Abstract PWE-130 Table 1

	SIBO positive (mean and standard deviation)	SIBO negative (mean and standard deviation)	P value
Gastric emptying time (minutes)	237±233	208±205	0.7
Small bowel transit time (minutes)	316±104	361±127	0.3
Colonic transit time (minutes)	2050±1518	1357±1280	0.2
Whole Gut Transit time (minutes)	2670±1447	2561±1902	0.9
Ileal contractility (AUC)	193±130	148±115	0.38
Colonic contractility (AUC)	87±71	81±83	0.87
Ileal pH	7.8±0.2	7.8±0.2	0.9
Colonic pH	7.3±0.5	7.4±0.8	0.9

Conclusions Concomitant SIBO in patients with IBS-M confers a higher gastrointestinal and extra-gastrointestinal symptom burden. Moreover, it is associated with a reduction in quality of life. However, it was not associated with any demonstrable alterations in GI physiology. It is plausible to suggest that such IBS patients with co-existent SIBO may potentially preferentially respond to antimicrobial interventions such as rifaximin.

REFERENCES

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PWE-131 FODMAP INTAKE AND THE RISK OF IRRITABLE BOWEL SYNDROME IN THE COMMUNITY: A PROSPECTIVE STUDY

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Introduction The cause of IBS is uncertain; however, food intolerance shares many features with this condition. Consumption of Fermentable Oligo-, Di- and Mono-saccharides And Polyols (FODMAPs) has been shown to induce IBS-type symptoms (Shepherd 2008) and clinical trials have shown that a low FODMAP diet can improve symptoms in this patient group (Halmos 2014). However, FODMAP intake is not higher in IBS than in health (Bohn 2013) and the outcome of low FODMAP diet may not be better than standard dietary advice in this condition (Bohn 2015). Previous research has shown that psychological factors are associated with increased symptoms in IBS patients (Zhu 2013, Van Oudenhove 2016).

This population based study tests the hypothesis that high FODMAP intake increases the risk of IBS symptoms more in individuals with psychiatric disease and/or life event stress than in members of the community without risk factors for functional gastrointestinal disease.

Methods Subjects aged 16–74 were randomly selected from five South-Chinese communities. All subjects completed questionnaires by face-to-face inquiry with investigators including demographic information, gastrointestinal symptoms (Rome III), dietary intake (food frequency chart validated in Chinese

community), psychiatric disease (HADS), life event stress (LES) and quality of life (SF-8). Results are presented as odds ratio with 95% confidence intervals.

Results From 1999/2115 (94.7%) members of the community that completed study questionnaires, 117 (5.9%) had IBS by Rome III criteria. The IBS group ingested less lactose than the 'No-IBS' group ($p \geq 0.024$). Intake of other FODMAPs was similar in both groups ($p \geq 0.346$). Compared to the 'No-IBS' group, subjects with IBS had a greater likelihood of depression (OR 1.5 (0.97–2.32); $p \geq 0.05$), anxiety (2.84 (1.84–4.39), $p < 0.001$), recent life event stress (1.5 (1.03–2.20); $p \geq 0.03$) and medical or surgical co-morbidity (OR 2.90 (1.30–5.45), $p < 0.001$). The IBS group also had lower quality of life ($P < 0.001$).

Joint risk analysis identified high intake of total FODMAP intake as a risk factors for IBS only in subjects with psychiatric disease and/or life event stress (OR 2.3 (1.1–4.8), $p < 0.029$). Similar effects were seen for individual symptoms, in particular bloating (OR 2.4 (1.3–4.6), $p < 0.008$). Increased risk of IBS was identified with ingestion of high intake of individual FODMAPs (e.g. fructose, fructans, lactose) in combination with psychosocial factors, but not with sucrose (control) in any group.

Conclusions Overall FODMAP intake was similar in IBS and No-IBS groups in the community and FODMAP intake alone was not associated with abdominal symptoms. However, consistent with the study hypothesis, joint risk analysis demonstrates that high FODMAP intake does increase the risk of IBS symptoms in subjects with psychiatric disease and/or high levels of psychosocial stress, factors known to increase visceral sensitivity to digestive events.(ClinicalTrials: NCT01286597)

PWE-132 THERAPEUTIC OUTCOMES FOLLOWING ENDOTHERAPY FOR REFRACTORY GASTROPARESIS

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Introduction The relative merits of endotherapy for refractory gastroparesis remain unclear. We assessed the symptomatic response of patients undergoing non-surgical pyloric intervention at a specialist tertiary centre.

