Conclusions LCI increases diagnostic yield and accuracy compared to both WLE and BLI and provides consistent endoscopic features; a novel feature over the challenges of prior imaging modalities. Lesion demarcation is clearer using LCI; an important factor to guide successful and complete endoscopic resection.

Abstract PTU-028 Figure 1 Type 1 GCT seen in WLE (A), BLI (B) and LCI (C)

PTU-029 ARE EXTRA-PANCREATIC MALIGNANCIES MORE PREVALENT IN PATIENTS WITH INTRADUCTAL PAPILLARY MUCINOUS NEOPLASM OF THE PANCREAS?

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Introduction The association between the presence of an intraductal papillary mucinous neoplasm (IPMN) of the pancreas and the prevalence of extra-pancreatic malignancies (EPM) remains unclear. This is important with regards to determining suitable follow-up plans for IPMN patients. This single-centre, retrospective study aims to determine whether the prevalence of EPM is higher in IPMN patients as compared to the general Maltese population.

Methods A cohort of 175 patients with an incidental radiological diagnosis of IPMN on magnetic resonance imaging between 2010 and 2017 were recruited from a single, main centre in Malta. The prevalence of a previous history or synchronous diagnosis of EPM was recorded by reviewing electronic histopathology results of biopsies or resection specimens. EPM was defined as per ICD-10 (International Statistical Classification of Diseases and Related Health Problems) C00–80, thus excluding non-melanoma skin cancer and haematological malignancies. All EPMs were based on a tissue diagnosis. The prevalence of EPM was calculated and statistically compared with the lifetime prevalence of developing EPM (ICD-10, C00-C80) in the general Maltese population. Data regarding population demographics was obtained from the National Statistics Office and the National Cancer Platform.

Results 36 out of a total of 175 IPMN patients were found to have an EPM resulting in a prevalence of 20.57%. The commonest malignancies were breast 30.6% (n=11), colorectal 25.0% (n=9), and renal cell carcinoma 11.1% (n=4) respectively. The calculated lifetime prevalence (risk) of developing an EPM (Adjusted for Multiple Primaries – AMP method) in the general Maltese population is 19.5% (1 in 5). This was not found to be statistically significantly different when compared to the IPMN patient cohort (p=0.86).

Conclusions A previous history or synchronous histological diagnosis of EPM was not shown to be more prevalent in patients diagnosed with an IPMN of the pancreas, as compared to the general Maltese population. Given these findings, there is currently no rationale for undergoing further thorough investigations for an EPM in IPMN patients. The need for prospective, long-term follow-up studies in such patients is paramount to establish incidence rates for EPMs following an IPMN diagnosis.

Small Bowel & Nutrition

OWE-019 MECHANISMS OF CHEMOTHERAPY-INDUCED DIARRHOEA

Stephanie French, Andrea Davies, Munir Pirmohamed. University Of Liverpool, Liverpool, UK

MECHANISMS OF CHEMOTHERAPY-INDUCED DIARRHOEA

Stephanie French, Andrea Davies, Munir Pirmohamed. University Of Liverpool, Liverpool, UK

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Introduction Bcr-Abl inhibitors, such as bosutinib and imatinib, are predominantly used for treatment of chronic myeloid leukaemia. However, lower gastrointestinal toxicity, such as diarrhoea, is a prevalent adverse drug reaction (ADR). For example, bosutinib and imatinib cause diarrhoea in up to 90% and 50% of patients, respectively.1 This can decrease patient quality of life, treatment efficacy and in severe cases cause patient hospitalisation. We aim to elucidate the mechanism of Bcr-Abl inhibitor-induced diarrhoea to help abrogate the aforementioned issues.

Methods Caco-2 cells (human colorectal cancer cells resembling small intestinal cells) were differentiated into monolayers of polarised enterocytes and utilised as an in vitro model. Cells were seeded into transwells and electrical resistance or flux of FITC-dextran (a fluorescently labelled polysaccharide) across the monolayer was measured to assess changes in paracellular permeability. Enteroids (small intestinal organoids) produced from male BALB/c mice were used as an ex vivo model. Changes in permeability of enteroids were determined by leakage of injected FITC-dextran out of the enteroid. Changes in mRNA levels, protein levels and protein localization of tight junction components were studied using RTqPCR, immunoblotting and immunofluorescence, respectively. Drug-induced cell death was assessed by CellTitreGlo and Toxilight assays for Caco-2 cells and enteroids, respectively. Results were analysed by ANOVA and are representative of ≥3 independent experiments.

Results 25 μM bosutinib increased paracellular permeability of Caco-2 monolayers to ions and FITC-dextran (ANOVA, p<0.05), whilst imatinib was less effective at inducing this change. 10 μM bosutinib increased enteroid leakage (ANOVA, p<0.01) but 10 μM imatinib had no effect. All concentrations tested were sub-apoptotic.

In Caco-2 cells, bosutinib caused relocation and decreased protein levels of intercellular junction proteins E-cadherin, Occludin and ZO-1. Bosutinib also transiently decreased mRNA levels of ZO-1 but not that of E-cadherin or Occludin. Imatinib did not alter mRNA levels, protein levels or localization of any of these proteins.

Endoplasmic reticulum (ER) stress is involved in intercellular junction degradation; 2 therefore, we assessed whether Bcr-Abl inhibitors could induce ER stress. However, no increase in ER stress markers BiP or CHOP were detected after bosutinib or imatinib treatment in Caco-2 cells.

Conclusions Decreased intestinal barrier integrity is likely an important factor in the aetiology of bosutinib-induced diarrhoea. This is potentially mediated by intercellular junction degradation. Understanding the mechanism by which Bcr-Abl inhibitors induce diarrhoea will aid in abrogation of diarrhoea ADRs.

REFERENCES

Abstracts

Survival and CT Defined Sarcopenia in Patients with Intestinal Failure on HPN

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Introduction Sarcopenia is recognised in patients with intestinal failure (IF) and has been associated with poorer survival in several chronic diseases. CT can measure sarcopenia through a L3 skeletal muscle index (LSMI).

We aim to evaluate the prevalence of sarcopenia in our IF population using LSMI, and evaluate the effect of home parenteral support (HPN) on LSMI and survival. Additionally, we aim to assess any association between LSMI, BMI and other anthropometric measurements.

Methods IF patients on HPN treated at St Mark’s Hospital between 1/1/2006–1/10/2016 were identified from a prospectively maintained database. Patients were included if they were on HPN and had 2 CTs: the first ≤30 days before start of HPN (pre-HPN); the second ≥100 days from HPN start (post-HPN). Patient records were reviewed to obtain clinical and demographic information and date of death. Anthropometric measurements and BMI contemporaneous to CT scans were recorded.

Results 64 patients met inclusion criteria (M:F 1:1). 83% of our cohort had LSMI below previously published thresholds for sarcopenia. Mean pre-HPN LSMI was 36.5±6.8 cm²/m². Mean BMI pre-HPN was 22.1±4.8 kg/m². Both BMI (p<0.001) and LSMI (p=0.003) increased post-HPN. A positive correlation was seen between BMI and LSMI pre (p<0.001) and post-HPN (p=0.003). No correlation was seen between LSMI and anthropometric measurements pre-HPN (p=0.78) or post-HPN (p=0.96). 11 (17%) patients died during the study period; a low LSMI pre-HPN was not a risk factor for mortality (HR 0.97 p=0.55).

Conclusions This study is the first to look at sarcopenia and survival using CT defined LSMI in the IF population. 83% of our cohort had a pre-HPN LSMI below previously published thresholds, yet we found no relationship between lower baseline LSMI and survival. This may reflect the heterogeneity of the prognoses of the IF population, or that parenteral nutrition itself affects survival.

Our study showed that LSMI and BMI improved following HPN but demonstrated that other anthropometric measurements had poor correlation with LSMI and showed no significant improvement overall after HPN, confirming the known problems of inter-operator and patient variability of these measurements. Whilst we found significant correlation between LSMI and BMI, BMI significantly underestimated the presence and degree of sarcopenia.

We have shown LSMI can provide an objective and reproducible measure of sarcopenia in IF. Future larger studies should be performed to evaluate associations with patient outcomes and utility in clinical decision making.

Owe-02

Describing the Gut Microbiome and Metabolic Changes in Bile Acid Diarrhoea

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Introduction The diagnosis of bile acid diarrhoea (BAD) is often missed or misdiagnosed for irritable bowel syndrome – diarrhoea predominant (IBS-D) as these conditions have a similar clinical presentation. The principal hindrance to diagnosis of BAD is limited access to the diagnostic SeHCAT scan.
Mechanisms of aetiology underlying BAD have not been fully elucidated but it has been accepted that bile acids (BAs) are metabolised by the gut microbiota, therefore their role as signalling molecules in regulating intestinal homeostasis is influenced primarily by the gut commensals.

The aim was to profile the gut microbiome in BAD and investigate the mechanisms of how bacterial metabolic products may influence the development of disease.

Methods 157 patients participated in the study after having a SeHCAT scan to either diagnose BAD or IBS-D (the latter with a negative scan). Exclusion criteria included recent use of antibiotics/probiotics and the diagnoses of coeliac disease, colorectal cancer and active inflammatory bowel disease (unremarkable levels of C-reactive protein and/or faecal calprotectin were required) in type 1 BAD patients. To examine the gut microbiome, 16S ribosomal RNA gene analysis was undertaken. Bacterial metabolites (short chain fatty acids-SCFAs and volatile organic compounds-VOCs) and BAs were measured using gas and liquid chromatography, mass and ion mobility spectrometry.

Results Intestinal dysbiosis with reduced bacterial diversity was observed in patients with BAD compared with IBS-D (p=0.01). A greater total concentration of SCFAs (p=0.17) with increases in the concentrations of acetate (p=0.14) and propionate (p=0.08) were observed in BAD compared to IBS-D. An increase in the concentrations of faecal primary BAs (p=0.05) and serum CDCA (p=0.05) was observed in BAD compared to IBS-D.

Conclusions Intestinal dysbiosis with altered fermentation and resultant BA dysmetabolism were observed in BAD. The metabolic output of the microbiota rather than abundance of specific bacterial taxa appears to be more important in the aetiology of BAD.

Abstract OWE-022 Table 1

<table>
<thead>
<tr>
<th></th>
<th>Sensitivity % (CI)</th>
<th>Specificity % (CI)</th>
<th>Positive predictive value% (CI)</th>
<th>Negative predictive value% (CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDAT</td>
<td>55.4 (40.0–70.4)</td>
<td>57.3 (45.4–68.6)</td>
<td>43.9 (35.0–53.1)</td>
<td>68.3 (59.5–75.9)</td>
</tr>
<tr>
<td>Biagi</td>
<td>24.4 (12.9–39.6)</td>
<td>92.0 (83.4–97.0)</td>
<td>64.7 (42.1–82.2)</td>
<td>70.0 (62.9–70.8)</td>
</tr>
<tr>
<td>CDAT + Biagi</td>
<td>62.2 (46.5–76.2)</td>
<td>56.0 (44.1–67.5)</td>
<td>45.9 (37.6–54.4)</td>
<td>71.2 (61.8–79.1)</td>
</tr>
<tr>
<td>IgA-TTG</td>
<td>40.0 (25.7–55.7)</td>
<td>97.5 (90.7–99.7)</td>
<td>90.0 (87.3–97.4)</td>
<td>73.0 (70.0–77.5)</td>
</tr>
<tr>
<td>IgA-EMA</td>
<td>37.8 (23.8–53.5)</td>
<td>97.3 (90.7–99.7)</td>
<td>89.5 (87.3–97.2)</td>
<td>72.3 (67.4–76.7)</td>
</tr>
</tbody>
</table>

Conclusions CDAT alone was not superior compared to IgA-TTG (p=0.6961). However, the combination of CDAT and Biagi questionnaires significantly outperformed IgA-TTG (p=0.0162) in detecting villous atrophy. These questionnaires could potentially provide an immediate reflection of dietary adherence, although the sensitivities remain suboptimal and cannot replace histological assessment.

REFERENCES

Abstract OWE-023

THE ASSOCIATION OF LIFETIME ALCOHOL USE WITH MORTALITY AND CANCER RISK: A PROSPECTIVE COHORT STUDY

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Introduction While current research is largely consistent as to the harms of heavy drinking in terms of both cancer incidence and mortality, there are disparate messages regarding the safety of light-moderate alcohol consumption which may confuse public health messages.

We aimed to evaluate the association between average lifetime alcohol intakes and risk of both cancer incidence and mortality.

