

Scientific Poster Abstracts

Maaz Arif, MD

Research

PGY2: Wright State University

Identifying Quality Improvement Targets to Facilitate Covid-19 Vaccination in Patients with Cirrhosis

Purpose:

In view of the higher risk of COVID-19-related mortality in patients with cirrhosis, the American Association for the Study of Liver Diseases (AASLD) recommends prioritization of COVID-19 vaccination in patients with advanced liver disease as well as those with immune-mediated liver disease on immunosuppression. At the Dayton Veterans Affairs Medical Center (VAMC) GI Liver Clinic, we seek to evaluate and improve COVID-19 vaccine compliance to prevent morbidity and mortality in patients with liver disease.

Methods:

Our team employed a quality improvement strategy targeting Dayton VAMC patients with cirrhosis who qualified for COVID-19 vaccination. An Institute for Healthcare Improvement tool - Plan, Do, Study, Act (PDSA) - was utilized for the chart review cohort study. GI Liver Clinic patients with cirrhosis were mailed a questionnaire asking about COVID-19 vaccination status and 14 items regarding COVID-19 barriers and beliefs. In addition, a brochure concerning the impact of COVID-19 vaccination in patients with cirrhosis was included. We contacted by phone patients who did not respond to complete the vaccination hesitancy questionnaire. Other variables collected were age, gender, and MELD score. Our quality improvement goal was to increase COVID-19 vaccination rates in patients with cirrhosis at the Dayton VAMC.

Results:

A total of 207 patients with cirrhosis from the Dayton VAMC GI Liver Clinic database for the December 2020 to March 2022 period were sent questionnaires. Follow-up phone calls were made to those who did not respond. Seventy-two patients (34.8%) responded via questionnaire or phone call. The mean age was 66.6 ± 7.8 and 96% were male. 52 patients had a mean MELD score of 9.2 ± 3.7 . Forty-three participants (59.7%) received at least one dose of vaccination against COVID-19, while 29 (40.3%) remained unvaccinated. Compared to the vaccinated group, the unvaccinated more often reported lack of trust in the healthcare system or healthcare providers (24% vs. 0%, $p=0.030$), belief that they would not contract COVID-19 (34.6% vs. 0%, $p=0.004$), fear of vaccine side effects and injection (66.7% vs. 8%, $p<0.001$), and belief the vaccine will not work (62.5% vs. 0%, $p<0.001$). Further, compared to the vaccinated, unvaccinated patients more often reported not knowing enough about the COVID-19 vaccine (48.1% vs. 16.0%, $p<0.014$), bad experiences with prior vaccines (22.2% vs. 0%, $p<0.038$), and dislike of government mandates about vaccination status (85.2% vs. 27.3%, $p<0.001$).

Conclusions:

Despite the wide-spread availability of COVID-19 vaccines, vaccine hesitancy amongst the veteran population remains a pressing concern. We found that a number of factors was associated with refusal of the vaccine. The results are compelling, underscoring the need for further education.

Alexander Malik, MD

Research

PGY2: Summa Health System

Unraveling the Complex Interplay: A Comprehensive Global Population-Based Analysis on the Coexistence of Eosinophilic Esophagitis and Inflammatory Bowel Disease in the Modern Era

Purpose:

Our study examined the coexistence of inflammatory bowel disease (IBD) and eosinophilic esophagitis (EOE) using an extensive global dataset up to 2022. By investigating the epidemiology, risks of immune-mediated conditions, and implications of their coexistence, we aimed to offer a comprehensive understanding of these concurrent diagnoses and their impact on patient outcomes.

Methods:

A retrospective population-based cohort study was conducted using deidentified patient data from the TriNetX database (2011-2022). We estimated the incidence and prevalence of EOE in patients with IBD, including Crohn's disease (CD) and ulcerative colitis (UC), and vice versa. Risks of select immune-mediated conditions were compared among patients with EOE, IBD, or concurrent diagnoses. Kaplan-Meier methods were used to determine the risk of EOE-related or IBD-related complications among patients with coexisting conditions.

Results:

Our study comprised 174,755 CD patients, 150,774 UC patients, and 44,714 EOE patients. The risk of EOE was significantly higher among patients with CD (prevalence ratio [PR] 13.7) or UC (PR 10.6) compared with individuals without IBD. The risk of IBD was higher in patients with EOE (CD: PR 11.6; UC: PR 9.1) versus those without either diagnosis. A propensity-matched analysis of IBD patients revealed that, when comparing patients with and without EOE, the relative risk of immune-mediated comorbidities was significantly greater for celiac disease, IBD-related inflammatory conditions, eczema, and asthma (CD: n=1896; UC: n=1231; p<0.001). Patients with EOE and IBD were associated with a higher composite risk of IBD-related complications (CD: adjusted HR (aHR) 1.10, p<0.05; UC: aHR 1.30, p<0.0001) and lower risk of food bolus impaction (aHR 0.445, p=0.0011). There was no statistically significant difference in risk of requiring surgery for IBD patients with versus without EOE (CD: aHR 0.951, p=0.76; UC: aHR 0.747, p=0.2145).

Conclusions:

The results of our analysis substantiate the significant association between IBD and EOE while providing novel insights into their coexistence. These findings contribute to a deeper understanding of the complex interplay between EOE and IBD, and the implications of their concurrent diagnoses on patient complications. This pivotal discovery sets the stage for future research, refining patient care strategies, and driving innovation in the dynamic field of gastrointestinal research.

Pearl Aggarwal, MD

Research

PGY3: University Hospitals St John Medical Center

From Shadows to Spotlight: Unveiling the differential impact of the various types of Immune checkpoint inhibitors on the clinical occurrence of Microscopic colitis like Immune checkpoint inhibitor colitis-A Retrospective Single-Site Observational Study

Purpose:

To analyze the impact of different types of immune checkpoint inhibitors (ICI), particularly Pembrolizumab, on the occurrence of Microscopic colitis(MC) like and non-MC-like ICI colitis.

