

# Inflammatory Bowel Disease in the Elderly

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*The inflammatory bowel diseases (IBD)—Crohn's disease (CD) and ulcerative colitis (UC)—have a second peak of onset after the age of 60. Discerning IBD from alternate diagnoses is a great challenge in the geriatric population, as other diseases commonly encountered in the elderly can mimic IBD. The possibilities include ischemic colitis, diverticulitis and infectious colitis. Diagnosing and treating IBD should involve consultation with a gastroenterologist, but the approaches do not vary significantly from the strategies used in younger patients. Therapeutic modalities used in younger age groups are also applicable to the geriatric population, but great attention needs to be given to side effects and drug interactions.*

**Key words:** inflammatory bowel, crohn's disease, ulcerative colitis, differential diagnosis

## Epidemiology and Pathophysiology

The inflammatory bowel diseases—Crohn's disease (CD) and ulcerative colitis (UC)—are illnesses of unknown cause. Genetic, environmental and immune factors are all thought to play a role in the pathogenesis of these diseases.<sup>1</sup> Immune dysfunction, an exaggerated mucosal T lymphocyte response to poorly identified antigens, and uncontrolled inflammation are central to the pathophysiology of both CD and UC. The purported cellular and molecular mechanisms recently have been reviewed.<sup>1</sup> Some controversy exists as to whether CD and UC are distinct clinical entities, or parts of a spectrum of disease.

Traditionally, inflammatory bowel disease (IBD) has been considered a disease of young adults. However, IBD does occur in geriatric patients.<sup>2</sup> There is bimodality to the incidence of IBD, with a second peak occurring in the 60–70 year age group.<sup>3</sup> While some other diseases are difficult to distinguish from IBD (Table 1), and diseases such as ischemic bowel have been thought to account for misdiagnosed cases of IBD, the bimodality is a true phenomenon.<sup>3</sup>

The proportion of patients with ulcerative colitis who develop their disease after the age of 60 years has been estimated at 12%, with more men affect-

ed than women.<sup>4</sup> The proportion of patients with Crohn's disease who develop their disease after the age of 60 has been estimated at 16%, with more women than men affected.<sup>4</sup>

## Differential Diagnosis

One of the most difficult and important aspects of treating IBD in the elderly is establishing the correct diagnosis. Several disease processes that mimic IBD have a predilection for the elderly, including ischemic colitis, colonic diverticulitis and infectious colitis. Consideration also needs to be given to *Clostridium difficile* colitis, microscopic colitis, NSAID-induced enteritis, laxative abuse and carcinoma of the large or small bowel (Table 1).

Ischemic colitis usually presents with an acute episode of abdominal pain associated with bloody diarrhea. The clinical context is often a clue to diagnosis; microvascular or macrovascular atherosclerotic disease, diabetes and cardiac arrhythmias are risk factors. However, ischemic colitis may occur in the absence of an identifiable risk factor.

Diverticulitis is easily confused with CD and UC; they are all inflammatory conditions of (usually) the left colon. Furthermore, diverticular disease may coexist with IBD.

Infectious colitis can account for up to 38% of acute diarrhea, and the elderly

may be at a higher risk for such infectious processes.<sup>5</sup> Gastroenteritis can result from eating inadequately cooked food, or through person-to-person transmission in hospitals, nursing homes and chronic care facilities.<sup>6</sup>

## Investigation

The diagnosis of IBD requires identification of features specific to IBD and exclusion of other diseases,<sup>1</sup> starting with a good history and physical examination. Endoscopy is vital because it allows for visualization and biopsy of the sigmoid colon, rectum and anus (sigmoidoscopy) or the entire colon and terminal ileum (colonoscopy). Radiological examinations such as barium enemas and small bowel follow-throughs permit visualization, but not biopsy. CT scanning is useful for identifying extraintestinal masses and complications of the disease, but it is not commonly employed in the initial work-up. Stool cultures and analysis for toxins are almost always ordered to rule out infectious and toxin-mediated etiologies.

Endoscopy is well tolerated, even among the elderly population. However, caution is advised when there are significant underlying cardiovascular and pulmonary morbidities. Furthermore, contrast dyes used in CT scanning are contraindicated in elderly patients with significant renal impairment.

