with oral vancomycin (OV) is increasingly used to prevent progression of the liver disease and control concomitant Inflammatory bowel disease (IBD). There are concerns regarding the risk of development of Vancomycin-resistant Enterococci (VRE) because of long-term use of OV in these patients. Thus, we aimed to determine the incidence of VRE in PSC patients with concomitant IBD. **Methods:** We conducted a retrospective audit of patients with PSC and concomitant IBD, treated with OV at the Department of Gastroenterology and Hepatology at the Princess Alexandra Hospital. VRE testing was performed utilising rectal swabs. **Results:** We included 7 patients with PSC (4 post orthoptic liver transplantation and 3 pre-transplant) with concomitant ulcerative colitis (UC), (6 with pancolitis and one with J pouch) treated with variable daily dose of OV (250mg - 1.5gm). Their age ranged from 22-53 years and out of the 7 patients, 2 were females. All patients were treated for at least 6 months with OV (cumulated 225 months of treatment). All patients treated with OV had achieved complete clinical remission of the concomitant UC, with >80% reduction of faecal calprotectin, >50% reduction in the CRP and >90% reduction in the total Mayo score. With regards to the liver parameters, improvement in serum alkaline phosphatase enzyme and total bilirubin was 23.2% and 18.9% respectively. No patient developed VRE or reported adverse events during treatment with OV. **Conclusion:** The results of this cohort study in patients with PSC and concomitant IBD did not provide evidence for development of VRE, while treatment with vancomycin was associated with clinical and endoscopic remission of the associated colitis. Larger, prospective trials are required to define the efficacy and safety of antimicrobial therapy in PSC, while thus far the risk of VRE appears small.

Keywords: Primary Sclerosing Cholangitis, Vancomycin, Vancomycin-resistant Enterococci, Inflammatory Bowel Disease

PP-0454 Direct-acting antiviral therapy reduces the recurrence risk in patients with hepatitis C virus-related early stage hepatocellular carcinoma after curative resection

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Background and Aim: Background: There is controversy over the effects of direct-acting antiviral (DAA) therapies for hepatitis C virus (HCV) infection on hepatocellular carcinoma (HCC) recurrence. **Aim:** We aimed to compare HCC recurrence between DAA-treated and untreated HCV-infected patients who had received curative resection. **Methods:** We conducted a retrospective cohort study of patients who were mono-infected with HCV-related early HCC (BCLC stage 0/A) with curative resection from 2001 through 2019 at Kaohsiung Chang Gung Memorial Hospital. HCC recurrence and overall survival of patients were

compared between DAA-treated and untreated groups by multivariate adjusted Cox regression analyses. **Results:** Of 152 patients with mono-infected HCV-associated early stage HCC, 48 cases achieved a sustained virological response (SVR) by DAA, and 104 cases were not treated with any antiviral therapy (non treatment group). During mean follow-up duration of 62.8 months in non-treatment group, 62 (59.6%) patients developed HCC recurrence, and 39 (37.5%) died; during mean follow-up duration of 19.6 months after SVR in DAA-treated group, 5 (10.4%) patients developed HCC recurrence, and 3 (6.3%) died. By multivariate analysis, DAA therapy P=0.05; hazard ratio (HR), 7.064], liver cirrhosis (P=0.006; HR, 2.443), microvascular invasion (P=0.008; HR, 2.367) and AFP>200(P=0.041; HR, 2.136) were risk factors for HCC recurrence. In predictors for mortality, liver cirrhosis (P=0.046; HR, 2.113) and microvascular invasion (P=0.012; HR, 2.631) were independent prognostic factors. **Conclusion:** Among patients who underwent curative hepatectomy for HCV-related early HCC, DAA therapy was associated with a significantly lower risk of HCC recurrence compared with untreated patients.

Keywords: Direct-acting antiviral therapy, Hepatitis C, Hepatocellular carcinoma, Recurrence

PP-0455 Acute hepatic venous pressure gradient measurement in cirrhotics presenting with variceal bleeding is a useful predictor of short-term mortality

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Background and Aim: Hepatic venous pressure gradient (HVPG) measurement is recommended for prognostication of patients with portal hypertension. In this study we evaluate the prognostic value of acute HVPG (aHVPG) measurement in cirrhotic patients presenting with acute variceal bleeding (AVB). **Methods:** We conducted a retrospective study of patients with cirrhosis who underwent aHVPG measurement in our center upon presentation for AVB. All patients were treated with urgent fluid resuscitation, intravenous somatostatin, intravenous antibiotics and endoscopic variceal ligation within 12 hours. aHVPG was performed between day 3 and day 5 of admission after clinical stabilization. Somatostatin was discontinued prior to HVPG measurement. Subjects were followed-up until the primary outcome occurred, which was death from any cause or until the census date. **Results:** We identified 80 subjects who fulfilled the inclusion criteria. Mean age was 61.8±7.8 years with 61.3% males. Distribution of Child class was A(37.5%), B(53.8%), C(8.8%). Etiology of cirrhosis included viral hepatitis(28.8%), non-alcoholic steatohepatitis(28.7%), cryptogenic(20.0%), alcohol(17.5%) and autoimmune(5.0%). Seventeen (21.3%) subjects died over a mean follow-up duration of 24.9±13.2 months. There was a significant correlation between aHVPG and death ($p<0.001$). Among the various HVPG thresholds, aHVPG>18mmHg was found to be the best predictor of death with an AUROC 0.702(95% CI 0.560-0.844, $p=0.011$). 38.7% of subjects with aHVPG>18mmHg died compared to 10.2% with aHVPG≤18mmHg ($p=0.002$). HVPG>18mmHg had a sensitivity of 71%, specificity 70%, PPV 39% and NPV 90% to predict death within 2 years in cirrhotics presenting with AVB. **Conclusion:** aHVPG>18mmHg is a useful predictor of short-term mortality in cirrhotic patients presenting with AVB. Assessment of aHVPG in cirrhotics presenting with AVB is clinically relevant to identify those with higher mortality risk and guide therapeutic decisions.

Keywords: acute HVPG, acute variceal bleeding, mortality

PP-0456 Effects of refined protocols for non-diagnostic polyp specimens on detection rates of adenoma and sessile lesions

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Background and Aim: Detection of adenomatous polyps (AP) or sessile serrated lesions (SSL) are key quality indicators for colonoscopy since they affect the reduction of colorectal cancer morbidity and mortality. While tandem colonoscopies revealed a 10-15% miss rate of relevant lesions, little is known about technical aspects of tissue preparation and inter-individual variability of the histologic detection of AP and SSL. This project aimed to explore variations in the polyp detection rates among pathologists and the effect of technical aspects of tissue preparation (e.g. number of tissue sections cut) on AP and SSL detection rates. **Methods:** Fifteen months apart, two consecutive cohorts of patients undergoing colonoscopies (May-July, n=723 and October-December, n= 943), AP and SSL rates per pathologist were determined. Between both cohorts, a refined protocol with preparations of additional histologic sections until the tissue-blocks were exhausted for non-diagnostic tissue sections was introduced. **Results:** The overall detection rates of AP significantly increased from 32.2% (95% CI 28.9-35.7%) to 38.4% (95% CI 35.3-41.5%) while SSL did not significantly change (11.9%, 95% CI 9.7-14.5% vs. 9.7%, 95% CI 7.9-11.7%). The individual case load of pathologists ranged from three to 670 samples and all pathologists had AP and SSL detection rates within the 95% confidence intervals of the respective mean values. **Conclusion:** Additional histologic sections in non-diagnostic specimens instead of standard 3 sections per polyp increased the diagnostic yield for AP and SSL potentially changing surveillance intervals in up to 4% of patients. While the increased diagnostic yield related to the improved tissue preparation improves AP and SSL detection rates, this improvement is relatively small compared to variations in endoscopic detection rates of AP and SSL. However, our data suggest that protocols to process initially non-diagnostic polyps may result in a small increase of AP and SSL.

Keywords: Adenomatous polyps, Sessile serrated polyps, Quality indicators

PP-0457 Efficacy and safety of per-oral endoscopic myotomy for the treatment of achalasia cardia in Malaysia: A single centre study

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Background and Aim: Peroral Endoscopic Myotomy (POEM), introduced in 2010, has become a widely accepted treatment for achalasia cardia. However, POEM procedure is technically challenging and recommended to be performed by experienced endoscopists. Our objective was to assess the efficacy and safety of POEM procedures performed in a tertiary referral centre. **Methods:** This is a retrospective single-centre study. All consecutive achalasia patients that underwent POEM procedure (posterior approach) from November 2015 to May 2021 were recruited. Demographic data, achalasia type, technical success, procedure duration, myotomy length, duration of hospital stay, clinical success and adverse events were recorded. Technical success was defined as completion of POEM procedure from mucosa incision, to tunnel creation followed by myotomy and finally, mucosal closure. Clinical success was defined as a post-procedure Eckardt score

≤ 3 , or a reduction of 4 or more points at 2 months or more after a successful procedure. All POEM procedures were performed by 3 endoscopists (2 gastroenterologists and 1 surgeon) who have had experience in ESD or Heller's myotomy. **Results:** A total of 65 patients were recruited. The detailed results are summarised in Table 1. **Conclusion:** The high efficacy (with good intermediate to long-term outcome follow up) and good safety profile of the POEM procedure for achalasia cardia in our centre are comparable with the published literature. Adverse events were generally mild, and all were managed conservatively. The improvement seen in the technical success rate after the first 20 cases is in line with mastering the POEM skill after the initial learning experience.

Keywords: POEM, Efficacy and safety, Malaysia, Achalasia, Per-oral endoscopic myotomy

Table 1

Number of subjects	57
Mean age, years (range)	42 \pm 15.6 (16-76)
Gender	
Male	26 (45.6%)
Female	31 (54.4%)
Chicago classification	
Type 1	19 (33.3%)
Type 2	28 (49.1%)
Type 3	2 (3.5%)
Not available	5 (8.8%)
Sigmoid achalasia	
Type 1	3 (5.3%)
Type 2	0
Mean duration of procedure time, minutes(range)	120.8 \pm 30.7 (60-180)
Median length of myotomy, cm	10
Technical success	
Overall	54 (95%)
1 st 20 cases	17 (85%)
Last 37 cases	37 (100%)
Overall complication	13 (22.8%)
Minor complications	13 (22.8%)
Aspiration pneumonia	1 (1.8%)
Surgical emphysema	4 (7%)
Intra procedure bleeding	4 (7%)
Mucosa injury	6 (10.5%)
Retain of foreign body	1 (1.8%)
Major complication (Defined as complication requiring surgical intervention or death)	0
Mean duration of hospital stay, day (range)	4.4 \pm 1.4 (3-9)
Eckardt score	
Mean Pre-POEM, score (range)	7.5 \pm 2.4 (4-12)
Mean Post-POEM (at 2 month), score (range)	1.4 \pm 2.1 (0-9)
Mean Post-POEM (follow-up), score (range)	1.7 \pm 2.5 (0-12)
Clinical success (from the group who achieved technical success, n=54)	50 (92.6%)
PPI requirement post POEM (data on PPI usage was available in 46 subjects, n=46. 8 patients lost to follow-up.)	
Regular PPI	8 (17.4%)
On-demand PPI	10 (21.8%)
No PPI	28 (60.1%)
Mean duration of follow up, month (range)	16.4 \pm 9.4 (1-41)

PP-0458 Serum microRNA biomarkers for prediction and prognosis of portal vein thrombosis in patients with cirrhosis

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Background and Aim: Portal vein thrombosis (PVT) is one of the most common complications of cirrhosis, associated with poor prognosis. There is an urgent need to search for a risk assessment method to determine accurate precaution and treatment methods. Recently, differential expression of microRNAs (miRNAs) has been identified as potential diagnostic and prognostic biomarkers. **Methods:** Here, we investigate candidate miRNAs to precisely predict incidence of PVT in cirrhosis patients. MiRNA sequencing (8 PVT vs. 8 nPVT cirrhosis patients) were applied to obtain miRNA profiling. The expression pattern of candidate miRNAs was further confirmed in a testing cohort (20 PVT vs. 20 n PVT) with RT-PCR assays.

Results: We identified miR-122-5p for the prediction of PVT by logistic regression and Kaplan-Meier analysis showed that patients with low miR122-5p level had higher possibility of cirrhosis progression ($p = 0.038$). The expression pattern of miR-122-5p was further confirmed in a testing cohort through RT-PCR. Bioinformatics analysis demonstrated that miR-122-5p might involve in several molecular pathways closely related with PVT such as SNARE interactions in vesicular transport, Hedgehog signaling pathway and so on. **Conclusion:** In conclusion, miR-122-5p could act as a non-invasive biomarker in diagnosis and prognosis of PVT and help clinicians assess the risk of ascites in cirrhosis patients and provide further personalized treatment to decrease the morbidity.

Keywords: microRNA, Portal vein thrombosis, cirrhosis

PP-0459 LC-MS/MS based serum metabolomics signature as biomarkers of earlier detection of esophageal variceal bleeding in cirrhosis patients

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Background and Aim: Esophageal variceal bleeding (EVB) is a common and lethal complication of cirrhosis, desiderating investigation into its earlier detection for optimal disease management. Metabolomics-based approaches provide potential for noninvasive and unbiased identification of biomarkers for EVB, as well as exploration of possible pathophysiological mechanisms. **Methods:** We profile changes in serum metabolome between 13 EVB and 19 nEVB cirrhotic patients through liquid chromatography-tandem mass spectrometry (LC-MS/MS). **Results:** Various bioinformatic analyses demonstrated that EVB patients possessed distinct metabolic phenotypes compared with nEVB patients, characterized by increased quantities of 2-hydroxybutyric acid, alpha -aminobutyric acid, suberic acid, adipic acid, 3-hydroxybutyric acid, linoleic acid, oxoadipic acid and melatonin and decreased levels of mandelic acid, citrulline, 2-hydroxy-2-methylbutyric acid and fructose. These altered serous metabolites potentially involved in the disturbances of linoleic acid metabolism, ketone body metabolism and tryptophan metabolism. **Conclusion:** Our metabolomic study provides an overview of serous metabolic profiles in EVB patients distinguished from nEVB controls, highlighting the potential utility of LC-MS/MS based serous biological fingerprint as a potential avenue for earlier detection and prevention of EVB.

Keywords: Esophageal variceal bleeding, liquid chromatography-tandem mas, cirrhosis, ketone body metabolism

PP-0460 The clinical characteristics and treatment strategy of large duodenal pedunculated lesions

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Background and Aim: The clinical characteristics of the duodenal pedunculated lesions remain unclear and a management strategy for these cases, especially large lesions, has not been established. **Methods:** This was a retrospective observational study. The cases treated by endoscopic resection for duodenal lesions at our institute between July 2010 and January 2021 were analyzed. We divided the cases into pedunculated lesions and non-pedunculated lesions, and we compared clinical characteristics and treatment outcomes between the two groups. In addition, we summarized data on detailed clinical characteristics and outcomes of the large pedunculated lesions larger than 20 mm in size potentially difficult to achieve en bloc resection with a snare. **Results:** There were 38 and 950 cases classified as pedunculated lesions and non-pedunculated lesions, respectively. The median lesion size was significantly larger (23mm[6-66] vs 12mm[2-85], P=0.002), and the proportion of cases located in bulbs/supra duodenal angle (24/38[63%] vs. 199/950[21%), P<0.0001), cases resected by a snare forceps (28/38[74%] vs. 534/950[56%, P=0.04), and cases of the non-neoplastic lesion (28/38[74%] vs. 63/950[7%, P<0.0001) were significantly more in the pedunculated lesions group than in the non-pedunculated lesions. En bloc resection rate, R0 resection rate, and adverse event rate did not differ significantly between the two groups. There were twenty-four pedunculated lesions larger than 20 mm in which ten cases treated by ESD achieved en bloc resection, and fourteen cases were treated by polypectomy using snare forceps (twelve cases achieved en bloc resection and two cases were treated by planned piecemeal resection). There were no cases with either intraprocedural or delayed perforations. The specimens were retrieved successfully in all cases. **Conclusion:** This study reveals that duodenal pedunculated lesions were frequently located in bulbs/supra duodenal angle and tended to be non-neoplastic lesions. It also suggested the feasibility of endoscopic treatment for large lesions.