Methods:

A retrospective chart review analyzed patients who developed diarrhea after treatment with ICI from December 2017 to December 2022. Patients were categorized into 4 groups based on ICI received and histopathological findings - Pembrolizumab mediated MC-like ICI colitis(A), non -Pembrolizumab mediated MC-like ICI colitis(B), Pembrolizumab mediated non-MC-like ICI colitis(C), and non-Pembrolizumab mediated non-MC-like ICI colitis(D). We used two-tailed two-sample t-tests and Fisher Exact tests for analysis.

Results:

Of 113 patients, 30 were diagnosed with ICI colitis based on symptoms, labs, and +/- colonoscopy/flexible sigmoidoscopy. Among the 14 patients who underwent colonoscopy/flexible sigmoidoscopy, 6 (42.85%) showed histopathological findings consistent with MC-like ICI colitis. MC-like ICI colitis was common in males (66.6%), and the median age was 68 years. Pembrolizumab was used in 39.8% (45/113) of the cohort and caused ICI colitis (MC and Non-MC) based on histopathology in 50% (7/14) and 66.6% (4/6) of MC-Like ICI colitis. The time interval between symptom onset and colonoscopy was higher in Group A, B, and C (82, 106, and 80 days) compared to Group D (7 days). A higher hospitalization rate was seen in patients with MC-like ICI colitis (66% v/s 50%). All patients with MC-Like ICI colitis (Group A and B) responded to oral Budesonide.

Conclusion:

Our data shows that Pembrolizumab commonly causes MC-like ICI colitis which responds to oral Budesonide. However, there was a long delay between symptom onset and colonoscopy (>80 days) and an increased risk of hospitalization with MC-ICI colitis. Though AGA and the American Society of Clinical Oncology (ASCO) recommend colonoscopy in patients with moderate to severe symptoms, the delay in GI evaluation seen in our data points to a limited understanding of the pathologic subtypes of ICI colitis and that earlier colonoscopy with biopsy can help with diagnosis and management. The main shortcoming of our data is the small sample size; however, a strong trend toward the above statement was seen. Certainly, further prospective research to refine ICI colitis management based on histopathology is needed.

Max Kostyk, DO

Case Study

PGY2: University Hospitals Parma

Malignant Melanoma Presenting with Upper Gastrointestinal Bleeding!

Intro Malignant melanoma is an aggressive tumor that mostly originates from the skin. Despite that melanoma is the most common tumor to metastasize to the gastrointestinal (GI) tract, primary GI melanoma, notably gastric melanoma is extremely rare and accounts for < 1% of melanoma cases. Even though primary or metastatic GI involvement by melanoma is well described, it is rare for melanoma to initially present with GI bleeding. Herein we report the case of a 68 year-old patient presenting with hemorrhagic shock secondary to gastric malignant melanoma.

Case Description:

Methods A 68 year-old Caucasian man presented to the ED with few week history of melena. Patient was initially tachycardic and hypotensive. Physical exam noted abdominal ascites with unremarkable cutaneous and ophthalmologic inspection. Labs revealed a Hb of 3.2 (normal range 13.5-17.5 g/dL), MCV 81 (80-100 fL), Creatinine 2.76 (normal range 0.5-1.3 mg/dL). Abdominal CT scan showed gastric irregularity, large ascites and abdominal masses concerning for peritoneal carcinomatosis. After adequate resuscitation, upper endoscopy showed severe gastritis and multiple small pigmented lesions and confluent ulcerations in the gastric body and antrum. Pathology revealed poorly differentiated malignant neoplasm consistent with malignant melanoma. Patient's family decided on hospice care in view of the poor prognosis.

Conclusion:

Malignant melanoma is the 5th most common cancer in the United States and is responsible for >90% of skin cancer mortality. The GI system is the most common site of melanoma metastases . The most commonly involved GI sites include small bowel, colon, rectum and stomach. Symptoms include anemia, abdominal pain, GI bleed among others. Diagnosis is suggested by cross sectional imaging and endoscopic examination. Three morphological types are described. The 1st type consists of melanotic nodules, often ulcerated at the tip. The 2nd type describes elevated submucosal masses with apical ulceration. The 3rd type defines masses with variable necrosis and melanosis. Pathological and immunohistochemical inspection confirms the diagnosis via immunostaining with S-100, Sox10, MART-1, HMB-45 and tyrosinase. Surgical resection can be curative in localized disease. In metastatic disease patients are referred to targeted therapy, immunotherapy and/or radiation therapy. Prognosis is poor with GI involvement with a median survival of

Matthew Yoder

Case Study

MS3: The Ohio State University College of Medicine

A Free Screening and Diagnostic Colonoscopy Program for Uninsured Population Demonstrates Success of Collaborative Efforts to Decrease Disparities Due To Socioeconomic Status

Purpose:

We present a program providing free colonoscopies to uninsured people in Columbus Ohio in partnership between a medical student run free clinic and a tertiary academic medical center.

Methods:

The program began July 2022 at a community hospital serving the economically disadvantaged population in Columbus. All patients were screened at a free clinic to verify insurance status and appropriateness for moderate sedation. Two days before their procedure, they were seen at the free clinic for a history and physical examination, medications review, and received Polyethylene glycol (Miralax) and bisacodyl to prepare for their colonoscopy. All patients received help with transportation when needed and some were provided a hotel room if needed. On the day of the program, two gastroenterologists volunteered to perform up to 18 colonoscopies. Medical students and the program manager checked in patients, explained results, and established follow up. Nurses and surgical technicians helped run endoscopy rooms. A follow-up was arranged for all patients at the free clinic to review results. A gastroenterologist reviewed any polyps that were removed and suggested surveillance interval. Any pathology reports for potentially cancerous polyps were included in the program and communicated to patients when available.

