were used to assess the severity of symptoms (patient assessment of constipation symptoms (PAC-SYM)), somatic symptoms (patient health questionnaire (PHQ-12-SS)) and the personality trait of neuroticism (big five inventory-neuroticism scale (BFI-N)). At follow up, clinical response was defined as the proportion of patients achieving 3 or more SCBM per week.

Results 64 patients (59 female, mean age 48.3 years, range 19–83) had a mean SCBM per week of 1.6 (range 0.5–2). At a mean follow up of 4.6 weeks (range 4–8) 40/64 (62.5%) patients achieved clinical response. 8/64 (12.5%) did not tolerate treatment due to side effects. In an intention to treat analysis, mean SCBM per week increased from 1.6 to 3.2 ($p = 0.01$) with mean PAC-SYM scores reducing from 27.7 to 20 ($p = 0.001$). Logistic regression analysis demonstrated that BFI-N (odds ratio 8.7, 95% confidence interval (CI), 1.99–64, $p < 0.01$) and slow transit constipation (STC) (odds ratio 1.4, 95% CI, 1.20–2.1, $p < 0.01$) were independently associated with positive treatment outcomes.

Conclusion Prucalopride is a useful, generally well tolerated, treatment for the management of CC in secondary care. These data suggest that efficacy could be enhanced by targeting patients with STC and in those who are more neurotic. Further work is now warranted to confirm these findings in a larger cohort of patients.

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PTU-124 THE ASSOCIATION OF THE JOINT HYPERMOBILITY SYNDROME WITH FUNCTIONAL GASTROINTESTINAL DISORDERS – AN INTERESTING NEW FINDING THAT MAY EXPLAIN AETIOLOGY

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Introduction Functional Gastrointestinal Disorders (FGID) are common, but their cause is unknown. Joint hypermobility syndrome (JHS) is a common non-inflammatory connective tissue disorder characterised by joint hyperflexibility. It is associated with gastrointestinal (GI) symptoms (1), in particular unexplained symptoms (2). The association between JHS and FGID has never been studied.

Methods A nested case control study in patients aged 18–70 attending secondary care was performed. 694 consecutive new referrals to GI clinics were assessed for JHS using the Brighton criteria, prior to their outpatient consultation. Subsequent investigation by their gastroenterologist led to a diagnosis that was functional, organic or gastrooesophageal reflux (GOR); the latter were excluded due to the mixed aetiology of reflux. The control group consisted of 92 patients referred to secondary care for non-GI symptoms-those with diabetes, pregnancy, neuromuscular disorders or inflammatory arthritis were excluded. Controls were similarly assessed for JHS. JHS prevalence was compared in patients with FGID, organic GI disorders, and controls.

Results Of the 694 GI patients, 26 had GOR and 52 had not received a diagnosis–these were excluded. Thus 616 GI patients were included in the study: 363 had FGID, 253 had organic disorders. There were no significant age or gender differences between FGID and controls (age: 40.3 ± 0.69 vs 42.7 ± 1.5; 64% vs 67% females). Compared to FGID patients, organic patients were older (43.9 ± 0.92 vs 40.3 ± 0.69, p:0.002) and less likely to be female (54% vs 64%, p:0.008).The prevalence of JHS in FGID patients in secondary care was 40.5%. This was significantly higher than in organic GI patients (26.9%, p:0.000) and in controls (25%, p:0.006). Even after adjusting for age and gender differences, JHS was significantly associated with FGID (p:0.005).

Conclusion This is the first study that demonstrates a strong association between JHS and FGID, as compared to both organic GI and non-GI conditions. This suggests a potential connective tissue aetiology for 40% of FGID patients in secondary care. Furthermore, the high prevalence of JHS in FGID suggests that this common diagnosis is often overlooked. Our results have implications for future FGID research and efforts must now be focused to determine the mechanism of symptoms and identification of appropriate treatments for this subgroup of patients.

