cases were 60% and 25%, respectively. At present, the median survival period after recurrence of operation cases was longer than that of contraindication cases (37months v.s. 13months). Our results suggested that one FDG-PET oriented operation roughly corresponded to one year survival benefit with restart.

Conclusion Conclusion: FDG-PET could identify malignant lesions at earlier stage, and was an effective modality to evaluate not only disease spread but distant metastasis for recurrence of colorectal cancer. In this study, we first concretely demonstrated that FDG-PET oriented surgical indication had survival benefit for recurrent colorectal cancer.

Disclosure of Interest None Declared

OC-087 SCREEN-DETECTED COLORECTAL CANCERS ARE ASSOCIATED WITH AN IMPROVED OUTCOME WHEN COMPARED WITH INTERVAL CANCERS WHEN MATCHED FOR STAGE

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Introduction Colorectal cancers detected through the NHS Bowel Cancer Screening Programme (BCSP) have been shown to have a more favourable outcome compared to non-screen detected cancers. The aim of this study was to identify whether this was solely due to the earlier stage shift of these cancers, or whether there were other factors involved.

Methods A combination of a regional colorectal cancer registry (Northern Colorectal Cancer Audit Group) and the BCSP database were used to identify screen detected cancers and interval cancers (diagnosed after a negative faecal occult blood test, before the next screening round). All cancers were diagnosed between April 2007 and March 2010, within the North East of England. For each Dukes' stage, patient demographics, tumour characteristics, and survival rates were compared between the screen detected and interval cancer groups.

Results 322 screen detected cancers were compared against 192 interval cancers.

Significant differences highlighted in bold, $p < 0.05$. Mean follow-up 32 months.

Conclusion With equivalent patient demographics and tumour characteristics, the improved survival of screen detected cancers over interval cancers for Stages C and D suggest that there may be a biological difference in the cancers in each group. Although lead-time bias may have a role, this may be related to a tumours propensity to bleed and therefore may reflect detection through current screening tests.

Disclosure of Interest None Declared

OC-088 PROSPECTIVE PILOT STUDY TO INVESTIGATE TRANSCUTANEOUS SACRAL NERVE STIMULATION FOR FAECAL INCONTINENCE

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Introduction Sacral nerve stimulation (SNS) is an effective treatment for faecal incontinence (FI). However it is expensive, it requires two operations and has a risk of infection, implant migration and pain. Transcutaneous SNS is non-invasive and cheap. Only one small study has previously reported its use for FI. The aim of this study is to further assess the efficacy of transcutaneous SNS for FI.

Methods Recruited patients self-administered transcutaneous SNS for 12 hours a day, over four weeks. A two week bowel diary was kept for the final two weeks and compared to baseline. St Marks FI scores, a visual analogue scale assessing satisfaction with bowel habit, Rockwood FI QOL scores and SF-36 QOL scores were obtained.

Results Ten patients were recruited. Two achieved complete continence. There were significant reductions in the frequency of FI episodes per week, 9.5 (7.5) to 3 (7.38); $p = 0.03$, and in the frequency of defecation per week, 25.5 (19.5) to 14.5 (14.9); $p = 0.007$. There was a significant improvement in the ability to defer defecation (1(1.25) to 4.5 (4.5) minutes, $p = 0.02$). There was a significant improvement in the St Marks FI score, 20 (5.25) to 14.5 (8.0); $p = 0.01$. There was a significant improvement in the bowel habit satisfaction visual analogue scale 8.5 (20) to 45 (33); $p = 0.008$. There were no significant changes in the Rockwood FI QOL score, or in the SF-36 QOL score. No complications were reported.

Conclusion Transcutaneous SNS appears to be an effective and safe treatment for FI.

Disclosure of Interest None Declared

Pathology free papers

OC-089 EPIGENETIC CONTROL OF GI INFLAMMATION VIA THE METHYL-BINDING PROTEIN MBD2

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Introduction Methyl-CpG binding protein domain protein-2 (Mbd2) is a transcriptional co-repressor that binds to methylated DNA. Mbd2 can recruit a nucleosome remodelling complex which contains chromatin remodelling and histone deacetylase properties. Mbd2 deficient mice are viable and fertile. However, they display a dysregulated immune phenotype with an aberrant T cell cytokine response and susceptibility to intestinal helminth infection (1). This immunological phenotype has not been explored in the GI tract.

Abstract OC-087 Table

	Dukes' Stage A		Dukes' Stage B		Dukes' Stage C		Dukes' Stage D	
	Screen	Interval	Screen	Interval	Screen	Interval	Screen	Interval
Gender	No Difference		No Difference		More Men	More Women	No Difference	
Deprivation Level	No Difference		No Difference		No Difference		No Difference	
ASA Grade	No Difference		No Difference		No Difference		No Difference	
T Stage	No Difference		More T3	More T4	No Difference		No Difference	
N Stage	N/A		N/A		More N1	More N2	No Difference	
Tumour Site	No Difference		No Difference		More Left-Sided	More Right-Sided	No Difference	
Survival Rate	No Difference		No Difference		Better	Worse	Better	Worse

Aim To assess the impact of Mbd2 deficiency on the activation status and cytokine production of naïve *Mbd2-/-* leucocytes isolated from murine small intestine (SI) and large intestine (LI) lamina propria (LP).

Methods All mice were bred in specific-pathogen free facilities at the University of Edinburgh. *Mbd2-/-* mice were produced as described previously (1). Single cell suspension of SI and LI LP were isolated as previously described, n = 4 in each group, minimum 2 experiments (2). Controls were wildtype (WT) age and sex matched littermates.

