

ADVANCES IN IBS

Current Developments in the Treatment of Irritable Bowel Syndrome

Section Editor: William D. Chey, MD

Dietary Concerns and Patient-Focused Care in Irritable Bowel Syndrome



Lin Chang, MD
 Vice Chief, Vatche and Tamar Manoukian Division of Digestive Diseases
 Program Director, UCLA GI Fellowship Program
 Co-Director, G. Oppenheimer Center for Neurobiology of Stress and Resilience
 University of California, Los Angeles
 Los Angeles, California

G&H What is known about the pathogenesis of irritable bowel syndrome?

LC Irritable bowel syndrome (IBS) is now considered to be a disorder of gut-brain interaction, which refers to how the brain and the gut communicate. Dysregulation in this communication can result in altered gut function that manifests as IBS symptoms of chronic or recurrent abdominal pain associated with diarrhea, constipation, or both.

Not every patient has the same predominant mechanism causing symptoms. Some patients primarily have a motility disturbance, others have altered microbiota, and still others have altered immune functions/responses or central nervous system processing of gut input, resulting in visceral hypersensitivity.

IBS is a multifactorial disorder that has different symptom presentations. It is the clinician's job to determine the likely mechanisms that are driving the symptoms in a particular patient, including what factors trigger symptom flares and are important to target in the patient.

G&H What is the correlation between certain foods and IBS?

LC Food is not necessarily the main cause of IBS symptoms unless the patient has a true food intolerance or a food allergy; however, food can be a symptom trigger. Up to 70% of patients with IBS report that certain foods trigger their symptoms or worsen them, but this does not

mean that food is the sole culprit. Some patients are intolerant to certain foods, which can also be due in part to gut hypersensitivity and increased perception of gut stimuli.

Symptoms may be inconsistently associated with certain foods in other patients, who then begin elimination diets in an attempt to reduce their symptoms. Such patients can end up consuming a very limited diet. Reintroducing foods in these patients can be challenging unless done very slowly and methodically.

The clinician and the patient need to be astute in identifying a true, consistent food intolerance—eg, always experiencing bloating, gas, and diarrhea after drinking milk, such as in the setting of lactose intolerance—and differentiating this from a situation in which the patient reports sometimes having symptoms in relation to a particular food. This suggests that food intolerance is not the sole driver of the IBS-like symptoms.

It can be valuable to have the patient keep a food diary for approximately 2 weeks to track what is being eaten and any relationship to symptoms so that the patient can identify consistent symptom triggers. The clinician should advise against reducing or avoiding foods that do not consistently trigger symptoms.

G&H How is knowledge about the microbiota guiding knowledge about IBS?

LC Technology is moving fast in terms of gastroenterology and the microbiota. Knowledge regarding the gut microbiome and IBS is not as well understood or

advanced as we would like, but information will become more comprehensive with time. Microbiota studies thus far in patients with IBS show varying results. Certain bacteria—either in overabundance or underabundance—have been linked to IBS. It is important to note, however, that the findings of many microbiota studies are impacted by diet and the way stool is collected and processed. These study methods are not necessarily standardized. Further research is needed.

Some patients with IBS have normal microbiota populations compared with healthy persons based on the technology used. As technology becomes more sophisticated, identification of gut microbes and their metabolites and their role in symptomatology will become feasible.

G&H Do restrictive diets have an impact on IBS symptoms?

LC There is evidence that the microbiome is particularly altered in IBS patients who are restricting their diet. When a patient is on a restrictive diet—whether in relation to IBS or another health condition—the microbiome can become increasingly less diverse. This was confirmed in a recent study that showed that patients with IBS on an exclusion diet had a significantly (Q value, $<.05$) greater abundance of *Lachnospira* and a lower abundance of *Eubacterium*, and those patients on a restrictive diet had a significantly (Q value, $<.05$) lower abundance of *Lactobacillus*. Patients on a restrictive diet in this study tended to have more severe symptoms, which may be the reason patients eliminated foods from their diet. It is also plausible that part of the reason a patient with IBS on a restrictive diet cannot tolerate certain foods is because of changes in the microbiota associated with the limited diet. These patients need to slowly reintroduce foods by eating small amounts they can tolerate and help rebuild diversification of the microbiome.

The low-fermentable oligosaccharide, disaccharide, monosaccharide, and polyol (FODMAP) diet, which is a restrictive diet, has been shown to be efficacious in reducing IBS symptoms. Also, reducing or avoiding lactose is helpful in patients who are intolerant to dairy products. Data on gluten-free diets are more mixed. In patients with visceral hypersensitivity, reducing or eliminating foods that induce an increased gastrointestinal (GI) response can be beneficial, but this practice may not completely eliminate symptoms.

An important point with elimination diets is that the patient is not meant to stay on them long term. Many patients are unaware of this, or are afraid or do not know how to appropriately reintroduce foods. Interestingly, some patients stay on an elimination diet even if it is not that helpful in achieving symptom relief.

Patients with IBS may not need to consume a restrictive diet to improve symptoms. Traditional dietary advice, such as that recommended by the National Institute for Health and Care Excellence, also can provide symptom relief. These dietary suggestions include eating regular meals and taking time to eat; reducing intake of alcohol, carbonated drinks, and resistant starch; restricting tea and coffee to 3 cups per day; considering a limit of high-fiber foods; and limiting fresh fruit to 3 portions per day.

G&H Does probiotic supplementation have a role in the management of IBS?

LC It is not known whether probiotic supplementation will remedy microbiota deficits caused by elimination diets. There has not been a study that has definitively shown that probiotics are that helpful in restoring the gut microbiome in the setting of an elimination diet.