## Ulcerative Colitis

Ulcerative colitis presents in similar manners in both elderly and younger patients (reviewed in greater detail in Podolsky<sup>1</sup>). There is evidence that UC in the elderly has limited involvement, with proctitis and proctosigmoiditis occurring more frequently than pancolitis.<sup>4</sup> Common features include bloody diarrhea, passage of mucous, abdominal pain and sometimes fever (contrasted with features of CD in Table 2). Onset is usually gradual, but a spectrum of presentations is possible, from

**Table 1**  
**Differential Diagnosis of Inflammatory Bowel Disease in the Elderly**

Category	Example
Vascular	– Ischemic (thrombotic, embolic) – Vasculitis
Infectious	– <i>Escherichia coli</i> O157:H7 – <i>Shigella</i> , <i>Campylobacter</i> , <i>Yersinia</i> , <i>Salmonella</i> – <i>Clostridium difficile</i>
Diverticular disease	– Diverticulitis – Segmental colitis associated with diverticula
Malignancy	– Adenocarcinoma (large, small bowel) – Lymphoma – Carcinoid
Microscopic colitis	– Lymphocytic colitis – Collagenous colitis
Medications	– Non-steroidal anti-inflammatory drugs, disease-modifying anti-rheumatic drugs, sulfasalazine, methyldopa, ticlopidine – Cathartic colon (laxative abuse)
Other	– Post-radiation – Amyloidosis

insidious crampy abdominal pain to a more acute and systemically toxic presentation. UC almost always involves the rectum. Toxic megacolon and perforation are potentially lethal complications of UC. The risk of developing adenocarcinoma of the large bowel is proportional to the amount of bowel involved and the duration of disease, but not to the degree of inflammation on biopsy.<sup>7,8</sup> The risk becomes significant eight to 10 years after diagnosis, if more than the rectum is involved. Extraintestinal features may occur such as spondylitis, uveitis, arthritis, pyoderma gangrenosum and liver disorders including pericholangitis, sclerosing cholangitis and hepatocellular carcinoma.<sup>1</sup>

The course of the disease is usually characterized by exacerbations and remissions, although surgery (colectomy) can be curative. Management is multidisciplinary and early referral to a gastroenterologist is recommended. Education and diet modifications are important. For example, elemental diets

have been advocated as primary therapy for Crohn's disease.<sup>1</sup> Supplemental nutrition also is important in those failing to thrive. Supportive and symptomatic therapy can involve antidiarrheals, antispasmodics, transfusions, erythropoietin and iron (both oral and intravenous). Disease-modifying agents include sulfasalazine and its 5-aminosalicylic acid derivatives for milder disease. For more advanced disease, corticosteroids and immunosuppressive agents are considered. Surgery is considered for severe hemorrhage, carcinoma, severe dysplasia, toxic megacolon and medically-refractory disease. Common surgical therapy involves total colectomy with either ileostomy or ileoanal anastomosis and creation of an ileoanal pouch (to act as a reservoir and to improve continence). "Pouchitis" is a common complication, occurring in 10–35% of patients in the first 10 years following pouch construction for UC, and it usually responds to antibiotic therapy.<sup>9</sup>

## Crohn's Disease

As with UC, the presentation of CD in the elderly resembles that in the younger population.<sup>4</sup> CD, in contrast to UC, can involve any area of the gastrointestinal tract.<sup>1</sup> Usually, CD involves the terminal ileum with or without involvement of the colon (Table 2). In general, CD affects the right side and spares the rectum. In the elderly, however, the colon seems to be affected more commonly, and there may be a predilection for left-sided disease.<sup>4</sup> The stomach and esophagus are involved far less commonly in both younger and older age groups.

A characteristic complaint is crampy lower-right quadrant abdominal pain. Other features at presentation include a gradual onset of diarrhea, low grade fever, anemia and weight loss.<sup>1</sup> Bloody stools are uncommon in CD. Occasionally, an acute presentation may be mistaken for appendicitis. Partial small bowel obstruction and strictures are common, but complete obstruction and free perforation are rare. Localized perforation may give rise to sinus tracts and ultimately fistulas, which may communicate with other loops of bowel, bladder, vagina and skin. CD should be considered in anyone presenting with a perianal abscess or fistula.