Keywords: duodenal pedunculated lesion, endoscopic resection, duodenal lesion, endoscopic submucosal dissection

PP-0461 Primary resistance of helicobacter pylori in Malaysia: Trends of changes (1994-2020) and application of molecular testing

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Background and Aim: The prevalence of *H. pylori* antibiotic resistance to clarithromycin (CLA) and levofloxacin (LVX) is increasing and affecting the efficacy of current therapeutic regimens worldwide including in Malaysia. Here, we aimed to inspect the *H. pylori* primary resistance towards both antibiotics in Malaysia and further evaluate its trend and the application of molecular testing. **Methods:** Eleven reports [1-11] concerning primary *H. pylori* antibiotic resistance in Malaysia published through 1994 to 2021 were included. **Results:** The frequency of primary antibiotic resistance to CLA has been increasing from 0% in 1994 [1] to 14.8% in 2020 [11]. Molecular tests revealed that mutation A2143G in the 23S rRNA is a dominant mutation associated with CLA resistance compared to A2142G/C (Table 1). The prevalence of primary resistance to LVX is inconsistent (1% to 17.1%). The resistance-related mutations N87I/K and D91N/Y of the gyrA were not detected previously while N87I/K was also not detected recently [11]. Intriguingly, a high rate of silent mutation at codon 87Asn (32.8%) was found and this could be due to the genetic background during the process of acquiring resistance to LVX or bacterial SOS response [11]. **Conclusion:** Malaysia is listed under a low CLA resistance region (<15%), however, the present study shows us alarming results. Hence, continuing monitoring *H. pylori* resistance is essential especially using the molecular approach as shown by [Puah et al. (2021)]. Current status of *Helicobacter pylori* resistance to clarithromycin and levofloxacin in Malaysia - findings from a molecular-based study, PeerJ offers a practical way.

Keywords: 23S rRNA, Clarithromycin resistance, *Helicobacter pylori*, gyrA, Levofloxacin resistance

Table 1. Primary antibiotic resistance over time in Malaysia (1994-2020).

Study (Accession number in Pubmed)	Year	Sample size	Resistance percentage	Detection method	Information on molecular test							
					E-test	Molecular test	Method	DNA source	23S rRNA (CLA)		gyrA (LVX)	
					Clarithromycin	Levofloxacin	Culture	Biopsy sample	A2142G/C n (%)	A2143G n (%)	N87I/K n (%)	D91N/Y n (%)
[1] Parasakthi & Goh, 1995 (PMID: 7872306)	1994	20	0	-	✓	-	-	-	-	-	-	-
[2] Goh et al., 1997 (PMID: 9421124)	1996	63	0	-	✓	-	-	-	-	-	-	-
[3] Goh et al., 2000 (PMID: 11022833)	1999	74	0	-	✓	-	-	-	-	-	-	-
[4] Ho et al., 2011 (PMID: 20402836)	2002	107	2.9	-		✓	PCR-RFLP	✓	1/3 (33.3)	2/3 (66.7)	-	-
[5] Alfizah et al., 2014 (PMID: 24757218)	2004- 2007	161	1.2	1.9	✓	✓	Sequencing	✓	2/2 (100)	2/2 (100)	0/3 (0)	0/3 (0)
[6] Ahmad et al., 2009 (PMID: 19575497)	2005- 2007	187	2.1	-	✓	✓	PCR-RFLP	✓	2/4 (50)	2/4 (50)	-	-
[7] Ahmad et al., 2011 (PMID: 21241412)	2005- 2007	187	-	1	✓		-	-	-	-	-	-
[8] Goh & Navaratnam, 2011 (PMID: 21585611)	2009	90	0	-	✓		-	-	-	-	-	-
[9] Teh et al., 2014 (PMID: 25003707)	2014	102	6.8	6.8	✓	✓	Sequencing	✓	1/14 (7.1)	12/14 (85.7)	4/9 (44.4)	5/9 (55.6)
[10] Hanafiah et al., 2019 (PMID: 31632095)	2014- 2015	41	12.2	17.1	✓	✓	Sequencing	✓	0/5 (0)	5/5 (100)	6/7 (85.7)	1/7 (14.3)
[11] Puah et al., 2021 (PeerJ)	2019- 2020	61	14.8	3.3		✓	Sequencing	✓	0/61	9/61 (14.8)	0/60	2/61 (3.3)

PP-0462 Alarm! Liver and associated problems: A cross sectional study during COVID-19 pandemic

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Background and Aim: To analyze the prevalence, impact of treatment and associated factors of liver problems among SARS patients at Karachi Pakistan **Methods:** A cross-sectional study was conducted at three different hospitals of Karachi for a period of one year. (March 2020-march 2021) 583 patients were included in the study via purposive sampling technique with confidence level 95%. The details profiles, prescription, laboratory reports were obtained from the patients, after the informed consent and analyzed individually, the laboratory data of patients was compared with normal ranges. Descriptive statistics was applied to analyzed the data using SPSS 21.0. **Results:** A total of 583 patients were enrolled in the study with average age was 48.3±2.47years. out of total, 56% were male patients. The analyzed results were so much alarming i.e. undiagnosed disease or recent

diagnosed disease patients were more i.e. nearly 31.54%. Most of the patients (52%) had multiple morbidities i.e., diabetes type II, Insulin resistant problem, Hypertension, GIT associated problems. 56.3% patients reported aggravation in Liver problems. 41.43% of the COVID-19 patients were observed with self-medication. However, PCR+ patients were prescribed with antibiotics 23.6% (P=0.092) antiviral agents (Ribavirin) 19.4% (P=0.001) steroids 9.6% (P=<0.002), Hydroxychloroquine 21.5% (P=0.034), dietary supplements 15.6% (P<0.005), other drugs 10.3% (P=0.001). The Antiviral, and steroid were frequently prescribed to SARS patients which indicates the associated risk to liver damage. Elevated ALT, and AST levels were observed among critically effected patients with SARS infection. **Conclusion:** The current study revealed the alarming condition of the liver patients having high rate of associated problems and their treatment making a situation worse, prolongation of illness, and longer hospital stay. The protocols for an appropriate prescribing should be followed and CMEs programs shall be initiated on emergency basis.

Keywords: Pandemic, COVID-19, SARS, Liver, Factors

PP-0463 Appropriateness and diagnostic yield of oesophagogastroduodenoscopy (OGDS) in gastroenterology unit Hospital Tuanku Fauziah, Perlis.

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Background and Aim: Many hospitals adopt the open-access OGDS system due to increasing demand. This raised the question on referrals' appropriateness, from doctors without Gastroenterology training. The local OGDS service receives referrals from Gastroenterology Clinic, MOPD, and wards. It is beneficial to examine the referrals' appropriateness, in order to assess the efficacy of the current system, with the possibility of expanding it into fully open-access system. Also, the OGDS diagnostic yields are studied to see the clinical relevance of findings correlating to the initial indications. **Methods:** A cross-sectional study was conducted

on 582 patients that underwent OGDS in 2018-2019. The appropriateness of OGDS indications was examined with the American Society for Gastrointestinal Endoscopy guideline. Also, the OGDS diagnoses were studied to see the prevalence of upper GI diseases, and the clinical relevance of these findings correlating with their initial indications, statistically. **Results:** 98.8% of all OGDS referrals received are appropriate. Gastroenterology Clinic recorded 96% of appropriateness, whereas MOPD and wards referrals achieved 100%. The appropriateness level of referrals posts a significant difference in predicting the clinical relevance of subsequent OGDS findings, with appropriate referrals have OR of 5.38 (95% CI 1.15 to 25.07; p <0.05), in detecting clinically relevant findings. All factors that influence the clinical relevance of OGDS findings were analysed, as per 'Table 1'. **Conclusion:** High appropriateness level shown on OGDS indications received implies that semi-open access OGDS system works well. It is reasonable to consider converting it to a fully open system, for the benefits of more patients.

Keywords: Oesophagogastroduodenoscopy, Appropriateness, Diagnostic yield, Clinical relevance, Perlis

Table 1: Factors Influencing Clinical Relevance of OGDS Findings

Influencing Factors	Clinical Relevance of OGDS Findings											
	Total		Clinically Not Relevant		Clinically relevant		Crude OR	95% CI	p-value	Adjusted OR	95% CI	p-value
	n	(%)	n	(%)	n	(%)						
Age	57	(±16.1)	51.6	(±17.4)	58.3	(±15.5)	1.03	(1.01, 1.04)	<0.001*	1.03	(1.01, 1.04)	<0.001*
Gender							0.066					
Male	335	57.56%	58	17.30%	277	82.70%	1.47	(0.97, 2.21)				
Female	247	42.44%	58	23.50%	189	76.50%	1.00	(ref)				
Referral Source							0.015*					
Gastro Clinic	169	29.04%	42	24.90%	127	75.10%	1.00	(ref)				
MOPD	223	38.32%	49	22.00%	174	78.00%	1.17	(0.73, 1.88)				
wards	190	32.65%	25	13.20%	165	86.80%	2.18	(1.26, 3.77)				
Indications' Appropriateness							0.027*					0.032*
Not indicated	7	1.20%	4	57.10%	3	42.90%	1.00	(ref)				
Indicated	575	98.80%	112	19.50%	463	80.50%	5.51	(1.22, 24.98)				
Indications for OGDS							N/A					
Persistent Dyspepsia <50y.o.	104	17.87%	28	26.90%	76	73.10%						
Dyspepsia in >50y.o. OR with Alarming Signs	132	22.68%	17	12.90%	115	87.10%						
Dysphagia/Odynophagia	16	2.75%	3	18.80%	13	81.30%						
GERD Sx despite therapy	56	9.62%	13	23.20%	43	76.80%						
Persistent vomiting	5	0.86%	1	20.00%	4	80.00%						
Other Disease in which presence of upper GI pathology might modify plan	12	2.06%	5	41.70%	7	58.30%						
Confirmation of Imaging abnormality	3	0.52%	0	0.00%	3	100.00%						
GI bleed/ IDA	166	28.52%	23	13.90%	143	86.10%						
suspected portal HPT or varices	73	12.54%	20	27.40%	53	72.60%						
surveillance of malignancy in pt with premalignant conditions	6	1.03%	2	33.30%	4	66.70%						
OGDS Findings							N/A					
Esophageal varices	39	6.70%	0	0.00%	39	100.00%						
Esophagitis	33	5.67%	0	0.00%	33	100.00%						
Esophageal Ulcer	6	1.03%	0	0.00%	6	100.00%						
Esophageal malignancy	5	0.86%	0	0.00%	5	100.00%						
Gastric ulcer	63	10.82%	0	0.00%	63	100.00%						
Gastric Erosion	285	48.97%	34	11.90%	251	88.10%						
Duodenal ulcer	14	2.41%	0	0.00%	14	100.00%						
Duodenal erosion	12	2.06%	4	33.30%	8	66.70%						
normal	44	7.56%	44	100.00%	0	0.00%						
hiatal hernia	14	2.41%	12	85.70%	2	14.30%						
non-erosive gastritis	18	3.09%	18	100.00%	0	0.00%						
Non-erosive duodenitis	6	1.03%	2	33.30%	4	66.70%						

Note:

*Chi-square test for independence; ^bFisher's Exact test, *Statistically significant.

PP-0464 Microbial composition is altered in a pharmacological model of slowed GI transit in aged rats.

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Background and Aim: Gastrointestinal (GI) motility is an integral part of digestive function. The enteric nervous system (ENS) is the primary controller of GI motility. Dysfunction of the ENS can cause impaired GI motility as seen in the case of constipation. Animal models mimicking symptoms of constipation have been developed by way of pharmacological manipulations. We have previously shown that loperamide, an opioid agonist that works by inhibiting enteric neuronal activity, reduces propulsion and delays GI transit, inducing constipation in aged rats. Previous studies have reported an association between altered GI motility and gut microbial population. Little is known about the changes in gut microbiota profile resulting from pharmacologically induced constipation in rats. The aim of this study was to examine how constipation induced by a pharmacological drug loperamide, affects the gut microbiota composition. **Methods:** Caecal digesta samples were collected from adult male Sprague Dawley rats that were administered with 1 mg/kg/day loperamide (in 100%DMSO) or DMSO vehicle only (Control) for seven days via a subcutaneous 2 mL capacity slow release osmotic mini pump. Caecal microbial composition was determined by 16S rRNA gene amplicon sequencing. **Results:** Significant differences in caecal microbial communities were observed between loperamide treated and control groups. At the phylum level Proteobacteria and Bacteroidetes were relatively more abundant in loperamide treated vs control($P<0.05$). Comparison of community compositions using weighted UniFrac distances, a phylogenetic distance-based analysis showed a clear separation between loperamide and control communities. Permutation multivariate analysis of variance (PERMANOVA) confirmed that the overall differences in communities were significant($P=0.008$). Alpha diversity also differed between groups, with loperamide treated rats showing significantly lower numbers of observed species compared to control rats($P=0.018$). **Conclusion:** Constipation induced by loperamide affects the diversity and abundance of gut microbiota. Identifying bacterial species that are associated with slowed GI transit may help in developing prebiotic and probiotic treatments for the management of constipation.

Keywords: Gastrointestinal motility, Constipation, Gut microbiota

PP-0465 The characteristics and gastric endoscopy features of patients taking nonsteroidal anti-inflammatory drugs

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Background and Aim: To evaluate patients' characteristic and the impact of nonsteroidal anti-inflammatory drugs (NSAIDs) use within one month, prior to current upper gastrointestinal (GI) endoscopy (UGIE). **Methods:** We prospectively collected and interviewed consecutive patients with an endoscopically active gastric lesions of two hospitals in Indonesia, from December 2018 to January 2019. Descriptive data reported were age, gender, diagnosis, endoscopic features, history of GI bleeding, all medication, and history of GI related NSAID adverse reaction. **Results:** A total of 103 patients who had gastric lesions were interviewed, and 28 patients (27.2%) had history of taking NSAIDs. To ensure the gastric lesions related to NSAID, we further analyzed 12 patients (11.7%) who took NSAIDs within one month before the endoscopy was conducted. Gastric lesions would be healed after one month and might not be detected by UGIE. Most patients aged 45–65 years old and 6 of 12 patients were male, the diagnosis mostly was GERD (Gastroesophageal Reflux Disease). All the NSAIDs used were non-selective ones and 7 patients (58%) were prescribed by primary care's doctors. Less than 50% patients administered gastroprotective agent. About 60% of the patients had non-GI comorbid, mostly hypertension. Almost all patients admitted that they have had GI symptoms related to NSAIDs previously. One patient had history of overt GI bleeding. The endoscopic features were gastric ulcer 8.3% (1 patient), erosive gastritis 8.3%, esophagitis 23%, moderate gastritis 16.7%, combination of moderate gastritis and esophagitis 41.7%. **Conclusion:** NSAIDs use which were mostly prescribed by primary care doctors within one month was found in about 10% of patients underwent UGIE with gastric lesions. The gastric endoscopy feature was mostly combination of moderate gastritis and esophagitis. The previous GI symptoms related to NSAIDs could be the important risk factor of current gastric lesions.

