



Nutritional support is an important adjunctive aspect in the management of IBD. However, the role of nutrition as a primary treatment has been limited to patients with small bowel Crohn's disease. These patients may achieve and maintain remission with total parenteral nutrition or elemental diets after prolonged periods (at least 4 weeks). Many patients with Crohn's disease or UC experience weight loss during exacerbations of their illness and need caloric supplements. Vitamins and minerals can be given orally as a multivitamin with folic acid. Vitamin B<sub>12</sub> should be supplemented parenterally in patients who have extensive ileal disease or an ileal resection. Patients taking corticosteroids require supplemental calcium and vitamin D, and individuals with extensive small bowel involvement can also develop malabsorption of fat-soluble vitamins (A, D, E, and K), iron, and, rarely, trace minerals. Lactose-free diets and low-fiber diets may be necessary in patients with active disease or strictures.

### Surgical Management

Surgical intervention is indicated for patients with severe complications such as obstruction, perforation, massive gastrointestinal hemorrhage, or toxic megacolon not responsive to medical treatment. The other main indication for surgical treatment is the presence of dysplasia or cancer. For patients with UC, regardless of the extent of disease, the entire colon must be removed. Historically, the initial operation for UC was a total proctocolectomy and Brooke ileostomy, but ileal pouch–anal anastomosis has become the procedure of choice in most patients. In this operation, the colon is removed and the small bowel is constructed into a reservoir (ileal pouch) that is anastomosed to the anus, allowing defecation through the anus. Complications include the development of pouchitis, fecal incontinence, reduced fertility, and need for reoperation. Surgery is not curative in Crohn's disease. Many surgical procedures in patients with Crohn's disease are performed to manage complications of the disease, including segmental resection, stricturoplasty, fistulectomy, and abscess drainage.

### PROGNOSIS


The prognosis in a patient with IBD is determined by the relapse rate, the rate of surgery, and the incidence of colon cancer. Approximately two thirds of patients with UC have at least one relapse in the 10 years after their diagnosis. About 20% to 30% of patients with pan-UC will require colectomy within their lifetime. Only 5% of individuals with proctitis undergo colectomy by 10 years after diagnosis. In contrast, more than 60% of Crohn's patients require surgery within the 10 years after their diagnosis. The rate of recurrence in Crohn's disease is high, with 70% of patients having an endoscopic recurrence within 1 year after surgery and 50% having a symptomatic recurrence within 4 years. Predictors of a severe course in Crohn's disease include stricturing or penetrating disease and perianal disease.

The risk for colon cancer is increased in patients with UC, and its magnitude is related to the extent and duration of disease. The colon cancer risk is increased 10- to 20-fold after 8 to 10 years of disease in pancolitis, and after 15 to 20 years in left-sided colitis. The cumulative incidence of colorectal cancer is 2.5% after 20 years and 7.6% after 30 years of disease. Proctitis is not associated

with an increased risk of colorectal cancer. In colonic Crohn's disease, the risk of colorectal cancer is equivalent to that in patients with UC of similar extent and duration. Patients with only small bowel Crohn's disease are not thought to be at increased risk for colorectal cancer. The rates of small bowel carcinoma and lymphoma are increased in patients with Crohn's disease.

Screening for dysplasia and colon cancer should be performed by colonoscopy 8 to 10 years after the onset of symptoms. Surveillance examinations are performed every 1 to 3 years. Proctitis does not require endoscopic surveillance. Patients with IBD and PSC appear to have a particularly increased risk for colon cancer, and yearly surveillance is recommended after the initial diagnosis of PSC. It is recommended that a minimum of 33 "random" mucosal biopsy samples be obtained during the colonoscopic examination, in addition to targeted samples of circumscribed lesions. The use of chromoendoscopy and other enhanced imaging techniques increases the detection of dysplastic lesions in patients with UC and may replace the performance of random biopsies in the future. Colectomy is indicated in patients with flat high-grade dysplasia, multifocal flat low-grade dysplasia, or evidence of colorectal cancer. Polypoid dysplasia entirely removed by polypectomy without flat dysplasia elsewhere in the colon can be managed with continued surveillance colonoscopy.

As understanding of the etiologic and pathophysiologic aspects of IBD increases, major advances in diagnosis and treatment are anticipated. These will be based on better use of molecular, genetic, and serologic tests to differentiate among the subtypes of disease; earlier and more targeted use of biological agents to manage inflammation; and improvements in the detection and prevention of colorectal cancer in those at risk.

 For deeper discussion, see Chapter 141: Inflammatory Bowel Disease in Goldman-Cecil Medicine, 25th edition.

### SUGGESTED READINGS

- Abraham C, Cho JH: Inflammatory bowel disease, *N Engl J Med* 361:2066–2078, 2009.
- Anderson CA, Boucher G, Lees CW, et al: Meta-analysis identifies 29 additional ulcerative colitis risk loci, increasing the number of confirmed associations to 47, *Nat Genet* 43:246, 2011.
- Burger D, Travis S: Conventional medical management of inflammatory bowel disease, *Gastroenterology* 140:1827–1837, 2011.
- Cheifetz AS: Management of active Crohn disease, *JAMA* 309:2150–2158, 2013.
- Cho JH: The genetics and immunopathogenesis of inflammatory bowel disease, *Nat Rev Immunol* 8:458, 2008.
- Danese S, Fiocchi C: Ulcerative colitis, *N Engl J Med* 365:1713–1725, 2011.
- Farraye FA, Odze RD, Eaden J, et al: AGA medical position statement on the diagnosis and management of colorectal neoplasia in inflammatory bowel disease, *Gastroenterology* 138:738–745, 2010.
- Franke A, McGovern DP, Barrett JC, et al: Genome-wide meta-analysis increases to 71 the number of confirmed Crohn's disease susceptibility loci, *Nat Genet* 42:1118, 2010.
- Kornbluth A, Sachar DB: Ulcerative colitis practice guidelines in adults: American College of Gastroenterology, Practice Parameters Committee. [Erratum: *Am J Gastroenterol* 105:500, 2010.], *Am J Gastroenterol* 105:501–523, 2010.
- Lichtenstein GR, Hanauer SB, Sandborn WJ: Management of Crohn's disease in adults, *Am J Gastroenterol* 104:465–483, 2009.
- Maggiore L, Panis Y: Surgical management of IBD: from an open to a laparoscopic approach, *Nat Rev Gastroenterol Hepatol*. 10:297–306, 2013.
- Talley NJ, Abreu MT, Achkar JP, et al, American College of Gastroenterology IBD Task Force: An evidence-based systematic review on medical therapies for inflammatory bowel disease, *Am J Gastroenterol* 106(Suppl 1):S2–S25, 2011.