Results:

Between July 2022 and July 2023, 6 free colonoscopy days were held. One hundred and five people underwent a colonoscopy, 30% were for screening, and one person underwent colonoscopy three times due to large polyps identified during the first colonoscopy. One hundred percent of patients showed up for their procedure and 103/105 had adequate quality of bowel prep. More than 50% of patients were non-English speaking. Two hundred ten polyps were removed. There were no complications. Only one person had their colonoscopy canceled due to asymptomatic bradycardia noted pre-procedure.

Conclusion:

We present an example of a free colonoscopy program aimed at serving the uninsured population. We show that with collaboration between gastroenterologists, endoscopy leadership, community health workers and a free community clinic, it is possible to overcome barriers and reduce disparities in colorectal cancer screening. Our future directions will aim at expanding the program to be able to reach more of the uninsured population.

Gavisha Waidyaratne, MD

Research

PGY3: The Ohio State University College of Medicine

The Evaluation and Analysis of Irritable Bowel Syndrome (IBS)-Related Short Videos on Social Media (TikTok)

Purpose:

TikTok is one of the world's fastest growing social media platforms. There is ongoing research on the use of social media as a tool for patient education. However, there are concerns that social media can disseminate poor quality and misleading information. While the research around Irritable Bowel Syndrome (IBS)-related patient education on social media is surprisingly limited, IBS has recently become a viral topic of interest amongst TikTok users. Our study objective is to better understand the quality and accuracy of information presented in the most popular IBS-relevant videos on TikTok.

Methods:

Videos categorized under the tag 'IBS' were sorted by relevance. Exclusion criteria excluded videos that were not relevant to IBS or were <10 seconds or >10 minutes. In total, 100 videos were reviewed. Baseline characteristics about the video presenter and video content were collected. The quality of each video was reviewed by two independent reviews using the DISCERN and Patient Education Materials and Assessment Tool (PEMAT) tools, two validated instruments to assess the quality of patient education materials.

Results:

Of 100 videos included in this study, 33% were uploaded by a participant with a medical background, 62% were uploaded by a participant with a non-medical background, and 5% were unclear. The median DISCERN score of videos uploaded by a participant with a medical background was 2.43 (2.00-3.10) which was significantly higher than participants with a non-medical background 1.37 (1.23-1.70); (p <0.01). The median PEMAT Understandability score of videos uploaded by a participant with a medical background was 92.86 (86.61-95.00) which was significantly higher than participants with a non-medical background 80.95 (75.76-89.58); (p <0.01). The median PEMAT Actionability score of videos uploaded by a participant with a medical background was 100.00 (66.67-100.00) which was significantly higher than participants with a non-medical background 0.00 (0.00-45.83); (p <0.01).

Conclusion:

These results demonstrate that videos posted by medical professionals are more reliable, unbiased, actionable, and easy to understand. As patients are increasingly turning to social media for health information and recommendations, there is a need for more health professionals to post reliable information.

Arjun Chatterjee, MD

Research

PGY3: Cleveland Clinic Foundation

Non-alcoholic fatty pancreas disease (NAFPD) Outcomes: Not as Benign as it seems

Aims:

Non-alcoholic fatty pancreas disease (NAFPD) is characterized by fat accumulation in the pancreas. It is often reported as a benign, incidental finding on imaging, but its clinical implications are poorly understood. We aimed to accurately measure the visceral fatty infiltration in NAFPDP patients and study its natural history.

Methodology:

We identified adults ≥ 18 years with MRI findings of fatty pancreatic infiltration who also had a non-contrast CT scan of the abdomen/pelvis within one year of the MRI between 2004-2023. Patients with excess alcohol use, prior acute/chronic pancreatitis (AP/CP), pancreatic malignancy/surgery, cystic fibrosis, or steroid/antiviral use for >3 months were excluded. We identified controls without NAFPDP on imaging and performed 1:2 matching for age, gender, body mass index (BMI), and smoking. Aquarius software was used to accurately quantify the CT fat percentage in the liver and pancreas and measure the subcutaneous and visceral fat area at the L4-L5 junction. Descriptive statistics were used to summarize the data. Results We included 109 NAFPDP patients and 218 controls without NAFPDP. The mean age of both groups was 66 years, 55% of the participants were women, and the mean BMI was 32.5.

There were no significant differences in subcutaneous, visceral, or liver fat percentage between the groups. However, the NAFPDP cohort had a significantly higher mean pancreatic fat percentage (81% vs.55%, $p<0.001$). Both groups were followed for a mean of 4 years. During this time, the NAFPDP cohort developed new diagnoses of pre-diabetes (24% vs.15%, $p=0.04$), AP (11 vs.3, $p<0.001$), CP (5 vs.1, $p=0.02$), and pancreatic cancer (4 vs.0, $p=0.01$). There was no difference in the incidence or prevalence of diabetes between the groups.

Conclusion:

Our study demonstrated that NAFPDP patients are at an increased risk of developing clinically significant pancreatic diseases, including pancreatic cancer, compared to matched controls.

Non-Pylori Helicobacter: Does It Even Exist?

Helicobacter pylori is the most common chronic infection in humans and the leading cause of peptic ulcer disease in the world. Non-pylori helicobacter namely Helicobacter heilmannii (H heilmannii) can cause gastritis in dogs, cats and pigs. Despite H heilmannii being described in animals, it is very rare to cause gastrointestinal (GI) implications in humans with only few cases reported.