Keywords: gastric endoscopy features, patient characteristics, NSAID, adverse reaction

PP-0466 Association between COVID-19 clinical severity outcome and the use of proton pump inhibitors

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Background and Aim: Proton pump inhibitors (PPIs) are usually prescribed in the treatment of Peptic ulcer disease. Although minimal, the adverse effects of these drugs have been documented several papers, including pneumonia. This drug has been commonly prescribed in patients with SARS COV 2 infection. One study showed that administration of PPI

might be harmful in patients with COVID 19. However, there is no consensus as to its risk to patients infected with SARS COV 2. This study will aim to identify if there is an association between PPI administration with severity outcomes of patients diagnosed with COVID-19. **Methods:** This is a retrospective Analytic, Cross-sectional study in order to determine association between COVID-19 Clinical Severity Outcome and the use of Proton Pump Inhibitors. All adult subjects (age ≥ 18 years old) with COVID-19 disease admitted at Vicente Sotto Memorial Medical Center were included in the study. Patients transferred to other hospitals, home against medical advice and those with incomplete data are excluded. Pregnants and patients on H2-blockers were also excluded. **Results:** Among the total of 352 patients who underwent SARS COV 2 test, 129 were excluded. The final sample who was diagnosed with COVID-19 were 232 individuals. Based

Table 1. Demographic and clinical characteristics at baseline			
Characteristics	With PPI exposure	Without PPI exposure	p value
Gender			
Male	90	29	0.745
Female	75	28	
Age, Mean \pm SD	52.25 \pm 15.23	42.77 \pm 16	0.000
Hospital days \pm SD	13.03 \pm 10.9	12.3 \pm 16	0.598
Severity			
Mild	22	26	
Moderate	84	23	
Severe	15	0	0.000
Critical	44	6	0.000
Chief complaints			
Fever	43	17	0.705
cough	51	13	0.32
dyspnea	62	16	0.256
abd pain/epig pain	9	1	0.429
sore throat	4	8	0.003
slurring of speech/unilateral weakness	12	2	0.489
body malaise	21	4	0.351
diarrhea	8	1	0.528
Final disposition			
Discharged improved	120	47	0.197
Expired	45	10	
Indication			
No indication	133	57	0.001
with indication	32	0	
Comorbidities			
Hypertension	84	18	0.018
DM	40	9	0.254
PTB	8	2	0.960
Asthma	9	5	0.567
CAD	8	1	0.528
Stroke	11	0	0.100
CKD	22	5	0.501
alcoholic	5	4	0.354

Parameter	Table 2. Parameter Estimates					
	B	Std. Error	Wald Chi-Square	df	p-value	Odds ratio
Threshold	[Severity=0]	-.270	.2619	1.060	1 .303	.764
	[Severity=1]	2.073	.3065	45.748	1 .000	7.948
	[Severity=2]	2.432	.3152	59.551	1 .000	11.387
Exposure	1.502	.3157	22.624	1 .000	4.489	2.418
	(Scale)	1 ^a				8.333

on the criteria provided by DOH on COVID 19 severity, 26(21.6%) were categorized as mild, 107(48.2%) are moderate, 15(6.8%) are severe, and 52(23.4%) are critical. Among patients given PPI, only 45.8% were mild, and 78.5% were moderate in severity while 100% were severe and 84.6% were critical. PPI exposure increases severity outcomes in COVID 19 (p-value: 0.000) and the odds of being critical is 4.5 times in patients with PPI exposure. **Conclusion:** Patients diagnosed with COVID-19 who are given PPI have increased risk of having severe clinical outcomes. This should call the physician to assess the risk against the benefit in patients with COVID-19.

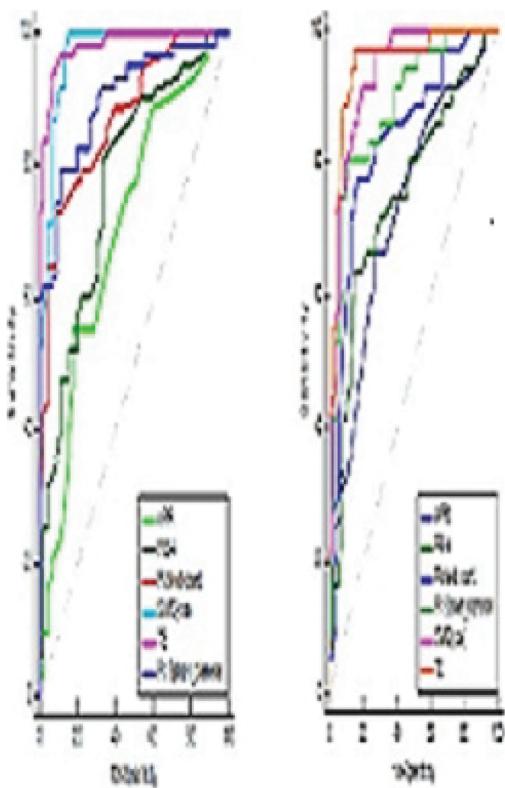
Keywords: PPI, COVID-19, Proton Pump Inhibitor

PP-0467 2D-Shear wave elastography in predicting esophageal varices in patients with compensated liver cirrhosis

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Background and Aim: We looked at the diagnostic performance of 2D-shear wave elastography (SWE) for predicting the presence of esophageal varices and high-risk esophageal varices in patients with compensated cirrhosis. Diagnostic capabilities of 2D-SWE, transient elastography (TE), and other non-invasive parameters were compared. **Methods:** 108 patients with compensated cirrhosis undergoing B-mode, 2D-SWE, TE, and endoscopy were enrolled. Comparisons of the accuracy of prediction between groups were made by AUROCs. Regression analysis was performed for the multiple variables. **Results:** There were 64 males and 44 females, with a mean age of 51.73 ± 11.35 years. NASH (42%) and alcohol (28%) were the main etiologies. Esophageal varices were found in 63 patients. 36 had high-risk varices. The AUROC value of 2D-SWE (0.967) was comparable to that of TE (0.961), but significantly higher than other non-invasive parameters (platelet count, spleen diameter, platelet count/spleen diameter ratio, FIB-4, and APRI) (Figure 1). 2D-SWE had 92.1% sensitivity, 88.7% specificity, 90.6% PPV, and 88.6% NPV for predicting the presence of varices at an optimal cut-off value > 21.1 kPa, and 91.7% sensitivity, 88.6% specificity, 80.2% PPV, and 95.1% NPV for predicting high-risk varices at an optimal cut-off value > 24.6 kPa. At a value < 20.3 kPa, none of the patients had varices with 100% sensitivity. **Conclusion:** In patients with compensated cirrhosis, liver stiffness measured by 2D-SWE is an effective



non-invasive diagnostic tool for predicting the presence of esophageal varices and high-risk varices. The diagnostic performance of 2D-SWE is similar to that of TE but better than other non-invasive parameters.

Keywords: compensated liver cirrhosis, esophageal varices, liver stiffness, shear wave elastography

PP-0468 Predictors of complications and weight loss following intragastric balloon insertion

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Background and Aim: Obesity is a major global health issue, and to address this, multiple weight reduction strategies are emerging. Intragastric balloon (IGB) insertion has shown to be an effective option. However, it is associated with adverse events, and weight loss is variable. Hence, the aim of this study is to identify factors associated with weight loss and complication following insertion of IGB. **Methods:** Retrospective analysis of the complications and weight loss of the patients who had IGB inserted at King Abdullah Medical City, Makkah, a tertiary referral center for Bariatric surgery. **Results:** Of the 72 patients who had IGB inserted, 24 (66.7%) developed an adverse event, including 5 early removals within 2 weeks. In multivariate stepwise backward logistic regression, female gender was identified as the only predictor of adverse event ($P = 0.009$; odds ratio 0.247, 95% confidence interval 0.086–0.711). The most common complication was abdominal pain occurring in 15 patients (21%). Data at 6-month follow up were available in 67 patients with mean percentage of excess body weight loss of $17.47\% \pm 14.21\%$ with a reduction of BMI of 6.33 kg/m^2 . On a multiple regression model, weight loss at 3 months and asthma were significantly correlated with the percentage of excess weight loss ($P < 0.001$ and $P = 0.04$, respectively). **Conclusion:** In this cohort, gender of the patients was associated with complications, and weight loss at 3 months and asthma predicted the final weight loss.

Keywords: bariatric, BMI, intragastric balloon, obesity

PP-0469 Efficacy and safety of vedolizumab in the maintenance phase of ulcerative colitis

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Background and Aim: Ulcerative colitis is an inflammatory bowel disease in which there is a dysregulated immune response to intraluminal antigens. Vedolizumab, a humanized anti- $\alpha 4\beta 7$ integrin monoclonal antibody, selectively blocks trafficking of memory T cells to inflamed gut tissue. Previous studies have shown Vedolizumab to be effective in the induction phase of ulcerative colitis. The objective of this study is to determine the efficacy and safety of Vedolizumab in the maintenance phase of ulcerative colitis.

Methods: A computer-assisted search of PubMed, MEDLINE, and CENTRAL was done. Extraction of data and risk of bias assessment were done for each trial. The primary outcome measured was the proportion of patients who achieved clinical remission at the end of the maintenance study period as defined by the included studies. Secondary outcomes were the proportion of patients who had endoscopic remission (or mucosal healing) at the end of the study, durable clinical response as defined by the included studies, durable remission as defined by the included studies, steroid free remission, adverse events, serious adverse events, and withdrawal due to adverse events. **Results:** Three studies (672 patients) were studied.

Analysis revealed that Vedolizumab was significantly superior to placebo in the maintenance phase of therapy in all the outcome parameters compared. Adverse events between the two groups were not statistically significant; however, there was a statistically significant difference in withdrawals due to adverse events with more withdrawals in the placebo group. **Conclusion:** Data from the three studies show that Vedolizumab is superior to placebo in the maintenance phase of ulcerative colitis therapy. Adverse events appear to be similar to placebo. Future trials are needed to further assess pharmacokinetics, efficacy, and safety of Vedolizumab in other populations and against other approved therapeutic agents

Keywords: maintenance phase, ulcerative colitis, Vedolizumab

PP-0470 Post TACE hepatocellular carcinoma response assessment by modified RECIST and short-term post-TACE survival

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Background and Aim: Transarterial chemoembolization (TACE) improves the overall survival of patients with intermediate-stage HCC. Modified response evaluation criteria in solid tumors (mRECIST) is used for evaluation of the treatment response in patients after TACE. This study evaluated response and survival in patients after TACE in a tertiary center

Methods: Patients underwent superselective TACE using epirubicin, and mRECIST response was calculated using MRI after 6 weeks. Predictive factors for response and survival were calculated. **Results:** 42 patients were analyzed. The mean age was 59.12 ± 8.74 years. 23 patients had complete response (CR), 8 patients partial response (PR), 4 patients stable disease (SD), and 7 patients progressive disease (PD) as per mRECIST criteria. Objective response (OR) is defined as patients achieving either CR or PR and poor response (PoR) as patients achieving either SD or PD. 73.8 % had an objective response and 26.2%, a poor response. HAP score ($p = 0.003$) and CHILD stage ($p = 0.011$) were the most important predictive variables for the mRECIST response. 72.7% and 32.2% of patients with PoR and OR died. Survival was more in patients with OR (25.64 months) than in patients with PoR (13.10 months), ($p = 0.001$). mRECIST response predicted survival on univariate analysis (HR = 1.08, $p = 0.02$), but not multivariate analysis. The independent predictors for survival were post-TACE decompensation (B-1.43, $p = 0.03$), ECOG performance status (B-1.41, $p = 0.010$), and the number of lesions (B-2.20, $p = 0.017$). **Conclusion:** TACE has a significant survival advantage in intermediate stage HCC when they achieve objective response as per mRECIST. Proper selection of patients is important for objective response and survival

Keywords: HAP score, mRECIST, OR, PoR, TACE

PP-0471 Evidence of objective endoscopic gastroesophageal reflux post sleeve gastrectomy

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Background and Aim: Sleeve gastrectomy (SG) is a popular bariatric surgery, but its link to gastroesophageal reflux (GERD) is a concern as it is associated with Barrett's oesophagus (BE). However, the development of GERD following SG is far from clear. Hence, the aim of this study was to

look objectively for endoscopic oesophagitis (EE) post SG. **Methods:** Hospital records of all patients who had post SG endoscopy were retrospectively reviewed. Demographics, comorbidities, medications used, endoscopic findings, and *Helicobacter pylori* status were recorded. **Results:** 155 of the 169 patients who had a gastroscopy post SG were included, 14 were excluded as there were done immediately post SG. Median age of patients was 35 years (range 18–65) with 59% (92) females and 48% (74) had hypertension, diabetes mellitus, and/or hyperlipidemia. The median post SG endoscopy interval was 16 months (range 7–33). EE was detected in 23% (36) with 64%, 31%, and 5% having grades A, B, and C, respectively. None had hiatus hernia, and one of them had a 5-cm Barrett's oesophagus (BE). In addition, 26 patients had endoscopy prior to SG of which 15% (4) had oesophagitis post SG and none had oesophagitis prior to SG. 19% (30) were positive for *Helicobacter pylori* (HP) and 23% of these had oesophagitis. Compared to those without HP, the prevalence of oesophagitis was not significantly different ($P = 1.00$).

Conclusion: Endoscopic oesophagitis was prevalent in nearly a quarter of our study population. The development of EE maybe de novo with the potential to evolve into BE.

Keywords: esophagitis, GERD, intragastric balloon, obesity, reflux

PP-0472 Effect of vegetarians and non-vegetarian diet on gut microbiota and gastrointestinal diseases among the Indian patients

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Background and Aim: Gut microbiota is modulated by changes in diet and plays an important role in human health. This study aimed to evaluate the effect of a vegetarian and non-vegetarian diet on gut microbiota and its association with gastrointestinal disease and age. **Methods:** 35 gastric biopsies were collected from patients suffering from several GI diseases, and dietary status and lifestyle patterns of all the patients were recorded. 16S metagenome analysis for V3–V4 regions was performed using QIIME workflow and analyzed the number of OTUs identified within the sample. Microbial composition within a sample was estimated using alpha diversity indexes. **Results:** Comamonas is dominantly abundant among the Veg only in both GI diseases (0.12%) and control (0.03%). *H. pylori* (0.28%) belongs to Proteobacteria phyla is dominantly abundant in GI patients only among the Non-veg. *Prevotella tannerae* (0.01%) (belongs to Bacteroidetes phyla), *Pseudomonas nitroreducens* (0.006%), *P. alcaligenes* (0.005%) & *Stenotrophomonas geniculata* (0.006%) (belongs to Proteobacteria phyla), and *Bulleidia moorei* (0.009%) (belongs to Firmicutes phyla) were shown dominantly low abundance rate in control among the Vegetarians only. Among the age groups (range 15–90 years), *Corynebacterium* sp. (belongs to Actinobacteria phyla) is highly abundant in Vegetarians while Bacteroidetes phyla are abundant in Non-vegetarians. *Streptococcus* sp., *H. pylori*, and *Prevotella melaninogenica* were found highly abundant in 15–40, 41–65, and 66–90 years age groups of Non-Vegetarians, respectively. **Conclusion:** Comamonas is dominantly abundant among the Veg only in both GI diseases (0.12%) and control (0.03%). *H. pylori* (0.28%) belongs to Proteobacteria phyla is dominantly abundant in GI patients only among the Non-veg. Firmicutes and Bacteroidetes were shown high abundance rate in Veg and Non-veg, respectively. Among the Veg diet, as age increase, the abundance rate of Firmicutes and Actinobacteria also increase and decrease, respectively. In a Non-Vegetarian diet, the rate of *Prevotella* increase.

