MAYO CLINIC

REVIEW

Ulcerative Colitis: Epidemiology, Diagnosis, and Management

Joseph D. Feuerstein, MD, and Adam S. Cheifetz, MD

Abstract

Ulcerative colitis is a chronic idiopathic inflammatory bowel disease characterized by continuous mucosal inflammation that starts in the rectum and extends proximally. Typical presenting symptoms include bloody diarrhea, abdominal pain, urgency, and tenesmus. In some cases, extraintestinal manifestations may be present as well. In the right clinical setting, the diagnosis of ulcerative colitis is based primarily on endoscopy, which typically reveals evidence of continuous colonic inflammation, with confirmatory biopsy specimens having signs of chronic colitis. The goals of therapy are to induce and maintain remission, decrease the risk of complications, and improve quality of life. Treatment is determined on the basis of the severity of symptoms and is classically a step-up approach. 5-Aminosalycilates are the mainstay of treatment for mild to moderate disease. Patients with failed 5-aminosalycilate therapy or who present with more moderate to severe disease are typically treated with corticosteroids followed by transition to a steroid-sparing agent with a thiopurine, anti–tumor necrosis factor agent, or adhesion molecule inhibitor. Despite medical therapies, approximately 15% of patients still require proctocolectomy. In addition, given the potential risks of complications from the disease itself and the medications used to treat the disease, primary care physicians play a key role in optimizing the preventive care to reduce the risk of complications.

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From the Department of Medicine and Division of Gastroenterology, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA.

Ulcerative colitis (UC) was first described in the 1800s by Samuel Wilks.[1] Along with Crohn disease, it falls under the category of idiopathic inflammatory bowel disease (IBD). Ulcerative colitis is characterized by continuous colonic mucosal inflammation that extends proximally from the rectum. It is a chronic disease that typically presents in the second or third decade of life with bloody diarrhea and abdominal cramps.[2] The natural history of the disease is one of periods of remission and flares. Although the disease can be cured with total proctocolectomy, medical therapies are the mainstay of treatment.

EPIDEMIOLOGY

Worldwide, UC is more common than Crohn disease. Both diseases are more common in the industrialized world, particularly North America and Western Europe, although the incidence is increasing in Asia. The overall incidence is reported as 1.2 to 20.3 cases per 100,000 persons per year, with a prevalence of 7.6 to 245 cases per 100,000 per year.[2,3] The exact pathogenesis of UC is unknown, although there are a number of genetic and environmental factors that have been found to increase the risk of the disease.[4]

RISK FACTORS

Risk factors for the development of UC appear to be related to alterations of the gut microbiome or disruption in the intestinal mucosa.[2,3]

MEDICATIONS AND INFECTIONS

Gastrointestinal infections, nonsteroidal anti-inflammatory drugs, and antibiotics have all been implicated in the development of IBD.[3-7] The association between enteric infection and development of IBD has been seen most commonly within 1 year of illness with *Salmonella* or *Campylobacter*.[5] One recent study that used the Nurses Health Registry found that women who used nonsteroidal anti-inflammatory drugs for at least 15 days were at an increased risk of developing IBD. Those women taking higher doses of nonsteroidal anti-inflammatory drugs for a longer time were at the highest risk of IBD.[6] Antibiotic exposure, particularly to tetracyclines, is also associated with a higher risk of UC.[8] Other risk factors may include hormone replacement therapy and oral contraceptives.[7,9,10] Although isotretinoin

ARTICLE HIGHLIGHTS

- Ulcerative colitis is a chronic condition characterized by continuous mucosal inflammation that starts in the rectum and extends proximally.
- Natural history of the disease is one of remission and episodic flares.
- Typical symptoms include bloody diarrhea, abdominal pain, urgency, and tenesmus.
- Diagnosis is made in the right clinical setting via endoscopic evaluation and confirmation on pathologic specimens.
- Treatment is determined on the basis of severity of symptoms and is classically a step-up model starting with 5-aminosalycilates and corticosteroids as needed for inducing remission, followed by steroid-sparing agents with thiopurines, anti–tumor necrosis agents, or adhesion molecule inhibitors.
- Primary care physicians are critical in optimizing the overall care of these patients and limiting potential complications.

has been reported to increase the risk of IBD,[11] epidemiologic studies have not substantiated this finding.[12,13]

FAMILY HISTORY AND GENETICS

Although family history portends an increased risk, only 10% to 25% of patients with IBD have a first-degree relative with the disease.[4] Ulcerative colitis is more common in patients of Jewish origin compared with non-Jews and is less frequently seen in African Americans or Hispanics.[4] Genetic risk factors are still being elucidated. HLA-DqA1 variants appear most strongly associated with UC. Other genetic pathways involve epithelial barrier function, such as *CHD1* and *LAMB1*, and those that encode cytokines and inflammatory markers, such as *TNFRSF15, TNFRSF9, IL1R2, IL8RaIRB*, and *IL7R*.[14]

MISCELLANEOUS

Cigarette smoking has a protective effect against UC, and cessation of cigarette smoking has been associated with an increased risk of developing the disease.[4,7,15] However, given the complications associated with cigarette smoking, patient should be counseled to stop smoking. The role of diet has been evaluated in numerous studies, but no specific diet has been consistently linked to an increased risk of UC.[4,16,17]

SIGNS AND SYMPTOMS

Classically, UC presents with bloody diarrhea, abdominal pain, urgency, and tenesmus. Rarely, patients may present with weight loss or other systemic symptoms, such as a low-grade fever. The disease typically starts gradually and progresses for several weeks.[2,18]

EXTRAINTESTINAL MANIFESTATIONS OF DISEASE

Ulcerative colitis is associated with a number of extraintestinal manifestations that can primarily affect the skin, joints, eyes, and liver.[2,18,19] Erythema nodosum and pyoderma gangrenosum are the 2 most common immunologic skin lesions. Erythema nodosum follows the activity of the luminal disease, whereas pyoderma gangrenosum is more often independent.[19-22] Arthritis is the most common extraintestinal manifestation and can be peripheral or axial. The peripheral arthropathies can be subdivided into type 1 and type 2 arthritis. Type 1 is acute, is pauciarticular (<6 joints), and usually flares with the colitis. This type of arthritis is most often self-limited. Type 2 is more chronic and involves more than 6 joints, especially the metacarpophalangeal joints. The symptoms are often migratory, with synovitis that lasts for months. In addition, colitis-associated arthritis is different from rheumatoid arthritis and osteoarthritis in that it is seronegative and nonerosive. It is usually worse in the morning and improves throughout the day. Axial arthritis includes ankylosing spondylitis and sacroiliitis. These conditions can be very debilitating and result in limited spinal flexion. The symptoms are usually stiffness and pain that are relieved with exercise.[22-24]

Primary sclerosing cholangitis is also associated with UC. Primary sclerosing cholangitis is slightly more common in males and those with more extensive colonic involvement.[25] It can be a progressive disease, resulting in portal hypertension and cirrhosis, and is a risk factor for cholangiocarcinoma and colon cancer.[26] Its course does not parallel that of the luminal disease. Multiple other conditions have also been associated with UC, including uveitis, scleritis, optic neuritis, osteoporosis, psoriasis, depression, Sweet syndrome, aphthous stomatitis,

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