In terms of probiotic supplementation in general, the data are not substantive enough to arrive at a recommendation one way or the other in current IBS treatment guidelines. Studies suggest that there is some advantage to taking probiotics, but the effects are not overwhelming. Probiotic supplementation may help ameliorate mild symptoms. Also, many patients with IBS take probiotics but admit that they are not sure if the probiotics are benefiting them. Nevertheless, they continue taking the probiotics under the assumption that doing so is being health conscious.

G&H Are there nutritional drawbacks to the low-FODMAP diet?

LC A patient is supposed to be on a low-FODMAP diet anywhere from 2 to 6 weeks. Four weeks is likely better than 2 because sometimes it takes a week or 2 for a patient to understand how to follow a low-FODMAP diet appropriately. The longer the low-FODMAP diet persists, however, the greater the risk of nutritional deficiencies. The low-FODMAP diet also has been associated with a depletion of *Bifidobacterium*. These bacteria make short-chain fatty acids and provide food substrate for the epithelial cells in the lining of the gut. The bacteria will become replenished once the culprit foods are identified and an appropriately modified low-FODMAP diet is instituted.

G&H What have studies found regarding wheat exclusion and IBS?

LC Studies suggest that fructans are the real culprit in triggering IBS symptoms, not gluten. Fructans are found in many cereals and breads as well as onions and garlic,

which are major culprits for symptoms in many patients with IBS. For example, slow rise or slow fermentation sourdough bread contains gluten but less fructan. If a patient can tolerate sourdough, he or she is most likely not gluten-intolerant. One study showed that the most common FODMAP groups that trigger symptoms are fructans, galacto-oligosaccharides, and mannitol.

G&H When should a patient be referred to a GI dietitian for multimodal care?

LC Generally speaking, partnering with a GI dietitian to take care of patients whose GI symptoms are triggered by meals is wise. Such professionals are better than many gastroenterologists in comprehensively obtaining a dietary history, providing dietary advice, and identifying nutritional deficiencies, such as those that can occur with elimination diets. Also, an American Gastroenterological Association (AGA) clinical practice update on diet in IBS, which includes a management algorithm, will be published in *Gastroenterology* this spring.

It may be best to refer patients with mild-to-moderate IBS to a GI dietitian as a first-line intervention. It also is a good strategy, as mentioned, for patients who cannot or do not know how to discontinue an elimination diet and appropriately reintroduce foods. In general, patients to consider referring to a dietitian are those who have meal-related symptoms and are interested in dietary management as well as patients for whom there are concerns about nutritional deficiencies.

Patients who may not be good candidates for referral to a dietitian are those who are not interested in dietary management, those who do not feel that food is a significant trigger of their GI symptoms, patients who are food insecure, and patients with uncontrolled psychiatric disorders. Patients with eating disorders ideally should be referred to a GI dietitian who has expertise in eating disorders plus an eating disorder behavioral specialist. This includes patients in whom avoidant/restrictive food intake disorder (ARFID) is suspected. ARFID is increasingly being recognized.

Although it could be argued that any patient could benefit from a GI dietitian, insurance often does not

cover such care. Certain dietitians have a sliding fee scale to make their services more accessible to patients. Free dietitian-driven patient resources can be found online, including from the AGA in partnership with the Academy of Nutrition and Dietetics (www.gastro.org), Michigan Medicine (www.myginutrition.com), Monash University (www.monashfodmap.com), and GI dietitian Kate Scarlata, RDN (<https://blog.katescarlata.com>). There are also helpful diet-related smartphone applications such as ones involving the low-FODMAP diet and the tracking of symptoms.

Disclosures

Dr Chang is a member of the Rome Foundation Board of Directors; has served as a consultant for Ardelyx, Arena, Allergan, Immunic, Ironwood, Mauna Kea Technologies, and Trellus; has received research support from the National Institutes of Health, Arena, Vanda, and AnX Robotica; and holds stock options for Trellus and ModifiHealth.

Suggested Reading

Black CJ, Staudacher HM, Ford AC. Efficacy of a low FODMAP diet in irritable bowel syndrome: systematic review and network meta-analysis [published online August 10, 2021]. *Gut*. doi:10.1136/gutjnl-2021-325214.

Chang L. How to approach a patient with difficult-to-treat IBS. *Gastroenterology*. 2021;161(4):1092-1098.e3.

Chey WD, Hashash JG, Manning L, Chang L. AGA clinical practice update on the role of diet in irritable bowel syndrome: expert review [published online March 22, 2022]. *Gastroenterology*. doi:10.1053/j.gastro.2021.12.248.

Chey WD, Keefer L, Whelan K, Gibson PR. Behavioral and diet therapies in integrated care for patients with irritable bowel syndrome. *Gastroenterology*. 2021;160(1):47-62.

Lenhart A, Dong T, Joshi S, et al. Effect of exclusion diets on symptom severity and the gut microbiota in patients with irritable bowel syndrome. *Clin Gastroenterol Hepatol*. 2022;20(3):e465-e483.

Liu J, Chey WD, Haller E, Eswaran S. Low-FODMAP diet for irritable bowel syndrome: what we know and what we have yet to learn. *Annu Rev Med*. 2020;71:303-314.

National Institute for Health and Care Excellence. Irritable bowel syndrome in adults: diagnosis and management. <https://www.nice.org.uk/guidance/cg61/chapter/1-Recommendations#dietary-and-lifestyle-advice>. Updated April 4, 2017. Accessed March 27, 2022.

Sturkenboom R, Keszthelyi D, Masclee AAM, Essers BAB. Discrete choice experiment reveals strong preference for dietary treatment among patients with irritable bowel syndrome [published online February 16, 2022]. *Clin Gastroenterol Hepatol*. doi:10.1016/j.cgh.2022.02.016.