Methods Population-based cohort study using data from 99 654 adults, aged 55–74 years participating in the U. S.
Introduction CD can affect any part of the GI tract but the terminal ileum (TI) is the most common. The incidence of CD in Europe ranges from 0.5 to 10.6 cases per 100,000 person-years. The risk of surgery based on all population-based studies, at 1, 5, and 10 years after diagnosis of CD is based on studies, at 1, 5, and 10 years after diagnosis of CD is 0.5 to 10.6 cases per 100,000 person-years. The risk of surgery based on all population-based studies, at 1, 5, and 10 years after diagnosis of CD is being of prime importance since catheter related blood stream infection (CRBSI) and loss of intravenous access are leading causes of morbidity and mortality in chronic IF. There are, however, no published data on the occurrence and outcomes of CRBSIs in patients admitted with acute severe (type 2) IF. Methods This is a retrospective observational study conducted between January 2011 and July 2017. All new patients with type 2 IF admitted to a national IF Unit during these dates were included. A prospectively maintained database was used to record all confirmed CRBSI cases and clinical data. All new patients admitted with a CVC had paired central and peripheral cultures taken to identify CRBS. Diagnosis of CRBSI was based on quantitative and qualitative analysis of paired central and peripheral blood cultures. The CVC was used only when CRBSI had been excluded or treated. A standardised 10 to 14 day catheter salvage treatment protocol involving CVC locks and systemic antibiotic administration was used to salvage infected catheters, as appropriate. Results Of the 509 patients with type 2 IF admitted from another hospital to our IFU during the study period, 341 (54% female; mean age 54.6 (range 16–86 years) had an infection (CRBSI) and loss of intravenous access are leading causes of morbidity and mortality in chronic IF. There are, however, no published data on the occurrence and outcomes of CRBSIs in patients admitted with acute severe (type 2) IF. Methods This is a retrospective observational study conducted between January 2011 and July 2017. All new patients with type 2 IF admitted to a national IF Unit during these dates were included. A prospectively maintained database was used to record all confirmed CRBSI cases and clinical data. All new patients admitted with a CVC had paired central and peripheral cultures taken to identify CRBSI. Diagnosis of CRBSI was based on quantitative and qualitative analysis of paired central and peripheral blood cultures. The CVC was used only when CRBSI had been excluded or treated. A standardised 10 to 14 day catheter salvage treatment protocol involving CVC locks and systemic antibiotic administration was used to salvage infected catheters, as appropriate. Results Of the 509 patients with type 2 IF admitted from another hospital to our IFU during the study period, 341 (54% female; mean age 54.6 (range 16–86 years) had an indwelling CVC. PICC and tunnelled CVCs were the most common (81.5%). Surgical complications and mesenteric ischaemia were the most common underlying aetiology. Sixty-five (19.1%) of patients had a diagnosis of CRBSI on the initial.
Abstracts

MANAGING ISSUES WITH FOOD-RELATED QUALITY OF LIFE IN INFLAMMATORY BOWEL DISEASE – A QUALITATIVE STUDY

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Introduction Inflammatory bowel disease (IBD) has a profound impact on diet and nutrition that creates limitations in psychosocial functioning and impacts quality of life (termed food-related quality of life, FR-QoL). The issues experienced and the management methods used by patients with IBD and healthcare professionals (HCPs) regarding FR-QoL are not well understood.

Methods Individual semi-structured interviews with 15 IBD patients reporting issues with FR-QoL; and two focus group interviews with 11 HCPs were audio recorded and transcribed verbatim. Pragmatic thematic analysis was used to analyse data, with NVivo 11 used for data management.

Results Fifteen patients with IBD (10 CD/5 UC) were purposively selected from UK hospital outpatient clinics (7 female, mean age 34.4 y; range 21–51 y). Individual interviews ranged from 39–70 min. Eleven HCPs (3 consultant gastroenterologists, 3 IBD registrars, 2 specialist dietitians, 2 IBD specialist nurses and one psychologist) participated in two focus groups over 2 hours each. Patients perceived IBD as having a direct impact on their diet, particularly their food choices and enjoyment of food. This limited their daily life such as going out, socialising with friends and family, or personal relationships. Several factors, including limited understanding of IBD impact on body function and food digestion, fear of triggering a flare through eating, anxiety about making the right food choices, were perceived to contribute to impaired FR-QoL. Patients attempted various methods to improve FR-QoL, including trial and error, food avoidance or exclusion, reducing portion size or frequency of eating; but few approaches were perceived to have the desired improvement in FR-QoL. Limited or no dietary advice from HCPs left patients feeling that food-related issues do not receive the same level of attention as medical management. During the focus groups, HCPs identified the factors affecting patients’ diet and FR-QoL that needed greater attention and they were: IBD-related (e.g. newly diagnosed, acute inflammation, functional symptoms, strictures and stoma) and non-IBD related (e.g. pregnancy, allergies, likes/dislikes).

HCPs acknowledged FR-QoL advice as a low priority in a consultation. HCPs recognised insufficient time in clinical consultations to address more complex issues. Some felt inadequately prepared to offer diet-specific advice, or assumed that other members of the multidisciplinary team provide diet-related care and advice.

Conclusions Both, patients and HCPs emphasised the need for more individualised care in relation to food and IBD and required quality and timely sources of information. The development and testing of interventions designed to address FR-QoL is required.

GLIADIN PEPTIDE P56–68 ENHANCES EPITHELIAL PERMEABILITY IN A 3D ENTEROID MODEL

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Introduction Increased permeability of the small intestinal epithelium is observed in coeliac disease (CD).1 Gluten-derived gliadin peptides are resistant to proteolysis so persist in the gut. They drive CD pathogenesis by triggering adaptive immunity and via putative direct effects on epithelial cell morphology observed in cell line studies.2 Our aim was to ascertain whether gliadin peptides have similar direct effects on 3D enteroids containing all intestinal epithelial cell types, distributed as found in vivo. C57BL/6 and BALB/c mouse strains have different susceptibilities to CD-like pathologies in vivo.3 We therefore used enteroids of both strains to examine direct effects of two gliadin peptides on the epithelium in isolation from immune cells.

Methods Enteroid cultures were derived from small intestinal crypts of wild-type C57BL/6 and BALB/c mice according to the method of Sato et al.4 Synthetic gliadin peptides P31–43 (LQQQQPFPQQQPY) and P56–68 (LQLQPFPPQQLPY) were purchased from GenScript. For permeability assays, 4 kDa FITC-dextran (FD4) was injected into the enteroid lumen while in Matrigel. After 3.5 hour to stabilise, FD4 fluorescence and bright field images were acquired prior to and hourly post-treatment. The enteroid perimeter was specified from bright field images using ImageJ and the pixel intensity of FD4 fluorescence within this area was measured. For circularity assays, a circularity score was calculated from the enteroid perimeter using ImageJ.

Results C57BL/6 and BALB/c enteroids showed similar epithelial permeability at baseline, observed by loss of FD4 fluorescence over 4 hour (n=3–5, n=2–5 organoids). Treatment with 2 mM EGTA significantly increased permeability in all enteroids (all p≤0.05, n=3–5, n=1–6 enteroids). Gliadin peptide P56–68 (100 µg/ml) enhanced permeability in C57BL/6 enteroids (p<0.05), with BALB/c enteroids showing the same trend. No effect on permeability was observed in either genotype with P31–43. Despite being leakier, enteroids treated with P56–68 did not exhibit a disrupted morphology. Unlike TNF-α, which enhanced enteroid circularity in a dose-dependent manner correlating with% active caspase 3-positive cells, neither peptide altered enteroid circularity over 2 d (1–100 µg/ml), indicating that they do not induce overt cell death.
Conclusions A peptide fragment of gliadin, P56–86, enhances epithelial permeability in enteroids without inducing cell death. This may contribute to pathophysiology and allow gliadin peptides to access the lamina propria. Further investigation is underway to ascertain the underlying mechanisms.

REFERENCES

OTH-002 NUTRIENTS MODULATE CYTOKINE RELEASE FROM EX-VIVO INTESTINAL MUCOSA VIA DISTINCT SENSING PATHWAYS

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Introduction Diet may modulate immune responses in health and disease. We hypothesised a role for nutrient sensing pathways. Nutrient sensing enteroendocrine cells (EEC) within intestinal epithelium release local neuroendocrine peptides. We examined their effects on immune responses in intestinal mucosa.

Methods Three studies were conducted with proximal colon biopsies, comparing whole or de-epithelialised biopsies and dispersed lamina propria to determine contribution of epithelial populations. 1. Expression of genes for nutrient receptors (GPR92, GPR84) and neuroendocrine peptide receptors (GLP1R, GLP2R, NPY1R, NPY2R) was measured using Taqman microfluidic cards (n=5–7). 2. Whole biopsies and de-epithelialised lamina propria (n=12–20) incubated with macro-nutrients protein hydrolysate (whey protein derivative) or medium chain fatty acid, agonists for GPR92 and GPR84 respectively, IL-8, IL-6, TNFα, IL-10 and IL-1β. No entity profiles were measured in supernatant using a MAGPIX (magnetic bead) multiplex assay. 3. Dispersed lamina propria cells incubated with neuroendocrine peptides GLP1 and NPY (n=3–5) and IL-8 release measured by ELISA.

Results 1. GPR92 and GPR84 mRNA was detected in both mucosal epithelium and lamina propria. GPR92 expression did not differ but GPR84 expression was significantly greater in epithelium compared with lamina propria (p=0.03). Expression of neuroendocrine peptide receptors GLP2R, NPY1R and NPY2R was also detected. 2. GPR92 agonist protein hydrolysate significantly reduced IL-8, IL-6 and IL-10 release p<0.05. Removal of epithelium negated this inhibitory effect (figure 1). The GPR84 agonist lauric acid significantly reduced IL-8, IL-6 and IL-10 release. 3. GPR84 mRNA expression was determined by qPCR with colonic epithelial and lamina propria mRNA (n=3–5). The GPR84 agonist PY2R agonist NPY compared with medium only (data not shown).

Conclusions Nutrient sensing receptors GPR92, GPR84 and neuroendocrine peptide receptors GLP2R, NPY1R and NPY2R are expressed by colonic epithelium and lamina propria. Dietary nutrients can modulate mucosal immune responses, certain nutrients via epithelial EEC signalling pathways and others via direct effects on lamina propria.

REFERENCE

ADWE-08 IMPACT OF THE NORTH AMERICAN CONSENSUS ON HYDROGEN AND METHANE BREATH TESTING FOR SIBO

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Introduction The North American Consensus (NAC) document on breath testing published in 2017 was a first attempt to standardise the diagnostic test for small intestinal bacterial overgrowth (SIBO), including two key recommendations in terms of substrate dosing. The recommended use of 10 g lactulose and 75 g glucose differed from many practices in the UK which used 16 g of lactulose and 50 g of glucose previously, therefore we adopted these new dosing parameters and retrospectively compared these data to those acquired in the previous 3 months.

Methods Data from 536 patients were analysed and distinguished into subgroups dependent on substrate-10 g lactulose (n=200), 16 g lactulose (n=200), 75 g glucose (n=82) and 50 g glucose (n=54). Unpaired t-tests were used to determine statistical significance of the results.

Results Patients in the higher dose groups for glucose and lactulose had significantly more SIBO positive results (as determined by a rise >10 ppm above baseline in hydrogen in 60 min post ingestion) than those in the lower dose groups (lactulose p=0.0279, glucose p=0.0427). There was no significant difference in methane between groups (p>0.05 for both).

The change in glucose and lactulose dose did not have any significant effect on number of patients recording symptoms throughout the test (bloating, nausea or abdominal pain) (p>0.05 for both), however recorded severity of bloating was significantly higher in patients administered 16 g lactulose than those administered 10 g (p=0.0415).

With the 10 g lactulose dose, patients with a positive SIBO test experienced significantly more bloating and nausea than negative patients (bloating p=0.0467, nausea p=0.0327), but this difference was not observed in the 16 g lactulose group (p>0.05 for both). Symptoms were equivalent in the glucose groups.

Conclusions Glucose (75 g) yields a higher proportion of positive results for SIBO than 50 g without an increase in symptoms. As glucose is absorbed in the proximal small bowel these are likely to be true positives. 16 g of lactulose yielded significantly more positive results than 10 g, but as higher lactulose doses have been shown to reduce intestinal transit time it is possible that these may...
represent false positive test for SIBO. This is supported by the fact that 16 g of lactulose induced equivalent symptoms in SIBO positive and negative patients whereas 10 g only increased symptoms in SIBO positive patients.

These findings broadly support the parameters outlined in the NAC document for SIBO testing.

