and EMA to detect coeliac disease, using duodenal biopsy as the gold standard.

Results 235 patients were recruited (145 female, median age 48, range 17–86). Of these, 51 had newly diagnosed coeliac disease and 184 were controls with a normal duodenal biopsy. The sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) for the individual coeliac serological test are demonstrated in Abstract PWE-120 table 1.

Abstract PWE-120 Table 1 Diagnostic accuracy of coeliac serological tests

Serological test	Sensitivity	Specificity	PPV	NPV
TTG	92%	84%	61%	98%
EMA	80%	98%	93%	95%
TTG POCT	67%	97%	87%	91%

Conclusion The Negative Predictive Value of the transglutaminase-based POCT may allow us to adopt this into clinical practice and potentially reduces the number of duodenal biopsies which would be taken at endoscopy.

Competing interests None declared.

PWE-121 DOES CHROMOENDOSCOPY ALLOW AVOIDANCE OF DUODENAL BIOPSY IN COELIAC DISEASE?

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Introduction Chromoendoscopy is increasingly being used to detect, localise and characterise mucosal abnormalities seen at gastrointestinal endoscopy. The endoscopic features of coeliac disease may be difficult to recognise and are reported to lack sensitivity and/or specificity. Thus many UK centres undertake routine duodenal biopsy or have a low threshold for duodenal biopsy in order to ensure detection of patients with coeliac disease. Other than one Italian investigator group there has been limited work evaluating the role of duodenal dye spray in patients undergoing endoscopy. We aimed to determine if dye spray improved identification of characteristic endoscopic markers of coeliac disease and whether this would enhance a biopsy avoidance strategy.

Methods Patients undergoing oesophagastroduodenoscopy (OGD) with duodenal biopsies were prospectively recruited between January and November 2011. Four experienced endoscopists undertook the endoscopic examinations, with endoscopic findings reported both before and after the use of indigo carmine dye spray in the second part of the duodenum (D2). Endoscopic markers reported suggestive of coeliac disease included reduction or absence of duodenal folds, scalloping, mosaic pattern, visible blood vessels and nodularity of the duodenal folds. Thereafter, in accordance with the current gold standard four duodenal biopsies were taken and histology compared with reported endoscopic findings.

Results 83 patients were recruited (55 female: 28 male, median age 49 years). Of these, 33 (40%) had coeliac disease (24 newly diagnosed, nine previously treated) and 50 were controls. Three of the treated coeliac patients had persistent Marsh 3a–3c changes. In patients with coeliac disease (n=33), endoscopic features of coeliac disease were identified in 16/33 (48%) of patients. The addition of dye spray in D2 accentuated these features but only highlighted endoscopic markers in two further cases (18/33, 55%), which was not statistically significant (p=0.81). However, a significant difference was identified when comparing endoscopic markers in the coeliac group with the control group (p<0.001), both before and after the use of dye spray (Abstract PWE-121 table 1). Sensitivity, specificity, positive and negative predictive values of chromoendoscopy to detect coeliac disease were 55%, 100%, 100% and 77% respectively.

Abstract PWE-121 Table 1

		Coeliac endoscopic markers seen	
	n	Without dye	With dye
Coeliac group	33	16	18
Control group	50	0	0

Conclusion The preliminary data from this study suggests there is no additional benefit of using dye spray in patients with suspected coeliac disease. Our data suggests that our current practice of a low threshold for duodenal biopsy may still be the optimal way of diagnosing patients with coeliac disease due to the low sensitivity of endoscopic markers.

Competing interests None declared.

PWE-122 HOW RELIABLE IS SEROLOGICAL TESTING IN THE DIAGNOSIS OF COELIAC DISEASE?

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Introduction Coeliac disease is an autoimmune disorder of the small bowel with a prevalence as high as 1:100 in the UK and Ireland. The gold standard for diagnosis is to identify the characteristic histopathological changes (based on the modified Marsh criteria) from an adequate small bowel biopsy. However non-invasive serological blood tests are often the first line investigation. Serological testing is reported to have both high sensitivity and specificity with the sensitivity and specificity of IgA anti-tissue transglutaminase antibodies (tTG) being higher (99% and >90%) than IgA anti-gliadin (46–100% and 86–100%) and IgA anti-endomysium (74–100% and 91–100%). However, in a study of 26 UK patients with coeliac disease Smith-Laing *et al* (Clinical Medicine 2009) raised the issue of limitations of serological testing reporting discrepancy between histology and anti-tTG in as many as 38.5%. Given our reliance on serological testing the results were of concern. The objective of this retrospective study was to analyse the results of serological tests for coeliac disease in consecutive patients with duodenal biopsies confirming the diagnosis.

Methods Results of duodenal biopsies which fulfilled the histological criteria for coeliac disease between 2005 and 2010 at two UK district general hospitals (King George hospital, Ilford and Queen's hospital, Romford) were correlated with coeliac serological tests. IgA tTG antibodies, IgA anti-endomysium antibodies, and serum IgA levels were recorded. Serological testing done before or within a month of biopsy was noted. Reference range for tTG was >15 U positive.

Results There were 182 positive duodenal biopsies. Serological tests were not performed in 35 patients. Of the remaining 147, sixteen were excluded (IgA not measured—6, IgA deficient—3, serological testing done more than a month after biopsy date—6, other—1). Complete data were therefore available in 131. Nine patients with confirmed coeliac disease had anti-tTG levels below the diagnostic range. Of these, three had positive anti- endomysium antibody. Thus anti-tTG levels suggestive of coeliac disease were found in 122 of 131, demonstrating sensitivity of 0.93 with combined sensitivity of tTG and anti-endomysium of 0.954.