Herein we report the case of an elderly lady that was diagnosed with symptomatic erosive gastritis secondary to H heilmannii infection. 74-year-old woman with history of hypertension, hyperlipidemia, constipation and cholecystectomy presented to the gastroenterology office for history of dyspepsia. She denied NSAIDs intake. Physical exam showed mild epigastric tenderness. Labs significant for a hemoglobin of 10.1 g/dL (normal range 12-16 g/dL). Upper endoscopy showed erosive gastritis. Immunostaining of gastric biopsies showed long tight spiral organisms, thicker than and twice as long as Helicobacter pylori consistent with Helicobacter heilmannii organisms. The patient was treated with 14 day course of triple therapy with amoxicillin 1g, clarithromycin 500mg, and omeprazole 20mg twice daily. Repeat upper endoscopy showing resolution of gastric erosions with significant improvement of the patient's symptoms. H heilmannii is a group of species of gram-negative, spiral-shaped bacilli that is catalase-positive and urease-positive. H heilmannii and H pylori belong to the same genus.

It is thought that H heilmannii gets transmitted to humans through direct contact with animals or through consumption of contaminated raw pork meat. As H pylori infects up to 50% of human population, only 0.3-1.1% of humans are infected by H heilmannii. H heilmannii infection can be asymptomatic or present with non-specific gastrointestinal symptoms. Potential complications include peptic ulcer disease, gastric MALT lymphoma and gastric carcinoma. The diagnosis of H heilmannii is challenging in view of the unavailability of noninvasive testing unlike H pylori. Diagnosis relies on histopathological detection where silver staining is preferably used. Polymerase Chain Reaction (PCR) followed by gene sequencing is used for specific species identification. Treatment of H heilmannii is similar to H pylori and includes triple or quadruple therapy. A confirmation of eradication is recommended via gastric biopsies 4 weeks after completion of therapy.

Khushbu Patel, MD

Research

PGY2: University Hospitals/Case Western Reserve

Indications for Performing Simultaneous Upper and Lower Endoscopy for Investigation of Lower Gastrointestinal Bleeding: A Single Center Retrospective Study

Introduction:

Hematochezia is typically associated with sources located in the colon. Occasionally, it can result from more proximal sources within the gastrointestinal tract. In patients hospitalized with suspected lower gastrointestinal bleeding (LGIB), the aim of this study was to identify factors that predict the use of just lower endoscopy versus lower plus upper endoscopy and identify the sources of bleeding.

Methods:

We performed a single institution retrospective cohort study for patients that underwent inpatient evaluation for LGIB with either colonoscopy or flexible sigmoidoscopy with or without upper endoscopy between 4/1/2016 and 8/31/2021. Patients were identified through the Provation endoscopy software using procedure indications of hematochezia, melena or rectal bleeding and were eligible if the procedure was performed inpatient. Patients who underwent both an upper and lower endoscopy were included in Group 1 and were compared to those without an upper endoscopy in Group 2. Laboratory data was collected for baseline, day of admission, and day of procedure results. We also examined the indications for endoscopy, findings on endoscopy, endoscopic interventions performed, pre-presentation use of anticoagulant and antiplatelet medications, and the length of hospital stay. Data analysis was performed using a univariate analysis to calculate odds ratios between the groups.

Results:

A total of 318 patients met inclusion criteria. 277 had an initial colonoscopy and 40 only had a flexible sigmoidoscopy. Decrease in hemoglobin greater than 3g/dl between admission and day of procedure, INR on admission greater than 2, and requirement of at least one red blood cell transfusion were all associated with performing bi-directional endoscopy (OR 3.21, 3.73, 5.55, respectively). Common findings on lower endoscopy include diverticulosis (142), hemorrhoids (80), and polyps (41). Within the 140 upper endoscopies, 128 (91.4%) had a source of GIB including 79 (61.7%) from peptic ulcer disease.

Conclusion:

INR on admission and drop in hemoglobin between baseline and day of initial lower endoscopy were both associated with performing an upper endoscopy during evaluation for suspected LGIB. A high proportion who had upper endoscopy had a source for bleeding, most commonly peptic ulcer disease.

Achintya Singh, MD

Research

PGY5: MetroHealth Medical Center

Prevalence Of Endoscopy Related Injuries and Its Impact on Clinical Practice: A Systematic Review and Meta-Analysis

Background:

Endoscopy related musculoskeletal injuries (ERI) are commonly reported but the exact prevalence is not known. Also, the impact of these injuries on workplace productivity remains obscure. We conducted a systematic review and meta-analysis of the present literature to answer these questions.

Methods:

Individualized searches of all the major databases were done for studies evaluating ERI in gastroenterologists, and surgeons. The keywords included “Endoscopy” or “colonoscopy or esophagogastroduodenoscopy” and “Occupational Injuries” or “Ergonomics” or “Musculoskeletal System”. The primary outcome was to assess the prevalence of ERI in the reported literature. The secondary outcomes were to assess the prevalence of respondents that missed workdays or reduce the number of their daily procedures due to ERI.

Results:

Twenty studies including 5350 respondents met our inclusion criteria. Majority of the participants were males (3976, 74.3%) and most were right-handed (87.2%). Only 37.2% participants reported prior training in ergonomics of endoscopy while 69% participants expressed the desire for further training in ergonomics. The reported prevalence of ERI was 65.4% (95% CI: 56.7, 74.0%, I2: 97.9%). The pooled prevalence of respondents that had missed work due to injuries were 9.2% (95% CI: 5.3, 13.1%, I2:97.4%). While the 9.4% (95% CI: 5.7, 13.2; I2: 89.3%) participants had reduced the number of procedures due to these injuries. Overall, there was a moderate risk of bias in the present literature.

