The relationship between the low food chemical diet and symptoms in irritable bowel syndrome: a cross-sectional survey

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Dietary therapies have revolutionised treatment for irritable bowel syndrome (IBS). However, response rates to the diet with the highest evidence of efficacy (the low FODMAP diet) remain at 50-75%, suggesting other potential drivers of symptom onset. A low food chemical elimination-rechallenge diet targeting bioactive food chemicals (including salicylates, amines, glutamate and other additives), is commonly applied in Australia in patients exhibiting both gastrointestinal and extra-intestinal symptoms. One key food chemical, salicylate, has been shown to elicit symptoms in IBS patients with aspirin-sensitivity(1), and 77% of IBS patients have reported amine-rich foods trigger symptoms(2). However, data supporting the full low chemical diet is scant, and safety concerns exist due to its restrictive nature potentially causing nutritional deficiencies and disordered eating. This cross-sectional survey aimed to evaluate the frequency of co-existing extra-intestinal symptoms, as well as explore patient perceptions and use of the low chemical diet in those with IBS and healthy controls. Participants with IBS (IBS-Severity Scoring System (IBS-SSS) >75), and healthy controls (not meeting Rome IV and IBS-SSS ≤75) were recruited via online advertisement. Validated questionnaires were used to assess gastrointestinal symptoms (IBS-SSS), extraintestinal symptoms (extended PHQ-12), nutrient (Comprehensive Nutritional Assessment Tool) and food additive intake (IBD-Food additive questionnaire). Additional questionnaires assessed use of dietary therapies with specific focus on food chemicals. Data was analysed using independent samples t-test and chi-square test. 204 IBS (Total IBS-SSS, 277 ± 79) and 22 healthy controls (36 ± 28, p<0.01) completed the study. IBS participants were more likely to report extra-intestinal symptoms including headaches (p<0.01), migraines (p = 0.03), fatigue (p<0.01), difficulty sleeping (p = 0.03), rhinitis (p = 0.02), urticaria (p = 0.04) and mood disturbance (p<0.01). IBS participants were more likely to report at least one food chemical as a trigger for gastrointestinal (38% vs 13%, p = 0.03) and/or extra-intestinal (30% vs 9%, p = 0.04) symptoms. In the IBS group, the most common suspected dietary triggers for gastrointestinal symptoms were salicylates (19%) followed by MSG (17%) and artificial colours (14%); while for extra-intestinal symptoms, MSG (15%) was most common, followed by amines (14%), and sulphites (12%). There was no significant difference in consumption of ultra-processed, additive containing foods. Twenty-one (10%) IBS participants were following a low chemical diet, with dietary advice provided by a dietitian (n = 13), general practitioner (n = 6), gastroenterologist (n = 6), naturopath (n = 3), family/friend (n = 4) and/or the diet was self-initiated (n = 7). Fourteen of the 21 (67%) reported following both a low food chemical and low FODMAP diet. Patients with IBS are more likely to report extra-intestinal symptoms compared to healthy controls. Despite limited evidence, a low food chemical diet is utilised to manage both gastrointestinal and extra-intestinal symptoms. Of concern, many respondents following a low food chemical diet reported also following a low FODMAP diet, which may have implications for nutritional adequacy.

Keywords: dietary therapy; disorders of gut-brain interaction; extra-intestinal symptoms; bioactive food chemicals

Ethics Declaration

Yes

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References