Introduction Duodenal bulb biopsies have been demonstrated to increase the diagnostic rate of newly diagnosed coeliac disease (CD) by 10%. The aim of this study was to assess the utility of duodenal bulb biopsies for the assessment of established CD.

Methods A prospective study of 375 established CD patients (mean age 51.0 years; 69.9% female) who underwent endoscopy for assessment of persisting symptoms or remission at Sheffield Teaching Hospitals was performed, between 2013–2019. Quadrantic biopsies were taken from D2 in addition to duodenal bulb biopsies.

Results 63.2% (n=237) of patients had ongoing villous atrophy (VA). Table 1 outlines the histological appearance of D1 and D2 biopsies. Among those with VA (n=237), this was confined to D1 in 10.2% (n=14) and to D2 in 8.0% (n=11). There was no significant difference in number of patients with VA confined to D1 versus D2 (p=0.69). There was no difference in age (p=0.18) or gender (p=0.10) between patients with VA confined to D1 compared to the remaining cohort. As time from diagnosis increased, the proportion of individuals with complete duodenal mucosal healing (defined as Marsh 0 in both D1 and D2 biopsies) also increased. Two years after diagnosis 4.9% (n=11) of patients had complete healing, increasing to 10.7% (n=24) after 4 years, 17.3% (n=39) after 6 years, 20.9% (n=49) after 8 years and 24.0% (n=54) after 10 years. A further 11.1% (n=25) of patients achieved complete healing after more than 10 years since diagnosis.

Conclusions Duodenal bulb biopsies increased the detection of VA by 10% in established CD, highlighting the importance of bulb biopsies in established CD for the first time in the literature. Complete mucosal healing can occur in established CD after a significant delay, suggesting development of immune tolerance in these individuals.

Introduction The coordination of biliary and pancreatic secretions is vital for normal digestion. However, it is unknown if bile acid malabsorption (BAM) is associated with pancreatic exocrine insufficiency (PEI). Faecal elastase-1 (FE1) is the only widely available test for PEI. Its limitations include a falsely low (positive) result in patients submitting dilute stool samples, as might occur in patients with BAM. We studied the association between BAM and PEI, and the impact of coexisting BAM on the management of patients with low FE1.

Methods We carried out a retrospective study at a London teaching hospital. All outpatients investigated with both FE1 and a SeHCAT scan 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, and BAM as 7-day SeHCAT retention ≤15%. Where FE1 had been repeated, any normal result led to classification as not having PEI. Logistic regression was used to explore the dependence of PEI on BAM, and multivariable logistic regression was used to adjust for age, sex and ethnicity. Pearson’s Chi² test was used to study the association between BAM and repeating FE1, imaging the pancreas, and the initiation and response to pancreatic enzyme replacement therapy (PERT). Complete case analysis was used where any data were missing.

Results 258 patients were identified; mean age 51 years; 65.3% female; 61.6% white ethnicity. BAM was diagnosed in 111 patients (43%). PEI was diagnosed in 39 patients (15.1%), with no subjective difference between those with and without BAM (15.3% v. 15.0%). On univariable analysis, BAM was not associated with PEI (OR 1.03; 95% CI 0.52 to 2.04; p=0.94). After adjusting for age, sex and ethnicity, this lack of association held (OR 0.78; 95% CI 0.37 to 1.64; p=0.52).

43 patients (16.7%) had FE1 repeated, with 9 patients (20.9%) reclassified from PEI to normal as a result. There was no difference between patients with and without BAM in FE1 being repeated (15.3% v. 17.7%; p=0.61) or the repeat FE1 leading to reclassification of PEI status (23.5% v. 19.2%; p=0.74). In patients with PEI, there was no difference in the rate of pancreatic imaging between those with and without BAM (64.7% v. 63.6%; p=0.61), but pancreatic abnormalities were detected more frequently in patients with coexisting BAM (58.3% v. 20.0%; p=0.04). Findings included atrophic or fatty pancreas, and one pancreatic cancer. There was a non-significant trend towards fewer patients with PEI and BAM receiving PERT (58.8% v. 72.7%; p=0.36), but no difference in clinical response when treated (77.8% v. 76.9%; p=0.96).

Conclusions BAM is not associated with PEI. However, when a patient with BAM does have a low FE1, our findings suggest most are representative of PEI, rather than false positives.
coeliac disease.\textsuperscript{1} Duodenal biopsies (D2) should be performed only after a positive serological test or a negative test with a high clinical suspicion by gastroenterologist. Previous studies have demonstrated that random D2 biopsies are not cost effective.\textsuperscript{2} We aimed to analyse whether current practice is now in keeping with guidelines.

**Methods** This was a retrospective review of the electronic records of 422 patients who had had duodenal (D2) biopsies in 1 year. Furthermore, we collated the annual number of duodenal biopsies from 2009 to 2018 to determine if the new guidelines had made an impact.

**Results** The indications for endoscopy were iron deficiency anaemia (IDA) (68%), low ferritin (3%), weight loss, loose stool and non-specific gastrointestinal symptoms (29%). Only 1 patient with a negative tTG had a positive biopsy.

Prior to D2 biopsy, 192(45%) patients had no previous TTG or D2 biopsy. Of these, 9 had a positive biopsy and were subsequently found to be tTG positive. 203 (48%) patients had biopsies despite a negative tTG. 31 (7%) had previous normal D2 biopsies (12 also negative TTG).

The excess cost incurred for processing biopsies after a negative TTG was £12,180. £9882 would have been saved by carrying a TTG test in subjects having a negative biopsy.

The number of biopsies over 10 years remained largely unchanged with a low of 412 in 2012 and a high of 522 in 2018 with a median of 437 biopsies per year.

**Conclusion** A significant proportion of duodenal biopsies are still done in patients with a negative TTG and/or previous normal D2 biopsy. Following BSG guidelines, would have saved over £20,000 in 1 year. We suggest an IT based solution where an alert is triggered to check tTG at the same time as a referral is made for endoscopy. Furthermore, D2 biopsy samples can be delayed until a tTG is checked if not done prior to endoscopy. Finally, a point of care tTG could be utilised in GP surgeries or endoscopy units to minimise any delay. These measures will be put forward to the CCG.