Methods 57 patients (21 male, mean age 47, 16–81) with medical refractory gastroparesis (29 idiopathic, 5 diabetic, 23 post-gastric transposition) underwent 117 endoscopic treatments from Sep 2013-Sep 2017: either 100IU units of Botox injected into 4 quadrants of the pylorus ($n \geq 66$), balloon dilatation to 15–20 mm (EBD, $n \geq 13$) or combination therapy ($n \geq 38$). Patients with gastric malignancy, pyloric surgery or no follow-up were excluded. Symptoms were assessed immediately prior to each procedure and at first follow up using a retrospective scoring system based on the presence (1 point) or absence (0 points) of Vomiting, Nausea, Bloating or Early satiety. This formulated a composite symptom score (SS) out of 4; positive response was defined by improvement in SS of at least 1. Statistical analysis was performed using Wilcoxon Signed-Rank Test and Fischer's Test.

Results There were no immediate or late complications. Mean symptom score (SS) improved per-patient from 2.1 points at baseline to 1.2 post initial endotherapy ($p < 0.01$) at median follow up of 2.1 months. 20 patients required further

endotherapy (median 2.5 treatments; range 2–12); mean SS was 1.0 at latest follow-up.

Per-procedure, mean reduction in SS was 0.8 points ($p<0.01$) with overall positive response rate of 67%. By symptom, vomiting was most responsive to endotherapy (86% pre v 32% post). By treatment type, Botox alone ($n\geq 66$) had the highest overall response (78%) compared to EBD (38%, $p\geq 0.02$) or combination therapy (66%, $p\geq 0.3$). Response to Botox was greater in patients under 40 (83% v 61%, $p\geq 0.04$) and females (81% v 33%, $p\geq 0.002$). By indication, diabetic GP ($n\geq 17$) were most likely to respond (76%).

Sub-group analysis showed procedures for gastroparesis (diabetic/idiopathic, $n\geq 75$) responded significantly more to Botox (mean SS reduction 1, $p<0.01$) than EBD (mean SS reduction 0.2, $p>0.1$) or combination therapy (mean SS reduction 0.44, $p\geq 0.12$). Procedures for gastric transposition ($n\geq 42$) showed significant SS reduction post combination therapy (2.1 v 1.2, $p\geq 0.01$) but not post EBD (1.9 v 1.6, $p>0.1$) or Botox (1.7 v 1.1, $p\geq 0.08$).

Conclusions Endotherapy is a safe and effective treatment for refractory gastroparesis. We found Botox monotherapy significantly improved symptoms in diabetic or idiopathic gastroparesis, especially younger females; conversely, combination therapy was preferable for delayed gastric emptying post gastric transposition. Careful patient selection may augment therapeutic response.

PWE-133 IMPACT OF THE NORTH AMERICAN CONSENSUS ON HYDROGEN AND METHANE-BASED BREATH TESTING FOR CARBOHYDRATE MALABSORPTION

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Introduction The acquisition parameters and interpretation of breath testing data for the assessment of carbohydrate malabsorption (CM) varies widely between centres. The North American Consensus (NAC) document on breath testing published in 2017 was a first attempt to standardise this diagnostic test. Two key recommendations were to extend the period of post ingestion breath sampling from 120 to 180 min and that SIBO should be excluded prior to CM testing. We retrospectively assessed our database of CM studies from the previous 12 months to examine the impact of these recommendations on results.

Methods Patient data was retrospectively attributed to 120 min and 180 min groups for both lactose and fructose breath tests. All patients provided a baseline sample prior to ingestion of 25 g of either substrate following a 24 hour restrictive diet and 12 hour fast. In total 200 breath tests were analysed (120-lactose and 80-fructose). A rise >20 ppm above baseline was considered positive for CM. The results were compared statistically using Pearson's chi-squared test.