Conclusions:

Endoscopy related injuries have been reported by 7 out of 10 endoscopists. These injuries can be severe, leading to missed workdays and reduction in number of procedures. Most gastroenterologist report an unmet need for training in proper ergonomics of endoscopy.

Type IV Paraesophageal Hernia Causing Pancreatitis

Introduction:

A hiatal hernia (HH) occurs when a portion of the stomach protrudes through the esophageal hiatus. Most cases are asymptomatic; in rare cases, herniation of pancreas can occur which can lead to pancreatitis. We present a case of a type IV paraesophageal hernia (PEH) with inclusion of the pancreatic body and tail causing acute pancreatitis.

Case Description:

73-year-old male with past medical history of peptic ulcer disease and known intrathoracic hernia presented to the hospital with sudden onset epigastric abdominal pain, nausea, and vomiting. Labs were remarkable for lipase 237 U/L (normal < 65 U/L) and WBC 14 K/mcL. Liver function tests, calcium and triglyceride levels were normal. Computed tomography showed a large right PEH with a debris-filled stomach consistent with gastric outlet obstruction. In addition, it contained the mid transverse colon, along with the body and tail of the pancreas. Cardiothoracic surgery initially pursued conservative management given active pancreatitis and gastric outlet obstruction. After resolution of pancreatitis and obstruction, the patient then underwent exploratory laparotomy, reduction of hiatal hernia, and placement of gastrostomy tube. One month later he was discharged tolerating a regular diet.

Discussion:

HH are classified into four subtypes based on the location and size. The most severe form of HH is type IV PEH and occurs when other intraabdominal organs project into the thoracic cavity. The exact etiology is variable and can be congenital, smoking, age, and obesity. Clinical presentation can vary from asymptomatic, gastric reflux, to more severe complications such as obstruction from gastric volvulus, bleeding, and perforation. Pancreatitis is a rare complication of PEH and is thought to be caused by repetitive trauma, vascular insufficiency and pancreatic ductal obstruction. Diagnosis is based on imaging. Treatment options depend on the degree and severity of herniation. While asymptomatic paraesophageal hernias do not necessarily require surgical intervention, early treatment should be considered before complications arise.

Ellen Tan, DO

Research

Chief Resident: OhioHealth/Riverside Methodist Hospital

Get FIT Campaign for Colorectal Cancer Awareness Month: a QI Project to Improve Screening Rates for an Underserved Population in a Resident-Led Primary Care Clinic

Purpose:

Colorectal cancer (CRC) is the second leading cause of cancer-related deaths in the USA and can be prevented through adequate screening. Many factors influence screening completion, such as provider recommendation, method of screening, transportation, health insurance status, race/ethnicity, and socioeconomic status. Lower screening rates are associated with recent immigration, lack of health insurance, and Medicaid insurance. Our resident clinic is made up of 14% non-English speaking or immigrant status patients, and 48% have Medicaid insurance or are uninsured. In 2021, our CRC screening rate was 55.4% compared to the national average of 71.8%. We assessed barriers to screening and implemented a CRC screening program.

Methods:

The quality improvement (QI) initiative started with a patient questionnaire assessing barriers to CRC screening completion. Four Plan-Do-Study-Act (PDSA) cycles were implemented: resident education on guidelines and screening modalities, patient education using visual aids, decision support tool with price transparency, financially assisted colonoscopies for uninsured patients, and our “Get FIT” campaign for CRC awareness month. For two weeks in March 2023, we celebrated CRC screening discussions with a catchy t-shirt design and in-person FIT testing. We called average-risk patients with outstanding screening orders for FIT testing. Monthly performance metrics were collected from the physician dashboard of the electronic medical record.

Results:

Common barriers were scheduling difficulties, transportation, time, fear, cost, lack of desire, and no CRC screening discussion. Over 20 months, CRC screening rates increased from 55.4% to 62.2%. 172 patients were called during the “Get FIT” campaign and 50% of tests ordered were completed within one month. This was our most effective PDSA cycle to increase the number of completed screening tests.

Conclusion:

Through provider and patient education, process mapping, stakeholder involvement, and an in-person FIT screening program, we increased CRC screening rates for our patient population. Our PDSA cycles sought to remove barriers to screening and offered a combination of non-invasive testing and colonoscopy, which increased participation. These team-based interventions can be utilized within other underserved patient populations to improve health access and equity for CRC screening.

Blake Leeds, DO

Case Study

PGY2: OhioHealth/Riverside Methodist Hospital

Utility of EndoFLIP in the Identification of Occult Esophageal Strictures in Eosinophilic Esophagitis

Introduction:

Eosinophilic esophagitis (EoE) is a chronic fibro inflammatory disorder characterized by development of strictures in the esophagus. This leads to dysphagia to solids and sometimes food impaction. Upper endoscopy has low sensitivity but high specificity for detection of strictures. EndoFLIP is a novel technique that allows measurement of the distensibility of tubular organs like the esophagus. It is used to measure lower esophageal sphincter distensibility in patients with dysphagia. However, its role in identifying strictures is unknown. We present a case of EoE where we identified an occult stricture that was not detected by esophagram or endoscopy.

Case Description:

A 19-year-old male patient was evaluated for dysphagia. He was diagnosed with EoE at the age of 12 years with endoscopy demonstrating more than 100 eosinophils per high power field (normal is less than 15 per high power field). At the time of the clinic visit, he was on no therapy for EoE. A barium esophagram revealed a 2 cm long 9 mm wide stricture in the proximal esophagus. Upper endoscopy revealed mild changes of EoE including vertical furrows and loss of mucosal vascular markings. Mild resistance to passage of the scope was felt in the proximal esophagus corresponding to the stricture noted on esophagram. EndoFLIP test revealed normal distensibility of the lower esophageal sphincter with diminished peristalsis of the esophageal body. In addition, it revealed two areas of narrowing, one was located 7 cm distal to the upper esophageal sphincter corresponding to the stricture seen on esophagram and a second area 7 cm above the lower esophageal sphincter and 11 cm distal to the first stricture. The distal stricture was not identified on esophagram or endoscopy. Both areas were dilated up to 19 mm with an endoscopic balloon with mild mucosal disruption.