Keywords: dietary habits, gastrointestinal diseases, gut microbiota

PP-0473 Frequency of small intestinal bacterial overgrowth by quantitative culture of small intestinal aspirate among patients with irritable bowel syndrome

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Background and Aim: The role of small intestinal bacterial overgrowth (SIBO) in irritable bowel syndrome (IBS) symptomatology, particularly when the SIBO is diagnosed by culture of small intestinal aspirate which is considered as the gold standard, is debatable. Hence, we conducted a prospective study to determine the frequency of SIBO and to identify the causative bacteria of SIBO among the non-constipated IBS patients. **Methods:** This was a prospective study conducted in the Department of Gastroenterology, Dhaka Medical College Hospital, Dhaka, Bangladesh. Consecutive non-constipating IBS patients diagnosed and subtyped by Rome IV questionnaire, translated in Bengali were included. Colony count in the culture of duodenal aspirate of $\geq 10^5$ CFU/ml and ≥ 103 but $< 10^5$ CFU/ml were considered as diagnostic of SIBO and low-grade SIBO, respectively. **Results:** Of 104 IBS patients (mean age 31.69 ± 10 years, male 78 [75%]) included, 60 (57.69%) and 44 (42.30%) had diarrhea-predominant IBS (IBS-D) and mixed type IBS (IBS-M), respectively. Among the 104 IBS patients, 38 (36.5%) had SIBO. Among the IBS-D and IBS-M patients, 32/60 (53.3%) and 6/44 (13.63%) had SIBO, respectively ($p = <0.001$). There was no significant difference of SIBO between male and female (30/78 [38.46%] vs. 8/26 [30.76%], $p = 0.481$). There was no significant difference in age between patients with and without SIBO (31.16 ± 10.6 vs. 32.0 ± 9.7 , $p = 0.682$). Of 38 patients with SIBO, *Pseudomonas aeruginosa* and *Escherichia coli* were found in 30 (78.9%) and 8 (21.1%), respectively. Low-grade SIBO was found in 24/104 (23.1%) subjects. *Pseudomonas aeruginosa*, *Escherichia coli*, both *Pseudomonas aeruginosa* and *Escherichia coli*, and *Pseudomonas aeruginosa* and *Klebsiella pneumonia* were found in 16 (66.6%), 4 (16.6%), 3 (12.5%), 1 (4.2%) patients with low-grade SIBO, respectively. **Conclusion:** The frequency of SIBO among non-constipated IBS was found to be 36.5%. *Pseudomonas aeruginosa* was the most common organism among patients with SIBO and IBS. SIBO was more frequent among IBS-D patients.

Keywords: IBS, SIBO

PP-0474 Association of *Helicobacter pylori* with obesity in the western population of kingdom of Saudi Arabia

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Background and Aim: Prevalence of *Helicobacter pylori* (HP) in obese patients is conflicting with studies showing a very wide range from 8.7% to 86%. Hence, the aim of this study was to confirm the prevalence of histologically proven HP in obese patients. **Methods:** Obese (body mass index [BMI] ≥ 30 , cases) patients who had endoscopy and biopsy for HP in King Abdullah Medical Center (KAMC), Makkah, were identified from the hospital information system, and their demographics, comorbidities, and HP status were recorded retrospective. **Results:** 468 obese patients (male: female, 1:1.7) with mean age of 48.3 ($SD \pm 15$) years and mean BMI of 44.43 kg/m^2 were analyzed. The prevalence of HP was 35% (166/469). There was no significant association of HP infection and gender ($P = 0.557$). There was no difference between the mean ages of patients infected with HP (40.2 ± 12 years) compared to those who were not (42.46 ± 13.7 years) ($P = 0.076$). Similarly was the case with glycated haemoglobin (6.79 ± 1.9 in HP positive compared with 6.85 ± 1.7 in HP negative, $P = 0.708$). However, the mean BMI was significantly higher in HP positive patients ($46.75 \pm 10.3 \text{ kg/m}^2$) compared to HP negative ($43.1 \pm 8.2 \text{ kg/m}^2$) ($P = 0.0001$). There was a positive linear correlation with BMI and HP prevalence ($P = 0.0007$) (Table 1). **Conclusion:** The prevalence of HP in our study was positively associated with BMI, rising with increasing BMI. This may have implication for obesity management. Further population based studies are needed to confirm this.

Keywords: bariatric, *Helicobacter pylori*, obesity, reflux

Table 1: Association of Helicobacter Pylori with obesity in the western Population of kingdom of Saudi Arabia

BMI	HP Positive (%)	HP Negative (%)
30-34	32	68
35-39	29	71
40-44	23	77
50-54	54	55
55-59	50	50
60-64	60	40
>65	73	27

PP-0475 Characteristic of patients with common bile duct stone underwent endoscopic retrograde cholangiopancreatography at Gastrointestinal Endoscopic Center, Division of Gastroenterology, Pancreatobiliary and Digestive Endoscopy, Department of Internal Medicine

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Background and Aim: Gallstones are a very common problem in developing countries affecting most populations and ethnicities with the prevalence as high as 10–15%. The development of symptomatic disease and complications is mostly related to the migration of stones into the common bile duct (CBD). Common bile duct stones may be treated by endoscopic retrograde cholangiopancreatography (ERCP) with endoscopic sphincterotomy and stone extraction using baskets or balloon catheters, lithotripsy, or surgically during cholecystectomy. The aim of the study is to investigate the demographic characteristics of CBD stone in Gastrointestinal Endoscopic Center, Division of Gastroenterology, Pancreatobiliary and Digestive Endoscopy, Department of Internal Medicine Cipto Mangunkusumo National General Hospital. **Methods:** This is a retrospective study using registry medical records of patients with CBD stone diagnosed by ERCP in Gastrointestinal Endoscopic Center, Division of Gastroenterology, Pancreatobiliary and Digestive Endoscopy, Department of Internal Medicine Cipto Mangunkusumo National General Hospital from January 2018 to May 2021. **Results:** A total of 2593 patients underwent ERCP, and CBD stones were detected in 509 patients with complete required data. The patients comprised of 327 females (64.3%) and 182 males (35.7%). Majority of patients were between 30 and 60 years old (52.4%), and Javanese ethnic was the most common (40.7%). Possible risk factors such as overweight (37.3%), high fat consumption (68.4%), and diabetes (47.7%) were identified. **Conclusion:** Prevalence of CBD stone among patients who underwent ERCP procedure in Gastrointestinal Endoscopic Center, Division of Gastroenterology, Pancreatobiliary and Digestive Endoscopy, Department of Internal Medicine Cipto Mangunkusumo National General Hospital was 19.6% and seems to be more common in women than men. Majority of patients were Javanese female between 30 and 60 years old with multiple possible risk factors.

Keywords: characteristic, common bile duct stone, endoscopic retrograde cholangiop, risk factor

PP-0476 Do NAFLD patients with advanced fibrosis have an adverse cardiometabolic profile: A comparative study using carotid intimal medial thickness, metabolic syndrome, and atherogenic index of plasma

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Background and Aim: Carotid intimal medial thickness (CIMT) and atherogenic index of plasma (AIP) are parameters that correlate well with

cardiovascular disease (CVD) risk. Metabolic syndrome (MetS) contributes independently to CVD. In this study, we compared the cardiometabolic profile in NAFLD patients with and without advanced fibrosis using these parameters. **Methods:** 201 patients diagnosed with NAFLD were stratified into two cohorts based on transient elastography values: those with and without advanced fibrosis. Anthropometric indices, blood investigations, and sonographic assessments of subjects were done to compare and analyse the cardiometabolic risk between the two cohorts. **Results:** Mean age of the study population was 42.89 ± 13.62 years. 27.4% (55/201) of patients had advanced fibrosis. The male-to-female ratio was 1.25:1. Patients with advanced fibrosis were older ($P < 0.001$), had higher sonographic grades of steatosis ($P < 0.001$), increased BMI ($P = 0.0003$), higher waist circumference ($P < 0.0005$), elevated triglycerides ($P < 0.001$), lower HDL values ($P = 0.049$), and increased prevalence of MetS ($P < 0.0001$). Mean CIMT (0.59 ± 0.08 vs 0.52 ± 0.07 mm, $P < 0.001$) and AIP (0.64 ± 0.50 vs 0.41 ± 0.65) were significantly higher in the advanced fibrosis cohort. Waist circumference and triglyceride levels were the most significant MetS components in advanced fibrosis. AIP had good correlation with BMI ($r = 0.45$) and MetS ($r = 0.60$) in NAFLD. Mean CIMT had a significant correlation ($r = 0.968$, $P < 0.0001$) with the increasing number of MetS components. Multivariate regression analysis showed that patients with advanced fibrosis higher mean CIMT, MetS components, and AIP values (AUROC=0.85, Specificity 0.87, and Sensitivity 0.77). **Conclusion:** Older age, increasing number of metabolic syndrome components, and surrogate markers for subclinical atherosclerosis (CIMT and AIP) are the significant factors contributing to advanced fibrosis. MetS, CIMT, and AIP can be used to create a novel predictive model for CVD risk stratification in NAFLD patients.

Keywords: advanced fibrosis, CIMT, metabolic syndrome, NAFLD

PP-0477 Technical success of endoscopic ultrasonography guided biliary drainage (EUS-BD) among patient with malignant biliary stricture: Report from a single tertiary hospital in Indonesia

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Background and Aim: Endoscopic retrograde cholangiopancreatography has become standard treatment for management of benign and malignant biliary obstruction. When ERCP fails, endoscopic ultrasonography guided biliary drainage (EUS-BD) has become preferred therapeutic options. Compared to conventional percutaneous transhepatic biliary drainage and surgery, EUS-BD offers less adverse effect and could perform directly after failed ERCP. The aim of this study is to evaluate technical success of EUS-BD in malignant biliary stricture. **Methods:** This study is a retrospective study from data of EUS-BD performed during period of 2016–2021 in Gastrointestinal Endoscopy Center, Cipto Mangunkusumo National General Hospital, Jakarta, Indonesia. Patient demographic, technical success, and short-term mortality after procedure were taken from report dan medical record. **Results:** A total of 70 patients who underwent EUS-BD were included. Median age of 57 years old range from 33 to 86 years old, and 37 (52.8%) patients were female. Most of patients were diagnosed pancreatic cancer (42.3%). Choledochooduodenostomy was conducted in 58 patients (82.9%), hepaticogastrostomy in 8 patients (11.4%), and

rendezvous in 4 patients (5.7%). Types of stent used in the procedure were 52 plastic stents (74.3%) and 18 metal stents (25.7%). Technical success was achieved in all the patients (100%). Short-term mortality was observed in 23 patients (32.9%). **Conclusion:** EUS-BD has excellent technical success. Most patients underwent EUS-BD due to obstruction of pancreatic cancer. Type of plastic stent and choledochooduodenostomy procedure were more prevalence.

Keywords: biliary drainage, EUS, malignant stricture

PP-0478 Renal resistive index as a predictor of hepatorenal syndrome in a cohort of chronic liver disease: A prospective study

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Background and Aim: Hepatorenal syndrome (HRS) is a serious complication of cirrhosis associated with a short survival. It is characterized by renal arterial vasoconstriction, which may precede clinically manifest renal dysfunction. Renal resistive index (RRI) is frequently used to assess intrarenal arterial vasoconstriction. Early prediction of predilection for HRS can assist in early assignment to Liver Transplant workup and institute preventive measures. Our primary aim was to obtain the best cutoff value of RRI in predicting HRS in decompensated cirrhosis over 6 months. Other clinical and biochemical factors associated with the development of HRS were also studied. **Methods:** A prospective follow-up study of 130 decompensated cirrhotics admitted to our hospital. All underwent abdominal ultrasound Doppler with RRI measurement at initial admission. Baseline clinical and laboratory results were obtained. Patients were followed up for 6 months to look for the development of HRS. **Results:** 10 patients were lost to follow up. Selected variables of the remaining 120 patients were analyzed. HRS occurred in 20% of the patients. RRI cut-off values of ≥ 0.77 (AUROC: 0.895, sensitivity 91.7%, specificity 76%), ≥ 0.77 (AUROC: 0.910, sensitivity 92.3%, specificity 83.3%), and ≥ 0.82 (AUROC: 0.912, sensitivity 90.9%, specificity 87.5%) predicted HRS in decompensated cirrhosis, NASH-related, and non-NASH-related decompensated cirrhosis, respectively. NASH-related etiology was found to be an independent predictor for HRS. Higher blood urea and serum creatinine levels, low serum albumin levels, and presence of tense ascites at admission were also significantly associated with the risk of development of HRS. **Conclusion:** Measurement of RRI is a novel non-invasive diagnostic screening tool to predict the development of HRS in decompensated cirrhosis. It is sustainable and useful for monitoring at primary care level to assist in early referral. NASH-related etiology is an independent predictor for the occurrence of HRS.

Keywords: decompensated cirrhosis, HRS, RRI

PP-0479 Efficacy and safety evaluation after conversion from twice-daily to once-daily tacrolimus in stable liver transplant recipients: A phase 4, open-label, and single-center study

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Background and Aim: Simplifying immunosuppressive therapy after liver transplantation (LT) can improve patient compliance, thereby preventing acute rejection and graft loss. This study is a phase 4, open-label, and single-center study to evaluate the efficacy and safety of once-daily tacrolimus (TAC) conversion in stable liver transplant recipients. **Methods:** Between May 2017 and January 2019, twice-daily TAC was converted to once-daily TAC in 101 stable recipients who are at least 12 months after LT in Asan Medical Center. The dose of both drugs was converted to 1:1, and the target trough level was 5–10 ng/ml. We prospectively analyzed the graft function, the drug compliance, and adverse reactions after switching regimen for 24 weeks. **Results:** There was no acute rejection confirmed histologically within 24 weeks, the primary end point, and there was no occurrence of chronic rejection, fatal deterioration of liver function or death in all patients during the study period. After conversion, the trough level of TAC decreased, and the differences of trough level compared to the baseline were 1.46 (± 2.41) ng/ml, 0.43 (± 2.08) ng/ml, and 0.07 (± 2.73) ng/ml after conversion from 3, 12, and 24 weeks, respectively. Despite the transient fluctuation of the trough level, there was no evidence of rejection or graft dysfunction. There were 37 adverse reactions after conversion, most of them were mild reactions, and thrombocytopenia was found in only one patient as a serious adverse drug reaction. It was figured out drug compliance improved after conversion at all visits during the study period by individual questionnaire. **Conclusion:** The conversion to once-daily TAC in stable LT patients is an effective and safe therapeutic strategy as well as improves drug compliance with simplified regimen.

Keywords: compliance, liver transplantation, tacrolimus

PP-0480 Exclusive enteral nutrition treatment could ameliorate systemic inflammation in complicated Crohn's disease

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Background and Aim: It showed that exclusive enteral nutrition (EEN) exert therapeutic efficacy in Crohn's disease (CD). But few studies investigated the changes of systemic immune responses to EEN, here we enrolled complicated CD patients and investigated the changes of lymphocytes and cytokines involved in CD pathogenesis. **Methods:** Blood was collected from 25 complicated CD patients before EEN start (pre-EEN), at 4 (EEN-1M) and 12 (EEN-3M) weeks thereafter and 23 healthy controls in serum separator tubes. A panel of cytokines that are known to participate in chronic intestinal inflammation was selected for testing. Then, serum

was measured by enzyme-linked immunosorbent assay (ELISA). PBMCs isolated from peripheral blood from 8 complicated CD patients before and after EEN treatment and 6 healthy control. Relative cell numbers of target populations were calculated from total lymphocytes of routine complete blood count using FACS analysis. **Results:** Furtherly, we found that EEN was paralleled with a downregulation of proinflammatory cytokine production in peripheral blood. EEN significantly decreased the expression level of serum IL-17, IFN-gamma, IL-1B and TNF-x0237A; at 4 and 12 weeks in comparison with start (pre-EEN). Meanwhile, IL-10 expression level presented increased trend at 4 and 12 weeks after EEN treatment compared to start, but there was no significant difference compared to start. However, IL-10 was higher in complicated CD compared to healthy control. We assessed changes of lymphocyte subsets directly isolated from peripheral blood at start (pre-EEN), 4 and 12 weeks at the end of EEN. EEN significantly increased relative numbers of Foxp3+ regulatory T (Treg) cells and B lymphocytes, while decreased Th1 and Th17 in relative numbers. **Conclusion:** Exclusive enteral treatment could ameliorate systemic inflammation of complicated CD. EEN may exert anti-inflammatory efficacy by regulating the function of lymphocytes, while further investigation could focus on the proportional changes of intestinal mucosa lymphocytes.

