

Author

Whelan, Kevin
Department of Nutritional Sciences
King's College London
London
United Kingdom

Title

Gut microbiota in IBS and its modification by diet: probiotics, prebiotics and low FODMAP diet

Abstract

Irritable bowel syndrome (IBS) is a functional bowel disorder characterised by abdominal pain with disordered defecation. This presentation will describe the role of the gastrointestinal microbiota in the pathogenesis of IBS and how dietary strategies to manage symptoms impact on the microbial community. Evidence suggests a dysbiosis of the luminal and mucosal colonic microbiota in IBS, frequently characterised by a reduction in species of Bifidobacteria which has been associated with worse symptom profile. Probiotic supplementation trials suggest intentional modulation of the GI microbiota may be effective in treating IBS. A smaller number of prebiotic supplementation studies have also demonstrated some effectiveness in IBS whilst increasing Bifidobacteria. In contrast, a novel method of managing IBS symptoms is the restriction of short-chain fermentable carbohydrates (low FODMAP diet). Studies consistently demonstrate clinical effectiveness of the low FODMAP diet in patients with IBS. However, one unintentional consequence of this dietary intervention is its impact on the microbiota. This leads to an interesting paradox; namely, increasing luminal Bifidobacteria through probiotic supplementation is associated with a reduction in IBS symptoms while in direct conflict to this, the low FODMAP diet has clinical efficacy but markedly reduces luminal Bifidobacteria concentration. Given the multifactorial aetiology of IBS, the heterogeneity of symptoms and the complex and diverse nature of the microbiome, it is probable that both interventions are effective in patient subgroups. However combination treatment has never been explored and as such, presents an exciting opportunity for optimising clinical management, whilst preventing potentially deleterious effects on the GI microbiota.

Key references

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Key messages

- i. The evidence for the role of the gut microbiome in IBS pathophysiology
 - ii. The role that probiotics and prebiotics have in modifying the gut microbiome and impacting on symptoms
 - iii. The impact of the low FODMAP diet on the gut microbiome and symptoms in IBS
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