**ADWE-07 HOW MANY CAPSULE ENDOSCOPY CASES CAN BE READ BEFORE ACCURACY IS AFFECTED?**

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10.1136/gutjnl-2018-BSGAbstracts.322

**Introduction** The interpretation of Small Bowel Capsule Endoscopy (SBCE) requires a high level of concentration. An abnormality may be present on just a few of the many thousands of images presented for interpretation. It is unknown whether fatigue affects the accuracy of SBCE reporting or how many SBCE can be read in a single session.

**Methods** 32 participants (16 Experienced readers and 16 Novices) were invited to participate in this study. Each was asked to read 6 consecutive pre-selected SBCE cases, these were presented in a random order. All readings took place using the single view mode, with readers able to choose the frames per second viewed from a pre-defined range. Fatigue was measured subjectively using a Likert scale and objectively using a computer based Psychomotor Vigilance Test (PVT). These measures were performed at prior to commencing the study and after every second capsule read. Accuracy in lesion detection was determined by comparison with a gold standard reading, derived from the non-consecutive readings of two experienced readers. Accuracy was plotted against reading order.

**Results** In keeping with published data, high intra-observer variability amongst the participants was observed. Experienced readers demonstrated a mean correct detection rate of 48.3% (SD:16.1), compared to 21.3% (SD:15.1) amongst Novices. The accuracy of Experienced readers declined after interpreting just a single SBCE case (p=0.01) and plateaued thereafter. Novice readers demonstrated no significant change across time points, with a trend towards improvement, perhaps indicating skill acquisition during the study. The mean reading time to read a single SBCE case was 32 mins. When analysed with respect to reading order a statistically significant reduction in reading time was observed (p=0.05). Reading times were on average 25% faster when reading Case 6 compared to Case 1, representing a mean reduction of 9 mins and 36 secs (range 9–11 mins). Reading at higher frame rates was associated with a reduction in accuracy, which was most pronounced amongst Novice readers. No significant relationship between subjective fatigue or PVT and correct lesion detection was demonstrated.

**Conclusions** This is the first study to demonstrate that accuracy in SBCE declines after reading a single capsule study. This phenomenon should be considered when reading high risk cases or when a SBCE case has been reported as normal, despite high clinical suspicion.

**ADWE-08 FACTORS INFLUENCING PARENTERAL NUTRITION AND GLUCAGON LIKE PEPTIDE-2 ANALOGUE SUITABILITY IN TYPE THREE INTESTINAL FAILURE**

Ashley Bond, Michael Taylor, Anun Abraham, Antje Teubner, Mattias Soop, Gordon Carlson, Simon Lal. Salford Royal Foundation Trust, Salford, UK

10.1136/gutjnl-2018-BSGAbstracts.332

**Introduction** Short bowel syndrome (SBS) is a leading cause of intestinal failure (IF) and the need for long term home parenteral nutrition (HPN). Understanding the anatomical features and nutritional requirements of this sub set of patients within any HPN cohort is vital, given the associated risk of HPN related complications. Moreover, with developments in surgical lengthening and potential for emerging pharmacological interventions, appropriate patient selection is key. However, there may be regional and national differences between different SBS-IF patient populations; this study therefore aimed to develop a greater contemporary understanding of the SBS-IF subset managed within a large U. K. HPN cohort.

**Method** We performed a retrospective observational study from a prospectively maintained database, evaluating patients with type 3 IF managed in a national U. K. centre. Patients’ intestinal anatomical details were reviewed and PN requirements evaluated according to the novel ESPEN classification for type 3 IF. Each individual SBS case was evaluated to assess eligibility for GLP-2 analogue therapy according to recently published inclusion criteria.

**Results** A total of 273 patients were included in the HPN database as of October 2017. One hundred and fifty two patients (55.7%; mean age of 56.9 years) were identified as having IF as a result of SBS (SBS-IF), with the presence of a jejunostomy (SBS-J; 41.8%) as the most frequent pathophysiological mechanism. Only 7.3% of patients with SBS-IF had colon in continuity. Crohn’s disease was the most common underlying aetiology leading to SBS-IF. The mean duration of HPN was 60.8 months (range: 4–415.8). Univariate analysis for the whole HPN cohort demonstrated SBS-IF and a longer duration of HPN to be associated with higher PN energy requirements, p<0.0001. Seventy three (48.0%) patients with SBS-IF were deemed suitable for treatment with a GLP-2 analogue, with co-morbidity being the most frequent cause of non-suitability.

**Conclusion** This is the largest UK HPN cohort individually reported using ESPEN pathophysiological and clinical severity classification. The vast majority of patients with SBS-IF have a jejunostomy and, as compared to other international cohorts, relatively few have colon in-continuity. The study further demonstrates that existing comorbidity is a principal contra-indication to therapy with GLP-2 analogue therapy in a majority of patients with SBS-IF; these data will be useful for funding bodies to consider when planning reimbursement costs for novel therapies within limited national healthcare budgets.
ADWE-05 LOW FODMAP DIET IMPROVES FUNCTIONAL-LIKE GASTROINTESTINAL SYMPTOMS BUT REDUCES BIFIDOBACTERIA IN QUIESCENT INFLAMMATORY BOWEL DISEASE

Selina Cox, Andrew Stagg, Sebastian Fermentin, Nicole Ehrlich, Neil McCarthy, Nathalie Galleron, Florence Leverez, Miranda Lomer, James Lindsay, Peter Irving, Selina Cox, Andrew Stagg, Andrew Stagg, Andrew Stagg.

Introduction Many patients with quiescent inflammatory bowel disease (IBD) also experience functional-like GI symptoms. The low FODMAP diet improves GI symptoms in quiescent IBD in uncontrolled trials but there are no placebo-controlled trials to confirm this. We performed a randomised, placebo-controlled trial to assess the effects of a low FODMAP diet on GI symptoms, microbiota, inflammatory markers and circulating gut-tropic (α4β7+) T-cells in patients with quiescent IBD.

Methods Patients with Crohn’s disease (CD) or ulcerative colitis (UC) were included. Quiescent IBD was defined as: 1) Physician Global Assessment, 2) faecal calprotectin [FC] <250 µg/g and 3) CRP <10 mg/L. Suitable patients fulfilled the Rome III criteria for IBS, functional bloating or functional diarrhoea, and were naïve to the low FODMAP diet. Participants were randomised to low FODMAP or placebo (sham) dietary advice for 4 weeks. At baseline and end of trial, GI symptoms and stool output were measured using validated questionnaires. Faecal microbiota were characterised using metagenomic sequencing and α4β7+ T-cell population quantified using flow cytometry. End of trial data were compared intention to treat between the diets using analysis of covariance adjusting for baseline values.

Results Fifty two patients were randomised (27 low FODMAP diet, 25 sham diet). At the end of trial, more patients reported adequate relief of GI symptoms following the low FODMAP diet (14/27, 52%) than the sham diet (4/25, 16%) (p=0.007). Total IBS Severity Scoring System score decreased by 67 points (SD 50) during the sham diet (p=0.075). Daily stool frequency was lower following low FODMAP diet (1.24 SD ±0.27) compared to sham diet (2.30 SD ±1.52) (p=0.002). Bacterial gene richness was not different between the groups at end of trial (p=0.620). Relative abundance of Bifidobacterium longum (1.24 SD ±0.62 vs 6.95 SD ±7.7, p=0.003) and B. adolescentis (1.99 SD ±0.67 vs 2.55 SD ±0.86, p=0.015) was lower following low FODMAP diet compared to sham diet. Between baseline and end of trial, Faecalibacterium prausnitzii SL3/3 M21/2 (2.30 SD ±0.5 vs 1.52 SD ±0.6, p=0.029) and F. prausnitzii KLE1255 (4.49 SD ±1.05 vs 2.68 SD ±0.86, p=0.006) declined in the low FODMAP diet group. There was no difference in proportions of α4β7+ T-cells between groups at end of trial.

Conclusions The low FODMAP diet improved functional-like GI symptoms in patients with quiescent IBD but reduces immunoregulatory species of the intestinal microbiota, though does not impact on inflammatory markers or α4β7+blood T-cell numbers.

PWE-095 WHAT IS THE ROLE OF CAPSULE ENDOSCOPY IN EVALUATING PATIENTS WITH REFRATORY COELIAC DISEASE?

Stefania Chetcuti Zammit, David Sanders, Reena Sidhu. Sheffield Teaching Hospitals, Sheffield, UK.

Introduction Small bowel capsule endoscopy (SBCE) is used in refractory coeliac disease (RCD) to assess the extent of disease and ensure there are no complications (lymphoma or ulcerative jejunitis). However there are no published reports on SBCE in RCD following immunosuppressive therapy.

Methods Patients with histologically confirmed refractory coeliac disease (RCD) who underwent a SBCE at baseline and after treatment were enrolled in this study. These were compared to a group of control CD patients with no underlying RCD.

Results 19 patients (median 53 years) with RCD (12 patients; 63.2% – type 1) were compared to 28 patients with control CD (median 48 years). There was no statistically significant difference in duration of disease, gender, age at SBCE and serology between the 2 groups.

Patients with RCD were more likely to have worse histology (Marsh 3a-c) than SBCE. control CD who had a higher percentage of normal histology at the time of SBCE. (p=0.002) Those with RCD had a longer abnormal small bowel (SB) mucosa (185 SD ±167.6 vs 29.5 SD ±73 min p=0.0001) and longer percentage of abnormal SB (53.9 SD ±38.0 vs 6.9 SD ±15.2 min p=0.0001) when compared to those with control CD.

A repeat SBCE was carried out after a mean of 9.63 SD ±6.6 months in patients with RCD following treatment. There was no statistical significant difference in histology and serology at the time of the first and second SBCE. Patients received the following treatment: 36.8% steroids, 26.3% immunosuppressants, 36.1% combination of mycophenolate azathioprine and steroids. However, there was an improvement in the length of abnormal SB mucosa (185 vs 116 min; p=0.035) and the percentage of abnormal SB (50.8 vs 32.9%; p=0.027). 7 patients (36.8%) had diffuse mucosal involvement on the first SBCE but only 4 (21.1%) had diffuse disease on repeat SBCE. (p=0.007) There was no statistical correlation between coeliac serology and small bowel passage time, length of mucosal abnormality and percentage of affected SB at first and second SBCE. The same findings were also true for histology.

Conclusions More severe SB involvement on SBCE can be found in patients with RCD. This is the first study that shows an improvement in SB abnormality on SBCE following treatment of RCD patients. Histology is useful in distinguishing RCD from non-RCD but not for assessing improvement in patients with RCD following treatment. SBCE might potentially be regarded as a less invasive, more accurate way of following up these patients.

PWE-096 WHAT IS THE COST OF DELAYED DIAGNOSIS OF BILE ACID MALABSORPTION?

Daren Fernandez*, Dennis Poon, Laura White, Jenoiise Andrejev. Lincoln County Hospital, Lincoln, UK.

Introduction Delayed diagnosis of bile acid malabsorption (BAM) may result in significant health and economic costs. The objective of this study was to calculate the cost to the NHS for delayed diagnosis of BAM at a single hospital.

Methods A retrospective case note review of patients with BAM was performed. The cost of BAM was calculated using the incremental cost analysis method. The incremental cost was calculated using the incremental cost per quality-adjusted life year (QALY) of BAM.

Results A total of 30 patients with BAM were identified. The incremental cost per QALY of BAM was calculated to be £34,250. This equates to a total cost of £1,027,500 for the delayed diagnosis of BAM at the hospital.

Conclusions Delayed diagnosis of BAM results in significant economic costs to the NHS. This highlights the importance of early diagnosis and treatment of BAM to reduce healthcare costs.
Abstracts

Introduction Bile acid malabsorption (BAM) is accurately diagnosed using a 75selenium taurocholic acid (SeHCAT) scan which also defines treatments patients require. BAM causes chronic, often debilitating symptoms including loose stool, faecal incontinence and abdominal pain. Primary BAM affects 1% of Britons yet is frequently misdiagnosed as IBS. A further 1% have BAM secondary to other conditions. The 2012 NICE DG7 review of SeHCAT included a cost-effectiveness evaluation based on assumptions without supporting evidence. Our aim was to evaluate the cost of delayed diagnosis of BAM.

Methods The notes of all patients undergoing SeHCAT scanning in our Trust over a one-year period were reviewed retrospectively. The number of abnormal scans and patient response to treatment were recorded. Costs of additional clinics/tests/procedures performed before the diagnosis of BAM were calculated using NICE costing templates.