Keywords: Crohn's disease, cytokines, exclusive enteral nutrition, lymphocytes

PP-0481 SIM01 as a novel microbiome replacement therapy for COVID-19: An open-label pilot study

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Background and Aim: Gut dysbiosis is associated with immune dysfunction and severity of COVID-19. Whether targeting dysbiosis will improve outcomes of COVID-19 is unknown. To assess the effects of a novel microbiome formula (SIM01) as an adjuvant therapy on immunological responses and changes in gut microbiota of hospitalised COVID-19 patients. **Methods:** This was an open-label, proof-of-concept study. Consecutive COVID-19 patients admitted to an infectious disease referral centre in Hong Kong were given a novel formula of Bifidobacteria strains, galactooligosaccharides, xylooligosaccharide and resistant dextrin (SIM01). The latter was derived from metagenomic databases of COVID-19 patients and healthy population. COVID-19 patients who were admitted under another independent infectious disease team during the similar period without receiving the SIM01 formula acted as controls. All patients received standard treatments for COVID-19 according to the hospital protocol. We assessed antibody response, proinflammatory markers and faecal microbiota profile from admission up to Week 5. **Results:** Twenty-five consecutive patients received SIM01 for 28 days; 30 patients without receiving the formula acted as controls. Significantly more patients receiving SIM01 than the control group developed antibody (88% vs. 63.3%; $p = 0.037$) by Day 16. One (4%) patient in the SIM01 group and 8 (26.7%) in the control group did not develop positive IgG antibody upon discharge. At Week 5, plasma levels of interleukin (IL)-6, monocyte chemoattractant protein-1 (MCP-1), macrophage colony-stimulating factor (M-CSF), tumour necrosis factor (TNF- α), and IL-1RA dropped significantly in the SIM01 group but not in the control group. Metagenomic analysis showed that the bacterial species of the

SIM01 formula were found in greater abundance, leading to enrichment of commensal bacteria and suppression of opportunistic pathogens in COVID-19 patients by Weeks 4 and 5. **Conclusion:** The use of a novel microbiome formula SIM01 hastened antibody formation against SARS-CoV-2, reduced pro-inflammatory immune markers and restored gut dysbiosis in hospitalised COVID-19 patients.

Keywords: gut microbiota, immunity, probiotics, SARS-CoV-2

PP-0482 Vonoprazan-based high-dose dual therapy for *H. pylori* treatment failures: A pilot study

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Background and Aim: We investigate the use of Vonoprazan-based dual therapy with high-dose Amoxicillin (V-HDDT) for 14 days for the eradication of treatment-experienced *H. pylori* infection. **Methods:** This is a prospective single arm pilot study. All patients at endoscopy and the gastroenterology clinic who has proven *H. pylori* infection with a history of previously failed eradication therapies were recruited. They were given V-HDDT: Vonoprazan 20 mg b.i.d + Amoxicillin 1 g t.i.d for 2 weeks as rescue therapy. Follow up on successful eradication using either C13-UBT or endoscopic biopsies was done after 4 weeks of post treatment. **Results:** A total of 29 patients were recruited in this study. The mean age was 51 (± 16.1) years, and 58.6% were females. 10.3% of them were active smokers, and 6.9% were active drinkers. All patients were fully compliant to the treatment regime, and there were no defaulters. The eradication rate using V-HDDT was 82.8% (24/29). There were no major side effects; however, mild side effects were seen in 13.8% of them. **Conclusion:** The eradication rate is suboptimal in this pilot study. The authors feel that a tds vonoprazan regimen may result in a better eradication rate in this difficult group of patients.

Keywords: dual therapy, *H. pylori* infection, rescue therapy, treatment-resistant *H. pylori*, Vonoprazan

PP-0483 COVID-19 and liver dysfunction: Preliminary data from a single centre in Malaysia

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Background and Aim: Hepatic involvement in COVID-19 infection is a recognised entity; however, the contributing factors haven't been well elucidated. We aimed to explore the extent of liver involvement, and its predisposing factors among COVID-19 patients admitted to a large teaching hospital. **Methods:** Complete clinical data from hospitalised COVID-19 patients in this institution from March to December 2020 were analysed.

Abnormal liver function was defined as liver enzymes or total bilirubin (TB) above upper limit (UL) of normal range. Liver injury was categorised as hepatocellular injury ($3 \times$ UL of alanine aminotransferase [ALT] or aspartate aminotransferase [AST]), cholestasis ($2 \times$ UL of gamma-glutamyl transferase [GGT], alkaline phosphatase [ALP] or TB) or mixed. **Results:** A total of 295 COVID-19 patients with the following baseline characteristics were analysed: mean age: 45.4 (± 17.4) years; female: 55.9%; and ethnicity: Malay (64.4%), Chinese (18.3%), Indian (12.2%) and others (5.1%). 40.3% had underlying chronic medical condition. The majority of patients (68.1%) had mild disease (Categories 1 & 2), whereas 18.6% and 13.3% exhibited moderate (Category 3) and severe (Categories 4 & 5) disease, respectively. Only 83 (28.1%) patients received disease-modifying treatment. Abnormal liver biochemistry was observed in 50.2% (hepatocellular: 24.7%, cholestasis: 4.7% and mixed: 21%) patients, whereas liver injury was recorded in 13.9% (hepatocellular: 4.4%, cholestasis: 5.4% and mixed: 4.1%). No patient had acute liver failure. On multivariate analysis, abnormal liver biochemistry was associated with only male gender ($p < 0.001$, OR: 2.66 95%CI [1.6, 4.42]), whereas liver injury was associated with the following parameters: age >40 years ($p = 0.025$, OR: 3.16 95%CI [1.15, 8.66]), male gender ($p = 0.014$, OR: 2.83 95%CI [1.23, 6.51]), moderate ($p = 0.016$, OR: 4.43 95%CI [1.32, 14.86]) and severe illness ($p = 0.019$, OR: 10.31 95%CI [1.47, 72.17]).

Conclusion: Abnormal liver biochemistry was common, but acute liver injury was infrequent among COVID-19 patients. An increased age, male gender and disease severity were predictive of COVID-19-associated liver injury.

Keywords: abnormal liver function, COVID-19, hepatitis, liver injury

PP-0484 Application of a clinical decision support tool for predicting biochemical remission with vedolizumab therapy in patients with ulcerative colitis

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Background and Aim: A clinical decision support tool (CDST) has been developed and validated for predicting outcomes of vedolizumab (VDZ) therapy in patients with ulcerative colitis (UC) (Dulai et al. Clin Gastroenterol Hepatol 2020;18:2952–2961). We aimed to validate the CDST for predicting biochemical remission (BioREM) in UC patients. **Methods:** Patients with UC treated with VDZ were retrospectively enrolled. We assessed BioREM defined by C-reactive protein (CRP) and fecal calprotectin (FC) at weeks 26 and 54, respectively, by CDST-defined response groups (low vs. intermediate to high probability group with a cut-off of 26 points, Table 1A). BioREM was defined as decrease of CRP or FC below cut-offs in patients with elevated CRP (≥ 0.6 mg/dL) or FC (≥ 250 mg/kg) at baseline. The CDST was evaluated by area under the receiver operating characteristics curve (AUC) and test performance. **Results:** From August 2017 through December 2020, 52 patients with UC were classified as low ($n = 16$) and intermediate to high

Table 1. (A) Variables consisting CDST, and (B) Test performance and discriminant function of CDST

(A) Variables consisting CDST and weighted points of each variable					
Disease duration ≥ 2 years	+3 points				
No prior TNF antagonist	+3 points				
Baseline endoscopy moderate activity (vs. severe activity)	+2 points				
Baseline albumin concentration	+0.65 points per unit (g/L)				
(B) Test performance and discriminant function of CDST					
	AUROC (95% CI)	Sensitivity (95% CI)	Specificity (95% CI)	PLR (95% CI)	NLR (95% CI)
Cut-off: 26 points					
Biochemical remission after week 26 (CRP)	0.685 (0.470–0.854)	72.7 (39.0–94.0)	64.3 (35.1–87.2)	2.04 (0.92–4.49)	0.42 (0.15–1.20)
Biochemical remission after week 54 (CRP)	0.650 (0.435–0.828)	70.0 (34.8–93.3)	60.0 (32.3–83.7)	1.75 (0.83–3.67)	0.50 (0.18–1.41)
Biochemical remission after week 26 (FC)	0.658 (0.487–0.804)	90.9 (58.7–99.8)	40.7 (22.4–61.2)	1.53 (1.07–2.21)	0.22 (0.03–1.53)
Biochemical remission after week 54 (FC)	0.617 (0.433–0.780)	87.5 (47.3–99.7)	36.0 (18.0–57.5)	1.37 (0.92–2.03)	0.35 (0.05–2.34)

CDST, clinical decision support tool; TNF, tumor necrosis factor; AUROC, area under the receiver operating characteristics; CI, confidence interval; PLR, positive likelihood ratio; NLR, negative likelihood ratio; CRP, C-reactive protein; FC, fecal calprotectin

probability group ($n = 36$), respectively. The CDST discriminated BioREM of CRP with an AUC of 0.685 (sensitivity 72.7% and specificity 64.3%) at week 26, and with an AUC of 0.650 (sensitivity 70.0% and specificity 60.0%) at week 54. BioREM of FC was identified with an AUC of 0.658 (sensitivity 90.9% and specificity 40.7%) at week 26 and with an AUC of 0.617 (sensitivity 87.5% and specificity 36.0%) at week 54. **Conclusion:** CDST can be used to help guide VDZ therapy for UC patients to predict BioREM with a high sensitivity and a fair discriminant function.

Keywords: biochemical remission, clinical decision support tool, ulcerative colitis, vedolizumab

PP-0485 Patients with ulcerative colitis, particularly during relapse, have more psychological issues and worse quality of life

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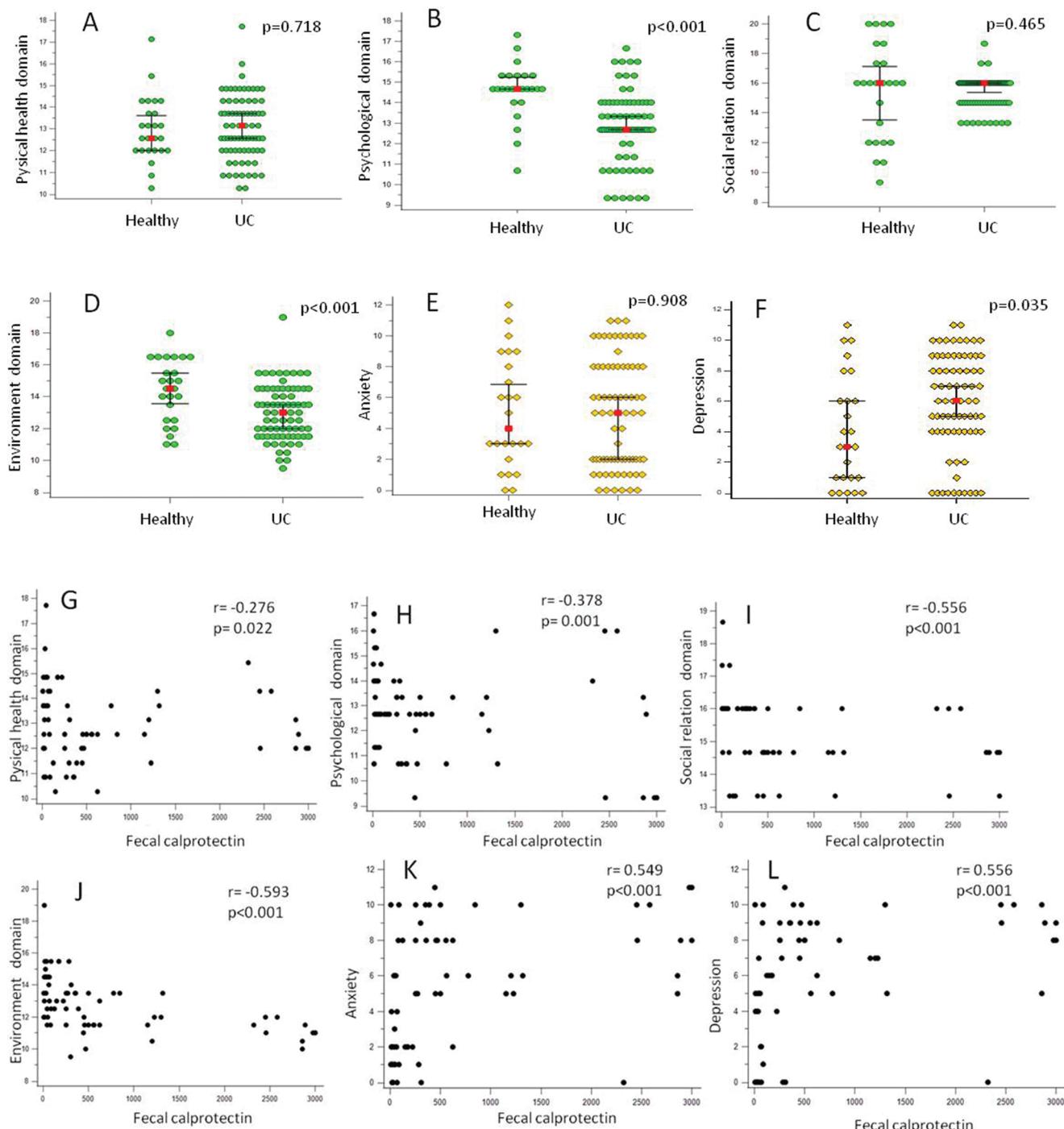
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Background and Aim: Psychological issues may be important factors for relapse of ulcerative colitis (UC), and during such exacerbations, the quality of life (QOL) is expected to be worse; however, the data on these, particularly among Asian Indian, are scanty. Accordingly, we studied the QOL and hospital anxiety and depression scale (HADS) among UC patients and healthy controls. **Methods:** QOL (using WHOQOL-BREF) and HADS data were obtained from 75 UC patients and 25 healthy controls. Severity of UC was assessed using ulcerative colitis disease activity index (UCDAI) and Truelove and Witt's severity index. In addition, fecal calprotectin was estimated in patients with UC as a biomarker of the disease activity. **Results:** Of 75 UC patients (median age 35 years [range 26–52], 35 [46.6%] male), 40 in relapse (median UCDAI 12.50 [range 12–

15]) had poorer psychological and environment domain of WHOQOL-BREF than those 35 in remission (median UCDAI 3 [range 2–4]) and 25 healthy controls (median age 29 years [range 27–41], 15 [60%] male) (Figure 1A, 1B, 1C, and 1D). Depression and not anxiety

was greater in UC patients in comparison to healthy controls (Figure 1E and 1F), whereas both depression and anxiety were significantly higher in patients with active disease than those in remission (median 8 [range 7–9] vs. 4 [0–5], $p < 0.001$; median 8 [range 5–10] vs. 2 [1–3]

Figure 1



$p < 0.001$, respectively). Fecal calprotectin negatively correlated with QOL and positively with HADS (Figure 1G, 1H, 1I, 1J, 1K, and 1L).

Conclusion: UC patients in relapse have poorer QOL and more psychological issues than those in remission and healthy controls.