Conclusions:

This case highlights the utility of EndoFLIP, a novel technique to identify occult strictures in the esophagus. This can be combined with an upper endoscopy to guide therapy (i.e. dilation) in those with dysphagia. Early treatment of sub-clinical strictures may prevent food impactions in the future.

Raj Jessica Thomas, DO

Case Study

PGY2: Cleveland Clinic Foundation/Akron General

Bedside Endoscopic Ultrasound Guided Gallbladder Drainage in Critically Ill Patient with Acute Cholecystitis

Introduction:

Endoscopic ultrasound-guided gallbladder drainage (EUS-GBD) is employed as a therapeutic option for high-surgical-risk patients suffering from acute cholecystitis and symptomatic cholelithiasis. EUS-GBD has gained traction as the preferred treatment modality in these patients given increased efficacy and minimal adverse events. This case series aims to highlight the technical feasibility and safety of bedside EUS-GBD in patients deemed too high-risk for transfer to the traditional endoscopy or operating room for EUS-GBD.

Case Description/Methods:

Case 1:

72-year-old male presented with right upper quadrant pain and septic shock. Magnetic resonance cholangiopancreatography was notable for cholelithiasis with a distended GB causing hepatic duct compression, necessitating biliary drain placement. Due to the patient's ongoing shock and need for vasopressor support, EUS-GBD was performed urgently at bedside.

Case 2:

73-year-old male with a history of prior aortic dissection presented with an enlarging pseudoaneurysm following thoracic endovascular aortic repair. His hospital course was further complicated by coagulopathy and hemorrhagic shock requiring extracorporeal membrane oxygenation (ECMO) with clinical and imaging findings of cholecystitis. Given the presence of ECMO at this critical stage, a bedside EUS-GBD was performed.

Case 3:

33-year-old female presented with septic shock attributed to pneumonia with plausible precipitant as acute cholecystitis. Computed tomography showed persistent GB wall thickening and elevated liver function tests. Due to the patient's need for invasive mechanical ventilation and ongoing shock, EUS-GBD was carried out at the bedside.

Discussion:

EUS-GBD for acute cholecystitis is typically reserved for high-surgical-risk patients. In rare circumstances, as exemplified in the aforementioned cases, where these patients can be too sick to be transferred to the endoscopy or operating room for EUS-GBD, bedside EUS-GBD can serve as a feasible alternative method when performed by experienced endoscopists at specialized centers.

Parthvi Dani, MD

Research

PGY3: The Jewish Hospital of Cincinnati

Advancing Diagnostic Evaluation for Dysphagia in Children: Importance of High Resolution Esophageal Manometry and Implications for Pediatric Centers

Introduction:

Diagnostic evaluation for dysphagia typically includes contrast study, endoscopy, and high-resolution esophageal manometry (HREM). There is no data on the diagnostic yield of HREM compared to the other modalities in children. Expertise in performing and interpreting HREM is not widely available in pediatric centers. We aimed to compare the diagnostic yield of different diagnostic modalities for evaluating dysphagia in children.

Methods:

All available contrast studies, endoscopy (EGD) reports and HREM tracings of children presenting with symptoms of difficulty swallowing, vomiting, and poor weight gain or loss were analyzed.

Results:

Of the 60 children evaluated (33% female, median age 16 years, IQR (7.5-17.0)), most (49, 87%) had at least one abnormal test. Esophagram was abnormal in 22 (37 %) patients, with esophageal dysmotility being the most common finding (8, 36%). Seven out of eight (88%) patients with esophageal dysmotility on esophagram also had an abnormal HREM. Three (43%) had ineffective esophageal motility (IEM) on HREM and 4 (57%) had aperistalsis on HREM. Six (10%) had an abnormal esophagram with a normal HREM. Twenty (33%) patients who had a normal esophagram had an abnormal HREM and were diagnosed with ineffective esophageal motility (IEM) (16, 80%), aperistalsis (2, 10%) and achalasia (2, 10%). In 17 (28%) both esophagram and HREM were normal. HREM was abnormal in 37 (62%) patients, and it defined more cases with specific motility disorders: IEM in 20/37 (54%), aperistalsis in 9/37 (24%), and achalasia in 5/37 (14%) patients. EGD/biopsy was abnormal in 28 (47%) and the majority of findings were mild to moderate inflammation of esophagus/stomach/duodenum in 18/28 (64%). Eosinophilic esophagitis was found in 4/28 (14%). Four (14%) were found to have pooling or dysmotility, esophageal strictures and/or hiatal hernia in 2 (7%). Overall, HREM had a higher diagnostic yield (62%) than esophagram (37% $p=0.01$) and EGD (47%, $p=0.14$)

Conclusion:

Our findings suggest that esophageal motility disorders are the primary cause of dysphagia and related symptoms in children. HREM is the most effective test in identifying specific motility disorders, and we recommend that all tertiary-level pediatric centers have the capability to perform and interpret HREM studies.

Rami Musallam, MD

Research

PGY3: University Hospitals/Case Western Reserve

Risk of Surgery for Inflammatory Bowel Diseases Has Decreased Over Time: A Systematic Review and Meta-analysis of Population-Based Studies

Purpose:

Inflammatory bowel diseases (IBDs) are chronic diseases that often require surgery. However, there is considerable debate in the literature as to whether the risk of surgery has decreased over time. We performed a systematic review and meta-analysis to establish the cumulative risk of surgery among patients with IBD and evaluated how this risk has changed over time.