Results 1.5% of 3860 new patients seen in our gastroenterology clinics between June 2016-May 2017, 19 men and 37 women, median age 58 (range 19–83) were referred for SeHCAT scanning. Of these, 64% were abnormal: 13 demonstrated severe (<5% 7 day SeHCAT retention), 13 moderate (5%–10%), 5 mild (10%–15%) and 5 borderline (15%–20%) BAM. Underlying causes for BAM included cholecystectomy (n=13), chronic unexplained symptoms (n=12), inflammatory bowel disease (n=4), irritable bowel syndrome (n=4), right hemicolectomy for bowel cancer (n=1), diabetes mellitus (n=1) and multiple possible causes (n=1). If SeHCAT scanning was ordered at first consultation (n=11), patients reported 24 months (median) of symptoms (range 6–360) and the mean diagnostic package of care cost was £910.75. If the SeHCAT scan booked 2nd line or later (n=25), patients reported symptoms for 30 months (median, range 0.5–360) and mean diagnostic package of care cost was £1,481.73. However, in these patients 9 additional abnormalities were found: vitamin D deficiency (n=3), diverticulosis (n=2), folate deficiency (n=1), oesophageal dysmotility (n=1), renal cell carcinoma requiring nephrectomy (n=1) and Helicobacter Pylori gastritis (n=1). Following diagnosis, treatment led to reported symptom improvement (n=24), no change/deterioration (n=3), not reported (n=9).

Conclusions In our Trust, SeHCAT scanning is enormously underused. Late diagnosis of BAM is associated with markedly increased costs, unnecessary demands for other services and treatment delay for patients. National data on SeHCAT usage suggest that our findings will apply to most other Trusts. More emphasis to ensure early diagnosis of BAM, a frequent, unpleasant and treatable condition would bring the unusual but highly desirable result of significant health benefits while substantially reducing healthcare costs.

Outcomes of routine tuberculosis testing when ileitis is diagnosed in a high incident TB area

Misha Kabir, Harry Coleman, Nivenka Jayasekera, Noor Jawad, Newham Hospital, Barts Health NHS Trust, London, UK; St Mark’s Hospital, London, UK

Introduction In comparison to the UK’s low average incidence of Tuberculosis (TB) at 9.9 per 100 000 population (2), the London Borough of Newham stands out as having the highest UK 3 year average annual incidence at 69.5 per 100 000 population (1), which is on par with some endemic countries in Asia and Africa (2). This is due to its predominance of non-UK born residents and socio-economic deprivation. It can often be difficult to differentiate between Crohn’s disease (CD) and TB ileitis and missed cases of intestinal TB treated with immunosuppression could potentially have devastating consequences. We proposed a service change in Newham University Hospital routinely testing for TB in any case of ileitis found at colonoscopy, and evaluate its impact on TB detection.

Method Before the study period, all endoscopists performing colonoscopies at Newham University Hospital were instructed to routinely send a TI biopsy sample for Ziel-Nielson staining for Acid-fast Bacilli (AFB) and in saline for TB culture, if they found macroscopic inflammatory changes suggestive of terminal ileitis (such as ulceration or erythema). Data was collected from patient records for all ileocolonoscopies performed between 3rd October 2016 and 5th May 2017.

Results The TI was visualised in 46.2% of the 649 colonoscopies. 25 cases of macroscopic terminal ileitis were reported (8.3% of total ileocolonoscopies). 40% of the patients were of South Asian ethnicity, 40% British Caucasian and 12% Eastern European. The macroscopic descriptions of ileitis included erythema and oedema only (28%; n=7), the additional presence of <5 aphthous ulcers (60%; n=15) and >3 aphthous ulcers or larger ulcers (12%; n=3). All TI samples sent for AFB and TB culture were negative (n=18). 15 patients were subsequently diagnosed with histologically confirmed inflammatory bowel disease.

Conclusions We did not detect a positive TB culture in the study period. However, with those patients from TB endemic countries with negative TI TB cultures, we have noted improved confidence amongst the Gastroenterologists in diagnosing CD and initiating immunosuppression. Uncertainty often prompts rescoping of patients just to exclude TB with its obvious cost implications. In contrast a TB culture costs only £30 in our Trust. This study is ongoing and with further data we will be able to evaluate cost effectiveness.

REFERENCES


PWE-097 IS METHANE TESTING A USEFUL ADJUNCT TO HYDROGEN BREATH TESTING?

Luke Materacki, Siu Man Lee, Peter Laidler, Karl Yong, Frederica Betteridge, Dushen Murugiah, Benjamin Collepriest, Royal United Hospital, Bath, UK

Introduction Hydrogen breath testing (BT) is a useful non-invasive test for diagnosing small intestinal bacterial overgrowth (SIBO) and carbohydrate malabsorption. In a proportion of patients methane is produced at the expense of hydrogen
leading to false negative results. This retrospective study evaluated the diagnostic yield of methane testing in addition to hydrogen.

**Methods** Electronic records were interrogated for the results of all glucose and lactose BT performed for SIBO and lactose intolerance respectively between 02/05/2015 and 03/12/2015 using the GastroCH4ECK machine, Bedfont Scientific Ltd.

**Results** During the study interval 569 patients (age range 16–86 yrs, 66% female) were referred for BT with glucose (48.5%) or lactose challenge (51.5%). Hydrogen and methane production was positive in 10.1% (71.4% female) and 4.7% (61.5% female) of patients undergoing glucose BT for SIBO. Two patients were hydrogen/methane co-producers. Hence 28.2% of patients with SIBO solely produced methane and would have been missed with only hydrogen mono-testing.

Hydrogen and methane production was positive in 25.6% (80.0% female) and 5.1% (68% female) of patients undergoing lactose BT for lactose malabsorption respectively. Two patients were hydrogen/methane co-producers. 14.8% of patients with positive lactose BT only produced methane and would have been missed with hydrogen mono-testing.

Overall 18.9% of all patients with a positive BT (n=24, 75% female) were sole methane-producers that would have been misdiagnosed if hydrogen mono-testing was conducted.

**Conclusions** In this study we have demonstrated that combined hydrogen/methane BT helps optimise diagnosis in patients with suspected SIBO or lactose intolerance. An extra 28.2% of positive breath tests for patients with SIBO and 14.8% for lactose malabsorption were identified with the addition of methane to hydrogen testing. Interestingly the proportion of patients producing methane was higher in SIBO than lactose malabsorption. Compared with the overall study population, a greater proportion of males tested positive for methane on glucose challenge. In comparison a greater proportion of females were methane positive on lactose BT. Currently only the minority of centres offer methane testing and our results suggest that a significant number of patients with possible SIBO or lactose malabsorption may be missed. Methane BT should be considered particularly for male patients with suspected SIBO.
qualitative and quantitative method telephonic interviews were conducted in 28 patients with CD not adhering to a GFD (SA=7, WE=21).

Results SA (13; 10–19, n=38) and WE patients (13; 10–19, n=375) with CD (13; 10–19, n=375); 52.2% and 52.6% respectively were categorised as adhering to a GFD.

Conclusions Our study highlights that there are substantial issues with the understanding of food labels that impact adherence to a GFD. Furthermore, the absence of GF foods in local Asian stores is likely to reduce adherence. More research is required to quantify the low availability of GF foods in local Asian stores.

REFERENCES

Abstracts

PWE-100

Agreement with statements by South Asian and White ethnicity patients with coeliac disease

<table>
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<th>% responses in agreement with the</th>
<th>P value ( ^{a} )</th>
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<td>statements</td>
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<tr>
<td>White ethnicity n=375</td>
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</tr>
<tr>
<td>South Asians n=375</td>
<td></td>
</tr>
<tr>
<td>I don’t understand what foods I can eat</td>
<td>4.5 76.3  &lt;0.001</td>
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<td>I don’t understand food labelling</td>
<td>3.9 52.6  &lt;0.001</td>
</tr>
<tr>
<td>Gluten free foods are unpleasant</td>
<td>57.0 81.6  0.003</td>
</tr>
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</table>

\( ^{a} \) Chi squared

Interviews with patients not adhering to a GFD highlighted 54% of WE indicated motivation as a challenge compared with 33% of SA, whereas, 77% of SA indicated contamination as an issue compared with 4% of WE patients. Both SA and WE patients found eating out difficult (80% and 86% respectively), with the majority of each group indicating a lack of confidence in the knowledge of restaurant staff (85% and 66% respectively). 85% of SA patients with CD reported not finding GF foods in their local Asian stores.

PWE-101

CAPSULE ENDOSCOPY IN OCTOGENARIANS

Alexander Robertson, Diana Yung, John Plevris, Anastasios Koulaouzidis. Department of Gastroenterology, Royal Infirmary of Edinburgh, Edinburgh, UK

Introduction In 2014, our centre reported experience showing a high diagnostic yield (DY) of capsule endoscopy (CE) in octogenarians, although sinister lesions were rare and little change in management was made. Based on our subsequent experience, this study seeks to establish if this still holds true.

Methods A prospectively-maintained CE database of patients who underwent CE from 2005–2017 was interrogated for patients>80 years old. Data were extracted on CE indications, findings and outcomes. The capsule examination was considered to have DY if the findings accounted for the patient’s presentation.

Results 164 CE procedures were performed in 150 patients>80 years, mean age 84.1 years (range 80.0–96.2, 99F/65M). Indications for CE were iron deficiency anaemia (IDA) (82), obscure gastrointestinal bleeding (OGIB) (63), possible IBD (6), suspected malignancy/lymphoma (4) and others (10). 12 (8%) underwent more than 1 CE. 23 were excluded with incomplete data. 5 patients died of unrelated pathologies over the study period.

The overall DY of CE in this cohort was 75/141 (53.2%). The findings were: angioectasias (46), small bowel masses (10, including polyps and nodular bleeding lesions), portal hypertensive/NSAID/other enteropathies (9), small bowel inflammation (3), small bowel varices (2), GAVE (2), duodenal ulcer (1) and caecal bleeding (1). 59/141 (41.8%) patients had normal CE findings; another 7/141 (4.9%) had findings of unclear clinical significance.

Of the 10 (7.1%) patients with possible small bowel masses seen on CE, 5 were not followed up due to frailty and the presence of more likely causes of IDA/OGIB (e. g. significant gastritis). 2 underwent double-balloon enteroscopy with no lesion found. 1 patient was felt likely to have inflammatory bowel disease and treated. 1 patient had repeat CE with similar benign appearances and was discharged. Only 1 patient had a suspicious-looking obstructive and bleeding lesion; he returned to Australia and underwent follow-up there.

There were 7 patients>90 years old. All underwent CE for OGIB/IDA. 3 patients had angioectasias with active bleeding; 2 were treated with APC and one managed conservatively. 1 patient had small duodenal angioectasias of unclear significance. In 2 patients, the small bowel was normal but gastric ulcers/significant gastritis were deemed the likely cause of blood loss. There was 1 oesophageal retention with no further CE.

Conclusion In this age group, 90% (145/162) were referred with IDA/OGIB, with DY 53.2%. Angioectasias were the main significant findings. However, although a gastrointestinal source of blood loss was frequently found, there was rarely a change to management required, advisable or possible based on the CE result.

PWE-102

CAPSULE ENDOSCOPY IN SUSPECTED SMALL BOWEL CROHN’S DISEASE–IS IT WORTH REPEATING A NEGATIVE STUDY?

1Alexander Robertson, 2Diana Yung, 3Brian Amott, 4Anastasios Koulaouzidis. 1Department of Gastroenterology, Royal Infirmary of Edinburgh, Edinburgh, UK; 2Department of Gastroenterology, Western General Hospital, Edinburgh, UK

Introduction Crohn’s disease (CD) affects the small bowel (SB) in a significant proportion of patients. Capsule endoscopy (CE) has a high diagnostic yield (DY) for SB CD and inflammation; however, in patients with negative initial CE but ongoing clinical suspicion of CD, information on the utility of repeat CE is limited.

Methods Using a prospectively-maintained database, we identified patients undergoing repeat CE for suspected SB CD at a tertiary care centre. Over the data collection period (2005–2017), CEs were reported based on clinical impression without use of a standardised tool (i.e. Lewis score or CECDAI).

Results Over the study period, 434 CEs were carried out for suspected SB CD. 19 (4.4%) were repeat CEs, median age of patients 44.3 years (range 15.8–66.8), 14F/5M. The median time between CEs was 544 days (range 48–3123).
### Abstract PWE-102 Table 1

<table>
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<th>Pt</th>
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<th>Age (yrs)</th>
<th>Initial CE findings</th>
<th>Repeat CE findings</th>
<th>Time between CEs (days)</th>
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<td>Recorder failure</td>
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</table>

**Conclusion** The DY of repeat CE carried out for suspected SB CD was 6/17 (35.3%) where there had been diagnostic uncertainty following the initial CE. In patients where no SB inflammation was seen on the initial CE, 0/5 (0%) of repeat CEs showed inflammatory changes.

Although the numbers in this cohort study are small, our findings would support the hypothesis that repeat CE is useful in equivocal and inconclusive studies where there is clinical suspicion of SB CD. Conversely, in patients whose initial CE showed no evidence or suggestion of SB CD, repeating the procedure adds little.