Keywords: fecal calprotectin, inflammatory bowel disease, remission

PP-0486 Fructose malabsorption among patients with irritable bowel syndrome: A case-control study

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Background and Aim: The frequency of fructose malabsorption (FM) among IBS patients varies in different population, and there is no published study on the frequency of FM among IBS patients from Bangladesh. Hence, we conducted a prospective case-control study to determine the frequency of FM among IBS patients and healthy volunteers in an academic hospital in Bangladesh. **Methods:** IBS was diagnosed by using the Rome IV criteria. Consecutive IBS patients and age- and sex-matched asymptomatic healthy controls were enrolled from outpatient department of gastroenterology, Dhaka Medical College Hospital, Dhaka, Bangladesh. FM was diagnosed by fructose hydrogen breath test (FHBT) after ingestion of 25-gm fructose. Persistent rise (at least two readings) in breath hydrogen 20 parts per million (PPM) above the basal level was considered as positive for FM. **Results:** Consecutive 50 IBS patients and 35 healthy controls (mean age; 33.04 ± 9.60 years vs. 34.82 ± 7.83 years, $p = 0.366$; male 39/50 [78%] vs. 26/35 [75.3%], $p = 0.691$) were included into the study. Among 50 IBS patients, 22 (44%) were IBS-D, 9 (18%) were IBS-C, 18 (36%) were IBS-M, and 1 (2%) was IBS-U. Of 50 IBS patients, 7 (14%) had FM; of 35 healthy controls, none (0%) had FM ($p = 0.038$). Among patients with IBS-D, IBS-M, IBS-C, and IBS-U 6/22 (27.27%), 1/9 (11.11%), 0/9(0%), and 0/1(0%) had FM, respectively.

Conclusion: This study showed that FM was present in 14% of patients with IBS. FM was more frequent among patients with IBS-D.

Keywords: fructose hydrogen breath test, fructose malabsorption, irritable bowel syndrome, parts per million

PP-0487 GI endoscopy procedure during global pandemic of SARS-CoV-2 (severe acute respiratory syndrome corona virus 2) COVID-19: Experience from a tertiary hospital in Indonesia

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Background and Aim: SARS-CoV-2 is the etiologic agent of worldwide pandemic COVID-19 (Corona Virus Disease 19). Nonemergent endoscopy services have been disrupted as incidence and hospitalizations were rising. Endoscopic procedures in particular pose risk of droplet and aerosol infection, and adequate infection control is therefore essential. Many organizations have proposed measures for infection control. **Methods:** Retrospective study of standard operational procedure and policy in GI Endoscopy Unit Center at Cipto Mangunkusumo Hospital, 2020 March to 2021 April. **Results:** Emergent cases are performed, whereas outpatient elective cases are reviewed on a case-by-case basis and may be rescheduled. Direct-access endoscopy is suspended during this period. Until the end of year 2020, emergent cases that we performed for positive COVID-19 were three ongoing upper GI bleeding cases and one foreign body removal case, with only negative result from an antibody rapid test checked. We routinely had our staff PCR swab screened, even though we had 5 (five) medical staffs that were infected of COVID-19, that is one doctor, two nurses, one cashier and one medical record staff. In GI Endoscopy Unit Center at Cipto Mangunkusumo Hospital, we use level II-PPE during COVID-19, that is, mask, cap, googles or face shields, gown, shoe covers, and gloves. **Conclusion:** In addition to adequate personal protective equipment, hand hygiene and compliance with protocols are important. Special caution should be taken to prevent transmission among medical staff. Our success in preventing endoscopy unit transmission of COVID-19 is dependent on every team member.

Keywords: experience, GI endoscopy, pandemic SARS-COV-2 COVID19

PP-0488 Clinical profile and endoscopic characteristics among inflammatory bowel disease (IBD) patients in Ciptomangunkusumo National General Hospital

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Background and Aim: Inflammatory bowel disease (IBD) patients represent a chronic inflammation of the gastrointestinal tract. Types of IBD include ulcerative colitis and Crohn's disease. Globally, the incidence of IBD is approximately 0.5–24.5 cases per 100 000 person-years for ulcerative colitis and 0.1–16 cases per 100 000 person-years for Crohn disease. This study aimed to identify clinical profile and endoscopic among IBD patients at Gastrointestinal Endoscopy Center in Cipto Mangunkusumo National General Hospital. **Methods:** This study was a retrospective study which enrolled patients with suspected IBD who underwent colonoscopy from 2018 to 2019 in National General Cipto Mangunkusumo Hospital. **Results:** The total of patients with suspected IBD was 947, resulting in 143 patients diagnosed with IBD. The prevalence is higher among female (54%) than male. Inflammatory bowel disease patients were found higher

in >50 years old patients (51.9%). According to BMI criteria, normoweight group is highest among all (58.4%). Thirty-seven percent patients often consumption of red meat, and 67% patients eat less than once a week. Patients with ulcerative colitis were 67.1% and with Crohn's disease were 32.9%. Colitis ulcerative sites are most found in the left side, with a total of 55.5%. Patients with Crohn's disease with lesion in ileum were 73.8%, and 26.2% were involved in ileum and colon. **Conclusion:** The total of ulcerative colitis patient was higher than Crohn's disease, and the location in the left side is the highest among all. There are no significant differences in age and gender.

Keywords: colonoscopy, inflammatory bowel disease

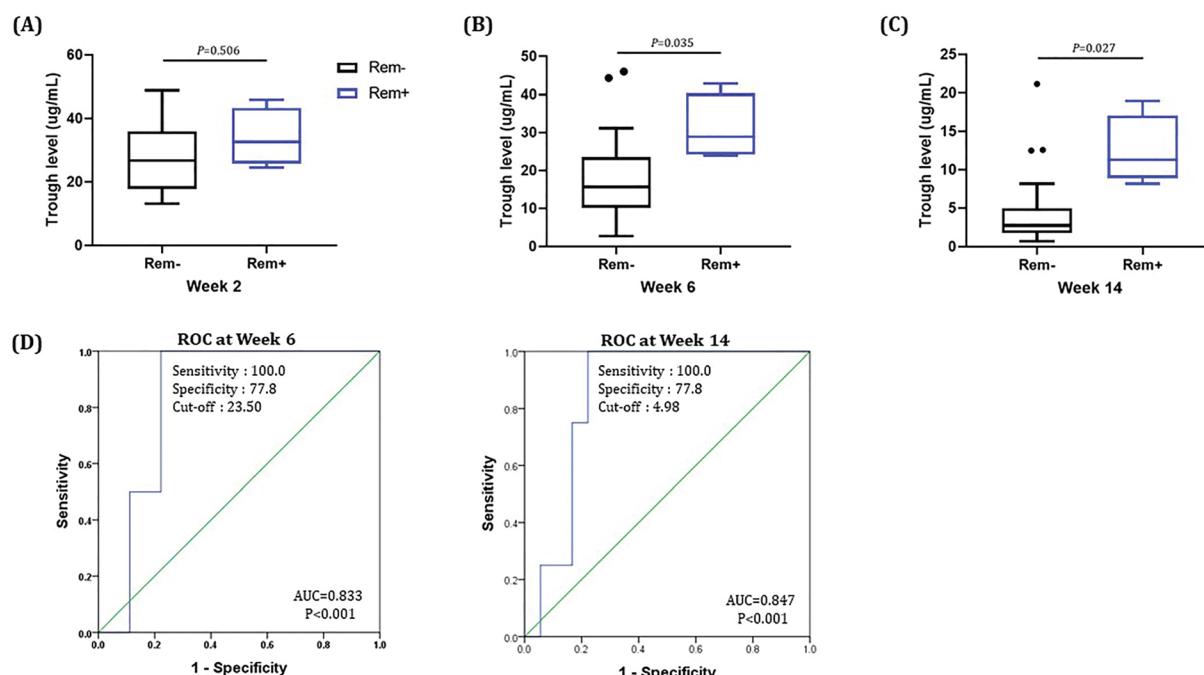
PP-0489 Association between early vedolizumab trough levels and biochemical remission in patients with Crohn's disease

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Background and Aim: The association between early vedolizumab trough level (VTL) and biochemical remission (BioREM) at 1 year in patients with Crohn's disease (CD) was evaluated. **Methods:** CD patients treated with vedolizumab (VDZ) were prospectively enrolled. All patients were

Figure 1. Boxplot of serum trough level of vedolizumab at (A) week 2, (B) week 6, (C) week 14 according to biochemical remission (fecal calprotectin < 250 mg/kg) at week 54, and (D) Receiver operating characteristic (ROC) curves at week 6 and week 14. REM, biochemical remission; AUC, area under the receiver operating characteristics curve.



given a 300-mg infusion of VDZ at weeks 0, 2, 6, and 14, and then every 8 weeks or every 4 weeks in case of dose optimization. Serum VTLs were checked at weeks 2, 6, 14, 30, and 54. Association between VTL at weeks 2, 6, and 14 and BioREM (decrease of fecal calprotectin [FC] below 250 mg/kg) at week 54 was analyzed among patients with baseline FC \geq 250 mg/kg. **Results:** From August 2017 through December 2019, a total of 40 patients were enrolled. Median VTLs ($n = 40$) were 30.3 $\mu\text{g}/\text{mL}$ (interquartile range [IQR], 21.4–38.8) at week 2, 19.9 $\mu\text{g}/\text{mL}$ (IQR, 11.4–31.1) at week 6, and 4.3 $\mu\text{g}/\text{mL}$ (IQR, 1.9–8.4) at week 14. Median VTL at week 6 (28.9 vs. 14.5, $P = 0.035$, Figure 1B) and 14 (11.3 vs. 2.9, $P = 0.027$, Figure 1C) significantly differed between patients with BioREM ($n = 4$) and those without ($n = 19$). A cut-off VTL for BioREM at week 6 was 23.5 $\mu\text{g}/\text{mL}$ with an area under the receiver operating curve (AUC) of 0.833 and 4.98 $\mu\text{g}/\text{mL}$ at week 14 with an AUC of 0.847 (Figure 1D). **Conclusion:** VTLs at weeks 6 and 14 were significantly associated with BioREM at week 54 among patients with CD.

Keywords: biochemical remission, Crohn's disease, trough level, Vedolizumab

PP-0490 Reproducibility and validity of a Malaysian food frequency questionnaire for dietary factors related to colorectal cancer

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Background and Aim: One of the contributing factors to colorectal cancer is dietary intake. This study aims to report on the reproducibility and validity of a 140-food item Food Frequency Questionnaire (FFQ) for dietary factors related to colorectal cancer among Malaysians. **Methods:**

Results

Table 1. Reproducibility and validation study: mean daily intake of nutrient, relative difference and cross-classification for the comparison between FFQ-1, FFQ-2 and 3-FD (n=98).

Nutrients	FFQ-1	FFQ-2	3-FD	Relative difference between FFQ-1 and FFQ-2 (%)	Relative difference between FFQ-1 and 3-FD (%)	Cross-classification into quartiles FFQ-1 and FFQ-2 (%)		Cross-classification into quartiles FFQ-1 and 3-FD (%)	
	Mean (P _s , P ₉₅)	Mean (P _s , P ₉₅)	Mean (P _s , P ₉₅)			Correctly classified	Grossly misclassified	Correctly classified	Grossly misclassified
Energy (kcal)	2455 (1395, 3188)	2527 (1247, 3193)	1658 (1110, 2208)	3	48	88	1	64	10
Protein (g)	99.9 (55.5, 144.4)	99.9 (44.5, 144.4)	71.5 (40.9, 90.4)	0	40	90	1	67	9
Carbohydrate (g)	329.6 (199.2, 436.5)	333.1 (174.8, 449.4)	217.9 (152.6, 299.1)	1	51	83	3	51	4
Fat (g)	78.7 (38.9, 116.2)	76.6 (34.8, 118.3)	55.2 (28.3, 81.8)	3	43	88	0	50	7
Saturated fat (g)	13.7 (5.9, 23.4)	13.4 (4.9, 25.4)	9.2 (3.0, 15.9)	2	49	85	3	66	5
Monounsaturated fat (g)	13.7 (4.9, 23.9)	13.1 (4.7, 21.7)	9.0 (3.5, 16.7)	4	52	82	2	63	12
Polyunsaturated fat (g)	9.4 (3.5, 14.8)	9.1 (3.1, 13.3)	6.5 (2.2, 13.2)	3	45	83	1	64	8
Cholesterol (mg)	371.0 (152.1, 748.8)	281.8 (128.0, 693.0)	294.8 (82.3, 555.7)	24	26	83	4	66	8
Calcium (mg)	557.4 (304.4, 923.4)	558.1 (301.1, 882.2)	460.4 (259.9, 786.3)	0	21	86	2	63	10
Magnesium	207.2 (107.2, 328.8)	211.2 (130.4, 320.2)	125.7 (62.9, 190.6)	2	65	88	2	66	9
Folate (mg)	146.9 (71.9, 347.8)	154.3 (64.8, 340.6)	89.6 (37.8, 136.1)	5	64	82	4	62	8
Fiber (g)	5.9 (3.0, 14.1)	6.1 (3.1, 13.5)	3.6 (1.4, 7.0)	3	64	87	3	64	8
Sodium (mg)	3800.4 (1999.9, 6607.3)	4056.1 (1477.0, 6574.5)	3352.9 (1801.7, 5357.4)	7	13	82	1	69	12
Iron (mg)	22.5 (10.9, 36.1)	22.3 (10.9, 32.6)	17.8 (8.0, 29.6)	1	26	87	2	63	11
Vitamin A, RE (μg)	1277.3 (539.3, 3076.8)	1217.8 (551.9, 2972.4)	796.1 (383.8, 1494.4)	5	60	80	3	64	10
Vitamin B-6 (mg)	1.6 (0.7, 2.6)	1.6 (0.8, 2.5)	0.9 (0.4, 1.4)	0	78	75	3	66	9

Population aged 30 to 70 years in Kuala Lumpur and Kota Bharu, Malaysia, were recruited through voluntary participation. A semi-quantitative FFQ was modified from the Malaysian Adult Nutrition Survey (MANS-2014) and included specific questions to measure the consumption of food sources related to colorectal cancer development. It was administered two times in 2 weeks to evaluate reproducibility (FFQ-1 and FFQ-2). The validity of the FFQ was assessed by comparing FFQ-1 against the 3-day food diary method (3-FD). A total of 98 respondents provided data for both FFQ and 3-FD. **Results:** Reproducibility and validity result is shown in Table 1. Relative differences in the intake of nutrients between FFQ1 and FFQ2 were overall small, representing acceptable reproducibility. However, a higher estimation was observed by FFQ-1 as compared to the 3-FD for the majority nutrient intake in the validity study where relative differences were between 13% and 78%. The classification into the same and adjacent quartiles was between 75% and 90% for reproducibility and 50% and 69% for validity assessment. **Conclusion:** Overall, the reproducibility of the FFQ was good, and its validity was satisfactory for estimating absolute nutrient intakes. Hence, the FFQ could be used as a valid tool for assessing dietary intake among Malaysian to study dietary factors related to colorectal cancer risk.

Keywords: colorectal cancer, FFQ, food diary, reproducibility, validation

PP-0491 Development of novel, multilingual IBD knowledge questionnaire for Asian patients with inflammatory bowel disease

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Background and Aim: IBD is a chronic disease and evaluating patient's knowledge is an essential part of patient management. The existing questionnaire, the CCKNOW, may not be suitable to apply to our local IBD population. Hence, the purpose of this study is to develop a new tool to evaluate IBD patient's knowledge. **Methods:** A draft of the questionnaire was constructed in the English language. The content and face validity of all the questions were done qualitatively with three experts in IBD. All experts reviewed, commented and amended the questionnaire as appropriate. Following this, the 'Asian IBD Questionnaire' (AIBDQ) which consists of 21 questions was created. The total score was calculated with a scoring system of one point

for each correct answer. Discriminative ability of the AIBDQ was validated in three occupational groups (doctors, nurses and clerks) with different levels of IBD-related knowledge. Correlation was also assessed in a subgroup of subjects by giving them both the AIBDQ and CCKNOW questionnaires. The AIBDQ was then translated into three major languages in Malaysia which are Malay, Mandarin and Tamil, and subsequently subjected to a pilot study involving IBD patients. Test-retest reliability done 2–4 weeks apart was also analysed for all the different languages. **Results:** The mean of the AIBDQ score was significantly different among the three groups ($p = 0.001$). It also showed excellent internal consistency ($KR20 = 0.8584$). Correlation coefficient obtained is 0.8 indicating a very strong correlation between AIBDQ and CCKNOW. Thirty-eight patients participated in the pilot study, and the total score of each language was calculated. Test-retest reliability was high (interclass correlation coefficient, 0.9) among the 38 patients for all the languages tested. **Conclusion:** The multilingual Asian IBD Questionnaire has a good discriminative ability, internal consistency and test-retest reliability for the measurement of knowledge among IBD patients.