Disclosure of Interest None Declared

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PTU-125 JOINT HYPERMOBILITY IS A RISK FACTOR FOR OESOPHAGEAL HYPERSENSITIVITY

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Introduction Generalised joint hypermobility (HM) refers to an increased flexibility of the joints which is present in 5–17% of the population, and is assessed by clinical examination or validated hypermobility questionnaire. HM is associated with increased incidence of somatic pain and hypersensitivity, but its relationship with visceral hypersensitivity is unknown. Gastro-oesophageal reflux symptoms occur in over 50% of hypermobile patients (1). We hypothesised that we would observe a higher prevalence of HM in patients with hypersensitive oesophagus compared to patients with either erosive (GERD) or non erosive (NERD) reflux disease, functional heartburn, or a healthy control group.

Methods A cross sectional study of patients attending our GI physiology unit for investigation of reflux symptoms between Jan 2010 and March 2012 was undertaken. Patients completed the validated joint hypermobility questionnaire; scores ≥2 out of 5 represented HM (Hakim 2003). Information from gastrosocopy and physiology testing was used to determine whether patients had GERD, NERD, hypersensitive oesophagus, or functional heartburn. Patients who were on PPI were excluded. Hypermobility questionnaire data from a group of 250 healthy volunteers was obtained from another study.

Results 457 (59% female, age range: 15–79) patients with complete data were included. HM was present in 79 (17%) patients. The prevalence of HM was highest in patients diagnosed with hypersensitive oesophagus (31%) and lowest in NERD (15%)-see table 1. The prevalence of HM was significantly higher in hypersensitive oesophagus (31%) compared to the combined prevalence in other reflux diagnoses (16%), p = 0.009, and to the healthy control group (18%), p = 0.04.

Abstract PTU-125 Table 1 Prevalence of HM (%) in different groups

	Total number	Number with HM (score ≥ 2) (%)
GERD	53	11 (19%)
NERD	233	35 (15%)
Hypersensitive oesophagus	49	15 (31%)
Functional heartburn	122	20 (16%)
Healthy volunteers	250	45 (18%)

Conclusion 17% of patients with reflux symptoms severe enough to warrant physiology investigation have HM, which is similar to the prevalence in healthy controls. The prevalence of HM in patients

with hypersensitive oesophagus (31%) was almost twice as high as in healthy controls, whereas, the prevalence in other subgroups (GERD, NERD) is similar to that of controls. This suggests that the link between HM and gastro-oesopheageal reflux disease is related to visceral hypersensitivity, rather than to increased reflux. HM appears to be a risk factor for oesophageal hypersensitivity, and may contribute to the pathogenesis of this reflux entity.

Disclosure of Interest None Declared

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PTU-126 JOINT HYPERMOBILITY SYNDROME, RECTAL HYPOSENSITIVITY AND SEVERE CONSTIPATION IN YOUNG NULLIPAROUS FEMALES

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Introduction The joint hypermobility syndrome (JHS) is a common non-inflammatory connective tissue disorder characterised by joint hyperflexibility and skin hyperelasticity. A validated 5 point hypermobility questionnaire screens for the presence or absence of JHS; formal diagnosis requires fulfilment of the Brighton criteria. Previous small cohorts demonstrate an association between the JHS and lower gastrointestinal symptoms (1), particularly alternating bowel habit with predominant constipation. The underlying mechanism for these symptoms is unknown.

Methods Retrospective observational study of patients attending a specialist colorectal physiology unit for investigation of chronic constipation. Patients completed validated lower GI symptom and 5 point hypermobility questionnaires, then underwent lower GI physiology testing. 43 patients with an established rheumatological diagnosis of JHS were compared to 146 consecutive patients who screened negative (score = 0) for JHS (Non-JHS). Demographic features, prevalence of presenting symptoms, and physiological abnormalities were compared in JHS and Non-JHS. In view of the multiple comparisons, the significance level was set at p:0.01.

Results In patients with constipation, those with JHS were younger, and females were more likely to be nulliparous. JHS patients had significantly more alternating bowel habit, infrequent bowel motions, abdominal pain, and childhood bowel problems. They were significantly more likely to require manual manoeuvres to help with rectal evacuation, but did not have an increased prevalence of other evacuatory symptoms. On physiology testing JHS patients had more rectal hyposensitivity, but were less likely to have internal (IAS) and external anal sphincter (EAS) abnormalities on ultrasound (see Table 1). There was no difference in the prevalence of pelvic dyssynergia, slow colonic transit or rectal morphological abnormalities.

