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PREBIOTIC INTERVENTIONS FOR IRRITABLE BOWEL SYNDROME: A SYSTEMATIC REVIEW OF CLINICAL EFFICACY AND OUTCOMES

Society: AGA

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Background: Irritable Bowel Syndrome (IBS) is a common gastrointestinal disorder that affects approximately 11% of the population. The burden of IBS on quality of life is substantial, with patients experiencing increased anxiety and depression. Given its significant impact, there is a growing focus on identifying effective treatments for IBS. Prebiotics, which selectively enhance the growth of beneficial gut bacteria, have emerged as a potential adjunct therapy for IBS management. This systematic review evaluates the efficacy of prebiotics in improving IBS symptoms.

Methods: Following PRISMA guidelines, a systematic literature review was conducted to evaluate studies comparing Prebiotics for the treatment of IBS. We searched large databases such as PubMed, Embase, Scopus, Web of Science, and the Cochrane Library from inception to November 2024. The inclusion criteria were randomized controlled trials (RCTs) that reported on outcomes related to IBS. Independent reviewers conducted the review of results and selection of research studies. We summarised the characteristics of the studies and the quality of the studies was assessed using the Cochrane Risk of Bias (RoB) tool.

Results: Five randomized controlled trials, with a total of 304 patients, evaluating a range of prebiotic - including acacia fiber, trans-galactooligosaccharides (GOS), partially hydrolyzed guar gum (PHGG), a combination of xyloglucan, pea protein, and tannins with xylo-oligosaccharides (XG-PPT-XOS), and agave fructans - were included. Across these studies, prebiotics demonstrated beneficial effects on several key IBS-related outcomes. Improvements in stool frequency were noted with acacia fiber (IBS-C) and agave fructans, while enhancements in stool consistency were reported with lower-dose GOS (3.5 g/day) and PHGG. Prebiotics, particularly GOS, led to significant increases in fecal microbiota levels. Multiple interventions (GOS, XG-PPT-XOS, and agave fructans) reduced abdominal pain, bloating, and flatulence, and some improved composite symptom scores and subjective global assessments of relief. Quality of life (QoL) was significantly improved with GOS at higher doses (7 g/day), the XG-PPT-XOS combination, and agave fructans. Mental health parameters, including anxiety and depression, also showed improvement in studies assessing these outcomes. Few adverse events were reported.

Conclusion: This review suggests that select prebiotics can positively influence stool characteristics, reduce key IBS symptoms, enhance beneficial gut microbiota, and improve QoL in patients with IBS. Although findings are promising, heterogeneity in study populations, interventions, and outcome measures limits definitive conclusions. Further large-scale, standardized RCTs are warranted to refine patient selection criteria and optimize prebiotic-based interventions for IBS management.

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