

Overview of Inflammatory Bowel Disease - Crohn's Disease and Ulcerative Colitis

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Abstract

Inflammatory bowel disease (IBD) describes two conditions that are classified by the inflammation of the gastrointestinal tract (McDowell et al., 2023). Inflammatory bowel disease is primarily characterised by the chronic inflammation of the gastrointestinal tract, sometimes associated with acute periods of active symptoms and periods of remission when symptoms are absent (McDowell et al., 2023). IBD is divided into two diseases, Crohn's disease and ulcerative colitis, which differ in the part of the GI tract that they infect (McDowell et al., 2023). While Crohn's disease includes inflammation of the entire gut, ulcerative colitis is usually limited to the colon (McDowell et al., 2023).

Causes of IBD

IBD occurs due to damages to the intestinal immune system, which is partially composed of the intestinal epithelium that includes sealed intercellular junctions (McDowell et al., 2023). Though the exact cause is unknown, the weakening of this system allows for microbial infection that leads to inflammation (McDowell et al., 2023). Further inflammatory reactions that follow exacerbate the condition (McDowell et al., 2023).

Crohn's Disease

Crohn's disease is a type of inflammatory bowel disease (IBD) characterized by chronic inflammation in various parts of the gastrointestinal tract. The pathophysiology of Crohn's disease begins with crypt inflammation and abscesses, which progress to tiny focal aphthoid ulcers. These mucosal lesions may develop into deep longitudinal and transverse ulcers with intervening mucosal edema, creating a characteristic cobblestoned appearance to the bowel. The transmural spread of inflammation leads to lymphedema and thickening of the bowel wall and mesentery. Mesenteric fat typically extends onto the serosal surface of the bowel, and mesenteric lymph nodes often enlarge. Extensive inflammation may result in hypertrophy of the muscularis mucosae, fibrosis, and stricture formation, which can lead to bowel obstruction. Abscesses are common, and fistulas often penetrate into adjoining structures, including other loops of bowel, the bladder, or psoas muscle (Walfish & Companioni, 2023).

Ulcerative Colitis

Ulcerative colitis is a chronic inflammatory bowel disease that primarily affects the colonic mucosa, often resulting in bloody diarrhea. The disease usually begins in the rectum and can extend proximally, sometimes involving the entire colon. The inflammation caused by ulcerative colitis affects the mucosa and submucosa, with a clear demarcation between normal and affected tissue. In severe cases, the muscularis layer of the bowel wall may also be involved (Walfish & Companioni, 2023). Early, the mucous membrane becomes erythematous, finely granular, and

friable, losing its normal vascular pattern. This can lead to the development of large mucosal ulcers with copious purulent exudate. Systemic symptoms and signs, more common with extensive ulcerative colitis, include malaise, fever, anemia, anorexia, and weight loss. Extraintestinal manifestations, particularly joint and skin complications, are most common when systemic symptoms are present. Diagnosis of ulcerative colitis involves stool cultures and microscopy to exclude infectious causes, and sigmoidoscopy with biopsy. Some studies report that up to 25% of patients subsequently develop inflammation in the small bowel mucosa consistent with Crohn disease. Treatment of ulcerative colitis depends on the symptoms and severity of the disease. It can include dietary management, symptom relief medications like loperamide, 5-Aminosalicylic acid (5-ASA), corticosteroids, and other drugs. In some cases, antimetabolites, biologic agents, a Janus kinase inhibitor, or sphingosine 1-phosphate (S1P) receptor modulator may be used. Surgery is sometimes necessary (Walfish & Companioni, 2023). Ulcerative colitis is typically characterized by intermittent episodes of abdominal cramping and bloody diarrhea. The disease is usually chronic, with repeated flare-ups and remissions. In about 10% of people, an initial attack progresses rapidly and results in serious complications. Another 10% of people recover completely after a single attack, while the remaining people have some degree of recurring disease (Walfish & Companioni, 2023).

Conclusion

Inflammatory bowel disease (IBD) is a chronic inflammatory condition that primarily includes Crohn's disease and ulcerative colitis. These diseases affect the gastrointestinal tract and can significantly impact the quality of life of affected individuals. The exact cause of IBD remains unknown, but it is believed to involve a combination of genetic, environmental, and immune factors. Diagnosis of IBD typically involves a combination of clinical findings, laboratory tests, imaging, and endoscopic biopsies. Treatment options for IBD depend on the severity and location of the disease and may include dietary management, medications, and in some cases, surgery. Although there is no cure for IBD, ongoing research and clinical trials continue to improve our understanding of the pathophysiology of intestinal inflammation in IBD, which may lead to more effective treatments and better patient outcomes in the future.

References

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