Abstract PTU-126 Table 1 Characteristics in constipated patients with and without JHS

	No JHS (n = 146)	JHS (n = 43)	p
Age	47.4 ± 15.3	31.7 ± 11.2	0.0000
Nulliparity	23%	69%	0.0000
Alternating bowel habit	3%	19%	0.0002
Bowels opening < once/week	24%	53%	0.0005
Manual manoevres	79%	100%	0.002
Childhood bowel problems	38%	62%	0.007
Rectal hyposensitivity	13%	35%	0.001
IAS abnormalities	39%	15%	0.003
EAS abnormalities	32%	5%	0.0006

Conclusion JHS patients have more severe constipation which is likely to date back to childhood, and which requires digitation. These patients are more likely to have rectal hyposensitivity but less likely to have structural or transit abnormalities to account for their symptoms. The diagnosis of JHS should be considered in young nulliparous females with a longstanding history of very infrequent bowel motions.

Disclosure of Interest None Declared

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PTU-127 THE MACROGOL MRI CHALLENGE TEST: A NOVEL NON INVASIVE COLONIC FUNCTION TEST

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Introduction Managing resistant constipation commonly involves multiple often unpleasant invasive tests. Our aim was to develop a more acceptable non-invasive colonic function test.

Methods 13 patients (ages 21–60, female: male = 12:1) with chronic constipation (CC) unresponsive to simple laxatives; 9 with slow transit constipation, 2 obstructive defecation and 2 IBS with constipation. Whole gut transit (WGT) was assessed by ingesting 5 pills filled with Gadolinium-DOTA solution, 24 hours before study day when a fasting MRI scan of the abdomen was performed. Transit of the pills was assessed from an average weighted Transit Score (TS) previously shown to correlate well with the standard radio-opaque marker method (1). This enabled TS to be converted to WGT time in hours. Patients then ingested 1 litre of macrogol (MCG), followed by hourly MRI scans for 4 hours while they scored bowel symptoms from 0–10 (none – severe). Colonic movements were assessed using a motility index (integral of the duration of contraction in secs/2 minute X multiplied by the number of sections of the ascending colon showing contraction). Results were compared with values from 11 healthy volunteers (HV) previously reported (2).

Results (Mean±SEM) WGT time was calculated from the TS to be significantly greater for CC being 83 ± 12 hr vs. 30 ± 4 hr for HV ($p < 0.01$). The average fasting small bowel water content (SBWC) was increased for CC being 200 ± 18 compared to 51 ± 7ml in HV ($p < 0.01$). Fasting AC volumes were also greater in CC being 307 ± 26 compared to 205 ± 14ml in HV ($p < 0.01$). The average arrival time of MCG to the ascending colon (AC) was 74 ± 7 min in CC and 65 ± 5 in HV ($p = 0.39$). Motility index 2 hours after MCG ingestion was reduced in CC compared to HV being 14 ± 14 and 82 ± 14 ($p = 0.04$). Distension of the colon at 2 hours by MCG was greater for CC with AC volume of 615 ± 59 vs. 357 ± 46 ml in HV ($p < 0.01$). Time to first bowel movement after ingestion of MCG was delayed for CC compared to HV at 414 ± 144 and 117 ± 21 min ($p = 0.04$). Stool frequency for CC on the day of MCG ingestion were reduced compared to HV being 4.5 ± 1.4 versus 8.9 ± 1.2 ($p < 0.01$). Bloating score following ingestion of MCG was greater in CC being 2.3 ± 0.3 compared to HV 0.9 ± 0.3 ($p = 0.02$).

Conclusion CC patients have increased fasting SBWC and AC volumes compared to HV. When challenged with MCG, they showed greater distension and more discomfort with reduced motility and delayed bowel movement response. This MRI monitored MCG challenge test gives data on transit, sensory and motor function.

Disclosure of Interest None Declared

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