



## AB067. 209. Unravelling the dysbiosis concept in ulcerative colitis

Helen Earley<sup>1,2</sup>, Grainne Lennon<sup>1,2</sup>, Aine Balfe<sup>2</sup>, Aonghus Lavelle<sup>1</sup>, John Calvin Coffey<sup>3</sup>, Desmond Winter<sup>2</sup>, Ronan O'Connell<sup>1,2</sup>

<sup>1</sup>Department of Surgery, St. Vincent's University Hospital, Nutley Lane, Donnybrook, Dublin 4, Ireland; <sup>2</sup>School of Medicine and Medical Science, University College Dublin, Belfield, Dublin, Ireland; <sup>3</sup>Graduate Entry Medical School, University of Limerick, Castletroy, Limerick, Ireland

**Background:** Changes in the colonic microbiome occur in ulcerative colitis (UC). Several species have been implicated in the overall dysbiosis and may contribute to inflammation through trophic interactions with other species or production of metabolites. Species that have been implicated include those with mucolytic, sulfidogenic and butyrogenic potential. The aim of this project was to determine the abundance of the mucolytic *Akkermensia muciniphila*, sulfidogenic *Desulfovibrio* and butyrogenic *Rosburia hominis* in the colitic colon.

**Methods:** Paired mucosal brushings and biopsies were obtained from patients with active UC (n=20), quiescent

UC (n=14) and healthy controls (n=20). Bacterial abundance was determined using specific primers and RT-PCR. Mucosal inflammation and mucin sulphation were scored histologically using H&E and High Iron Diamine-Alcian Blue stains. Statistical analysis was performed using SPSS.

**Results:** *Akkermensia muciniphila*, *Desulfovibrio* and *Rosburia hominis* were less abundant in active UC than in health and quiescent UC. A positive correlation existed between abundance of *A. muciniphila* and percentage sulphation. There was a negative correlation between abundance of *A. muciniphila* and mucosal inflammation.

**Conclusions:** Differences exist in the relative proportions of mucolytic, butyrogenic and sulfidogenic species between health and UC. These data suggest that these species are an integral part of the mucosa associated microbiota and may play a key role in the maintenance of microbial homeostasis. In addition, the reported reduction in butyrate in the colitic colon may be the result of a lack of butyrogenic bacteria, rather than inhibition of butyrate production by microbial by-products.

**Keywords:** Ulcerative colitis; dysbiosis; colonic microbiota; inflammatory bowel disease

doi: 10.21037/map.2019.AB067

**Cite this abstract as:** Earley H, Lennon G, Balfe A, Lavelle A, Coffey JC, Winter D, O'Connell R. Unravelling the dysbiosis concept in ulcerative colitis. *Mesentery Peritoneum* 2019;3:AB067.