

8th International Conference on Dietary Fibre 2022

“Towards unlocking the Full Potential of Fibre for Food, Function and Global health”

16-18 Oct 2022 – Leuven, Belgium

Pre- and probiotics to relieve constipation-related complaints in Irritable Bowel Syndrome

Lonneke Janssen Duijghuijsen¹, Maartje van den Belt¹, Ben Witteman^{2,3}, and Nicole de Wit¹

¹ Wageningen Food and Biobased Research, Wageningen University & Research, Wageningen, the Netherlands; ² Division of Human Nutrition and Health, Wageningen University & Research, Wageningen, the Netherlands; ³ Gastroenterology and Hepatology department, Hospital Gelderse Vallei, Ede, the Netherlands

Abstract

Irritable Bowel Syndrome (IBS) is a disease that affects a large number of people. To date, no adequate treatment is available. This is partially due to the heterogeneity of the patients and the complicated pathology in which not all mechanisms are understood. Dietary interventions are one promising route to relieve IBS-related complaints, such as constipation. The objectives of the NUTRIC study were to determine the effects of a 4-week intervention with either a prebiotic supplement or a probiotic supplement on stool pattern (including stool frequency, consistency, and volume), gastrointestinal (GI) complaints, and quality of life in IBS patients suffering from constipation (IBS-C).

In total, 180 IBS-C patients were included in a randomized double-blinded placebo-controlled human intervention study. The study consisted of two periods. First a 4-week observation period (week 1-4), which was similar for all three parallel arms (n=60 per arm), followed by a 4-week intervention period (week 5-8) in which study participants received one of three dietary supplements: prebiotic acacia fiber (Inavea™), probiotic *Bifidobacterium lactis* BLa80, or placebo supplement (maltodextrin). At the start and at the end of both study periods, study participants completed several online questionnaires on their IBS-related complaints (IBS-SSS, PAC-SYM), their Quality of Life (PAC-QOL, HADS), and their habitual dietary intake (FFQ). During both study periods, study participants also completed short daily questionnaires via an EMA app on their phone (LifeData LLC, Marion, IN, USA) asking for their stool pattern, gastrointestinal (GI) complaints, and supplement compliance.

Prebiotics supplementation significantly improved stool frequency as compared to the placebo treatment, both when assessed on a daily basis and when assessed as the difference (delta) between the observational period and the intervention period (P=0.04 and P=0.02, respectively). This increase in stool frequency was also clinically significant with an increase of >1 stools per week. Probiotics supplementation showed a trend towards improved stool frequency over time as compared to the placebo treatment (P=0.08). Probiotics supplementation furthermore showed a significant decrease in symptom severity, as assessed with the IBS-SSS questionnaire (P=0.02).

In conclusion, daily dietary supplementation with prebiotic and probiotic supplements may significantly relieve IBS-related complaints by increasing the stool frequency and decreasing symptom severity, respectively.