Conclusion This retrospective study reassuringly demonstrates that there is not a significant number of serologically negative but

positive biopsy cases. A proportion of patients will not have serological tests going straight to endoscopy as first line investigation for their anaemia. Serological testing remains useful in primary care and for physicians to diagnose coeliac disease; however it is important to be aware of the small number of cases (approximately 5%) that will be missed when relying on serology alone.

Competing interests None declared.

PWE-123 RESPONSE TO BILE ACID SEQUESTRANTS IS POOR IN PATIENTS WITH EQUIVOCAL SEHCAT RESULTS

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Introduction Bile acid malabsorption (BAM) is a common cause of chronic diarrhoea that can be diagnosed by the SeHCAT test and treated with bile acid sequestrants (BAS). The purpose of this study was to clarify the use and efficacy of BAS in the treatment of patients with diarrhoea and equivocal SeHCAT results.

Methods Case records were reviewed over a 6-year period for patients investigated by SeHCAT with a positive (≤8%), equivocal (>8% and <16%) or negative (>16%) retention result. Patients were sub-characterised into the following groups. Group 1: terminal ileum Crohn's disease, (pre or post resection) n=51. Group 2: diarrhoea predominant irritable bowel syndrome (D-IBS) n=159. Group 3: BAM associated with other gastrointestinal disease n=51; of which cholecystectomy (n=37), coeliac disease (n=1), chronic pancreatitis (n=1), bacterial overgrowth (n=2), diabetes (n=4) and other gastrointestinal surgeries (n=6). Group 4: terminal ileum disease plus cholecystectomy n=3. Patients' sex and age were recorded. Use of BAS (colestyramine or colesevelam) and response were noted.

Results SeHCAT tests were performed in 264 patients and 39 (15%) patients were found to have equivocal results while 104 (39%) had positive results. Although 28/39 (72%) patients with equivocal results were offered treatment with BAS, information on response to treatment was only available in half of these patients (n=14). In comparison, there was a higher rate (75%) of follow-up in the patients with positive SeHCAT results with information on response to treatment being available in 73 of the 97 patients offered BAS treatment. There was a marked difference in response to BAS therapy between the two groups. A successful response was noted in only 36% (n=5) of patients with equivocal SeHCAT results while 66% (n=48) of patients with positive SeHCAT results had a successful response. The difference in treatment response was also most significant among the patients in group 2 with D-IBS. 73% (n=24/33) of the patients with positive SeHCAT results in group 2 responded to BAS therapy while only 33% (n=3/9) of those with equivocal SeHCAT results in this same group had a successful response.

Conclusion This retrospective study indicates that there is a poorer response to bile acid sequestrants among patients with equivocal SeHCAT results, however it is possible there was a disproportionate number of non-responders attending for follow-up in this group. More comprehensive follow-up is needed in patients with equivocal SeHCAT results in the future to help determine whether BAS treatment in this lower response group is cost-effective.

Competing interests None declared.

PWE-124 COLESEVELAM USE AND EFFICACY FOR BILE ACID MALABSORPTION

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Introduction Bile acid malabsorption (BAM) is a common cause of chronic diarrhoea that can be diagnosed by the SeHCAT test and treated with bile acid sequestrants (BAS). Colestyramine, the most commonly used BAS, is often poorly tolerated due to side effects including nausea, vomiting, flatulence and abdominal pain. Colesevelam, has recently been advocated, as a second line BAS therapy in patients who poorly tolerate colestyramine.[1] The purpose of this retrospective study was to determine the current use and efficacy of colesevelam in bile acid malabsorption.

Methods Case records were reviewed over a 6-year period for patients found to have a positive SeHCAT test (defined as retention ≤8%). The age and sex, indication for SeHCAT test, use of BAS and clinical response were noted.

Results SeHCAT tests were performed in 264 patients, of which a positive SeHCAT was found in 104 (39%). Data on use and response to BAS were found in 73. The majority (n=68) were given colestyramine as first line treatment with only five receiving colesevelam first line. Symptom improvement with colestyramine occurred in 41/68 (60%). 27/68 (40%) failed colestyramine therapy of which 2/3 were due to poor tolerance. 12 of these were then offered second line therapy with colesevelam. 42% of the 12 patients (n=5) who were given colesevelam after failing to respond to or tolerate colestyramine had a positive response to colesevelam second line. None of the patients reported poor tolerance to colesvelam. Overall BAS response was slightly higher among male patients (76% success in males vs 60% success in females) but there were no differences between different age groups.

Conclusion This retrospective study indicates a good response rate and good tolerance to colesevelam in colestyramine non-responders; however its use as second line therapy was low for reasons that are unclear. Further study is needed to establish whether colesevelam might have better efficacy than colestyramine as first line therapy and to raise awareness of its availability.

Competing interests None declared.

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PWE-125 DOES THE TNM STAGING CRITERIA PREDICT SURVIVAL IN PATIENTS WITH SMALL BOWEL NEUROENDOCRINE TUMOURS?

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Introduction Small bowel neuroendocrine tumours (SBNETs) are regarded as relatively indolent cancers. A TNM staging system designed by European NET Society (ENETS) was designed to help stage these tumours to enable ease in classification of these tumours.[1] This study aims to demonstrate whether the TNM stage and grade of tumour predicts survival in this cohort of patients. The cause of death is also analysed.

Aim To retrospectively stage patients with known small bowel primary NETs and see whether survival is dependent on stage and grade of disease. The cause of death in patients with small bowel NETs was also analysed.

Methods A total of 138 patients with SBNETs were identified. Primary site: Duodenal 2.1% (3), Jejunal 2.9% (4), ileal 95% (131).