post-transplant group. Paired pre and post-operative data were available for eight patients: function scores improved significantly for general health (p0.04**). Improvements in physical function, social functioning, emotional role limitations, energy/fatigue, emotional well-being and pain were seen but this did not reach statistical significance. Physical role limitation was the only function to decline. Of the eight pairs, two patients had significantly better overall scores post transplant (p=0.02, p=0.01**) and four had improved overall scores not reaching statistical significance. *independent T test **Wilcoxon signed rank.

Conclusion In this small experience there was an overall trend for better quality of life after transplantation, but certain QOL parameters appear to improve more than others. If quality of life is to be an indication for transplantation it will be important to select patients on the basis of quality of life parameters that are known to improve after transplantation. Longer term and larger studies are required.

Competing interests None declared.

PTU-151 SMALL BOWEL ULTRASOUND: DIAGNOSTIC YIELD IN ESTABLISHED SMALL BOWEL CROHN'S DISEASE

doi:10.1136/gutjnl-2012-302514c.151

[1]D S Pearl,* [2]A Higginson, [1]A Quine. *[1]Gastroenterology, Portsmouth Hospitals NHS Trust, Portsmouth, UK; [2]Radiology, Portsmouth Hospitals NHS Trust, Portsmouth, UK*

Introduction Crohn's disease is an intestinal inflammatory disorder which frequently involves the small intestine. Accurate localisation of disease is important to direct targeted therapy. Video capsule endoscopy (VCE) has revolutionised clinical assessment of small intestinal Crohn's disease. Small bowel ultrasound (SB USS) is a rapid, inexpensive, interactive and non-invasive alternative method for assessing small bowel Crohn's disease, which is in routine use only at selected UK institutions. We evaluated the diagnostic yield of SB USS in VCE determined Crohn's disease.

Methods A retrospective assessment of patients who had undergone VCE in 2008–2010 was carried out. Patients investigated for suspected small bowel Crohn's disease, or who had findings of small bowel Crohn's on VCE were included, if they had also had a SB USS within 12 months. VCE findings were graded as mild (aphthous ulcers only), moderate (aphthous ulcers with mucosal distortion) or severe (aphthous ulcers with mucosal distortion and strictures/stenosis). SB USS was graded positive or negative for small bowel Crohn's disease. Both assessments were single operator. Either investigation could predate the other. Results were expressed as sensitivity, specificity, positive and negative predictive value (PPV and NPV) of SB USS compared with VCE for detection of small bowel Crohn's. Sub-analysis of SB USS findings for VCE-defined severity of small bowel Crohn's disease was carried out.

Results 196 VCE procedures were reviewed, of which 22 fulfilled the inclusion criteria. 10 patients had SB Crohn's on VCE; this was detected in four patients by SB USS (sensitivity 40%). 12 patients had no evidence of SB Crohn's on VCE; none of these had SB USS findings of Crohn's disease (specificity 100%). Of 18 patients with no evidence of SB Crohn's on SB USS, VCE findings of Crohn's disease were apparent in 6 patients (negative predictive value 67%); however, all patients with positive findings of Crohn's disease on SB USS had evidence of SB Crohn's on VCE (positive predictive value 100%). Sub-analysis for severity of inflammation on VCE was carried out. Of four patients with positive findings at SB USS, 3 were severe and one moderate on VCE. One patient with severe Crohn's on VCE was missed by SB USS; however, the patient's body habitus was unfavourable.

Conclusion SB USS has excellent positive predictive value (100%) and specificity (100%) for detection of SB Crohn's disease, with only moderate negative predictive value (67%). In addition, all detected cases were moderate or severe, which may complicate VCE. It therefore seems a safe, quick, relatively cheap initial investigation in expert hands, which may obviate more costly, invasive investigations. A prospective evaluation of these diagnostic modalities should be carried out.

Competing interests None declared.

PTU-152 SIGNIFICANT IMPROVEMENTS IN ABDOMINAL PAIN AND BOWEL SYMPTOMS IN A PHASE 3 TRIAL OF LINACLOTIDE IN PATIENTS WITH IRRITABLE BOWEL SYNDROME WITH CONSTIPATION (IBS-C): A EUROPEAN PERSPECTIVE

doi:10.1136/gutjnl-2012-302514c.152

[1]E M Quigley,* [2]A J Lembo, [3]C Diaz, [3]J Fortea, [3]M Falques, [4]S Shiff, [4]K Shi, [4]H A Schneier, [5]J M Johnston. *[1]University College Cork, Cork, Ireland; [2]Beth Israel Deaconess Medical Center, Boston, Massachusetts, USA; [3]Almirall, Barcelona, Spain; [4]Forest Research Institute, Jersey City, New Jersey, USA; [5]Ironwood Pharmaceuticals, Cambridge, Massachusetts, USA*

Introduction Linaclotide, a minimally absorbed guanylate cyclase-C agonist, was evaluated in a Phase 3 trial. To fulfil EMA submission requirements, the efficacy, safety and effects of withdrawal of linaclotide 290 μg in patients with IBS-C were assessed.

