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Does a diet low in FODMAPs reduce symptoms associated with functional gastrointestinal disorders? A comprehensive systematic review and meta-analysis.

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Abstract

BACKGROUND: Functional gastrointestinal symptoms such as abdominal pain, bloating, distension, constipation, diarrhea and flatulence have been noted in patients with irritable bowel syndrome (IBS) or inflammatory bowel disease (IBD). The diversity of symptoms has meant that finding an effective treatment has been challenging with most treatments alleviating only the primary symptom. A novel treatment option for IBS and IBD currently generating much excitement is the low fermentable, oligo-, di-, mono-saccharides and polyol (FODMAP) diet. The aim of this meta-analysis was to determine the evidence of the efficacy of such a diet in the treatment of functional gastrointestinal symptoms.

METHODS: Electronic databases were searched through to March 2015 to identify relevant studies. Pooled odds ratios (ORs) and 95 % confidence intervals were calculated for the effect of a low FODMAP diet on the reduction in IBS [Symptoms Severity Score (SSS)] score and increase in IBS quality of life (QOL) score for both randomized clinical trials (RCTs) and non-randomized interventions using a random-effects model.

RESULTS: Six RCTs and 16 non-randomized interventions were included in the analysis. There was a significant decrease in IBS SSS scores for those individuals on a low FODMAP diet in both the RCTs (OR 0.44, 95 % CI 0.25-0.76; I (2) = 35.52, p = 0.00) and non-randomized interventions (OR 0.03, 95 % CI 0.01-0.2; I (2) = 69.1, p = 0.02). In addition, there was a significant improvement in the IBS-QOL score for RCTs (OR 1.84, 95 % CI 1.12-3.03; I (2) = 0.00, p = 0.39) and for non-randomized interventions (OR 3.18, 95 % CI 1.60-6.31; I (2) = 0.00, p = 0.89). Further, following a low FODMAP diet was found to significantly reduce symptom severity for abdominal pain (OR 1.81, 95 % CI 1.13-2.88; I (2) = 0.00, p = 0.56), bloating (OR 1.75, 95 % CI 1.07-2.87; I (2) = 0.00, p = 0.45) and overall symptoms (OR 1.81, 95 % CI 1.11-2.95; I (2) = 0.00, p = 0.4) in the RCTs. In the non-randomized interventions similar findings were observed.

CONCLUSION: The present meta-analysis supports the efficacy of a low FODMAP diet in the treatment of functional gastrointestinal symptoms. Further research should ensure studies include dietary adherence, and more studies looking at greater number of patients and long-term adherence to a low FODMAP diet need to be conducted.

KEYWORDS: Diet; FGID; FODMAP; Functional gastrointestinal disorders; Meta-analysis; Symptoms

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