Results All cases considered not IgG4-RD in the MDM (n=52) similarly did not meet ACR/EULAR criteria. Of those considered definite IgG4-RD (n=63) in the MDM, only half (33;52%) met ACR/EULAR criteria. In those with definite HPB involvement (n=48) in the MDM, just over half (27;56%) met ACR-EULAR criteria. Most of the IgG4-HPB patients not meeting ACR/EULAR criteria scored insufficient diagnostic points (n=17) due to reliance on pancreatic imaging characteristics; diffuse swelling and pseudocapsule, with no points awarded for cholangiopathy without pancreatic involvement, atrophy, or focal enlargement of the gland. Small and unrepresentative biopsies were an additional challenge. Specific exclusions were absence of glucocorticoid response in advanced (fibrotic) cholangiopathy, and Crohn's disease or ulcerative colitis in isolated HPB involvement.

Conclusions The ACR-EULAR classification demonstrated excellent specificity (100%) and will be an invaluable tool for clinical trials. Disparity between diagnosis according to our IgG4-RD MDM and the ACR/EULAR criteria are explained by specific pancreatic imaging characteristics, absence of cholangiopathy/hepatopathy as a unique entity, and the necessity for steroid responsiveness even if presenting with advanced cholangiopathy.

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P258 IS REPEATING FAECAL ELASTASE WORTHWHILE?

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Background Faecal elastase-1 (FE1) is the only widely available test for pancreatic exocrine insufficiency (PEI). However, FE1 is thought to misclassify approximately 10% of patients. False negatives delay treatment with pancreatic enzyme replacement therapy (PERT). False positives expose patients to unnecessary intervention, and the NHS to unnecessary costs. We studied the practice of repeating FE1 at our trust, its impact on being treated, and the predictors of reclassification of PEI diagnosis on repeat testing.

Methods We carried out a retrospective study at a London teaching hospital. All outpatients investigated with FE1 between 2012 and 2018 were identified. Demographic and clinical information was retrieved from the electronic medical record. PEI was defined as FE1 <200 µg/g. Where FE1 had been repeated, any change to PEI diagnosis was recorded. Univariable logistic regression was used to explore the dependence of having FE1 repeated and reclassification of PEI diagnosis on age, sex, ethnicity, presenting symptoms, comorbidities, and the initial FE1 result (grouped into FE1<100 µg/g, 100–199 µg/g, 200–299 µg/g and ≥300 µg/g). Exposure variables with significant associations ($p<0.05$) in the univariable analysis were incorporated into a multivariable logistic regression model. Univariable logistic regression was used to explore the association between having more than one positive FE1 result and being prescribed PERT. Firth's method of penalized likelihood was used to reduce bias in cases of

complete separation. Complete case analysis was used where any data were missing.

Results 1027 patients were included; mean age 53 years; 42.5% male; 54.5% white ethnicity. In total, 124 patients (12.1%) had their FE1 repeated. The median time to repeat FE1 was 5.4 months. 39 patients (31.5%) had their PEI status reclassified on repeat FE1; 28 patients from PEI to no PEI, and 11 from no PEI to PEI. On univariable analysis, diabetes mellitus, chronic pancreatitis and initial FE1 result were associated with having FE1 repeated. In the multivariable analysis, only initial FE1 result remained a significant predictor of having FE1 repeated (FE1 <100 µg/g: OR 4.66, 95% CI 2.76–7.87; FE1 100–199 µg/g: OR 7.26, 95% CI 4.21–12.5; FE1 200–299 µg/g: OR 3.53, 95% CI 1.88–6.61; all $p<0.001$). Initial FE1 100–200 µg/g was the only significant predictor of reclassification of PEI diagnosis on repeat testing (OR 6.91, 95% CI 2.39–19.95; $p=0.007$). Patients with more than one positive FE1 result were almost four times more likely to receive PERT than patients with a single positive result (OR 3.82, 95% CI 1.5–9.75; $p=0.005$).

Conclusions False positive and false negative FE1 results are common, and clinicians might be reluctant to prescribe PERT after one positive result. We recommend repeating FE1 routinely in all patients with FE1 <300 µg/g.

P259 ABNORMAL PANCREATIC IMAGING AND NUTRITION BIOCHEMISTRY PREDICT RESPONSE TO PANCREATIC ENZYME REPLACEMENT THERAPY

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Background Pancreatic enzyme replacement therapy (PERT) is a safe and effective treatment for pancreatic exocrine insufficiency (PEI). Approximately 80% of patients report symptomatic improvement with treatment, however the predictors of clinical response are unknown. We examined the investigation and management of patients with PEI at our trust, and studied the associations with clinical response to PERT.

Methods We carried out a retrospective study at a London teaching hospital. All outpatients diagnosed with PEI, defined as FE1<200 µg/g, between 2012 and 2018 were identified. Demographic and clinical information was retrieved from the electronic medical record. Patients with a positive followed by a negative FE1 were excluded. We noted the proportion of patients investigated with pancreatic imaging and nutritional blood tests within 6 months of diagnosis. Nutritional blood tests were defined as ≥3 of serum ferritin, folate, vitamin B12, vitamin D, magnesium and albumin. In addition, we noted the proportion of patients prescribed PERT, the initial dose, referral to dietetics and clinical response to treatment. Binary logistic regression was used to study the dependence of clinical response to PERT on PEI severity, initial dose prescribed, referral to dietetics, abnormal pancreatic imaging and abnormal nutritional blood tests. Complete case analysis was used where data were missing.