Methods In a randomised, double-blind, placebo (PBO)-controlled trial, IBS-C patients (modified Rome II criteria), with an average of <3 complete spontaneous bowel movements (CSBM)/week (wk), ≤5 spontaneous bowel movements (SBM)/wk and abdominal pain ≥3 (0–10 scale) during a 2-wk baseline period, received oral, once-daily linaclotide or PBO for a 12-wk treatment period (TP). In a 4-wk randomised withdrawal period (RWP), linaclotide-treated patients were re-randomised to receive linaclotide or PBO, and PBO-treated patients to receive linaclotide.

Results 800 patients (median age 44; female 90.5%) received linaclotide (n=405) or PBO (n=395). For the first co-primary parameter (≥30% reduction from baseline in mean abdominal pain or discomfort score for ≥6 of the 1st 12 wks with neither score worsening), 54.8% of linaclotide-treated patients and 41.8% of PBO-treated patients responded (p=0.0002). For the second co-primary parameter (patients "considerably relieved"/"completely relieved" on the weekly degree-of-relief of IBS symptoms question for ≥6 of the 1st 12 wks), 37.0% of linaclotide-treated patients and 18.5% of PBO-treated patients responded (p<0.0001). Linaclotide significantly improved all secondary parameters (including CSBM frequency rate, stool consistency, bloating and severity of straining) vs PBO (except wk 12 EQ-5D VAS; p=0.06). Improvements occurred in wk 1 and were sustained throughout the TP. During the RWP, patients continuing linaclotide had sustained efficacy in abdominal pain/discomfort response and IBS degree-of-relief response, and patients switched to PBO had symptom recurrence to the level of PBO during treatment. In patients initially treated with PBO and switched to linaclotide, abdominal pain improved to the level of linaclotide patients during the TP. Similar trends were seen in other abdominal/bowel parameters. Diarrhoea was the most common AE, causing discontinuation in 5.7% of linaclotide-treated patients and 0.3% of PBO-treated patients.

Conclusion In patients with IBS-C, linaclotide significantly improved all primary and secondary abdominal pain and bowel symptom parameters with no evidence of rebound on stopping treatment.

Competing interests E M Quigley Consultant for: Ironwood Pharmaceuticals, A J Lembo Grant/Research Support from: Ironwood Pharmaceuticals, Consultant for: Ironwood Pharmaceuticals/Salix/Prometheus/Alkermes/Ardelyx/GSK/Theravance, Conflict with: Lecture fees from Ironwood Pharmaceuticals, C Diaz Employee of:

Almirall, J Fortea Shareholder with: Almirall, Employee of: Almirall, M Falques Employee of: Almirall, S Shiff Employee of: Forest Research Institute, K Shi Employee of: Forest Research Institute, H A Schneier Employee of: Forest Research Institute, J M Johnston Employee of: Ironwood Pharmaceuticals.

PTU-153 CAN A 10 YEAR FRACTURE RISK SCORE (FRAX) BE USED TO AVOID DUAL ENERGY X-RAY ABSORPTIOMETRY (DEXA) SCANS IN PATIENTS WITH COELIAC DISEASE?

doi:10.1136/gutjnl-2012-302514c.153

E Derbyshire,* A Dhar. *Gastroenterology, County Durham & Darlington NHS Foundation Trust, Bishop Auckland, UK*

Introduction The BSG Guidelines for Osteoporosis in Inflammatory Bowel Disease and Coeliac state there is a definite increased risk of fracture in these conditions and recommend DEXA scanning after introduction of gluten free diet in subgroups of patients where the risk of osteoporotic fracture is high. A 10-year risk of major osteoporotic and hip fracture using the WHO Fracture Risk Assessment Score (FRAX) can be calculated in patients with coeliac disease and this score mapped to the National Osteoporosis Guideline Group (NOGG) assessment tool may be better to decide the need for a DEXA scan.

Methods The aim of this study was to determine if the WHO FRAX can be used to screen patients with Coeliac disease to decide who needed a DEXA scan, and make pathways more cost effective. A retrospective analysis of all duodenal biopsies in our Trust between June 2010 and April 2011 was undertaken and 50 definitive pathological diagnoses of coeliac disease that is, Marsh stage 1 to 4 were identified. The notes of these patients were reviewed to see if a DEXA scan had been requested and to calculate their FRAX score with and without a BMD measurement.

Results Of 50 patients with a definitive pathological diagnosis of coeliac disease, 33 were female and 17 male. The median age at diagnosis was 45, with 30 (60%) of patients aged between 42 and 71 yrs, making them eligible for the FRAX score. Documentation of smoking status, alcohol history, use of corticosteroids, past medical history and family history of fracture was done for most patients. Of the 30 patients, 13 had already had a DEXA scan; in two pts a FRAX score was unable to be calculated due to information not being documented. 17 had not had a DEXA scan; seven of these were unable to be FRAX scored due to information not being documented. 11 patients had both FRAX scores and DEXA scores: 4 had T scores <-2.5, indicating eligibility for treatment of osteoporosis. In these patients FRAX scores, without a BMD measurement, ranged from 6.1% to 13% for a major osteoporotic fracture and 0.9% to 6.6% for a hip fracture. In the seven patients with T scores >-2.5, FRAX scores, without a BMD measurement, ranged from 3.1%> 9.5% for a major osteoporotic fracture and 0.2%>1.8% for a hip fracture.