Cells were first stained with LiveDead blue (Life Technologies), FcR-Block and subsequently; CD11c, Ly6C, CD80, B220, CD11b, MHC(II), Ly6G, CD103, F4/80, CD40 and CD45. 4hr incubation with PMA/ionomycin/GolgiStop (BD bioscience) was performed for intracellular cytokine analysis with IFNgamma, IL-4, IL-13, IL-17 and TNFalpha. Samples were acquired using an LSRII and analysed with FlowJo (TreeStar), student t test was used with Prism (GraphPad) in statistical analyses.

Results *Mbd2-/-* mice showed significantly greater IFNgamma, TNFalpha and IL-17 but not IL-13 or IL-4 production in CD4+ and CD8+ lymphocytes isolated from SI and LI LP compared to WT controls. In addition surface activation markers CD80 and CD86 were significantly greater in *Mbd2-/-* CD103+CD11b+CD11c+ Dendritic cells and CD11b+CD11c+F4/80 macrophages from SI LP.

Conclusion These results show for the first time that epigenetic processes can regulate both antigen presenting cell activation status and T cell production of potentially damaging inflammatory cytokines at the mucosal-environmental barrier. They also identify methyl-binding proteins and/or genes that they regulate as exciting new targets for therapeutic modulation of GI inflammation.

Disclosure of Interest None Declared

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OC-090 CORRELATION BETWEEN DISTRIBUTION OF HLA HAPLOTYPES AND SEVERITY OF MUCOSAL DAMAGES

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Introduction Celiac disease is a chronic intestinal inflammation resulting in different degree of intestinal mucosal damages. The disease occurs in genetically predisposed individuals and associated with human leukocyte antigen (HLA)-DQ2/8 heterodimers. The aim of this study is to evaluate the correlation between distribution of HLA haplotypes and the severity of mucosal damages.

Methods Fifty nineIranian celiac disease patients were evaluated to predict the HLA-DQA1 and -DQB1 genes, using tagging SNPs method. All patients had positive tTGA and/or EMA antibodies and histology according to Modified Marsh classification (Marsh I-IIIc) by Rostami *et al*

Results The result of this study show that 86.4% of cases were carriers of HLA-DQ2 and/or HLA-DQ8 heterodimers, either homozygous or heterozygous. Marsh IIIa lesions were seen in 20 cases, Marsh IIIb in 9 and Marsh IIIc in 12 cases. Marsh IIIa is associated with HLA-DQ2 haplotype in 10 cases, IIIb with 4 and IIIc with 10 cases respectively. Marsh IIIa is correlated with HLA-DQ2.5/2.5 in 4 cases followed by HLA-DQ2.5/DQ8 and HLA-DQ2.5/DQX each in 3 cases respectively.

Conclusion According to high prevalence of HLA-DQ2 haplotype in Iranian population, we can conclude that there is a strong link between severity of mucosal damages and presence of HLA-DQ 2 haplotype. Celiac disease cases with Marsh III (a-c) carry more HLA risk alleles compared to those with Marsh I-II and this difference were statistically significant for DQ2.5 haplotype distribution (P = 0.0001).

Disclosure of Interest None Declared

OC-091 ARE THERE CHANGES IN KERATIN EXPRESSION PROFILE IN ACTIVE COLITIS AND IN COLITIS PHENOTYPES ASSOCIATED WITH INCREASED CANCER RISK?

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Introduction Colitis in homozygous mK8$^{-/-}$ mice as a result of a primary epithelial defect and heterogeneous missense mutations in keratin (K) 8 and K18 in IBD suggest a possible association between simple epithelial keratins and IBD. Our previous work using mass spectrometry (MS) and western immunoblotting suggests alterations in the insoluble forms of K8, K18 and K19 in intestinal epithelial cells in colitis phenotypes compared to controls. We have previously shown an increase in insoluble keratin in epithelium from patients with longstanding pancolitis (LSPC) and decreased levels in epithelium from patients with dysplasia (in both the lesion and rectal mucosa), recent onset colitis (ROUC) and PSC associated colitis. There is also a reduction in insoluble keratins in active areas of inflammation compared to inactive areas.

Methods Paired biopsies were taken from patients with active colitis (one from the actively inflamed area and another from a proximal inactive area, n = 10) and patients with dysplasia (biopsies taken from the dysplastic area and an area of rectal mucosa, n = 3). Single rectal biopsies were taken from patients with ROUC (n = 8), LSPC (n = 10) and PSC colitis (n = 7). These tissue sections underwent IHC staining for K8, K18 and K19. Semi-quantitative assessment of keratin expression was performed using a pixel counting algorithm and a manual scoring system, which scored staining intensity at the surface and base of the crypts and extent of crypt staining.

Results There was no difference in K8 expression measured by manual scoring between the groups. K18 showed a significant difference in pixel count scores between the active and inactive inflammation (0.078 p = 0.022) reflecting a shift towards more extensive, moderate and weak staining in the active group. There was also a significant change in the manual scores for the ratio of surface intensity to crypt intensity (p = 0.028) representing a greater surface compared to crypt K18 expression. All other groups were similar in K18 expression and pattern. There was no difference in K19 expression measured by manual and pixel count scoring between the groups.

Conclusion The results suggest a difference between MS and IHC approaches. If the IHC data hold true they may suggest that the changes in keratin expression profile that occur with duration of disease, inflammation and dysplasia may be a result of changes in keratin solubility rather than a change in the total expression of keratins. However, possible explanations include too small sample size for IHC and lack of sensitivity of IHC by comparison with MS.

Disclosure of Interest None Declared