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OC-078 COELIAC DISEASE AND PERSISTING SYMPTOMS: SHOULD CAPSULE BE THE NEXT INVESTIGATION?

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Introduction Up to a third of patients with coeliac disease fail to have a symptomatic response to a gluten-free diet (GFD), or relapse after initial response. Causes include inadvertent gluten exposure and complications of coeliac disease such as lymphoma. There are limited published data assessing the role of capsule endoscopy (CE) in patients with coeliac disease and persisting symptoms. For this reason we evaluated our experience of CE in this group of coeliac patients.

Methods Data from all patients with established, biopsy-proven coeliac disease and persisting symptoms despite 12 months GFD, who underwent CE between 2004 and 2011 in a tertiary gastroenterology department were analysed. Concurrently we performed serology (endomysial antibody [EMA] and tissue transglutaminase [tTG]), and a duodenal biopsy (Marsh grading, and where appropriate T cell clonality). At CE changes of coeliac disease such as scalloping, mosaic pattern and loss of folds were assessed including extent of disease (proximal or diffuse). Concordance between serology, histology and CE was assessed using Spearman's coefficient.

Results 69 patients (47 female, median age 56 years, range 22–83 y) were identified. 8/69 (13.0%) had significantly abnormal CE findings with either mass lesions, extensive disease or ulceration. In these eight cases: two had enteropathy associated lymphoma (EATL), four Type 1 refractory disease, one fibroepithelial polyp, one had ulcerative jejunitis. Of the 4 (4/69, 5.8%) refractory Type 1 cases, two were started on immunosuppressants, one died of unrelated causes and another was a tertiary referral case in whom outcome data are unknown. There was no correlation between the likelihood of having complicated coeliac disease and the serological titres (either a positive EMA or significantly raised tTG). However, there was a positive correlation between more extensive changes at CE (diffuse) and the level of tTG (r=0.448, p=0.001). A similar observation was made for the relationship between diffuse involvement at CE and EMA positivity (r=0.351, p=0.003). There was also a correlation between the extent of disease observed at CE and histology (r=0.455, p<0.0001).

Conclusion This is the largest internationally reported series demonstrating a role for CE in coeliac disease patients with persisting symptoms. A significant proportion are found to have complicated or refractory coeliac disease. Extensive changes of coeliac disease seen on CE should prompt clinicians to investigate for refractory disease, request PCR on duodenal biopsy (for monoclonality) and consider immunosuppressive therapy.

Abstract OC-078 Table 1 Features of coeliac disease on CE and serology

	No features	Mild	Extensive
tTG 0–99	22	15	12
tTG100–299	0	2	5
tTG >300	3	2	8

Competing interests None declared.

OC-079 FGF19 EXPRESSION IS HIGHLY RESPONSIVE TO BILE ACIDS COMPARED TO OTHER BILE ACID REGULATORY GENES WITHIN THE HUMAN ILEUM

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Introduction The expression of the enteric hormone FGF15 is largely restricted to the ileum in the mouse. FGF15 has also been shown to be the most BA responsive gene in mouse ileum. FGF19 is the human orthologue of FGF15 and is thought to have roles in the regulation of bile acid pool sizes and BA homeostasis. We set out to investigate the distribution of FGF19 expression in the human GI tract and FGF19 gene responses to BA in human ileum.

Methods Biopsies of normal ileal mucosa were obtained from 29 patients undergoing colonoscopy. Basal ileal FGF19 expression was compared to colonic (n=9) and duodenal FGF19 expression (n=3). Ileal biopsies (explants) from 20 patients were incubated for 6h in short term tissue culture in parallel with BA (chenodeoxycholic acid [CDCA] or glyco-chenodeoxycholic acid [GCDCA]) or without (control explants). 3 Duodenal and colonic explants from were also studied. Real-time qRT-PCR was used to measure expression of transcripts for FGF19, and several other ileal BA regulatory genes (ASBT, IBABP, SHP, FXR, OSTα and OSTβ). FGF19 protein levels in culture fluid were also measured by specific ELISA.

Results Transcripts for FGF19 were detected in human ileum, but not colon or duodenum. FGF19 expression was greatly induced in all ileal explants incubated with BA: geometric mean induction of 316-fold by 50 μM CDCA (n=17, p=0.0003), and 231-fold by 50 μM GCDCA (n=11, p=0.001). Measured by ELISA, the amount of FGF19 protein released into the culture media was significantly higher from the explants incubated with 50 μM of BA (CDCA 51 pg/explant, range 8–169, n=11 and GCDCA 38 pg/explant, range 3–113, n=10) compared to the matched control explants (8pg/explant, range 0–46 [p=0.0008] and 6 pg/explant, range 0–13 [p=0.0022] respectively). The EC50 for CDCA was 20 μM and 24 μM for GCDCA. Responses to both BA were similar at 50 μM and 100 μM. 6 h incubation of duodenal and colonic explants with 100 μM CDCA or GCDCA showed that FGF19 expression levels were <0.35 times the FGF19 expression seen in the control ileal explants at 6 h. In ileal explants, responses of other genes to CDCA and GCDCA at 50 μM (n=3–4) showed median increases for IBABP, OSTα, OSTβ and SHP between 2.4 and 4.0-fold, whereas ASBT and FXR showed little change.

Conclusion FGF19 is expressed in human ileum but not the colon or duodenum. Ileal FGF19 expression is highly responsive to CDCA and GCDCA, compared to other BA regulatory genes. No significant induction of FGF19 expression is observed in duodenum or colon with BA. Ileal BA induced FGF19 responses could be studied in clinical conditions of dysregulated BA homeostasis.

Competing interests None declared.

OC-080 REDUCED CIRCULATING FGF19 LEVELS ARE ASSOCIATED WITH SYMPTOMS OF DIARRHOEA IN CROHN'S DISEASE

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