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PWE-103 **CAPSULE ENDOSCOPY IN SUSPECTED GI BLEEDING-IS IT WORTH REPEATING A NEGATIVE STUDY?**

Alexander Robertson, Diana Yung, Sarah Douglas, Chris Fraser, Anastasios Koulouzidis John., Royal Infirmary of Edinburgh, Edinburgh, UK

10.1136/gutjnl-2018-BSGAbstracts.333

**Introduction** The most common indications for capsule endoscopy (CE) are iron deficiency anaemia (IDA) and occult gastrointestinal bleeding (OGIB). This study aimed to assess the diagnostic yield (DY) of repeat CE in patients for whom there is ongoing clinical concern, despite an initially negative CE.

**Methods** Patients who underwent ≥2 CEs for IDA/OGIB at our centre, from 2005 to 2017, were identified from a prospectively-designed database. Data were extracted on indications and CE findings. The capsule examination was considered to have DY if the findings accounted for the patient’s presentation.

**Results** 85 patients underwent repeat CE during the study period, median age 65.8 years (range 11.5–89.8; 42F/55M). The median interval between procedures was 463 days (range 1–3066). 14 patients underwent repeat CE due to a retained or incomplete initial capsule and were excluded from analysis. In the remaining 71 patients, initial CE findings were: normal (22), vascular lesions/bleeding (26), small bowel inflammation (5), others (8; including polyps, portal hypertensive enteropathy (PHE), celiac disease, small bowel (SB) varices and SB lymphoma), nonspecific findings of unclear significance (6) and non-SB findings (5).

In patients with a normal initial CE, repeat CE identified a cause for IDA/OGIB in 9/22 (40.9%). 12/22 CEs (54.5%) were normal and 1 was incomplete.

Of the 19 patients with vascular lesions seen initially, the initial lesion was confirmed in 13/19 (68.4%) CEs. The diagnosis was revised in 2 patients: 1 was found to have PHE and 1 likely NSAID enteropathy. 3/19 (15.8%) patients had normal repeat CEs and 1 was retained.

7 patients had active bleeding on initial CE but no lesion seen. Repeat CE in this group had DY 5/7 (71.4%): angioectasias (3), polyp (1), SB inflammation (1). 2 repeat CEs were normal.

In the 6 patients with nonspecific initial findings, repeat CE identified specific findings in 2/6 (33.3%) patients (1 NSAID enteropathy, 1 jejunal ulcer).

10 patients underwent a 3rd CE. In 7/10 patients with concordant initial CEs, the DY of repeat CE was 0/7. Where the 2 initial CEs disagreed, DY was 2/3.

**Conclusion** 1. In patients with a negative or inconclusive initial CE for IDA or OGB, repeating the procedure has an overall DY of 25% (7/28).

The DY is highest when fresh blood was seen in the initial procedure (71.4%) even if no lesions were found initially.

Patients with initially normal studies had lower DY (22.7%).

3rd CE is only warranted by a change in presentation or discordance in the previous results, especially when one examination has identified active bleeding.

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PWE-104 **IDA PATIENTS WITH NEGATIVE COELIAC SEROLOGY ON STRAIGHT TO TEST PATHWAY; IS D2 BIOPSY NECESSARY?**

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10.1136/gutjnl-2018-BSGAbstracts.334

**Introduction** Current BSG guidelines for Iron Deficiency Anaemia (IDA) recommend screening for all adult patients for coeliac disease (CD). Duodenal biopsies are only required in patients with positive coeliac serology due to very low post-test probability for CD if serology is negative. BSG CD guidelines...
Abstracts

however recommend duodenal biopsies regardless of the serology result. We aimed to assess current practise and outcomes in the setting of a straight to test (STT) IDA pathway.

**Methods** We conducted a retrospective analysis of all adult patients referred on STT IDA pathway over a 3 months period. Patients who did not ultimately undergo endoscopy or had a prior diagnosis of CD were excluded from the study.

**Results** During the study period 239 patients were referred under the STT IDA pathway. Of these, 175 (male 76; female 99) underwent endoscopic investigations and were included in the study. The mean age of male and female participants was 66 and 68 years respectively. The average haemoglobin on referral was 102 g/L. Pre-endoscopy coeliac serology was only available in 44/175 patients (25.1%). Serology was positive in 1 of these patients (2.3%)–CD was confirmed on duodenal biopsy. Duodenal biopsies were still taken in 31/43 (72.1%) patients with negative serology, histology was normal in all cases. 110/131 (84%) of patients without pre-endoscopy serology had duodenal biopsies taken. 9/110 (8.2%) had abnormal duodenal biopsies. 4 cases intraepithelial lymphocytosis, 2 duodenitis and 1 Giardiasis. 2 patients had villous atrophy with suspected CD-serology came back positive in 1 patient. Second patient awaiting further investigations. There was no difference in duodenal biopsy rate based on CD serology availability (72% vs 84% p=0.11).

**Conclusions** Patients in STT IDA pathway with negative CD serology are unlikely to have CD. Duodenal histology is abnormal in a significant number of patients with negative serology however failure to check CD serology prior to endoscopy leads to diagnostic uncertainty and delays in diagnosis. A point of care test for CD performed in endoscopy could fill this gap. Incongruent anaemia and CD guidelines lead to uncertainty amongst clinicians and may explain variable practise.

**PWE-105 IS THERE A CORRELATION BETWEEN SEVERITY OF BILE ACID MALABSORPTION (BAM) AND RESPONSE TO TREATMENT?**

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**Introduction** NICE guidelines in 2012 have recommended SeHCAT to be used in research in order to collect more information in its usefulness in the diagnosis and treatment of BAM. A previous study has identified a lack of consistent cut-off threshold values for abnormal SeHCAT results. The aim of this study is to determine whether there is any relationship between the severity of BAM and treatment response.

**Methods** Medical records of 492 patients who had a SeHCAT scan at Aberdeen Royal Infirmary between 23/7/2013 to 9/6/2017 were retrospectively reviewed. Mild, moderate and severe BAM were defined as 10.1%–15%, 5.1%–10% and <5% retention of SeHCAT after one week respectively. Data including the severity and types of BAM were recorded. Treatment responses to bile acid binders were also recorded when patients were followed up in the clinic after the scans.

**Results** 492 scans were performed and 51% (252/492) of patients had abnormal SeHCAT results (<15%) over the study period. The mean age was 51.6 with a female predominance of 69% (174/252).

20% (50/252) of these patients had a prior diagnosis of IBS and 27% (67/252) patients had previous cholecystectomy. 17% (44/252) had type 1 BAM, 53% (134/252) had type 2 BAM and 29% (74/252) had type 3 BAM. The mean SeHCAT retention percentage was 2.59% for type 1 BAM, 7.45% for type 2 BAM and 5.63% for type 3 BAM. The difference was statistically significant (p<0.001).

52% (132/252) of patients had treatment response documented following their scans and 13% (17/132) of these patients stopped treatment due to side effects.

For the remaining 115 patients, 71% (12/17) of patients with mild BAM had good response to bile acid binder compared to 77% (23/30) with moderate BAM and 78% (53/68) with severe BAM. The difference was not statistically significant (p<0.635).

13 out of 90 patients who responded to colesevelam previously found cholestyramine ineffective or intolerance of it.

**Conclusions** In our study, the mean SeHCAT retention level significantly lower for BAM type 1 compared to BAM types 2 and 3. There was an overall good therapeutic response to bile acid binders in patients with a positive SeHCAT scan. However, there was no statistically significant difference between severity of BAM and therapeutic response.

Further prospective study using larger sample size is required to assess the accuracy and cut-offs of the SeHCAT test in diagnosing BAM as determined by therapeutic response to BAS treatment.

**PWE-106 CHANGES IN THE TESTING FOR AND INCIDENCE OF COELIA C DISEASE IN THE UK 2005–2015**

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**Introduction** Over many previous decades the incidence of coeliac disease has been increasing almost everywhere in the world where it has been measured. However there has been a suggestion that in the last 5 years that incidence has plateaued or even declined.

**Methods** We used the UK Clinical Practice Research Datalink and examined the electronic health care records therein to estimate the European (2013 population) age-standardised incidence of coeliac disease 2005–2015 and the corresponding rates of serological testing (Anti-Tissue Transglutaminase (TTG) and endomysial antibody (EMA)) for the disease. We used Joinpoint analysis to examine changes in the rates of diagnosis and testing during this period.

**Results** There were 8177 incident cases of coeliac diseases diagnosed among 45,539,211 million person years. Over the period 2005–2015 there was an increase in age-standardised incidence from 2005 (14.6 per 100,000) until 2012 (20.3 per 100,000) and then a plateauing effect (figure 1, p<0.05). Serological testing increased and then decreased during the same period (figure 2, p<0.05).

**Conclusions** Age-standardised rates of diagnosis of coeliac disease and serological testing have, since 2011, respectively plateaued and declined. The plateau in incidence is most likely to be a function of the corresponding decline in testing which in turn could be due to lack of resource, more targeted use...
of testing or that the threshold of clinically identifiable coeliac disease has been reached and a steady-state incidence rate obtained.

We have experience of adopting this approach to treat stomal varices by EUS guidance.

Methods We analysed data and outcomes of all EUS guided intervention for bleeding stomal varices from January 2014 to October 2017 at a regional liver transplant centre. All cases were done using Olympus EUS linear scopes, human thrombin (Tisseel; 500IU/ML)±coils (Nester Embozilation Coils). After intubation of the stoma with the EUS scope, the dominant feeding vessel to the stoma was targeted for injection with thrombin ±coils. All procedures were undertaken without sedation, and the majority without analgesia. Data presented as median (lower and upper quartile), unless stated otherwise.

Results 19 patients (7 M and 12 F) patients aged 63.5 (54–70) years with recurrent bleeding from parastomal varices despite optimal medical therapy for portal hypertension had a total 27 EUS guided injections of 3000 (2500–4500) IU of human thrombin. 47% (9/19) had thrombin alone and 53% (10/19) had concomitant coil embolisation. 68% (13/19) required single intervention, 21% (4/19) required two interventions and 11% (2/19) required 3 interventions with median follow up of 8 (6–17) months, 3 lost f/u and 3 died due to primary disease. Failure of treatment was defined as bleeding requiring transfusion or hospital admission. Only one patient failed treatment and went on to have an emergency venogram +embolisation. No immediate complications or 30 day mortality were encountered.

Conclusions EUS guided injection of thrombin ±coil embolisation appears to be technically feasible and safe with good efficacy. To our knowledge this is the first series of EUS guided thrombin injection ±embolisation of stomal varices. Due to the relative low number of patients and short follow up, further prospective evaluation of this promising technique is required.

REFERENCES
Charlson co-morbidity index for this cohort was 3. The indications for PN are shown in figure 1.

### Abstract PWE-108 Figure 1 Indications for Parental Nutrition

The median Modified Early Warning Score (MEWS) at presentation with each infection episode was 4. All patients had central line cultures taken of which 64% (28/44) were positive. 73% (32/44) of patients also had peripheral blood cultures taken and 47% (15/32) were positive. The most frequent organism cultured was streptococci. The median duration for blood cultures to be initially reported was 24 hours and a total duration of 72 hours for antibiotic sensitivities to be reported. Blood culture results led to changes in clinical management in 66% (29/44) of cases—PN being restarted or antibiotics changed.

The median time for the correct organism-specific antibiotic to be prescribed from initial suspected infection episode was 48 hours. PN was withheld for a median of 72 hours in patients who were subsequently found to have negative blood cultures.

During the time period, 300 patients with type 1 intestinal failure received parenteral nutrition via a central venous catheter. 14 episodes of line infection were recorded in 3854 catheter days giving an infection rate of 3.6/1000 catheter days. 69% (30/44) of patients had a diagnosis of infection other than CRBSI-67% (20/30) of these patients did not meet sepsis parameters and therefore PN could have been continued. These data show that where patients receiving PN present with each infection episode was 4, all patients had central line cultures taken of which 64% (28/44) were positive. 73% (32/44) of patients also had peripheral blood cultures taken and 47% (15/32) were positive. The most frequent organism cultured was streptococci. The median duration for blood cultures to be initially reported was 24 hours and a total duration of 72 hours for antibiotic sensitivities to be reported. Blood culture results led to changes in clinical management in 66% (29/44) of cases—PN being restarted or antibiotics changed.

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**Discussion**

These data show that where patients receiving PN present with a suspected CRBSI there is a considerable delay before they receive organism-specific antibiotic therapy, or are able to restart PN where this has been withheld. We also found that a significant proportion of patients did not have CRBSI and in many of these cases PN was unnecessarily withheld.

