Nutritional Support of Patient with Inflammatory Bowel Disease

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KEYWORDS

• Nutrition • Inflammatory bowel disease • Crohn's disease • Ulcerative colitis

KEY POINTS

- The overwhelming majority of patients with inflammatory bowel disease (IBD) have some degree of malnutrition.
- IBD can lead to specific nutrient deficiencies.
- There can be significant microbial alteration in intestinal flora in patients with IBD.
- Nutritional support is a critical aspect of the overall care of patients with IBD.
- Patients with IBD require special perioperative nutritional support.

INTRODUCTION

Ulcerative colitis (UC) and Crohn's disease (CD) are the 2 most prevalent chronic inflammatory disorders of the digestive tract and affect approximately 1 million Americans. They have common clinical and pathologic features, but each is a distinct condition requiring individual approaches to management. CD can occur at any part of the gastrointestinal tract and may cause transmural tissue damage, whereas UC affects only the superficial mucosal layer of the colon and rectum. In both of these conditions, there is an activation of the immune system that results in chronic inflammation and ulceration. The underlying cause of inflammatory bowel disease (IBD) has not been completely elucidated, but it is thought to be multifactorial, with both genetic and environmental factors playing a role.

The authors have nothing to disclose.

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The incidence and prevalence of UC and CD continue to rise in the developing world.[1] The observed differences in the disease incidence across age, time, and geographic region suggest that environmental factors may significantly modify the expression of CD and UC.[1] This continuing increase in the number of patients diagnosed with IBD strongly suggests an environmental trigger that may be related to dietary patterns.[2]

EFFECT OF INFLAMMATORY BOWEL DISEASE ON DIET, NUTRITION, AND METABOLISM

Studies have shown that up to 92.1% of patients with IBD are considered malnourished and many factors can contribute to their overall nutritional state (**Table 1**).[3] Recent evidence suggests that even patients who appear clinically to be well nourished may harbor baseline vitamin and mineral deficiencies, even during periods of disease remission.[4,5] Patients with IBD frequently ask their physicians for recommendations regarding diet to improve or even cure their gastrointestinal symptoms while obtaining the appropriate quantities of both micronutrients and macronutrients. Despite data that suggest dietary factors may play a role in the onset and course of IBD, there is very limited information regarding specific foods to avoid or include in a patient's diet. Currently, the only recommendation most health care providers can offer is to adhere to a healthy and varied diet.[6] To further confound the issue, important clinical trials on this topic have been limited by their inability to include a placebo control, contamination of study groups, and inclusion of patients receiving medical therapies.[7]

Dietary Intake in Patients with Inflammatory Bowel Disease

Studies have yet to reliably demonstrate an association between the Western diet rich in carbohydrates, starch, and sugar with worsening of IBD symptoms.[8] However, observations of detailed dietary journals reveal most patients with IBD continue to self-restrict their diet.[9] Pain and inflammatory mediators are known to induce anorexia and cachexia, thus a relationship between disease activity and nutrient intake exists in IBD. Patients admit to restricting certain foods to alleviate perceived symptoms or triggers for active disease. The most commonly avoided food groups among this patient population are dairy products and fiber-containing foods. Studies have shown that avoiding dairy is actually associated with an increase in severity of gastrointestinal symptoms, in addition to decreased levels of serum calcium and folate.[10] Fiber has been shown to play a role in decreasing inflammation systemically; however, there is limited evidence supporting supplementation or restriction of fiber-containing foods in patients with IBD.[11] Also of concern, the fat intake of the average patients with IBD is above current recommended values.[9]

Table 1
Etiologies of malnutrition in inflammatory bowel disease

Drug Interactions	Abdominal Pain
Inflammation	Stricture formation
Fistula formation	Hypoalbuminemia
Short-gut syndrome	Diarrhea
Anorexia	Malabsorption
Altered bacterial flora	Disease chronicity
Nutrient losses from gut	Increased resting energy expenditure