POSSIBLE MECHANISMS UNDERLYING THE EFFECTS OF FAECAL MICROBIOTA TRANSPLANTATION IN PATIENTS WITH IRRITABLE BOWEL SYNDROME

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A mechanistic study of fecal microbiota transplantation in 93 IBS patients found that FMT increased intestinal stem cells and enteroendocrine cells, reduced submucosal inflammation, and increased butyric acid, with changes correlating inversely with symptom severity.

KEY POINTS

- FMT at 30g and 60g doses significantly increased densities of Musashi-1, neurogenin 3, chromogranin A, serotonin, PYY, and GLP-1 expressing cells compared to placebo, while densities of total submucosal immune cells and mast cells decreased significantly in treatment groups but not placebo.
- Higher densities of stem cells, enteroendocrine progenitors, serotonin, and GLP-1 cells correlated inversely with IBS symptom severity scores and fatigue scores, while immune cell and mast cell densities correlated positively with symptom severity.
- Butyric acid levels increased significantly after FMT in treatment groups and correlated inversely with symptom severity and fatigue scores; bacterial species that increased included Alistipes, Faecalibacterium prausnitzii, Eubacterium biforme, and Lactobacillus.
- The authors suggest these findings indicate potential new IBS treatments including epithelial organoid transplantation, GLP-1 agonists, low-dose anti-inflammatory drugs, mast cell-targeting agents, and sodium butyrate.
- This material is relevant to gastroenterologists and researchers interested in IBS pathophysiology and microbiome-based therapeutic mechanisms.

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