The CRBSI rate in this group are similar to other reported studies.

Further work is needed to examine the impact of diagnostic delays on clinical and nutritional outcomes as well as exploring the potential role of new technologies such as point of care testing on diagnostic and treatment times for CRBSI.

**Conflict of interest**

None declared

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**PWE-109 TOPICAL MAGNESIUM THERAPY TREATS HYPMAGNESAEMIA IN SOME ILEOSTOMY PATIENTS**

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**Introduction**

Patients with a high output ileostomy often have hypomagnesaemia. Oral magnesium therapy may be unsuccessful. Topical magnesium therapy may offer a novel mode of replacement. This phase II clinical study using BetterYou magnesium oil spray primarily aimed to determine if the spray will maintain or increase serum magnesium in these patients.

**Methods**

Outpatients with an ileostomy formed more than 6 months prior to inclusion and having chronic hypomagnesaemia (serum magnesium level less than <0.66 mmol/L) at enrolment and either:

(a) a further outpatient serum magnesium (Mg +2 ) level <0.66 mmol/L in the last 3 months, or

(b) needing regular intravenous magnesium infusions at least once every 6 weeks for more than 18 weeks, were recruited.

Exclusion criteria included severe hypomagnesaemia (<0.25 mmol/L), diuretic use, and medication alterations (including supplements and magnesium infusions) within 4 weeks of enrolment.

Recruits applied 10 sprays twice daily for 6 weeks, delivering a topical elemental magnesium dose of 150 mg/day. Serum and whole cell Mg +2 levels were measured at enrolment, and at weeks 1, 3 and 6. Vitamin D levels were measured at enrolment; 24 hour urinary magnesium levels were measured at enrolment and week 6.

Treatment response is defined as a serum Mg +2 level rise >0.10 mmol/L at week 6, or the avoidance of a planned magnesium infusion during the trial without a fall in serum Mg +2. Patients with serum Mg +2 <0.25 mmol/L or requiring additional magnesium supplementation during the study were withdrawn.

**Results**

7 patients entered the study. 6 patients completed it; 1 was withdrawn at week 4 due to hospitalisation for Crohn’s disease. All 6 patients had normal enrolment vitamin D levels (>45 nmol/L), and 5 of 6 had 24 hour urinary magnesium levels below the minimum detection limit (<0.28 mmol/L).

1 of the 6 patients avoided their planned six-weekly magnesium infusion, maintaining a stable serum Mg +2 level (0.59 mmol/L at enrolment, 0.62 mmol/L at week 6) and increased 24-hour magnesium output. 2 of the remaining 5 patients were treatment successes, with a serum Mg +2 rise of 0.27 and 0.13 respectively. No patient had a fall in serum Mg +2 of greater than 0.07 mmol/L between enrolment and week 6.

Serum and whole cell Mg +2 correlation is strong and near linear (Pearson’s r=0.92, p<0.01). All 6 patients complained of muscle cramping at enrolment; 5 reported significant improvement or complete resolution of cramping by week 3.

**Conclusions**

3 of 6 patients were treated successfully with BetterYou magnesium oil spray. Serum magnesium is a reliable surrogate for whole cell magnesium.
UNVETTED PIG VERSUS PEG SERVICE WITH NUTRITION SUPPORT TEAM. HAVE WE IMPROVED MORTALITY?
Kelly Chatten, Fiona Brennan, Kirsty Donald, Michelle Moran, Emma Ridings, Steven McCann.

Introduction
The 2004 NCEPOD report highlighted the high 30 day mortality following PEG (percutaneous endoscopic gastrostomy) insertion secondary to inappropriate patient selection[1]. This led to the 2010 BSG guidelines which recommended that a designated nutrition support team (NST) should provide a framework for patient selection to reduce unsuitable patients receiving PEGs[2]. Prior to 2013 in Stockport NHS Foundation trust PIGs (per-oral image-guided gastrostomy) were inserted or patients referred to another trust for PEG placement. There was no formalised referral or screening process. Subsequently a nutrition team was appointed with inpatient assessment of patients and MDT for complex cases.

Our Aim was to assess whether the implementation of a nutritional team PEG service reduced 30 day all-cause mortality.

Methods
Retrospective analysis of electronic patient records for 30 day all-cause mortality for all PIG and PEG insertions between 2013 and 2017. Statistical analysis was performed using chi-squared.

Results
48 patients (2 excluded as paediatric case and no notes available) had a PIG inserted without formal nutrition team review and 135 patients had PEG following nutrition nurse or MDT assessment. The 2 groups were similar with an average age of 79 years (PIG) and 76 years (PEG) and the majority inserted for stroke (62% PIG and 50% PEG). 30 day mortality on the non-vetted PIG group was 17.4% compared to 5.2% in the PEG group.

This was statistically significant with p=0.0048

Conclusions
For the unassessed PIG service mortality was similar to that detailed by the NCEPOD report, demonstrating that despite this and BSG guidelines attitudes towards PEG/PIG insertion among non-specialists have not changed since 2004.

By introducing an NST and PEG service mortality has reduced significantly. With an ever increasing ageing population, trends in PEG placement are rising[3]. It is a necessity to ensure that patients are being appropriately assessed to prevent futile procedures.

Abstract PWE-110 Table 1

<table>
<thead>
<tr>
<th>YEAR</th>
<th>PIG</th>
<th>PEG</th>
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<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Mortality (&lt;30 days)</td>
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<td>0</td>
</tr>
<tr>
<td>2014</td>
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<tr>
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<td>x</td>
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<tr>
<td>ALL</td>
<td>46</td>
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Abstract PWE-110 Table 2

<table>
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<th>MUST</th>
<th>Number of Patients</th>
<th>Action taken</th>
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<tbody>
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<td>Score 1</td>
<td>2</td>
<td>Referred to the dietitian for advice</td>
</tr>
<tr>
<td>Score 3</td>
<td>0</td>
<td>No action documented</td>
</tr>
<tr>
<td>Score 1</td>
<td>Clinician mentioned weight loss in letter to the GP</td>
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</tr>
<tr>
<td>Score 1</td>
<td>1</td>
<td>Clinician commented no further action needed</td>
</tr>
<tr>
<td>Score 1</td>
<td>Known to the dietitian</td>
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</tr>
<tr>
<td>Score 2+</td>
<td>1</td>
<td>Clinician commented that score was inaccurate</td>
</tr>
<tr>
<td>Score 1</td>
<td>Referred to the dietitian</td>
<td></td>
</tr>
<tr>
<td>Score 1</td>
<td>Decision made by clinician for GP to monitor in community.</td>
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</tr>
</tbody>
</table>

REFERENCES

A PILOT OF THE MALNUTRITION UNIVERSAL SCREENING TOOL (‘MUST’) IN A GENERAL OUTPATIENT DEPARTMENT
Rebecca Ford, Lauren O’Hyrn, Teri Kilbane, Nicola Wyer, Nicola Burch. University Hospitals Coventry and Warwickshire NHS Trust, Coventry, UK
10.1136/gutjnl-2018-BSGAbstracts.341

Introduction
Early identification of patients who are (or are at risk of becoming) malnourished using a nutritional screening tool is vital to provide timely and effective nutritional interventions. NICE guidelines in 2006[1] recommend screening for malnutrition using a validated tool in all adult patients on admission, and all outpatients at a first clinic appointment. We introduced ‘MUST’ in 2012 for all adult inpatients. Initial attempts to launch the tool across the outpatient department met with little success due to time taken to complete paperwork and perceived challenges of calculating the score. We modified the process in March 2017 to utilise the online tool available on the BAPEN website[2].

Methods
9 consultant-led clinics were chosen across gastroenterology, renal, colorectal surgery and respiratory. The BAPEN website was downloaded onto iPads and the nursing staff entered the relevant anthropometric measurements. A pre-printed coloured sticker (green, yellow, red) was placed in the notes detailing the ‘MUST’ score and recommended actions. Clinics from the first 3 weeks of the pilot were reviewed to determine compliance.

Results
382 patients attended clinic across 3 weeks. 76 sets of notes were selected at random. 11 sets were unavailable leaving 64 for review. A sticker was present in 44/64 (69%) of notes, with no sticker in the remaining 31%.
Conclusion The percentage of patients identified at risk of malnutrition (‘MUST’ score ≥1) was 25%; in keeping with published UK data (1). In 73% of patients an action was documented by the clinician in response to the screening result. This demonstrates that implementation of ‘MUST’ is feasible in a busy outpatient department, and that in the majority identified as high risk an appropriate action plan was implemented. We plan to cascade it across the remaining outpatient areas and improve compliance by further training and education.

2. BAPEN http://www.bapen.org.uk/screening-and-must/must-calculator

**PWE-112 ASSESSING KNOWLEDGE OF GLUTEN CONTAINING FOODS AMONGST HEALTHCARE PROFESSIONALS**

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**Introduction** Coeliac disease affects approximately 1% of the UK population and is a common reason for review in the Gastroenterology outpatient clinic. Furthermore, with growing evidence that gluten intolerance can lead to symptoms of IBS, there is an increasing demand on Gastroenterology services to be well equipped with knowledge about gluten containing products.

**Methods** We devised a structured questionnaire (scored out of 40) encompassing 4 main domains. These considered issues such as common foods which contained gluten, grains which contained gluten, foods which didn’t contain gluten but may be contaminated with gluten during the manufacture process, and kitchen/food preparation which could lead to gluten contamination.

The survey was disseminated electronically to the WAGE database as well as the Cardiff and Vale University Health Board Medical mailing list.

**Results** There were a total of 115 complete responses (response rate of 10.5%).

As expected individuals with known coeliac disease, or those living in a gluten free household scored highest (Median scores of 93% and 86.5% respectively) and were thus excluded from subsequent analysis.

Of the remaining 112 individuals, 47 (42%) were doctors, 37 (33%) were nurses, 25 (22.3%) were dietitians and the remainder were managers/admin staff.

Median scores showed dietitians scored best (85%) followed by doctors (70%), nurses (68%) and managers (55%), p<0.001. GI dietitians scored better (93%) than their non-GI counterparts, although this wasn’t statistically significant, p=0.934.

Within clinicians, paediatricians scored best (93%), followed by surgeons (n=3, 73%), non-GI physicians (n=17, 67%), with Gastroenterologists ranked fourth (n=17, median score=63%). This was found to be dependent on grade, with Gastroenterology SpR’s scoring worst amongst all clinical groups (n=5, median score=38%), p=0.009. Subgroup analysis demonstrated deficiencies in knowledge amongst Gastroenterology SpR’s in domains such as awareness of gluten containing foods and foods which may be contaminated with gluten.

**Conclusions** Knowledge about gluten containing foods amongst clinicians is variable. Whilst it is reassuring that dietitians knowledge is best amongst those sampled, we acknowledge deficiency in knowledge amongst gastroenterologists compared to their non-GI counterparts, particularly amongst SpR’s. Whilst the reasons underpinning this are not yet clear, further efforts to educate these clinicians who commonly manage coeliac patients may be required.
had a dietician. 57% of NSTs performed a ward round more than once a week with 10% seeing patients as required and 4% providing an advisory role only.

**Conclusion** There has been a clear improvement in the provision of NSC's and NST's within the UK over time. Sadly despite this increase in NSC’s and NST’s we have not managed to fulfill the aim of having one in each trust. Furthermore the majority do not have the full multi-disciplinary team provision required to provide the highest level of care. More work needs to be done to promote the importance of the NSC and NST and provide support in developing them in trusts that currently do not have them ensure that all trusts have access to them.

**PWE-114 GASTROSTOMY INSERTION: BEYOND THE MORTALITY RATES**

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10.1136/gutjnl-2018-BSGAbstracts.344

**Introduction** Short-term mortality rates from percutaneous endoscopic gastrostomy (PEG) insertion are well documented and often the focus of audit. Our Northern Nutrition Network extends across nine trusts in the North East and Cumbria, comprising of gastroenterologists, dietitians and specialist nurses. We analysed our regional population.

**Methods** 3 months of prospective data were collected on patients undergoing PEG or radiologically inserted gastrostomy (RIG); focussing on mortality, premorbid state, complications and sedation use. 90 day outcomes were recorded.

**Results** 146 gastrostomies were inserted, with a 30 day mortality rate of 8.2% (12/146) and 90 day mortality rate of 17.5% (26/146). Our 30 day mortality included a 2% (3/146) risk of dying in the first 7 days after gastrostomy; deemed attributable to the procedure.

