BSG NEURO-GASTROENTEROLOGY / MOTILITY SECTION SYMPOSIUM: 'More than meets the eye: evolving case'

OC-077

INCREASES IN ILEAL MAST CELLS IN PATIENTS WITH DIARRHOEA PREDOMINANT IRRITABLE BOWEL SYNDROME MAY BE DUE TO A RELATIVE REDUCTION IN MUCOSA-ASSOCIATED LACTOBACILLI

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Introduction There is substantial evidence for gastrointestinal (GI) immune upregulation and altered GI microbiota in patients with irritable bowel syndrome (IBS). The aim was to compare the immune cell populations in patients with IBS and controls and to correlate differences with the adjacent microbiota in small and large intestine.

Methods Patients with IBS (Rome III) and healthy controls were recruited. Patients underwent ileocolonoscopy at which paired ileal and rectal biopsies were snap frozen. Rectal microbiota analysis was performed using FISH.¹ Ileal microbiota analysis was performed on an adjacent biopsy using qPCR.² Immunohistochemistry on sections cut from the same biopsy was used to enumerate mast cells, intra-epithelial and lamina-propria lymphocytes and macrophages. Symptom data was recorded using a validated questionnaire.

Results 37 patients with IBS (27 diarrhoea predominant (IBS-D) and 10 constipation predominant (IBS-C)) and 23 healthy controls were recruited. There were significantly more mast cells in the rectum and ileum in the IBS-D group than in IBS-C and controls median; see figure 1. There was an inverse correlation between the number of ileal mast cells and the number of mucosa-associated lactobacilli ($p = 0.005$). The severity of diarrhoea positively correlated with the number of

rectal macrophages ($p = 0.001$), mast cells ($p = 0.02$) and IELs ($p = 0.01$).

Conclusion This is the first data to correlate alterations in the mucosa-associated microbiota with the adjacent immune cells in IBS. Increases in ileal mast cells in patients with IBS-D maybe due to reductions in adjacent lactobacilli. Increasing severity of diarrhoea positively correlated with increases in rectal mucosal immune cell populations

Competing interests None.

Keywords inflammation, irritable bowel syndrome, microbiota.

REFERENCES

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Figure 1 OC-077 The median number of mast cells per high powered fields in the ileum and rectum of patients with IBS and controls