Keywords: IBD, knowledge, questionnaire

PP-0492 Effect of potassium competitive acid blocker compared to proton pump inhibitor in gastroesophageal reflux disease

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Background and Aim: Gastroesophageal reflux disease (GERD) is a digestive disorder that occurs when acid from the stomach or food and fluids back up from the stomach into the esophagus. GERD affects people of all ages from infants to older adults. Acid reflux can cause an uncomfortable burning sensation in your chest, which can radiate upward to your neck. A novel potassium competitive acid blocker which inhibits gastric H⁺ K⁺-ATPase thus reducing the acidity of the stomach and symptoms of GERD it is highly concentrated in the acidic canalliculi of the gastric parietal cells and elicited an acid suppression effect for longer than 24-h efficacy of treatment for GERD. **Methods:** The author search using MEDLINE, EMBASE, Cochrane Central Register of Controlled Trials (CENTRAL), Google Scholar, and clinical trial registries, for studies published until September 2020 for randomized controlled trials comparing potassium competitive acid blocker with proton pump inhibitor in patients with GERD. **Results:** Ten randomized clinical trials that fit the inclusion and exclusion criteria that included in the study. Four reported objective findings of healed esophagitis on endoscopy, while two reported subjective finding of symptom relief. The total population in the potassium competitive acid blocker group was 1443 participants, while the PPI group had 1390 participants. The studies by Ashida (2016) and Ashida (2018) were further subdivided into subgroups to reflect the different doses of potassium competitive acid blocker used in the efficacy of the treatment for GERD and esophagitis. Vonoprazan with the dosage of 5–20 mg has a higher efficacy for relieving GERD symptoms and healing esophagitis on in endoscopy. **Conclusion:** This study suggests that any individuals with GERD, treatment with potassium competitive acid blocker reduce the symptoms of GERD, these findings add meaningfully to the emerging evidence from smaller trials on the effects of potassium competitive acid blocker on relieving the symptoms of GERD.

Keywords: gastroesophageal reflux disease, proton pump inhibitor, Vonoprazan

PP-0494 Combination therapy of aquauretic and natriuretic versus conventional diuretics in the treatment of cirrhotic ascites: A meta-analysis

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Background and Aim: Ascites due to decompensated liver cirrhosis are conventionally treated with natriuretic. Recently, vasopressin V2 receptor antagonists, particularly Tolvaptan, are considered part of the therapy, as they can promote urine excretion with no increase in electrolyte excretion. Several studies have previously shown that it has positive outcomes on patients who do not respond to conventional diuretics. This study aims to clarify whether the use of combination therapy is superior to traditional therapy in treating cirrhotic ascites in terms of body weight, urine volume, GFR, and adverse events. **Methods:** The authors searched databases such as PubMed and Cochrane Central Register of Controlled Trials for randomized controlled trials comparing the combination therapy of aquauretic and natriuretic versus conventional therapy in cirrhotic patients. **Results:** For the control of ascites, there was greater reduction in body weight in the combination diuretics arm than the conventional diuretics arm (MD -1.12 kg, 95% CI -2.34, 0.10, p value = 0.07). A noted the greater amount of urine volume on the combination diuretics arm than that of the conventional diuretics arm (MD 1.02 L, 95% CI 0.54, 1.50, p value < 0.0001). Comparison in GFR showed no significant difference in the combination diuretics arm compared to the conventional diuretics arm (mean difference of -2.01 mL/min; 95% CI -16.55, 12.53, p value = 0.79), as well as the comparison of occurrence of adverse events (RR 0.76, 95% CI 0.50, 1.16, p value = 0.20). **Conclusion:** The use of the combination diuretics was favored in terms of greater urine volume but did not have a significant difference in terms of body weight, GFR, and occurrence of adverse events. Additional studies to increase the sample size and the power of the study are recommended to yield a more desirable result.

Keywords: aquauretic, cirrhotic ascites, furosemide, natriuretic, Tolvaptan

PP-0495 Normalization of vitamin D status is associated with reduced risk of surgery and hospitalization in inflammatory bowel disease

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Background and Aim: Vitamin D may have an immunological role in Crohn's disease (CD) and ulcerative colitis (UC). Retrospective studies suggested a weak association between vitamin D status and disease activity but have been limited by inability to prospectively examine this hypothesis after excluding vitamin D values measured after outcomes of interest. Furthermore, no studies have examined whether normalization of vitamin D status is associated with improvement in patient outcomes. **Methods:** Using a multi-institution validated inflammatory bowel disease (IBD) cohort, we identified all CD and UC patients who had at least one measured plasma 25-hydroxy vitamin D [25(OH)D]. Our main outcomes were occurrence of first IBD-related surgery and IBD-related hospitalization. Secondary outcome included median C-reactive protein. We restricted our analysis to 25(OH)D measurements prior to the first surgery or IBD-related hospitalization. Logistic regression models adjusting for potential confounders were used. **Results:** Our study included 5600 patients (48% CD, mean age 55 years). A majority were citizens (78%) and women (57%). One-fifth had ever used immunomodulators, and 11% had used biologics. During a median follow-up of 10 years, 18% and 38% underwent an IBD-related surgery or hospitalization, respectively. The median lowest plasma 23(OH)D was 21 ng/ml (IQR 17–35 ng/ml). One-fourth were deficient (plasma 25(OH)D, 20 ng/ml), an additional 17% were insufficient. In

CD patients on multivariate analysis, plasma 25(OH)D (20 ng/ml) was associated with an increased risk of surgery. **Conclusion:** This study demonstrating prospectively that (1) low 25(OH)D is associated with greater C-reactive protein levels and increased risk of surgery (2) normalization of 25(OH)D status is associated with a reduction in the risk of surgery.

Keywords: colitis, vitamin D

PP-0496 Evaluate the role of serum indices (APRI, FIB-4 and RPR) in predicting liver cirrhosis in local population with chronic liver diseases

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Background and Aim: Despite liver biopsy being the gold standard in diagnosing liver cirrhosis, it is invasive and comes with potential serious complications and inter-observer variability. Therefore, it is imperative to have non-invasive methods, like APRI, FIB-4 and RPR scores, to monitor the progression into cirrhosis. In this study, we evaluated the accuracy of these serum indices, in predicting the development of cirrhosis in local patients with chronic liver diseases. **Methods:** Patients with liver cirrhosis were retrospectively recruited via ultrasonography reports. Laboratory data were chosen as those nearest to, but before the ultrasonography day. APRI, FIB-4 and RPR scores were calculated. Prediction on liver cirrhosis by these 3 indices was also computed for different liver aetiologies. Sensitivity and specificity were calculated and compared. **Results:** Apart from FIB-4 score for elderly patients, all 3 serum indices captured good accuracy of predicting liver cirrhosis, ranging 73–95% ($p < 0.005$). Comparing them, RPR does better prediction, and slightly better than APRI score (cut-off ‘1.5’) and FIB-4 (cut-off of ‘3.25’). All RPR, APRI (cut-off ‘1.5’) and FIB-4 (cut-off ‘3.25’) have high specificity of 96.3%. For sensitivity, FIB-4 score performs better, with cut-off of ‘1.45’ for patients less than 65 years old, and ‘1.3’ for those aged 65 and above. Linear logistic regression was performed for each liver aetiology, as per Table 1. **Conclusion:** All 3 indices predict cirrhosis well, with FIB-4 (cut-off ‘3.25’) being superior, closely followed by RPR, then APRI (cut-off ‘1.5’). Bigger sample size studies are required to examine accuracy of these indices for each aetiology.

Keywords: APRI, FIB-4, cirrhosis, RPR, serum indices

Table 1 : Association between Serum Indices and Liver Cirrhosis

	Cirrhosis		No Cirrhosis		Crude OR	95% CI	p-value	Adjusted OR	95% CI	p-value
	n	(%)	n	(%)						
Age					1.061	(1.03, 1.09)	<0.001	0.43		
Gender										
Male	60	(59.41)	41	(40.59)	0.732	(0.34, 1.59)				
Female	26	(66.67)	13	(33.33)	1.00	(ref)				
Ethnic_New							0.887			
Malay	66	(61.11)	42	(38.89)	0.943	(0.42, 2.13)				
Non-Malay	20	(62.50)	12	(37.50)	1.00	(ref)				
Etiology							<0.001			
Hep B	6	(25.00)	18	(75.00)	0.01	(0.002, 0.05)		0.008	(0.001, 0.059)	
Hep C	10	(27.78)	26	(72.22)	0.011	(0.002, 0.06)		0.013	(0.002, 0.081)	
NAFLD	3	(27.27)	8	(72.73)	0.011	(0.002, 0.08)		0.014	(0.001, 0.144)	
Others					1.00	(ref)		1.00	(ref)	
APRI_Cat							0.001			
Yes	56	(73.68)	20	(26.32)	3.173	(1.56, 6.44)				
No	30	(46.88)	34	(53.13)	1.00	(ref)				
APRI_new							0.002			
Elevated	25	(92.59)	2	(7.41)	10.656	(2.41, 47.14)				
Not elevated	61	(53.98)	52	(46.02)	1.00	(ref)				
FIB4_youth (n=92)							<0.001			
Yes	36	(76.60)	11	(23.40)	12.22	(5.37, 27.84)				
No	11	(24.44)	34	(75.56)	1.00	(ref)				
FIB4_old (n=48)							<0.001			
Elevated	8	(17.39)	38	(82.61)	10.714	(4.64, 24.73)		6.503	(1.57, 26.90)	0.01
Not elevated	1	(50.00)	1	(50.00)	1.00	(ref)		1.00	(ref)	
FIB4_new							<0.001			
Elevated	45	(95.74)	2	(4.26)	28.537	(6.53, 124.65)		9.589	(1.66, 55.36)	0.012
Not elevated	41	(44.09)	52	(55.91)	1.00	(ref)		1.00	(ref)	
RPR_Cat							<0.001			
Yes	39	(95.12)	2	(4.88)	21.574	(4.94, 94.28)				
No	47	(47.47)	52	(52.53)	1.00	(ref)				

PP-0497 New rapid *H. pylori* blood test based: Ready for adoption in clinical practice

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Background and Aim: Use of serology in diagnosis of *H. pylori* infection is restricted to few well-defined clinical scenarios. Rapid *H. pylori* blood tests have failed so far in providing reliable diagnostic accuracy. The aim of our study is to report a new *H. pylori* POCT for whole blood, serum and plasma. The test is based on the detection of antibodies against two highly specific and sensitive *H. pylori* antigens: flagellar filament capping protein (FlID) and cytotoxin-associated antigen A (CagA). **Methods:** Sera were obtained from 110 patients (F 97:M 43, age ranging from 19 to 86 years). 53 patients were *H. pylori* positive based on a positive culture combined with the histological confirmation. Analysis for the detection of FlID and Cag A was performed using lateral flow test. The results were assessed by visual detection of bands and become available after 20 min. The test performance was further studied on whole blood samples of a subgroup and compared with the results obtained in serology. **Results:** The POCT showed a sensitivity of 100% and specificity of 87.9% with an accuracy of 93.7%. In 53 *H. pylori* infected patients, POCT was positive in 100% with FlID or CagA combined, and the additive gain for CagA was only 2%. Out of 58 *H. pylori* negative patients, the dual antigen test detected 12.1% as FlID or CagA positive. Detection of FlID and CAG A antibodies in whole blood samples was successful and did not differ from serum samples. **Conclusion:** This novel POCT shows an unmet quality of performance when compared to culture and histology. The striking finding in our study was the sensitivity of 100%. The use of capillary blood with such high accuracy renders this test highly convenient in primary care for management of dyspeptic patients and for screening of *H. pylori*.

Keywords: CagA, FlID, *Helicobacter pylori* diagnostics, POCT

PP-0498 Early change in fecal lactoferrin is a better predictor of treatment induced remission in patients with ulcerative colitis

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Background and Aim: To evaluate the role of early change in levels of fecal calprotectin (FC), fecal lactoferrin (FL), and fecal myeloperoxidase (MPO) in predicting the treatment induced remission in ulcerative colitis (UC) patients. **Methods:** We conducted an observational study involving 59 patients. The diagnosed cases of UC with Mayo score of >2 and endoscopic subscore of ≥1 were included. They were treated as per the standard protocol and were followed up between days 7 to 10 and at day 90. Patients were assessed clinically, stool and blood samples were collected at each visit, and sigmoidoscopy with biopsy was done at baseline and at day 90. Clinical remission was defined as partial mayo score of <2 and endoscopic remission with endoscopic subscore of ≤1. **Results:** At baseline, 38 (64.4%) patients had moderate and 21 (35.6%) had severe disease. After assessment, steroids were given in 28 (47.5 %), and in remaining 5-ASA,

Biomarker	Decrease from baseline to 2 nd visit	Clinical remission			Endoscopic remission			Histologic remission		
		AUC (95% CI)	Sensitivity (%)	Specificity (%)	AUC (95% CI)	Sensitivity (%)	Specificity (%)	AUC (95% CI)	Sensitivity (%)	Specificity (%)
FC, µg/g	350	0.63 (0.49 to 0.76)	68	60	0.66 (0.49 to 0.79)	74	62	0.51 (0.35 to 0.67)	39	50
FL, µg/g	50	0.71* (0.57 to 0.86)	68	72	0.76* (0.6 to 0.88)	74	76	0.69* (0.52 to 0.83)	72	73
MPO, µg/g	21	0.64 (0.49 to 0.79)	57	60	0.64 (0.47 to 0.78)	53	85	0.6 (0.44 to 0.75)	67	32

*p <0.05

Table 1. Change in values for fecal biomarkers from baseline to 2nd visit (day 7 to 10) for predicting clinical, endoscopic and histological remission.

dose was optimized. Fifty-three (89.8%) completed the 90-day follow up, and 40 (67.8%) underwent sigmoidoscopy at day 90. Clinical remission was achieved in 28 (52.8%) patients, and endoscopic remission was achieved in 21 (52.5%) patients. At baseline, the mean FC was 1317 µg/g, mean FL was 209.7 µg/g, and mean MPO was 37.46 µg/g. The value of change in biomarkers from baseline to second visit for prediction of remission has been summarized in Table 1. **Conclusion:** Early change in FL by 50 µg/g between days 7 to 10 was best in predicting treatment induced remission in UC patients.

Keywords: fecal calprotectin, fecal lactoferrin, fecal myeloperoxidase, Mayo score, ulcerative colitis

PP-0499 Nutrition and gastrointestinal disorders

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Background and Aim: The gastrointestinal tract, including the liver and pancreas, is a complex system whose function is to process a wide range of nutrient and other products enabling their absorption as well as detoxification and excretion. During the process, food is converted into energy and into other substances that are used by cells throughout the entire body. Many diseases can affect the various organs of the gastrointestinal (GI) system and diet plays a relatively minor role in the onset of such GI diseases. Recently, it has become clear that glutamine, a 'non-essential' amino acid, is important in the maintenance of intestinal mucosal metabolism, structure and function. Dietary fibre has complicated properties including trophic effects on intestinal mucosa, volatile fatty acid production, alteration of bacterial flora and faecal bacterial mass and change in faecal bile acids. **Methods:** A recent Indian multicentre polyp prevention project has recruited subjects with adenomatous polyps cleared at colonoscopy. Subjects were randomised to receive high fibre, low fat, b-carotene or a combination of these and compared to an unchanged control group at yearly follow-up colonoscopy. Low fat and high fibre were not protective against polyp development; however, b-carotene ingestion was associated with an increased risk. **Results:** Duodenal ulcer disease is multifactorial with gastric acid and *H. pylori* induced gastroduodenitis playing important aetiological roles. Protection is afforded to individuals with a higher unsaturated fatty acid

and lower refined sugar intakes **Conclusion:** Treatment of gastrointestinal disease may require dietary modifications or, if the gut is not functioning adequately, nutritional support via the parenteral route.