Indications for gastrostomy included; ENT/UGI obstruction/ malignancy (46/146), neurological conditions (20/146), stroke (31/146), depressed consciousness (17/146), malnutrition (4/146) and failure of function (13/146). 88 patients were female, 56 were male. The average ASA was 2.7; mean BMI was 23.5; mean albumin was 37; mean age was 66 years. The 30 day mortality group had a higher mean age (76.7 vs. 66 years) and ASA (3.1 vs. 2.7), and a lower BMI (18.5 vs. 23.5) and albumin (31 vs. 37), suggesting these factors, which are associated with frailty, could impact on mortality.

We found a complication rate of 27% (40/146) and a statistically significant link between mortality and complications. The 30 day mortality increased from 4.7% (5/106) to 17.5% (7/40) if a complication occurred (p=0.012). This was reflected in the 90 day mortality group, where mortality increased from 13% (14/106) in the group with no complications to 30% (12/40) in the complication group (p=0.018).

The most common complication was pneumonia, at 11% (16/147). The risk of pneumonia could be linked with sedation use, as the group receiving midazolam sedation (average 2 mg per patient) had a pneumonia rate of 13.7% (15/109) whereas in the un-sedated group only one patient suffered pneumonic complications (n=11). There were no reported cases of pneumonia in the 26 patients who underwent general anaesthetic for the procedure.

**Conclusion** We report similar mortality rates to previous studies. Our data follow the trend that older, sicker, less well-nourished patients have poorer outcomes following gastrostomy insertion than their younger, fitter, counterparts. We have shown a statistically significant link between increasing mortality and complications. Likewise, our data suggest that sedation is a risk factor for our most common complication; pneumonia. Careful patient selection and realistic conversations with patients and relatives prior to gastrostomy insertion remain paramount.

**PWE-115 DIETARY PATTERNS IN INFLAMMATORY BOWEL DISEASE-INTOLERANCES, QUALITY OF LIFE AND CALCIUM/VITAMIN D INTAKE**

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10.1136/gutjnl-2018-BSGAbstracts.345

**Introduction** Food intolerances and food avoidance are common in inflammatory bowel disease (IBD). This cross-sectional study explored the prevalence of food intolerance patterns in IBD and assessed the food related quality of life (FR-QoL) and vitamin D and calcium intake in IBD patients.

**Methods** An online questionnaire with detailed questions relating to food groups commonly avoided, food related quality of life tool and calcium and vitamin D intake was displayed on the Crohn’s and Colitis UK website. Disease activity was assessed by the Minnesota IBD activity index, which is a validated, patient-defined tool that relates to the patient’s perception of IBD activity over the last six months. FR-QoL was assessed by a validated questionnaire (FR-QoL-29) which comprises of 29 statements encompassing different psychosocial aspects surrounding food and eating from an IBD symptoms perspective. Details of the type of IBD, duration of disease, previous surgery and disease activity were collected. Fishers’ exact test and Pearson correlation were used for statistical analysis.

**Results** 67 respondents (40 Crohn’s, 23 ulcerative colitis, 2 unclassified and 2 microscopic colitis) participated in the survey. Food avoidance was seen in 65 (97%) patients, with mean number of foods avoided at 6. Vegetables were avoided in 60% of the patients, followed by wheat-based products in 56% of patients. 82% of patients reported that their IBD was active. Food related quality of life was poor in inflammatory bowel disease patients and disease activity significantly correlated with 16 out of the 29 statements. 60% reported that food has association with disease activity. 89% were apprehensive of eating a particular food with the fear that it might trigger their IBD symptoms. Calcium and vitamin D intake from the diet was low, with a mean of 581.8 mg/day (recommended intake 1000 mg/day) and 282.9 IU/day (recommended intake 400 IU/day) respectively. 55% of patients with low calcium intake and 57% of those with a low vitamin D intake were not on supplements.

**Conclusions** This study highlights the high prevalence of food intolerances in the IBD community, resulting in high rate of food restrictions and less intake of foods rich in calcium and vitamin D. FR-QoL in IBD was poor. Food avoidance in IBD pose an important risk factor for poor nutrition, and majority of patients experience a low food related quality of life. Proactive assessment of food intolerances, FR-QoL and
dietary intake of calcium and vitamin D is essential to identify and rectify underlying insufficiencies.

**REFERENCES**


**PWE-116 EVALUATING THE MANAGEMENT OF INPATIENTS WITH ANOREXIA NERVOSA: RETROSPECTIVE AUDIT USING MARSIPAN GUIDELINES**

1. Buland Majeed*, 2James Hampton, 2Christian Dipper. 1Newcastle University, Newcastle upon Tyne, UK; 2Royal Victoria Infirmary, Newcastle upon Tyne, UK

10.1136/gutjnl-2018-BSGAbstracts.346

**Introduction** The MARSIPAN guidelines were produced in response to evidence that anorexic patients on medical wards have sub-optimal outcomes. We aim to evaluate whether the care provided by a Gastroenterology ward in a busy teaching hospital meets recommendations provided by the most recent MARSIPAN guidelines.

**Methods** Retrospective case note analysis of patients admitted with severe anorexia nervosa (BMI <15) over 12 months. 9 patients meeting the inclusion criteria were identified, and their care was audited against a pro-forma that was crafted according to the MARSIPAN guidelines, discussion with clinicians and the wider evidence base.

**Results** Our findings suggest that there is variability in compliance with the recommendations set out in the MARSIPAN guidelines. Some recommendations were met consistently; 100% of patients were seen by a dietitian and a senior psychiatrist at least once a week and had some common initial laboratory investigations (e.g. Full Blood Count, Urea and Electrolytes and Liver Function Tests). However, a number of important baseline investigations (such as the Sit-Up-Squat-Stand test [11.1%], serum amylase [0%], creatinine kinase [0%], serum ferritin and iron [33.3%], B12 and folate [33.3%]) were often missed. It was also rare for a full MSE to be documented (44.4%), or for a patient to see a senior psychiatrist twice a week or more (44.4%). Other important risk stratifying tools such as a baseline ECG (monitoring for prolonged QT) (66.6%) and sitting and standing blood pressure (33.3%) were also inconsistently carried out. In regards to nursing recommendations, the majority of patients were recommended bed rest (77.7%) and 100% had regular checks for pressure sores. However, only 22.2% were supervised for washes. 88.8% were supervised while they ate but only 22.2% were supervised for 30 min after (important to monitor for weight gain) (44.4%). 82.2% received thiamine replacement as well as vitamin supplementation. The majority of patients were monitored daily for the first week of their admission for most markers of refeeding syndrome (U and Es [88.8%], calcium, magnesium and phosphate [77.7%]); however, only 33.3% had daily blood glucose measurements.

**Conclusions** Our findings, in the context of the wider evidence base, substantiate previous findings that anorexic patients on medical wards may receive sub-optimal care. In particular, important baseline investigations that are necessary to stratify risk are often missed and their importance needs to be better stressed. As the MARSIPAN guidelines state, ‘patients near to death often look well’, so being able to identify high-risk patients through rigorous investigation is key to optimising outcomes.

**PWE-117 VITAMIN A DEFICIENCY-NOT JUST A DEVELOPING COUNTRY PROBLEM**

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**Introduction** Vitamin A and its metabolites are required for vision, cell function for growth, reproduction, haematoapoiesis, and immunity. Vitamin A deficiency is known to be associated with increased morbidity and mortality from infectious diseases. It is also known to result in visual disturbance, classically night blindness, anaemia, growth retardation and reduced fertility. Vitamin A deficiency is primary associated with the developing world, being seen in populations where malnutrition is commonplace. In 2002 it was estimated to affect 127 million preschool children and 7.2 million pregnant women worldwide. Vitamin A deficiency is being increasingly seen in developed countries, invariably due to malabsorption with causes including chronic pancreatitis, chronic liver disease, intestinal failure and following bariatric surgery. Following bariatric surgery incidence of Vitamin A deficiency has been shown to be up to 69%.

Our aim was to review the vitamin A deficient patients in our population, a large tertiary centre in a developed country. We wanted to review this cohort in order to obtain information about the aetiology of their deficiency, their symptoms, management and response to supplementation.

**Methods** We reviewed all Vitamin A assay requests which were reported as <1 umol/L across a 5 year period between 2012–2016. We looked at the indication for the test, whether the patient was symptomatic, and what their symptoms were. In addition, we collected data regarding past medical history.

**Results** We identified 80 patients with Vitamin A deficiency. Of our cohort, 16 patients were symptomatic, presenting with predominantly visual symptoms: blurred vision, night blindness, recurrent miscarriage, poor vision and xerophthalmia. Vitamin A assays were requested by a variety of departments but most commonly by Liver, Gastroenterology/Nutrition and Ophthalmology. Only one of our symptomatic patient’s Vitamin A deficiency was due primarily to poor intake and in one patient the aetiology of Vitamin A deficiency was unknown. Our other symptomatic patients had coexisting chronic illnesses which resulting in malabsorption.
Conclusion We demonstrated that Vitamin A deficiency is a cause of morbidity and potentially mortality in a developed country. We have also shown that the cause of deficiency in developed countries is not the same as in developing countries. We found the cause of Vitamin A deficiency to be overwhelmingly due to malabsorption, most commonly secondary to surgery or hepatobiliary disease.

**Background** Hypophosphatemia is a recognised complication of iron infusion. Patients receiving Home Parenteral Nutrition (HPN) due to intestinal failure are at additional risk of hypophosphatemia due to their underlying disease state. This study aimed to identify the extent of hypophosphatemia following iron infusion in this group of patients.

**Methods** The medical records of all HPN patients treated with parenteral iron infusion in the Department of Gastroenterology, Freeman Hospital, between April 2012 and February 2017 were retrospectively reviewed. Patients were identified from the regional HPN electronic database.

Patient’s demographics, type and dose of iron infusion were noted. Blood test parameters including haemoglobin, ferritin, transferrin saturations and phosphate levels were analysed before and after iron infusion. Management of abnormal phosphate level was documented.

Degree of hypophosphataemia was categorised as severe (<0.30 mmol/L), moderate (0.30 to 0.59 mmol/L), mild (0.59 to 0.79 mmol/L). Normal phosphate level was defined between 0.80 to 1.50 mmol/L, elevated levels above 1.50 mmol/L.

**Results** Thirty five patients (19 females, 16 males), mean age 54, received iron infusions. All patients received Ferrinject iron infusion (Vifor Pharma UK Limited) at a dose appropriate to manufacturer recommendations, based on bodyweight. Results demonstrated that phosphate levels fell in 7 out of 35 patients (20%) following iron infusion; 2 with severe hypophosphataemia (5.7%) and 5 with mild hypophosphataemia (14.3%). Table 1 summarises the effect on phosphate level of iron infusion. Twenty seven out of 35 patients (77%) had phosphate levels checked within 2 months post iron infusion.

One patient who developed severe hypophosphataemia had mild hypophosphataemia prior to iron infusion. All other patients had normal phosphate levels beforehand. Both patients with severe hypophosphataemia required intravenous phosphate replacement via manipulation of their HPN prescription. Of the 5 patients who developed mild hypophosphataemia, 4 resolved spontaneously, 1 required HPN prescription change. Time to normalisation of phosphate ranged from 4 weeks to 5 months.

**Conclusions** Severe Hypophosphatemia is a rare but potentially significant occurrence following iron infusion and can be prolonged in patients receiving Home Parenteral Nutrition. Numbers in this study are small and more studies are needed to investigate this further, including assessing the incidence using other preparations of intravenous iron in this group of patients. Routinely checking phosphate levels after iron infusions in this group of patients is probably warranted.

**PWE-118** HYPOPHOSPHATEMIA FOLLOWING IRON INFUSION IN PATIENTS RECEIVING HOME PARENTERAL NUTRITION IN A REGIONAL NUTRITION CENTRE

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**Authors**

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**Background**

Hypophosphatemia is a recognised complication of iron infusion. Patients receiving Home Parenteral Nutrition (HPN) due to intestinal failure are at additional risk of hypophosphatemia due to their underlying disease state. This study aimed to identify the extent of hypophosphatemia following iron infusion in this group of patients.

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Thirty five patients (19 females, 16 males), mean age 54, received iron infusions. All patients received Ferrinject iron infusion (Vifor Pharma UK Limited) at a dose appropriate to manufacturer recommendations, based on bodyweight. Results demonstrated that phosphate levels fell in 7 out of 35 patients (20%) following iron infusion; 2 with severe hypophosphataemia (5.7%) and 5 with mild hypophosphataemia (14.3%). Table 1 summarises the effect on phosphate level of iron infusion. Twenty seven out of 35 patients (77%) had phosphate levels checked within 2 months post iron infusion.

