PWE-030 5 YEAR EXPERIENCE- SAFETY/EFFICACY OF MIROCAM CAPSULE ENDOSCOPY IN PATIENTS WITH CARDIAC IMPLANTABLE ELECTRONIC DEVICES

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Introduction Cardiac Implantable electronic devices (CIEDs) are seen to be a relative contraindication to capsule endoscopy (CE), due to concern that interaction between the 2 devices may lead to technical failure or interference to each device. Consequently, CE is performed infrequently in this cohort and hence significant pathology may be missed. The MiroCam capsule (Intromedic, Seoul) does not use the standard radiofrequency transmission, but a mechanism known as human body communication (HBC), considered to be safer. Our aim was to assess the safety and efficacy of CE in this cohort.

Methods A retrospective analysis of a prospectively collected database of CE procedures between May 2014 and January 2019. All CIEDs were remotely checked on the day or by interrogation of log files post procedure for any technical disruption. All video footage from the CE was analysed to check for image degradation or signs of interference. The positive findings (PY), and those deemed to be diagnostic (DY) on capsule endoscopy were documented.

Results 1018 CE procedures were performed during the study period. 45 of these were performed in patients with CIEDs (28 pacemakers, 6 implantable cardiac monitors, 5 defibrillators, 2 Cardiac Resynchronisation Therapy Pacemakers (CRT-P) and 4 CRT Defibrillators (CRT-D). The median age was 68 years with 62% females. The main indications were occult (n=21) and overt GI bleeding (n=15). Log files from all the implantable devices showed no signs of technical disruption. Video footage from CE showed no image degradation apart from one case which coincided with the use of a Microwave oven. The PY was 36/45= 80% v 332/641= 65.9% (p<0.05) and DY was 24/45= 53.3% v 372/973= 38.2% respectively in the CIED group compared to the non-CIED group (p<0.05).

Conclusions CE with the MiroCam capsule has been shown to be safe within this large cohort of patients, with no incidences of any technical disruptions in patients with CIEDs. Considering the higher rate of positive and diagnostic findings in CIED patients, CE with the MiroCam capsule in patients with an CIEDs should not be considered a contraindication. Further studies are required to see if this translates to other capsule manufacturers.

PWE-031 NO ASSOCIATION BETWEEN HLA-DQA1*05 AND -DQB1*02 GENE DOSAGE AND CLINICAL PHENOTYPE OF COELIAC DISEASE

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Introduction Coeliac disease is a common gluten-sensitive enteropathy. Disease susceptibility is strongly associated with specific Human Leukocyte Antigen (HLA)-DQA1 and -DQB1 loci. Individuals with the HLA-DQA1*05:HLA-DQB1*02

heterodimer (referred to as HLA-DQ2.5) have the highest risk of developing coeliac disease, particularly if two copies of HLA-DQB1*02 are present. Understanding whether differences in the frequency of DQA1*05 and DQB1*02 accounts for differences in the clinical phenotype of coeliac disease is important for the development of personalised medicine for patients and was addressed in the following study.

Methods Demographic, clinical and laboratory data was retrospectively collected from adult patients attending the specialist coeliac disease clinic, Royal Hallamshire Hospital between 2008 to 2016 and correlated with the number of DQA1*05: DQB1*02 combinations forming the DQ2.5 heterodimer (DQ2.5 gene dose), as well as the frequency of DQB1*02.

Results Four hundred and ninety patients had biopsy-proven coeliac disease and HLA genotype information. Individuals who were positive for the DQ2.5 heterodimer were more likely to be EMA positive than those who were DQ2.5 negative (p=0.0132). There were no linear associations between the DQ2.5 gene dosage and clinical or laboratory parameters assessed. 190/490 (39%) patients carried two copies of DQB1*02, 278/490 (57%) patients had a single copy and DQB1*02 was absent in 22/490 (4%) patients. The prevalence of folate deficiency was higher and mean haemoglobin levels lower, in individuals carrying two copies of DQB1*02 than those with a single copy of DQB1*02 (p<0.001 and p=0.002, respectively), but neither were different in DQB1*02 negative individuals (p>0.05). The carriage of two copies of DQB1*02 did not correlate with any other parameters.

Conclusions The presence of DQA1*05 and DQB1*02 is well documented to correlate with risk of developing coeliac disease. Our results suggest that there is no association between homozygosity/heterozygosity for DQA1*05 and DQB1*02 and the clinical phenotype of active disease. These results provide an important insight into the interpretation of HLA-DQ data in the setting of coeliac disease.

PWE-032 CAN YOU DIAGNOSE ADULT COELIAC DISEASE WITHOUT THE NEED FOR A DUODENAL BIOPSY?

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Introduction National Institute of Clinical Excellence (NICE) and British Society of Gastroenterology (BSG) guidelines advise that a Duodenal (D2) Biopsy is required for a definitive diagnosis of coeliac disease. British Society of Paediatric Gastroenterology, Hepatology and Nutrition (BSPGHAN) 2013 guidelines indicate that this may not always be necessary. This study explored whether D2 Biopsy needs to be mandatory in the event of strongly positive IgA tissue transglutaminase (tTG).