Keywords: GI, nutrition

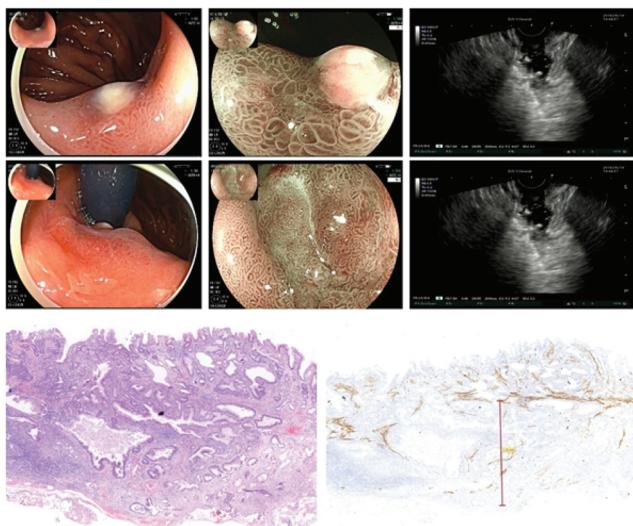
PP-0500 Endoscopic diagnosis and treatment of gastritis cystica profunda with early gastric cancer: A retrospectively study in single center of China

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Background and Aim: To summarize the endoscopic features and the effectiveness of endoscopic treatment for gastritis cystica profunda (GCP) with early gastric cancer **Methods:** A total of 35 patients, with GCP confirmed by pathology who received endoscopic or surgical treatment at Beijing Friendship Hospital, Capital Medical University from January 2015 to April 2021, were included in the retrospective analysis. The clinical data such as population composition, clinical manifestations, white light endoscopic findings, magnifying endoscopic features, and pathological results were summarized and analyzed. **Results:** Among the 35 cases, GCP were more commonly found in men than in women, and the overall mean age was 68.26 years. The most common anatomic location of GCP was the cardia. The clinical symptoms of the patients were atypical, and it was difficult to diagnose GCP with routine endoscopy examination. GCP with early gastric cancer accounted for 65.7%. Postoperative pathology confirmed low-grade intraepithelial neoplasia in 1 case, high-grade intraepithelial neoplasia in 4, intramucosal carcinoma in 11, and submucosal carcinoma in 8 patients. **Conclusion:** GCP is an uncommon disease with unknown origins. The clinical symptoms and endoscopic observation of GCP are not typical. EUS plays an important role in the diagnosis and treatment of GCP. GCP is highly correlated with early gastric cancer. Further studies may help to elucidate the natural history of process and the possibility for malignant potential of GCP.

Keywords: early gastric cancer, endoscopic feature, gastritis cystica profunda



PP-0501 Etiology and pattern of presentation of upper gastrointestinal tract ulcers among patients attending the gastroenterology department of a tertiary level hospital

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Background and Aim: Ulceration of the upper GI tract is one of the major pathological findings during endoscopy. Early diagnosis of upper GI ulcers with definite cause is the mainstay of therapy for patient's cure and prevention of complications. Different clinical features are observed in different types of ulcer. The objective of the study is to find out the causes of different types of ulceration in the upper gastrointestinal tract along with their clinical presentation. **Methods:** This cross-sectional study was conducted in the Department of Gastroenterology, BSMMU, Dhaka during the period of July 2016 to April 2017. Patients referred for upper GI endoscopy for different indications were primarily selected. Consecutive 220 patients having ulcers anywhere in the upper GIT were finally included in the study. Ulcer diseases were diagnosed through analysis of morphology of the ulcers, histopathology of biopsy materials, relevant clinical history and further investigations if required. Any association between various types of ulcers with age, gender, BMI, location of ulcer, different signs and symptoms was assessed. **Results:** Out of 220 patients, duodenal ulcer was found in 45.9%, gastric ulcer in 30.0%, oesophageal ulcer in 7.7%, ulceration at multiple sites in 13.6%, and stomal ulcer in 2.7% cases. Among the aetiologies, *H. pylori* infection (62.8%), NSAIDs (14.6%) and malignant ulcers (9.1%) were found in majority of cases. Less common causes were tubercular ulcer, lymphoma, GIST, Crohn's disease and caustic injury. Aetiology could not be identified in 6.8% cases. Epigastric pain, early satiety, anorexia, vomiting and GI bleeding were the common symptoms that differ significantly in patients with ulcers of different aetiologies. **Conclusion:** In majority of the cases, the underlying cause of ulcer could be identified. However, in some cases the exact aetiology could not be detected. Clinical presentations were also different in patients with various types of ulcer.

Keywords: endoscopy, peptic ulcer disease, ulcer, upper gastrointestinal tract

PP-0503 Colopathy and rectal varices in children with cirrhotic portal hypertension

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Background and Aim: Colopathy and rectal varices are seen in 40–54% and 38–94% of adults with portal hypertension (PHT). Children with extrahepatic portal venous obstruction have colopathy and rectal varices in 75% and 94%. As there is no pediatric data in cirrhosis, the present study was conducted to study the colonoscopic changes in cirrhotic children.

Methods: Consecutive patients under 21 years of age with histological and/or radiological cirrhosis and clinically evident PHT were enrolled. Colonoscopy was performed in the same setting and sedation as esophagogastroduodenoscopy (EGD) after overnight bowel preparation with lactulose or polyethylene glycol. Colonoscopic findings were recorded, and association with EGD findings, clinical and laboratory parameters was analysed. **Results:** There were 55 children (33 males). Median age was 12 years (6 months to 21 years). Biliary atresia ($n = 21$), autoimmune and Wilson disease (13 each) constituted the commonest etiologies. Median PELD score was 0 (−6 to 29). Ascites, variceal bleed and hepatic encephalopathy, and clinically significant esophageal varices (CSEV, Grade ≥ 2 , with red colour signs, or gastric varices) were present in 15, 7, 3 and 23 children. Internal hemorrhoids and rectal varices (RVx) were present in 15 and 23 children. Colopathy was present in 36 (colitis-like 35, vascular lesions 17 and both 16). Changes were isolated distal and pancolonic in 8 and 28 patients. Higher splenic Z-score (5.8 ± 2.9 vs 3.8 ± 2.6 , MD = 2.0, $p = 0.011$), alkaline phosphatase (484 ± 312 vs 330 ± 210 U/L, MD = 154 U/L, $p = 0.033$), fibroscan (43.8 ± 27.8 kPa vs 24.1 ± 20.4 kPa, MD = 19.8 kPa, $p = 0.011$), presence of CSEV (16/23 vs 7/32, OR = 3.18, 95%CI = 1.57, 6.46) and ascites (10/15 vs 13/40, OR = 2.78, 95%CI = 1.1, 7.05) were associated with RVx. Higher child status (7.4 ± 2.1 vs 5.9 ± 1.5 , MD = 2.2, $p = 0.013$), fibroscan (39.9 ± 27.6 kPa vs 20.7 ± 16.5 kPa, MD = 19.2 kPa, $p = 0.007$) and presence of ascites (15/15 vs 21/40, $p = 0.001$) were associated with colopathy. No other clinico-laboratory parameters or PELD score predicted colopathy. **Conclusion:** Cirrhotic children have colopathy and rectal varices in 65.5% and 41.8%, which are related to advance liver disease, higher fibroscan value and severity of PHT.

Keywords: children, cirrhosis, colopathy

PP-0504 Vascular reconstruction and outcomes of adult-to-adult right lobe living donor liver transplantations: A single-center experience in Vietnam

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Background and Aim: Adult-to-adult right lobe living donor liver transplantation is a viable alternative to whole liver transplantation from a deceased donor. Outflow and inflow reconstruction of the liver graft is a key to successful results of living donor liver transplant (LDLT) using right lobe graft. **Methods:** We prospectively analyzed the data on all right lobe liver transplantations adult patients, consecutively performed from January 2019 to December 2020 in Central Military Hospital 108. When the remnant and total liver volume ratio (RLV and TFLV ratio) less than

35%, we used modified right lobe (MRL) graft. In the case using extended right lobe (ERL) graft (RLV and TFLV ratio greater than 35%), we conjoined MHV and RHV. Reconstruction of the portal vein was done by end-to-end anastomosis between donor right portal vein and recipient main portal vein using continuous 5/0 polypropylene sutures. Reconstruction of the hepatic artery was done by end-to-end anastomosis between donor right hepatic artery and recipient hepatic artery continuous 8/0 polypropylene sutures. **Results:** A total of 52 cases of adult-to-adult living donor liver transplantation using right lobe graft were collected. For hepatic vein reconstruction, there were 10 cases using modified right lobe graft and 42 cases of extended right lobe graft. The intervention rate for outflow stenosis was 0/52 case (0%) of a mean follow-up of 11.4 ± 6.5 months (range, 1–28 months). Portal vein stenosis was detected in two patients (3.8%) who were successfully treated with stent placement. No hepatic artery thrombosis and hepatic artery stenosis were found after LDLTs. **Conclusion:** The single orifice hepatic vein reconstruction in LDLT using right lobe graft is a simple and feasible surgical technique, and it can prevent effectively RHV stenosis. Portal vein stent placement was technically and clinically effective technique in managing posttransplant portal vein stenosis after living donor liver transplantation.

Keywords: living donor liver transplantation, vascular reconstruction



PP-0505 Association of pre-pregnancy body mass index and gut microbiota diversity among second trimester pregnant women

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Background and Aim: Higher gut microbiota diversity during pregnancy has been associated with improved outcomes for the mother and newborn. A better understanding of pre-pregnancy nutritional status and gut microbiota diversity during pregnancy may lead to novel interventions. We assessed the association between pre-pregnancy body mass index (BMI) and gut microbiota diversity during pregnancy. **Methods:** A cross-sectional study involving 90 Indonesian pregnant women from primary health centers in Jakarta was conducted. Trained field enumerators collected data of sociodemographic characteristics and nutrient intake by 2 × 24-h diet recalls. Pre-pregnancy weight and height data were obtained from the antenatal book to calculate BMI. Fecal samples were analyzed for microbiota diversity using 16S rRNA gene sequences by next-generation sequencing methods. Microbiota diversity was assessed using the alpha diversity indices for Shannon, Chao1, and Faith Phylogenetic Diversity. Multivariate logistic regression was performed to determine the relationships between pre-pregnancy BMI and alpha diversity index above the median or mean, adjusted for carbohydrate and protein intake, ethnicity, age, and education. **Results:** The median (25th–75th percentile) Shannon index was 6.5 (6.1–6.8), Faith Phylogenetic Diversity was 41.8 (36.7–47.1), and mean (SD) Chao1 was 551.3 (12.2). The majority phylum was Firmicutes (68.2% of total bacteria in samples). Pregnant women who were overweight and obese before pregnancy had a significantly lower odds of gut microbiota diversity during pregnancy based on Shannon index (aOR 0.4, 95%CI 0.1–0.9, *p* value = 0.042), Faith Phylogenetic Diversity (aOR 0.2, 95%CI 0.07–0.9, *p* value = 0.027), and Chao1 (aOR 0.3, 95%CI 0.09–0.8, *p* value = 0.014) compared to those who were not overweight and obese. **Conclusion:** A higher pre-pregnancy BMI was associated with lower gut microbiota diversity among pregnant women in an urban community. Healthy eating counseling should be encouraged before and during pregnancy to maintain nutritional status and to potentially modify gut microbiota diversity.

Keywords: body mass index, microbiota, nutritional status, pregnancy

PP-0506 Clinical characteristics and outcomes of parastomal evisceration: A systematic review

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Background and Aim: Parastomal evisceration is a very infrequent complication. Little is known regarding its clinical manifestations and outcomes due to its rarity. Therefore, we conducted a systematic review of case reports to study its clinical characteristics and outcomes. **Methods:** PubMed, Embase, Cochrane Library and Google Scholar were searched using 'Stoma' OR 'parastomal' AND 'evisceration' in the title or abstract fields till December 2020. Additional studies were identified by searching individual references. Case reports and series describing parastomal evisceration were included. The data regarding patient's characteristics, possible risk factors and management were described qualitatively. **Results:** The assessment of 17 case reports ($n = 17$) was performed according to the PRISMA guidelines. The majority were males ($n = 14$, 82.4%), and median age of the patients was 62 years (range: 23–90). Most were colostomies ($n = 12$, 70.6%) and were temporary ostomies ($n = 16$, 94.1%). The majority were of loop configuration ($n = 10$, 58.8%), and others were end ostomies ($n = 7$, 41.2%). Chronic cough (52.9%), chronic obstructive pulmonary disease and smoking (41.2%), and emergency initial surgery (64.7%) were probable risk factors. Previous stoma complications were seen in 41.2% ($n = 7$). Most frequent eviscerated content was small bowel ($n = 15$, 88.2%). Majority required surgical correction via laparotomy ($n = 9$, 52.9%), and non-viable bowel was found in 3 patients (17.6%). Median length of intensive care and hospital stay were 3.5 (range: 2–7) and 8.5 (range: 3–21) days, respectively. The majority recovered following surgery, and 11.8% ($n = 2$) died after surgery. **Conclusion:** Parastomal evisceration is associated with considerable morbidity requiring urgent major surgical procedure. Chronic cough and smoking are possible risk factors that should be controlled in stoma patients.

Keywords: evisceration, outcomes, review, stoma, surgery

PP-0507 Comparison of endoscopic ultrasound guided fine needle aspiration with endoscopic ultrasound guided fine needle biopsy for solid gastrointestinal lesions: A randomised crossover single-centre study

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Background and Aim: Endoscopic ultrasound (EUS) guided fine needle aspiration (FNA) is limited to diagnosis by cytopathology alone while the core histologic tissue can be procured by EUS guided fine needle biopsy (FNB). Majority of the studies comparing EUS FNA and FNB are done in different lesions and/or patients and in different sessions with hardly any studies comparing both the modalities in a single lesion. The purpose of this study was to compare the results of EUS-FNA and FNB performed at the same site in a single session. **Methods:** Consecutive patients with solid gastrointestinal lesions referred for EUS evaluation were randomized to undergo EUS-FNA and FNB using 22G needles with three and two passes, respectively. In one group, EUS FNA was done followed by EUS FNB, in second EUS FNB followed by EUS FNA. **Results:** We included 50 patients (62% males and 38% females) with the mean age of 56.58 ± 14.2 years and mean size of the lesions being 2.6 (± 2) cm. The Kappa agreement with final diagnosis for FNA and FNB was 0.841 (almost perfect agreement) and 0.61 (substantial agreement), respectively. The sensitivity, specificity, PPV, NPV, diagnostic accuracy and tissue adequacy of FNA vs FNB was 85.19% vs 62.96%, 100% vs 100%, 100% vs 100%, 85.19% vs 69%, 92% vs 80% and 98% vs 80%, respectively, in comparison with final diagnosis (Figure 1). The overall adverse events were noted in 14% patients, which included self-limited bleeding (6%), hypotension (4%) and mild acute pancreatitis (4%). **Conclusion:** Both EUS-FNA and FNB are very safe. EUS FNA is better than EUS FNB in terms of sensitivity, diagnostic accuracy and tissue yield. However, the specificity and positive predictive value were equally good for both the modalities. There was no significant difference whether EUS FNA was performed first or FNB.