patients with CD[1] and the British Society of Gastroenterology guidelines state that DEXA should only be done after introduction of a gluten-free diet on the subgroups of patients in whom the risk of osteoporotic fracture is high[2]. This was however followed up by a guidance document in 2010 stating that BMD assessment should always be performed at diagnosis. Meanwhile the American guidelines suggest testing for vitamin and micronutrient deficiencies[3]. The aims of this study were to determine, the prevalence of osteopenia and osteoporosis among patients who are newly diagnosed with CD, and any risk factors which would increase patients' risk of osteopenia and osteoporosis.

Methods We carried out a prospective cohort study, where newly diagnosed CD patients were recruited. DEXA scanning was done at diagnosis. Data with regards to smoking, BMD and histology was entered into a database and analysed using SPSS software package.

Results 137 patients with a histological diagnosis of CD were recruited. 76.6% were females. Mean age at diagnosis was 37.1 years (95% CI: ±3.19 years). 21.9% (n = 30) of patients were osteoporotic and another 51.1% (n = 72) were osteopenic at diagnosis. A total of 14.9% (n = 17) had a previous history of fracture/s prior to diagnosis. Osteoporosis at the spine was significantly associated with the female gender (p = 0.04) and with an older age at diagnosis (50.3 years $p = 0.01$; 95% CI: ±6.6 years). Patients with Marsh 3c disease at diagnosis were also more likely to have an abnormal BMD at the spine than patients with Marsh 3a or 3b ($p = 0.04$). Mean BMI between osteopenic (24.15 kg/m^2 95% CI: ±1.29) and osteoporotic (23.37 kg/m^2 95% CI: ±2.81) patients was slightly different but not statistically significant (p = 0.07).

Conclusion This data demonstrates a high rate of osteopenia and osteoporosis among CD patients at diagnosis. DEXA scanning should therefore be considered at diagnosis. This is of greater importance in female patients diagnosed at or above the age of 50 years and with Marsh 3c disease.

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Disclosure of Interest None Declared.

PTH-116 POINT OF CARE TESTING FOR ADULT COELIAC DISEASE: A POTENTIAL ROLE IN ENDOSCOPY

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Introduction Endoscopic markers of coeliac disease (CD) lack sensitivity; therefore many centres take routine duodenal biopsies or have a low threshold for biopsy, ensuring high detection rates. Newly available, point of care tests (POCT) provide rapid findings unlike conventional serological markers, potentially reducing the need for duodenal biopsies. This study evaluates a new POCT (Simtomax) which detects IgA and IgG deamidated gliadin peptide (DGP) with comparisons made to conventional serological markers and histology.

Methods Patients referred for a gastroscopy to a specialist CD list were prospectively recruited between March and November 2013. Patients were excluded if they were on a gluten free diet at the time of the test or if they had previously been diagnosed with seronegative villous atrophy. All patients had a duodenal biopsy as the gold standard for detecting CD. Concurrently serological testing for IgA tissue transglutaminase (TTG), endomysial antibody (EMA), total immunoglobulin A level and the DGP based rapid test was performed. Sensitivity, specificity, positive predictive (PPV) and negative predictive values (NPV) were calculated.

Results 354 patients met the inclusion criteria (45.8% male mean age 53.3 +18.5). Of these, 52 (14.7% 11.2 – 18.9) had newly diagnosed CD and 302 were controls with a normal duodenal biopsy. The sensitivity, specificity, PPV and NPV for the POCT were 94, 83, 49 and 99% respectively. This compares with results for TTG of 92, 88, 57, 99 and EMA of 88, 97, 85, and 98% respectively. In a second cohort, 43 patients with known CD for re-assessment were recruited (20.9% male, mean age 49.4 +16.6). 16 (37% 23 -53) of these 16 patients (37%) had persistent villous atrophy despite a gluten free diet. POCT compared to histology showed sensitivity of 88% and specificity 41%. tTG showed sensitivity and specificity of 63 and 70% respectively and EMA 56 and 78% respectively. However agreement between histology and POCT was poor with concordance between results in only 60% (κ=0.274). tTG and EMA were marginally better with κ=0.321 and κ=0.345 respectively.

Conclusion This is the first study to prospectively demonstrate the value of a novel POCT for adult CD in endoscopy compared to the gold standard of histology. The sensitivity and specificity of the POCT is comparable to conventional serology. Simtomax could be used to appropriately identify patients requiring a duodenal biopsy within the endoscopic setting. This strategy may be cost effective by reducing the number of routine duodenal biopsies taken. Further work is required to clarify the role of POCT for the assessment of histological remission in patients with known CD.

Disclosure of Interest None Declared.

PTH-117 THYMIC STROMAL LYMPHOPOIETIN IS PRIMARILY REDUCED IN REFRACTORY COELIAC DISEASE DUODENAL MUCOSA

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Introduction Thymic stromal lymphopoietin (TSLP), a cytokine released by enterocytes and gut dendritic cells, promotes the development of Foxp3+ regulatory T cells and at the same time inhibits the development of pro-inflammatory T helper (Th)1 and Th17 cells. While mucosal TSLP expression is down-regulated in untreated coeliac disease (CD), its levels are unknown in refractory CD (RCD), in which the transformation of aberrant intraepithelial T cells predisposes to the emergence of enteropathy-associated T cell lymphoma. Therefore, we evaluated the

expression of TSLP and its receptor (TSLP-R) in the duodenal mucosa of patients affected by RCD.

