



Do we really understand how faecal microbiota transplantation works? Authors' reply



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We welcome the comments of Quraishi et al., who highlight the potential of spore-forming bacteria to contribute to the benefit associated with FMT for ulcerative colitis (UC). However, by what mechanism this benefit is conferred is not known. It should be noted that we did not observe a decrease in the abundance of viable spore-forming facultative anaerobes following aerobic processing of stool, as would be predicted if spores (which were not detectable) contributed substantially to their survival in this context.

Substantial functional overlap exists between many such species and obligate anaerobes whose viability is significantly reduced by aerobic processing. A recent clinical trial of FMT for UC that employed anaerobic stool processing reported greater efficacy than was observed in prior studies using aerobic processing [1]. These findings suggest that the clinical benefit associated with FMT might represent the cumulative effects of multiple bacterial groups, of which spore-forming facultative anaerobes are only one, perhaps acting via multiple mechanistic pathways.

In our study, we showed a significant effect of aerobic processing on non-spore forming obligate anaerobes, and in particular, elimination of viable *Faecalibacterium prausnitzii* and *Anaerostipes hadrus* from donor material. These species are abundant in healthy donors, and are major

contributors to butyrate biosynthesis [2], a capacity that has been linked to improved response to FMT [3]. In order to maximise the efficacy of this important emerging therapy, we would argue that all potential microbial contributions to benefit must be considered. The ability to define FMT material is essential to understanding and improving treatment. We agree that this is an area where ongoing research is needed.

Conflicts of interest

All authors have nothing to declare.

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