Results A positive result for CM at 120 min was seen in 27 of 120 (22.5%) subjects for lactose and 33 of 80 (36.3%) subjects for fructose. When extended to 180 min the number of positive CM tests increased to 30% and 41.3% for lactose and fructose, respectively. Within these sub-groups the significant rise in gas levels occurred at ≤ 60 min after ingestion in 34.3% for lactose and 69.8% for fructose. There was a significant association between patients who had a positive SIBO

test (as determined by a separate lactulose test) and a positive breath test for lactose at ≤ 60 min [$\chi^2\geq 5.3$, $p0.02$]. Findings for fructose were not significant [$p>0.05$].

Conclusions Around 20% of the positive results for CM occurred after 120 min supporting the NAC position to extend the post ingestion period to 180 min to avoid false negative studies. SIBO may influence results and a lactulose breath test should be performed prior to CM testing to avoid false positive tests and to help interpret CM studies with greater accuracy. Like the first iteration of the Chicago Classification for oesophageal motility testing – the NAC on breath testing represents a positive first step in standardising these diagnostic tests.

PWE-134 MANAGEMENT OF GASTROPAESES: CURRENT PRACTICE IN A TERTIARY CENTRE

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Introduction Gastroparesis is a syndrome characterised by delayed gastric emptying in the absence of mechanical obstruction. The aim of this study was to assess consistency and adherence to guidelines of current practice and to evaluate the effectiveness of routinely implemented interventions in a large London tertiary centre.

Methods A retrospective study was conducted by examining records of all adult patients with delayed gastric emptying, objectively measured by NM scintigraphy, between 2010–2017. Effectiveness was defined as evidence of symptomatic improvement either semi-quantitatively by the Gastroparesis Cardinal Symptom Index (GCSI) or by documented qualitative evidence from clinical records, before and after intervention. Our practice was compared to recommendations published by the American College of Gastroenterology in 2013.

Results We identified 91 patients diagnosed with gastroparesis from 655 consecutive scans. Of these, 46 were excluded due to incomplete records. 55 patients were included: median age 48 (range 21–89), 67% female. Diabetes (40%) was the commonest cause; 40% of cases were idiopathic.

Conservative management 34/55 (62%) patients had dietetic input with 16% requiring enteral nutrition. 17/55 (31%) of patients were taking a drug known to delay gastric emptying but stopped in only 12% of patients.

Medical management 48/55 (87%) patients received prokinetics, including metoclopramide 28/55 (51%), domperidone 33/55 (60%) and erythromycin 19/55 (35%) with treatment duration specified in only 30%. No patients had documented GCSI. From qualitative records, 7/48 (15%) of these reported some benefit, while 20/48 (42%) had no effect and in 21/48 (44%) the effect was unknown.

Intrapyloric Botox was administered in 25/55 (45%) of patients but results were not documented by GCSI. Nevertheless, 11/25 (44%) of patients reported some benefit. Additionally, 2 patients had pyloric dilatation and 1 feeding jejunostomy and venting gastrostomy.

Conclusions The management of gastroparesis showed wide variations in practice in our institution. The lack of semi-quantitative assessment of the results of different interventions hindered evaluation of effectiveness. Conservative measures, including discontinuation of contributing drugs, were adopted

only in a minority of patients. Prokinetics are widely used as first choice approach but treatment duration and stopping rules were not clearly established. Intrapyloric Botox injection showed subjective benefit in a proportion of patients, matching results of previous RCTs where placebo had similar benefit. Our study indicates the need for a more consistent and evidence-based management of gastroparesis. Dedicated outpatient clinics and internal protocols may help to achieve this task.

PWE-135 CONSTIPATION IS THE MOST COMMON GASTROINTESTINAL SYMPTOM IN ACROMEGALY

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Introduction Acromegaly is caused by a pituitary somatotroph adenoma resulting in excess secretion of growth hormone which leads to excess secretion of Insulin like growth factor 1 from the liver, causing abnormal soft tissue growth with a variety of symptoms and an increased risk of colorectal cancer. Somatostatin analogues, used in the management of acromegaly are also associated with a range of abdominal symptoms. We collected data from patients with a confirmed diagnosis of acromegaly to evaluate the frequency, type and burden of abdominal symptoms.

Methods Data was collected from patients with confirmed Acromegaly using SF36 RAND and Rome IV Diagnostic questionnaire and compared to a control group, to assess the burden of GI symptoms. Data analysis was carried out using Microsoft Excel and IBM SPSS v 25.