Conclusion The majority of coeliac patients in this study were females, over the age of 40. Coeliac patients, over the age of 40, with FRAX scores for a major osteoporotic fracture >9.5% and for a hip fracture >1.8% may need DEXA scans and be offered osteoporosis treatment. A cost effectiveness analysis of this strategy is needed to change the current guidance.

Competing interests E Derbyshire: None Declared, A Dhar Speaker bureau with: Several Pharmaceutical Companies, Conflict with: Honoraria from Pharmaceutical and endoscopy industry.

REFERENCES

1. http://www.shef.ac.uk/FRAX
2. **Scott EM**, Gaywood I, Scott BB, *et al. BSG Guidelines for Osteoporosis in Coeliac Disease and Inflammatory Bowel Disease*. 2000.

PTU-154 INVESTIGATION OF THE OPTIMAL DURATION OF THE GLUCOSE HYDROGEN METHANE BREATH TEST

doi:10.1136/gutjnl-2012-302514c.154

[1,2]E Grace,* [3]K Thomas, [3]S Gupta, [2]A Lalji, [1]K Whelan, [4]C Shaw, [2]J Andreyev. *[1]Nutritional Sciences, King's College London, London, UK; [2]GI Unit, London, UK; [3]Research Data Management & Statistics Unit, London, UK; [4]Dietetics Department, The Royal Marsden NHS Foundation Trust, London, UK*

Introduction Historically, the glucose hydrogen breath test has been popular for diagnosing small intestinal bacterial overgrowth (SIBO). Lately the glucose hydrogen methane breath test has become available. It is non-invasive and simple to carry out. This test is used as a part of standard clinical practice in patients suspected of having SIBO in our hospital. There are limited published data on the optimal test duration, with 3 h being the longest reported. This study aimed to determine if there is a significant difference in the number of patients who would be considered positive for SIBO depending on test duration.

Methods Patients in whom the gastroenterologist suspected SIBO underwent a breath test performed by endoscopy nurses using the QuinTron BreathTracker DP Digitial Microlyzer that measures hydrogen (H_2) and methane (CH_4) concentrations in parts per million (ppm). Pre-test preparation included avoiding slowly absorbed carbohydrates, fibre and large meals and limiting dairy intake and carbonated drinks for 24 h, a 12 h fast and avoiding exercise and cigarette smoking for 2 h. Breath H_2 and CH_4 concentrations were noted at baseline. Subjects then consumed 75 g (or 50 g if weight was <50 kg) in 100 ml of water. Thereafter, breath H_2 and CH_4 values were recorded every 20 min for 3 h (or less if positive). Positive test was defined as fasting $H_2 \geq 20$ or $CH_4 \geq 10$ ppm or a rise in $H_2 \geq 12$ or $CH_4 \geq 6$ ppm.

Results 98 males and 95 females, median age 63 years (range 28–86) underwent a breath test. Of these, 67 (35%) had a positive result for one or both gases: 18 (32%) at baseline, 39 (60%) by 40 min, 56 (84%) by 100 min, 60 (90%) by 140 min, 67 (100%) by 160 min. 126 patients had negative breath tests; n=75 had the test performed for a full 3 h, 26 (20%) had the test performed for 100 min only. In patients where the test was performed for 3 h the 95% CI for a false negative result at 100 min is 0.003 to 0.10.

Conclusion Most patients with SIBO will have a positive result by 100 min. This suggests that a reduction in the duration of the test can be achieved without compromising the number of true positives being diagnosed with SIBO.

Competing interests None declared.

PTU-155 IS THE GLUCOSE HYDROGEN METHANE BREATH TEST AN ACCURATE DIAGNOSTIC TOOL FOR SMALL INTESTINAL BACTERIAL OVERGROWTH?

doi:10.1136/gutjnl-2012-302514c.155

[1]R I Rusu, [1,2]E Grace,* [3]K Thomas, [2]K Whelan, [4]C Shaw, [1]H J N Andreyev. *[1]The GI Unit, Royal Marsden NHS Foundation Trust, London, UK; [2]Diabetes and Nutritional Sciences Division, King's College London, London, UK; [3]Department of Computing, Royal Marsden NHS Foundation Trust, London, UK; [4]Department of Dietetics, Royal Marsden NHS Foundation Trust, London, UK*

Introduction Small intestinal bacterial overgrowth (SIBO) is probably the most common cause for chronic gastrointestinal (GI) symptoms following cancer treatments. There is no diagnostic gold standard. We assessed whether the glucose hydrogen methane breath test has greater value than the hydrogen breath test alone and whether a duodenal (D2) aspirate improves the diagnostic yield.

Methods Patients in a cancer centre referred for potential SIBO. Breath hydrogen (H2) and methane (CH4) were measured in parts/