Methods:

We performed a comprehensive search in the databases of PubMed/MEDLINE, Embase, and Cochrane from inception through June 2023. Meta-analysis was performed by standard methodology using the random-effects model and heterogeneity was assessed using the I² statistics. The analysis included population-based studies published as articles and abstracts that reported risks of surgery at 1, 5, or 10 years after a diagnosis of Crohn's disease (CD) and/or ulcerative colitis (UC). Subgroup analysis based on the decade of diagnosis for studies conducted in 1955-1969, 1970-1979, 1980-1989, 1990-1999, 2000-2009 and after 2010 was performed.

Results:

Our final analysis included 62 studies (105 study arms) that included 221,574 patients with an age range of 11.2 - 46 years, and 50.4% were female. 35.8% Crohn's disease (CD) and 64% ulcerative colitis (UC). Based on all population-based studies the risk of surgery by 1, 5, and 10 years after diagnosis of IBD was 7.6% (95% confidence interval [CI], 6.2-9.2%), 17.8% (95% CI, 15.3-20.5%), and 24.5% (95% CI, 21.2-28.3%), respectively. The risk of surgery by 1, 5, and 10 years after diagnosis of CD was 12.7% (95% CI, 9.8-16.2%), 28.1% (95% CI, 24.1-32.6%), and 39.3% (95% CI, 31.9-47.2%), respectively. The risk of surgery by 1, 5, and 10 years after diagnosis of UC was 4.5% (95% CI, 3.1-6.6%), 9.7% (95% CI, 7.3-12.9%), and 13.4% (95% CI, 10.7-16.7%), respectively. The cumulative risk of surgery steadily declining over time by the decade of diagnosis for studies conducted 1955-1969, 1970-1979, 1980-1989, 1990-1999, 2000-2009 and after 2010.

Conclusions:

Based on our systematic review and meta-analysis of population-based studies, the risk of intestinal surgery among patients with IBD has been declining over the past 7 decades. Further studies are needed to identify factors that contribute to the declining surgical risk in IBD.

Unraveling the Esophageal Enigma: A Scleroderma Patient's Journey to Relief with EsoFLIP

Purpose:

To describe the successful treatment of dysphagia in a patient with scleroderma using EsoFLIP.

Methods:

The electronic medical record was reviewed for preparing this case report.

Results:

A 56-year-old woman with a history of scleroderma and gastroparesis presented to the esophageal clinic for evaluation of esophageal and pharyngeal dysphagia. An esophagram revealed a non-obstructing upper esophageal sphincter (UES), stasis of liquids in the mid esophagus, and stasis of a 13 mm barium tablet at the gastroesophageal junction (GEJ). An esophageal manometry showed 100% failed peristalsis in the esophageal body, normal lower esophageal sphincter (LES) and high UES pressure at rest, and normal LES and UES relaxation during deglutition. EGD revealed esophageal plaques suspicious for Candida. Biopsies showed a lichenoid-esophagitis pattern of injury with candidiasis. EndoFLIP revealed normal LES distensibility (maximum distensibility index (DI) 3.4 mm²/mmHg), a tight UES (maximum DI 3.2 mm²/mmHg) and markedly diminished peristalsis. The UES was dilated up to 20 mm. Post dilation, she reported no improvement in dysphagia. Thus, an EGD with FLIP was repeated 3 months later. Esophageal biopsies again revealed a lichenoid-esophagitis pattern of injury but were negative for Candida. EndoFLIP showed normal LES distensibility (maximum DI 5 mm²/mmHg) with diminished peristalsis and improved UES distensibility (maximum DI 3.8 mm²/mmHg). Due to ongoing symptoms, the LES and UES were dilated with a 30 mm EsoFLIP balloon. At a 1-month follow-up the patient reported significant improvement in dysphagia. A follow-up esophagram revealed normal passage of liquids and barium tablet through the GEJ.

Conclusion:

EndoFLIP is a useful technique to assess distensibility of the esophageal sphincters. A DI more than 3 mm²/mmHg at the LES and more than 4 mm²/mmHg at the UES are considered normal. Our case highlights an example where LES relaxation by manometry and LES DI by FLIP were normal, yet there was stasis of barium at the GEJ. Based on the esophagram results and clinical picture, dilation of the LES with EsoFLIP significantly improved dysphagia and normalized the esophagram. This case highlights the importance of considering a flexible approach utilizing various techniques when determining optimal therapy in dysphagia patients.

Judy Daboul, MD

Research

PGY3: The Ohio State University Wexner Medical Center

Trends in Fellowship Diversity between Gastroenterology and Major Internal Medicine Subspecialties

Purpose:

Given the lack of inclusion of underrepresented minorities (UIM) in medicine, including in Gastroenterology, most Gastroenterology societies support interventions to improve diversity, specifically during fellowship training. We aim to examine nationwide trends in race and gender in Gastroenterology fellowship compared to other Internal Medicine (IM) fellowships and at our own institution.

Methods:

Publicly available race and gender data from the American College of Graduate Medical Education and The Ohio State University (OSU) were collected from 2011 to 2021. Fellows identifying as Hispanic, African American, or Native American/Alaskan were subclassified as UIM. Cochran Armitage test was used to test trends for UIM proportion. 2-sample χ^2 or Fisher exact test were used as appropriate to compare Gastroenterology vs other major IM specialties.