Results 49 acromegalics (23 male and 26 females; age range 23–64 years, mean 43) and 200 controls (92 male and 108 females; age range 18–84, mean 42.4) were recruited. 94% (46 out of 49) of acromegalics reported abdominal symptoms and 79% (39 out of 49) had at least one FGID according to the Rome IV diagnostic criteria, compared to 36% of controls (OR >1, $p < 0.0001$). More acromegalic females reported suffering from abdominal symptoms (100%) than males (87%), however there was no significant difference observed in the frequency and intensity of symptoms. The most commonly reported symptom was constipation (69% acromegalics vs 21% of controls OR >1, $p < 0.0001$, 95%CI 4.4–15.8) followed by diarrhoea (52% acromegalics vs 18% of controls OR >1, $p < 0.0001$, 95%CI 2.5–9.3). 30 out of 49 (61%) respondents met the criteria for Functional Constipation according to Rome IV. The prevalence of constipation increased with increasing age and was often associated with bloating. No statistically significant difference seen in the prevalence of upper GI, biliary and anorectal symptoms between the acromegaly patients and controls. Acromegalics scored lower on the mean scores of the eight parameters (physical functioning, role limitations due to physical health, role limitations due to emotional health, energy/fatigue, emotional well-being, social functioning, pain, general health (mean scores 60.04 vs 71.23, 95% CI –13.6829 to –8.6971, OR >1, $p \text{ value} < 0.001$) measured by the RAND SF36 as compared to the control group.

Conclusions The presence of FGID affecting the lower gastrointestinal tract in acromegalics is substantially higher than the

controls in our study. Factors such as delayed transit and increased bowel length may play a role. Functional Constipation is the most commonly reported problem. Poorer quality of life may in part be attributable to abdominal symptoms. Symptoms of the upper GI tract such as reflux, dyspepsia and vomiting do not appear to occur more frequently in this group as compared to controls.

PWE-136 FUNCTIONAL GASTROINTESTINAL DISORDERS (FGID) IN EHLERS DANLOS TYPE III (HYPERMOBILE) AND MARFAN SYNDROME PATIENTS

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Introduction Ehlers Danlos syndrome is a group of inherited heterogenous multisystem disorders characterised by skin hyperextensibility, atrophic scarring, joint hypermobility and generalised tissue fragility. Hypermobile EDS (hEDS) is the most common type. Marfan syndrome (MS) is also a multisystem disorder caused by a mutation in FBN1 gene which shares some phenotypic features with Hypermobile EDS such as joint hypermobility. Recent studies have suggested an association of Functional Gastrointestinal Disorders with joint hypermobility.

Methods Data was collected from 27 MS patients (10 male and 17 females, age range 19–35 years mean 27) and 33 hEDS patients (3 male and 30 females, age range 19–32 years mean 23) with no organic gastrointestinal diagnosis, using SF36 RAND and Rome IV Diagnostic questionnaire and compared to control group (200 respondents, 92 male and 108 female; age range 18–84, mean 42.4) to assess the burden of GI symptoms in these patients. Data analysis was carried out using Microsoft Excel and SPSS version 25 (IBM Corporation, America).

Results In both groups the majority (78.3%) of respondents were female within the age range of 19–35 years. Both groups of patients showed a higher prevalence of abdominal symptoms as compared to the control group, however the hEDS group not only showed a higher prevalence but more frequent and severe symptoms meeting Rome IV criteria for diagnosis of FGIDs. 16 (49%) of the EDS patients met the criteria for more than one FGID.

p values were significant ($p < 0.001$) for functional heartburn, functional dyspepsia, functional dysphagia, IBS-D and functional bloating in hEDS patients when comparing the prevalence to controls.

The hEDS group also scored lower on quality of life scores (QOL) in comparison to either of the other groups with a mean score of 48.6 (95%CI 25.3–33.4, $p < 0.0001$) as compared 54.2 (95%CI 20.9–29.0, $p < 0.0001$) in the Marfan group and 78.6 in the control group.

Conclusions FGIDs are reported in both Marfan syndrome and Hypermobile Ehlers Danlos syndrome but appear to be more common and severe in hEDS. These patients score lower on quality of life scores as well despite hypermobility being a common feature of both conditions. Further research is needed in this area to see whether there are other factors that can explain this difference.