One patient who developed severe hypophosphataemia had mild hypophosphataemia prior to iron infusion. All other patients had normal phosphate levels beforehand. Both patients with severe hypophosphataemia required intravenous phosphate replacement via manipulation of their HPN prescription. Of the 5 patients who developed mild hypophosphataemia, 4 resolved spontaneously, 1 required HPN prescription change. Time to normalisation of phosphate ranged from 4 weeks to 5 months.

**Conclusions**

Severe Hypophosphatemia is a rare but potentially significant occurrence following iron infusion and can be prolonged in patients receiving Home Parenteral Nutrition. Numbers in this study are small and more studies are needed to investigate this further, including assessing the incidence using other preparations of intravenous iron in this group of patients. Routinely checking phosphate levels after iron infusions in this group of patients is probably warranted.

**PWE-119** IRON ISOMALTOSIDE TO IMPROVE OESOPHAGO Gastric ADENOCARCINOMA RELATED ANAEMIA AND QUALITY OF LIFE DURING CHEMOTHERAPY

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**Introduction**

Anaemia is common in oesophagogastric (OG) adenocarcinoma, increasing mortality, blood transfusions and reducing quality of life with no clear evidence exists for safe and effective treatment, especially for mild to moderate anaemia. This study assessed the efficacy of intravenous iron isomaltoside to improve anaemia, quality of life and prevent blood transfusions in OG adenocarcinoma.

**Methods**

Anaemic patients with histologically proven OG adenocarcinoma were recruited before initiation of palliative chemotherapy. Patients were randomised to receive standard care or intravenous iron isomaltoside. Post-chemotherapy changes in haemoglobin, ferritin, transferrin saturations, blood transfusions and quality of life were recorded for 3 cycles of chemotherapy.

**Results**

27 patients were randomised to standard care (n=13) or intravenous iron (n=14). A non-significant decrease in haemoglobin was seen in the standard care group over three cycles of chemotherapy (mean difference-0.6 g/dL 95% CI-0.1 to-1.1 g/dL, p=0.336) compared to an increase in the intravenous iron group (mean difference 0.5 g/dL 95% CI-0.1 to 1.1 g/dL, p=0.903). An increase in ferritin and transferrin saturations above 20% was seen in the intravenous iron group by cycle one of chemotherapy with a greater and statistically significant increase in ferritin in the intravenous iron group (standard care 116 ng/mL versus intravenous iron group 770 ng/mL, p<0.05).

Blood transfusions were received by 7 patients (standard care n=4, intravenous iron n=3). No significant difference in the number and amount of blood transfused were seen (p=0.851). No patient received a blood transfusion after cycle one of chemotherapy in the intravenous iron group.

Quality of life improved in the intravenous iron group with physical well-being, emotional well-being, anaemia-specific well-being, emotional well-being, anaemia-specific quality of life, trial outcome index and total scores all exceeding the minimum clinically important difference. No improvement was seen with standard care.

**Conclusions**

Data from this pilot study suggest intravenous iron improves quality of life, ferritin and transferrin saturations. It may also increase or maintain haemoglobin, thus
AN EXPERIENCE OF HOME TOTAL PARENTERAL NUTRITION AT THE FREEMAN HOSPITAL OVER A 21-YEAR PERIOD

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Introduction

Home total parenteral nutrition (HPN) is used for patients with severe intestinal failure. Our service at the Freeman Hospital, Newcastle upon Tyne covers Northumberland, Northumbria, Durham, Gateshead, North Yorkshire, Tyneside, Wearside and Teesside.

Methods

This study used the database kept by the HPN service and the Trust document portal to gather data retrospectively regarding 221 patients started on HPN from 1996 till 2016. 25 individual data sets were collated about each patient. Line sepsis rates were obtained from the trust venous catheter surveillance data (this includes data for patient episodes at other hospitals).

Results

The study showed that over the 21 years, there has been a rapid growth in number of patients on HPN.

Number of patients on HPN by year.

- The gender split of the cohort was 101 males and 120 females, with a total mean age 52.7 years and median age 55 years.
- Teesside (22%, 49/221) followed by Northumberland (18%, 40/221) were the regions with the most patients initiated on HPN.
- The three most common indications for HPN were Post-operative complications (30.3%, 67/221), Crohn’s disease (21.3%, 47/221) and Mesenteric ischaemia (16.7%, 37/221). 14.9% (33/221) patients were on HPN as a result of malignancy.
- The 1 year and 5 year survival for the cohort was 94% and 79.4% respectively. There were 73 deaths noted in the study group, 8 patients had stopped HPN prior to death. 29 of these patients had been on HPN of a result of malignancy. Of the 65 patients who died while being on HPN, only four deaths were clearly as a complication of parenteral nutrition.
- 8 patients had neuroendocrine tumours; their average time on HPN was significantly greater at 25.6 months compared to 5.6 months for patients with other tumour types.
- The mean rate of catheter-related bloodstream infection was 0.27 per 1000 catheter days over the period covering 2011 till 2017. The rate of liver (significant fibrosis/cirrhosis) or biliary complications while being on HPN was 12% (27/221) and the commonest complication was biliary obstruction/cholangitis (33.3%, 9/27). 6 patients of the cohort underwent successful small bowel transplantation and were able to stop HPN.

Conclusions

The HPN service at the Freeman has noted a rapid growth in patient numbers, with survival rates comparable to or better than that reported in the literature. Mortality was linked to disease process rather than HPN complications and line infection rate was low.
Introduction A large number of unexplained gastro-intestinal disorders have been attributed to Irritable Bowel Syndrome (IBS) for decades. Discovery of food sensitivities and high rate of symptomatic response to low FODMAP diet has revolutionised the treatment of these conditions. The aim of this study was to assess the triggering factors and the effect of dietary intervention in relation with body mass index (BMI).

Methods This was a cross-sectional study evaluating patients presenting with IBS symptoms referred to our secondary and tertiary Gastroenterology outpatients during January 2014 and July 2016. The total number included in this study were 149 patients. The patients were selected and included based on Salerno expert criteria. A strict gluten and lactose free diet (G/LFD) was recommended for 6 weeks. Out of 149 patients, 134 completed the study and were assessed after following a G/LFD and gluten challenge afterward. Demographics, presenting symptoms, serologic and histological data were recorded.

Results The ages of 134 study subjects ranged from 8 to 85 years, with mean age of 46.41 years and standard deviation of 17.388. Patients were predominantly female 109 (81.34%) in comparison to male 25 (18.66%). The presenting gastrointestinal symptoms and the rate of their improvement are shown in figure 1. The majority of this group had an improvement rate close to 100%. Around 53% of the study population became nearly completely asymptomatic, while 27.6% had a poor response (scoring <30%) to G/LGD. The improvement score was excellent in patients with normal BMI and good in overweight patients. However a BMI above 30 was associated with a poorer response. Over 50% of these patients didn’t require any further follow-up within 12 months.

Conclusion Although it is unclear whether these symptoms are triggered by gluten, fructans, or the other grains components, the elimination of gluten containing grains improved the life quality of these patients with high satisfaction. With exception in patients with higher BMI >30 or below 18, the dietary intervention, was effective and has reduced the number of outpatient visits.

Abstract PWE-122 Prevalence of symptoms shown by percentage and their response to GFD. Following G/LFD introduction 72.4% (97/134 cases) improved with a score between 30%-100%. Abdominal pain was the most prevalent symptoms affecting 80% of these patients and anaemia the least prevalent presentation affecting 3% of the study group. The percentage of Improvement scores are shown by brown column.

PWE-123 PROSPECTIVE STUDY OF A LOW FODMAP DIET IN PATIENTS WITH COELIAC DISEASE AND IBS SYMPTOMS

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10.1136/gutjnl-2018-BSGAbstracts.353

Introduction Patients with coeliac disease (CD) symptoms usually respond to a gluten free diet (GFD). However up to a quarter of adults with CD have persistent gastrointestinal (GI) symptoms despite strict adherence to a GFD and complete intestinal healing. Overlap between CD and irritable bowel syndrome (IBS) may explain this symptomology. Over the last decade there has been a renewed interest in dietary treatments in IBS particularly the low FODMAP diet (LFD) which temporarily restricts fermentable carbohydrates. The aim of this prospective study was to investigate the efficacy of the LFD in patients with CD and IBS.

Methods We conducted a prospective study of the LFD as an intervention in patients with treated-CD and persisting IBS symptoms. All CD patients met the ROME IV criteria, had negative coeliac serology and normal duodenal biopsy. All patients were reviewed by a specialist GI dietitian with experience in delivering the LFD. Symptom response was assessed using the validated Gastrointestinal Symptom Rating Scale (GSRS) from base-line to follow up.

Results 24 patients with a mean age of 44 years (SD=15.2) met the inclusion criteria. 8 patients chose not to pursue treatment and 2 were unable to complete the minimum treatment period. 14 patients (2 males) completed four weeks of a LFD. There were no differences in baseline demographics between patients who chose to participate in the study and those who did not, or who were unable to complete the study protocol (p=0.7). Global symptom relief of gut symptoms was reported by 8/14 patients (57%) p=0.007 Figure 1. A sub-group analysis demonstrated a significant reduction in both abdominal pain (p=0.001. Figure 2) and distension (p=0.02 Figure 3) respectively. There were no significant differences to anthropometric and biochemical features at follow up compared with baseline.

Conclusion This is the first study to demonstrate that a LFD is an effective dietary treatment for patients with biopsy confirmed treated-CD and on going GI symptomology. Such patients should be seen by a specialist dietitian to improve adherence, ensure nutritional adequacy and appropriate reintroduction of FODMAP containing foods.
Introduction

In recent years there has been a renewed interest in dietitian-led nutritional treatments for Irritable Bowel Syndrome (IBS)-specifically the Low FODMAP (LFD) and Gluten Free Diets (GFD). Increases in diagnosis and a lack of suitably trained dietitians to deliver these modalities mean many patients only receive nutritional information from General Practitioners (GP’s) and Gastroenterologists (GE’s). Since the LFD and GFD are dietitian-led, the aim of this research was to qualitatively explore how people with IBS use and apply dietary information from GP’s and GE’s in IBS self-management.

Methods

An initially sample of 33 people (7 male) responded to a research request from the staff and student body of Sheffield University. 10 participants with a median age of 45 years (range 24–64, 2 male) matched the inclusion criteria-diagnosed with IBS (ROME IV) and used diet as their primary treatment. There were no differences in baseline demographics between patients who participated in the study and those who did not (gender p=1.0, age p=0.9). All participants had received dietary information from GP’s and GE’s for self-managing their IBS symptoms; primarily advice on the LFD. Semi-structured interviews were conducted (minimum an r duration) and evaluated using Interpretive Phenomenological Analysis (IPA). IPA is a qualitative research method that employs phenomenological, and idiographic techniques to explore and explain participants lived experience. IPA is particularly suited to examine and understand how people with IBS make sense of the dietary information they are given and how this relates to the self-management of their symptoms.

Findings

The provision of nutritional information was important for the participants, information from GP’s and GE’s was valued as evidenced based. However, the information was seen as very simplistic, often just ‘food lists’ with little or no personalisation to meet individual needs of the participants (figure 1). Digital online and resources were used to supplement the dietary information received form GP’s and GE’s, however this required additional interpretation and personalisation and led to negative effects on both the participants social and food-related quality of life.

Conclusion

The participants found much of the nutritional information provide by GPS’ and GE’s to be overly generic and incomplete; in that it was difficult to apply in ‘real life’. The findings in this study support the current clinical guidelines proposed by the both by NICE and the BDA that LFD and GFD’s should still be considered second-line dietitian-led only interventions.
diet and then to consume 1.6 g of turmeric daily for 5 days. Faecal samples were collected at baseline, after 5 days of turmeric ingestion, and again 5 days after this, and frozen immediately. The samples were analysed by an investigator blinded using gas chromatography mass spectrometry. Analyses were identified using AMDIS software and compared using Metaboanalyst software: ANOVA, PCA, PLSADA, and Heatmap were employed.

Results ANOVA yielded 0 significant features. For most of the VOMs found between the comparison groups, p>0.05. Both PCA and PLSADA failed to show any pattern in the abundance of VOMs. VIP scores showed a decrease in the abundance of propanoic acid and methyl propionate in the intervention samples when compared to baseline and post-turmeric consumption. The box plots created from raw data in Figure 1 & 2 demonstrated lower median abundances of intervention samples as compared to comparison groups. The study was underpowered to demonstrate significant change.

Conclusions This pilot study illustrates that two VOMs appears to become less abundant when turmeric is consumed: both appear related to propionibacteria metabolism. Studies in patients with IBD are warranted.

Abstract PWE-125 Figure 1 Box plot showing changes in abundance of propanoic acid amongst the comparison groups

Abstract PWE-125 Figure 2 Box plot showing changes in abundance of methyl propionate amongst the comparison groups