Results:

An average of 11.7% of fellows identified as UIM in Gastroenterology which was significantly lower than most IM specialties. Only Pulmonology/Critical Care and Hematology/Oncology were significantly lower (Pulmonology/Critical Care vs Gastroenterology: 10.7% vs 11.7%, $p=0.019$; Hematology/Oncology vs Gastroenterology: 9.2% vs 11.7%, $p<0.001$). The number of UIM fellows in Gastroenterology had no trend observed during the studied time ($p=0.97$). However, there was a significant positive trend of UIM in other competitive specialties including Cardiology ($p<0.01$) and Hematology/Oncology ($p=0.01$). Comparison between proportion of UIM fellows at OSU and the national average was not significantly different ($p=0.50$). An average of 34.7% of fellows identified as female in Gastroenterology which was significantly lower than most IM specialties. Only Cardiology and Pulmonology/Critical Care were significantly lower (Cardiology vs Gastroenterology: 23.1% vs 34.7%, $p<0.001$ and Pulmonology/Critical Care vs Gastroenterology: 33.5% vs 34.7%, $p=0.011$). We observed a positive trend for the proportion of female fellows in Gastroenterology during the studied time (33.2% to 37.4%, $p=0.03$). There was a similar trend in other competitive specialties including Cardiology ($p<0.01$) and Pulmonology/Critical Care ($p=0.01$). Proportion of female fellows at OSU improved significantly (0% to 50%, $p=0.004$).

Conclusions:

Efforts to promote a more inclusive workforce in Gastroenterology have had success over the past decade; however ongoing interventions should be pursued. OSU achieved early success through active recruitment of minority applicants, structured mentorship, and bias mitigation training.

Akash Chavan, MD

Research

PGY2: University Hospitals Cleveland Medical Center

Doppler guided Endoscopic cyanoacrylate injection is an effective treatment for Gastric variceal hemorrhage: A Multicenter Retrospective Study

Introduction:

The Doppler Endoscopic Probe (DEP) is an FDA-cleared, non-EUS, through the scope, Doppler ultrasound probe that can be used by GI endoscopists without advanced endoscopic training. Endoscopic free hand injection of cyanoacrylate is generally used for gastric variceal obturation (GVO) but its limitations include the inability to objectively assess GVO. Herein, we present the outcomes of a GVO using an Endoscopic Doppler probe that enabled the assessment of variceal flow following cyanoacrylate therapy.

Methods:

This was a multicenter retrospective descriptive study of 119 patients from the years 2005-2020 who underwent endoscopic injection of N-butyl-2-cyanoacrylate for the treatment of GV with either pre, post, or pre and post DEP assessment. The primary outcomes were immediate hemostasis (bleeding stopped at index endoscopy) and durable hemostasis (no re-bleeding within one month). Secondary outcomes included re-bleeding rates after 1 month and 1 year, complication rates of embolization, sepsis, perforation, and bleeding provoked by Doppler probe termed serious adverse events (SAEs), the need for alternative treatments, in-hospital mortality and primary cause of death.

Results:

Of the 119 patients included in the study, 65% were male and 81% were Caucasian. Eighty-four percent had chronic liver disease with the most common etiology being alcohol-related (39%). The two most common types of gastric varices were IGV1 (50%) and GOV2 (32%). DEP was used both pre- and post-glue injection in 79% of the population and otherwise was used once (either pre or post treatment). Immediate and durable hemostasis were achieved in 97% and 87% of patients, respectively. The percentage of patients that rebled within 1 month and at 1 year following index endoscopy was 5.8% and 7.6%, respectively. TIPS or BRTO was required in 5.9% for endoscopic treatment failure. No embolization, sepsis or perforation occurred.

Conclusion:

A hybrid Doppler probe guided endoscopic free hand method of GVO is effective at achieving immediate and durable hemostasis in a large proportion of patients and had no serious adverse events. This simple non-EUS technique allows the endoscopist to objectively and effectively treat bleeding gastric varices.

Faris Shweikeh, MD

Research

PGY3: Cleveland Clinic Akron

General Inpatient Colonoscopy Utilization in Elderly Dementia Patients: Characteristics, Complications, and Charges in a National Matched-Cohort Analysis

Purpose:

It is projected that the size of the elderly population will increase drastically in the coming years. Many will develop chronic conditions such as dementia, most commonly Alzheimer's Disease. Our aims in this study are to describe the utilization of colonoscopy among dementia patients and compare outcomes in those who received colonoscopy with dementia versus without dementia.

Methods:

This population-based analysis utilized the National Inpatient Sample (NIS) during 2019. The NIS is publicly available healthcare database that includes over 7 million hospitalizations from 1,000 hospitals per year. Patients with dementia over the age of 60 years who received colonoscopy were identified utilizing the Elixhauser comorbidity measure and the colonoscopy procedure using ICD-10 codes. Propensity score matching was used to correct for effects of the uneven features of the clinical outcomes. A one-to-one Greedy matching algorithm was used where each patient in the dementia group was matched to a patient in the nondementia group with the closest propensity score. Multivariate regression analysis was used to assess the effect of patient factors.

Results:

Initially, 50,692 patients without dementia were compared with 4,323 patients with dementia. It was found that those with dementia were more likely to be female, were older, less likely white, had lower income, and more likely to be on Medicare (rather than private insurance). In the matched cohorts (4,176 patients in each group), complications analysis shows that those with dementia did not have higher colonoscopy-related complications (colonic perforation, bleeding, and/or splenic injury). However, they did have higher rates of other complications including renal/AKI ($p=0.0042$), pulmonary/pneumonia ($p=0.003$), cerebrovascular accidents ($p=0.0063$), and sepsis (<0.0001). They were also less likely to have routine discharges (<0.0001), had longer hospital stays (<0.0001), and higher hospital costs (<0.0001). However, there were no differences in mortality.

Conclusions:

In this national inpatient study, we found elderly dementia patients receiving colonoscopy have similar colonoscopy-related complications as patients without dementia. However, patients with dementia do have higher complications in general. The decision whether to perform colonoscopy in this patient population is multifactorial. A careful assessment of a dementia patient's history can help with this decision.