Methods Duodenal biopsies were collected from 12 RCD patients, 16 uncomplicated CD patients before and after 12 months of gluten-free diet, and 14 control subjects. The gene expression of TSLP and TSLP-R was evaluated on biopsy homogenates by quantitative RT-PCR, and the data were normalised for cytokeratin 18 expression. The protein expression of TSLP and TSLP-R was studied on biopsy homogenates by immunoprecipitation and on biopsy sections by confocal microscopy.

Results *In vivo* mucosal TSLP expression was significantly reduced both at the mRNA and protein levels in the duodenum of RCD and untreated CD patients compared to treated CD patients and controls, without differences between RCD and untreated CD patients and between treated CD patients and controls. TSLP transcript down-regulation in untreated CD mucosa was confirmed after normalisation for cytokeratin 18. TSLP-R was expressed in the duodenal mucosa both at the gene and the protein level, without significant differences between RCD, untreated and treated CD patients and control subjects. Confocal microscopy analysis confirmed these findings.

Conclusion TSLP expression is primarily reduced in the duodenal mucosa of RCD patients. Further studies are needed to clarify the influence of TSLP reduction on the process of immunosurveillance in RCD.

Disclosure of Interest None Declared.

PTH-118 ADHERENCE TO DUODENAL BIOPSY GUIDELINES INCREASES THE DETECTION OF COELIAC DISEASE: A MULTICENTRE UK STUDY

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Introduction Coeliac disease (CD) is a common autoimmune condition affecting 1% of the adult population. However large numbers of patients remain undiagnosed which may have significant health consequences. Guidelines suggest that at least 4 duodenal biopsies should be taken to rule out CD. A previous US study showed that biopsy guidelines were only followed in 35% of cases. The aim of the present study was to see whether guidelines were being followed in the UK and if adherence to the guidelines improved detection of CD.

Methods Endoscopy and histology reports were retrospectively reviewed for all patients who had a duodenal biopsy in a 3 month period between November 2012 and January 2013 from 4 UK hospitals. Indications for biopsy, role of the endoscopist, number of duodenal biopsies received by histopathology and the final diagnosis were recorded. The presence of villous atrophy was required for CD diagnosis. Patients were excluded if they had known CD. The difference between a double and single bite biopsy technique was also assessed.

Results 1423 patients underwent duodenal biopsy for possible CD across the 4 sites in the study period. 97 (6.8%) of these were diagnosed with CD. Guidelines to take at least 4 biopsies were met in 40% of patients and the median number of duodenal biopsies taken for all patients was 3. CD diagnosis was more likely guidelines were followed (10.1 vs. 4.6% $p < 0.0001$). The median number of biopsies was greater in patients diagnosed with CD (4 vs. 3) $p < 0.0001$. Gastroenterologists and nurse endoscopists were more likely than surgeons to follow guidelines (41.8% vs 51.2% vs 18.2% $p < 0.0001$) and took a higher median number of biopsies (3 vs. 4 vs. 2 $p < 0.0001$). As a result gastroenterologists and nurse endoscopists made a diagnosis of CD in more cases than surgeons (7.1 vs. 6.7% vs. 3.0% p 0.1). All presenting characteristics (other than positive serology in which guidelines were followed in 65%) were associated with poor adherence to guidelines. 12.4% of newly diagnosed CD patients had at least 1 non-diagnostic gastroscopy in the 5 years prior to diagnosis. Changing biopsy technique to single bites resulted in improvement of median D2 biopsies from 3 to 4. (p 0.02).

Conclusion We have shown that 12.4% of patients with CD had a previous gastroscopy 5 years prior to their diagnosis. Taking 4 duodenal biopsies results in increased detection of CD. We are the first investigators to demonstrate variation in biopsy rates based on the speciality of the endoscopist and biopsy technique. Furthermore this variability has a direct relationship with the detection rate of CD. Education of all groups of clinicians in duodenal biopsy techniques may result in more patients receiving a prompt diagnosis of CD.

Disclosure of Interest None Declared.

PTH-119 HIGH DEFINITION (HD) ENDOSCOPY WITH I-SCAN FOR THE DETECTION OF MARKERS OF COELIAC DISEASE: A FEASIBILITY STUDY

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Introduction Coeliac disease (CD) remains underdiagnosed. Previous studies have shown that up to 13% of patients with CD have undergone a previous gastroscopy where the opportunity to take duodenal biopsies and make a diagnosis had been missed. Clinicians may rely on the presence of endoscopic markers of CD to guide biopsy however these have been shown to lack the required sensitivity. A routine duodenal biopsy approach may solve this problem but this is time consuming and expensive. Methods to improve the macroscopic detection of CD at endoscopy to guide biopsy would seem advantageous. A single trial on I-Scan, a commercially available digital enhancement technique, has shown promising results in identifying markers of villous atrophy. However this was an uncontrolled, unblinded trial in high prevalence population (35% CD). We aimed to assess the utility of I-Scan in a lower prevalence population in a randomised controlled trial.

Methods Patients on a single coeliac enriched endoscopy list were randomised into 2 groups. Group 1 standard HD white light endoscopy (WLE) and group 2 WLE plus I-Scan. The presence of endoscopic markers of CD, scalloping, mosaic pattern, nodularity, loss of duodenal folds or increased vascularity was noted throughout the duodenum. All patients received 4 biopsies from the second part of the duodenum and at least 1 biopsy from the bulb. Coeliac serology was taken at the time of endoscopy. Macroscopic markers of CD are compared to the presence of villous atrophy on histology as the gold standard. 3, 10-point likert scales for pain, discomfort and distress were used to assess tolerability.