Methods We extracted data from the pathology system for all adult patients who tested positive for IgA tTG between January to December 2018. For IgG and IgA tTG a fluorescent enzyme immunoassay technique is used (Reagents from ThermoFisher on Phadia 250 analyser) by our local laboratory. tTG is reported as numeric value. Patients without D2 biopsies or biopsies more than 3 months apart from serology (n=147) and patients already known to have coeliac disease (n=9) were excluded. D2 biopsy results were reviewed for all

included patients. Marsh classification was applied to interpret the biopsy results. We then verified different multiples of Upper Limits of Normal (ULN) IgA tTG against the D2 biopsy results.

Results The total number of adult patients who had positive serology in the study period was 214. After applying the exclusion criteria, D2 biopsies of 58 patients were studied. The age range was 17 to 89 (mean 53.46, median 57). Male female ratio was 23:35. 47 of these patients had positive D2 biopsies (Marsh 2 or above), 3 patients had biopsies consistent with Marsh 1. Positive Predictive Value (PPV) for positive tTG taking different multiples of ULN was as follows.

Abstract PWE-032 Table 1

PPV	Marsh 2 and above	Marsh 1 and above
1XULN	0.827 (48/58)	0.879 (51/58)
5XULN	0.937 (30/32)	0.968 (31/32)
10XULN	0.90 (18/20)	0.95 (19/20)
>128	1 (12/12)	1 (12/12)

Conclusions The current Gold standard for diagnosis of Coeliac disease is a positive D2 biopsy. This initial study shows that locally agreed cut off for positive serology can be accepted as diagnostic and the need for OGD and D2 biopsies could be avoided. Potentially this could reduce delays in diagnosis and allow patients to commence a gluten free diet more quickly.

PWE-033 ASSESSING GFD ADHERENCE USING URINE GLUTEN IMMUNOGENIC PEPTIDES IN COELIAC DISEASE: FIRST UK PILOT STUDY

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Introduction Adherence to a gluten free diet (GFD) is essential, as poor adherence can lead to persistent villous atrophy and subsequent complications of coeliac disease. We have previously shown¹ that non-invasive markers of adherence have a poor sensitivity in comparison to the gold standard of duodenal biopsy. As a result of this, we assessed the novel technique of gluten immunogenic peptides (GIP) in the urine.

Methods Patients with coeliac disease both new diagnosis and those referred to secondary care for further evaluation of dietary adherence/disease remission were assessed from September 2018 to December 2018. Patients were tested for GIP using a rapid immunochromatographic test, following the collection of mid-stream urine samples. All patients were also tested for tissue transglutaminase (IgA-TTG) and endomysial antibodies (IgA-EMA) via blood tests. At least 4 duodenal biopsies were taken from D2 and at least one biopsy from the duodenal bulb, with the presence/absence of villous atrophy used to determine sensitivities of the tests.

Results 17 patients were recruited (n=12 female, 71%), median age 52 years (range 25–74 years), median duration of GFD 96 months (0–840 months). 2 patients were newly

diagnosed CD, 15 patients were established diagnosis of CD. Table 1 outlines the sensitivity and specificity of GIP, IgA-TTG and IgA-EMA.

Conclusions Urine GIP testing was not superior to IgA-TTG or IgA-EMA. Further data is required to assess this modality as a predictor of villous atrophy and adherence before this can be used in clinical practice.

Abstract PWE-033 Table 1 | Comparison of GIP, TTG and EMA

	Sensitivity% (CI)	Specificity% (CI)	Positive predictive value% (CI)	Negative predictive value% (CI)
GIP	66.7 (24.1–94.0)	63.6 (24.1–94.0)	50.0 (17.4–82.5)	77.7 (40.1–96.1)
IgA-TTG	40.0 (7.3–83.0)	100.0 (67.9–100.0)	100.0 (19.8–100.0)	78.6 (48.8–94.3)
IgA-EMA	40.0 (7.3–83.0)	100.0 (67.9–100.0)	100.0 (19.8–100.0)	78.6 (48.8–94.3)

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PWE-034 SHOULD WE BE DIAGNOSING COELIAC DISEASE IN THE ELDERLY?

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Introduction Coeliac disease (CD) is common, but is underdiagnosed in the elderly due to lack of physician awareness and heterogeneity of presentation. We aimed to establish whether there has been a change in the diagnosis of CD in the elderly (over 65 years old) from 1990 until present day, as well as the clinical and histopathological features of CD in old vs. young adults.

Methods Newly diagnosed CD patients were prospectively recruited from the Coeliac Specialist Clinic at the Royal Hallamshire Hospital, Sheffield, between 2008 and 2017. All patients had villous atrophy (VA) on biopsy, positive coeliac serology (IgA-tissue transglutaminase and IgA-endomysial antibodies) and compatible Human Leukocyte Antigen (HLA) typing. Additionally, patients were retrospectively identified from 1990 to 2008 to determine the trend in elderly CD diagnostic frequency over time.

Results 1605 patients with CD were recruited (n=644 prospectively, n=961 retrospectively). Of these, 208 patients (13.0%) were diagnosed over the age of 65 years between 1990 and 2017. The proportion of elderly CD diagnoses increased from 0% (n=0/11) in 1990–1991 to 18.7% (n=41/232) in 2016–2017 (p<0.001). The male to female ratio decreased with increasing diagnostic age from 1.71:1 in the 18–34 age group to 1.02:1 in the over 65 age group (p<0.001). Younger patients more commonly presented with fatigue (p<0.001) and gastrointestinal symptoms including diarrhoea (p=0.005), abdominal pain (p=0.019), and IBS-type symptoms (p=0.008), as seen in table 1. Older people