Results 182 patients were diagnosed with PEI; 60.4% severe (FE1<100 µg/g); mean age 56.4 years; 51.1% male; 47.8% white ethnicity. 149 patients (81.9%) underwent pancreatic imaging, with ultrasound (23.5%), CT (60.4%), MRI (15.4%) or EUS (0.7%). Poor views of the pancreas were reported in

17.1% of ultrasounds. Of patients with adequate imaging, 67 (46.9%) had pancreatic abnormalities detected; including 31 with chronic pancreatitis and 7 pancreaticobiliary cancers. 124 patients (68.1%) had nutritional blood tests sent. Of these, 65 (52.4%) had one or more abnormal result.

103 patients (56.6%) received PERT; median initial dose 50000 IU/meal. 77 patients (66.4%) were referred to dietetics. 67 patients (81.7%) responded clinically to PERT. Patients with severe PEI were no more likely to respond than those with mild PEI (OR 1.28, 95% CI 0.40–4.03; $p=0.68$). Initial PERT dose was not associated with clinical response (OR 1.00, 95% CI 1.00–1.00; $p=0.51$), nor was referral to dietetics (OR 0.61, 95% CI 0.12–3.04; $p=0.54$). However, patients with abnormal pancreatic imaging or nutritional blood tests had four times the odds of responding to PERT than those with normal results (OR 4.77, 95% CI 1.16–19.57; $p=0.03$, and OR 4.12, 95% CI 1.07–15.94; $p=0.04$).

Conclusions All patients diagnosed with PEI should be screened for malnutrition and undergo pancreatic imaging with CT or MRI. Abnormal results are common and may predict response to treatment.

Small bowel

P260 BILE ACID DIARRHOEA OUTSIDE TERTIARY CENTRES—HOW BAD IS BAD?

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Introduction Chronic diarrhoea causes significant morbidity and these patients are commonly referred to gastroenterology clinic. Bile acid diarrhoea (BAD) is considered causal in up to 1/3 of people investigated for IBS-D. BSG guidelines recommend investigation for BAD in secondary care using SeHCAT scanning/serum bile acid precursors.¹ Empirical trial of treatment is not recommended. Access to tests can be limited in district general hospital settings. We report our experience in a DGH where diagnostic testing is provided by a centre 39 miles away.

Methods A retrospective notes review was performed for all outpatients from East and North Herts NHS trust (catchment population 600,000) who had SeHCAT scans performed by a regional service (Mount Vernon Hospital) in 2019. Data were collected on demographics, symptoms, risk factors, other investigations, time between first clinic and scanning and prior empirical treatment. Comparison were made between positive and negative groups using multiple regression analysis.

Results 50 scans were requested of which 48 results were available. Median age was 49 (23 – 84 y), 33(69%) female. 21 scans (44%) were positive for BAD, 3 (14%) mild, 10 (48%) moderate 8 (38%) severe. Only patients with complete data (45) were included in subsequent analyses. Risk factors are presented in table 1. A statistically significant association between cholecystectomy and positive SeHCAT scan was found ($P=0.026$). There was considerable delay in diagnostic confirmation for some patients with a positive test taking 1 month to 10 years. Overall 41/45 patients had prior testing with faecal calprotectin (FC), 32 patients had colonoscopies of whom 24 had colonic biopsies, 43/50 had thyroid function checked and 39/50 were screened for coeliac disease. 10

Abstract P260 Table 1 Risk factors for BAD in chronic diarrhoea

Risk factors	Negative SeHCAT scan (26)	Positive SeHCAT scan (19)
Cholecystectomy	5 (19%)	10 (53%)
Crohn's	1 (4%)	1 (5%)
Right hemicolectomy	1 (4%)	1 (5%)
Coeliac	2 (8%)	0 (0%)
Diabetes	2 (8%)	2 (10%)
Other surgery	1 (4%)	0 (0%)
No risk factors	16 (59%)	7 (37%)

patients had empirical treatment with bile acid sequestrants before scanning.

Conclusions Our study has shown a burden of incident BAD in the outpatient DGH setting. This is underestimated due to use of empirical treatment without testing, lack of investigation of some patients with disease and referral for SeHCAT scanning in other centres not identified. Patients had appropriate initial investigations performed for chronic diarrhoea. In keeping with larger studies from tertiary centres prior cholecystectomy is the commonest predisposing factor (type III) and >1/3 of patients had no identified risk factor (type II). There are limited data regarding BAD investigation and management in DGH setting where patients have to travel considerable distance for testing. There are problems associated with empirical treatment including current drug availability in the UK. National management guidelines based on large studies and wider availability of economically viable testing are needed.

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P261 THE MICROBIOTA IS A KEY FACTOR INFLUENCING GUT REHABILITATION IN EARLY ONSET SHORT BOWEL SYNDROME

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Introduction Short bowel syndrome (SBS) is the most common cause of paediatric intestinal failure (IF) and its prevalence is rising. Home parenteral nutrition (HPN) is life-saving but can be associated with serious complications such as intestinal failure-associated liver disease (IFALD) and catheter related blood stream infections (CRBSI), therefore the ultimate aim is intestinal autonomy. Current understanding of predictive factors for achieving intestinal autonomy is limited, but include remaining bowel length, type and quality of bowel, and earlier age of onset of SBS. Significant dysbiosis also occurs in SBS and may impact on the likelihood of successful intestinal rehabilitation (IR).

Our aim was to phenotype patients with SBS, comparing children who achieved intestinal autonomy to those who remained on HPN or required intestinal transplant, to identify possible factors that impact upon the likelihood of successful IR.