Extraintestinal manifestations of CD are similar to those for UC. Unlike UC, however, CD is not characterized by linear spread of disease. It can occur in an area adjacent to previously diseased bowel, but it also may occur more distally, giving rise to "skip lesions". This is especially true after surgery when disease often recurs proximal to the site of an anastomosis. CD usually follows a course of exacerbations and remissions. The multidisciplinary approach to managing UC also applies to CD, yet the medical management of disease activity is somewhat different.<sup>1</sup> Antibiotics (such as ciprofloxacin and metronidazole) are essential for the infectious complications of CD and, although the mechanism is unclear, they also have a role in long-term management.<sup>10</sup> Compared to treatment of UC, sulfasalazine and its derivatives are less effective in treating acute exacerbations of CD, and there is a greater

reliance on corticosteroids and immunosuppressives. Prolonged monotherapy with corticosteroids should always be avoided. Newer biological agents such as infliximab—a chimeric antibody directed against tumour necrosis factor alpha—are also effective in treating perianal disease. Resection is necessary for stricturing complications of CD and can be considered for medically-refractory disease. Incision and drainage of abscesses usually are accomplished surgically, but radiological approaches also can be appropriate. Creation of an ileoanal pouch is not an ideal therapy, as disease recurs in the pouch, often prompting its excision.

### Therapeutic Considerations Specific to the Elderly

Treatment of elderly patients with IBD follows the same broad principles as treatment of younger populations. Aggressive therapy is often required for the induction of remission, and subsequent therapy is aimed at maintaining remission. Age is, however, an important consideration in the choice of therapeutic agent, as the elderly are more likely to have other significant comorbidities that could be made worse with agents used to treat IBD.

Corticosteroids warrant particular concern for therapy in the elderly. They contribute to osteoporosis and exacerbate hypertension, congestive heart failure and diabetes. Courses of steroids therefore should be as brief as possible. Chronic therapy with corticosteroids should be avoided, or at least balanced against the risks of steroid-sparing agents.

There is emerging evidence that the biological (anti-TNF) agent infliximab also exacerbates congestive heart failure.<sup>11</sup> Furthermore, patients should be screened for previous tuberculosis exposure prior to therapy with infliximab. Reactivation of tuberculosis has been reported with biological therapy.<sup>11</sup>

Many elderly patients may be treated with warfarin for other illnesses. Antibiotics (including metronidazole), immunosuppressives and cholestyramine are among the drugs

that affect the prothrombin time. Dose adjustments for warfarin may have to be made while patients are treated for their IBD.

Renal impairment and liver impairment may necessitate lower doses of certain medications used to treat IBD. Consultation with a gastroenterologist and/or pharmacist may be necessary as renal and/or liver function fluctuates. Some therapies for IBD require addition of other medications to minimize occurrence of complications. For example, therapy with sulfasalazine and methotrexate also should include initiation of folate. Similarly, therapy with corticosteroids necessitates initiation of

calcium, vitamin D and possibly a bisphosphonate.

Drug interactions are legion among the geriatric population. Consideration should always be given to possible interactions prior to the commencement of a new medication or to an alteration in dose. Allopurinol, for example, necessitates a dose reduction in azathioprine.

Surgery should not be denied in those who require it for serious complications of IBD (i.e., obstruction or infectious complications). However, the increased perioperative morbidity and mortality associated with age and comorbidities needs to be recognized. Furthermore, consideration should be

Table 2

### Common Features of and Therapeutic Strategies for Crohn's Disease and Ulcerative Colitis

	Crohn's Disease	Ulcerative Colitis
<b>Clinical Features</b>		
Pain	++	+
Diarrhea	++	+++
Rectal bleeding	+/-	++
Fever	+	+
Weight loss	++	+
Perianal disease	+	-
Abdominal mass	+	-
<b>Therapeutic Possibilities *</b>		
<b>Mild/Moderate disease</b>		
5-ASA (oral and rectal)	+	++
Rectal corticosteroids	-	+
Metronidazole	+	-
Budesonide (oral)	+	-
Azathioprine/6-mercaptopurine	+	-
<b>Severe disease</b>		
Oral/Intravenous corticosteroids	++	++
Infliximab	++	-
Methotrexate	+	-
Cyclosporine A	-	+
<b>Perianal disease</b>		
Antibiotics (metronidazole/ciprofloxacin)	++	n/a
Infliximab	++	n/a
Azathioprine/6-mercaptopurine	+	n/a

\* These are common therapeutic strategies that need to be customized to individual patients through consultation with a gastroenterologist familiar with these medications and their side effects. This is intended as an overview for induction of remission and not a guide to therapy.

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given to the need for perioperative medications such as beta-blockers and steroids in stress doses (for example hydrocortisone 100mg intravenously q8h perioperatively). ♦

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