# Inflammatory Bowel Diseases: Ulcerative Colitis (UC) and Irritable Bowel Syndrome (IBS)

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## Introduction

Inflammatory Bowel Disease or IBD is an umbrella term that refers to a group of inflammatory disorders which mainly affect the intestine when the immune system attacks a harmless bacteria or virus in the gut eventually leading to bowel injury that is caused due to inflammation in the intestinal tract. Symptoms of IBD and related diseases include diarrhea, weight loss, abdominal cramps, iron deficiency, fever, and anemia. The major types of inflammatory bowel disease are Irritable Bowel Syndrome, Ulcerative Colitis, Microscopic Colitis, and Crohn's disease. This paper explains the two major inflammatory bowel diseases; UC and IBS, their etiology, the pathogenesis of both disorders, diagnostics tests to be conducted to start the prognosis, treatment for both disorders, and goals of the treatment related to the pathophysiology of IBD.

## Etiology

Ulcerative Colitis (UC) and Irritable Bowel Syndrome (IBS) both disorders are under the umbrella term of Inflammatory Bowel Disease (IBD) which involves inflammation in the colon, rectum, digestive tract as well as intestine. The pathophysiology of Irritable Bowel Syndrome includes abnormalities in visceral sensation, psychosocial distress, brain-gut interaction, and contractions in the intestinal muscles while they move food through the digestive tract. On the other hand, the pathophysiology of Ulcerative Colitis is a chronic immune system malfunction that aggravates due to some environmental triggers (Banasik, 2021).

## Pathogenesis

The pathogenesis of Ulcerative Colitis involves an aberrant response implicated through immune-mediated retention of effector macrophages that mistakenly attacks healthy tissues in the intestine. This is due to the autoimmune disorder when antibodies are formed to fight off infections against the colonic epithelial protein. The pathologic bacteria that cause Ulcerative Colitis are Salmonella, Yersinia, Campylobacter, and Shigella species which are transmitted while ingesting contaminated water and food.

The pathogenic mechanism of Inflammatory Bowel Disease implicates the presence of pathogenic factors including gut microbiota dysregulation, gene variants, bacterial overgrowth, carbohydrate malabsorption, visceral hypersensitivity, and abnormal immune response. Brachyspira, a genus of bacteria is responsible for causing gut inflammation in people with Irritable Bowel Syndrome (Banasik, 2021).

# Clinical Manifestations/ Diagnostics

The diagnosis of IBS depends on the symptoms and various tests involving stool exam, blood test for C-reactive protein (CRP), computed tomography (CT scan), Barium X-ray, MRI, Colonoscopy, upper and capsule endoscopy, Sigmoidoscopy, and a complete blood count test. Colonoscopy and Sigmoidoscopy are similar procedures that involve inserting a narrow flexible tube in the colon and large intestine respectively with a light and camera to examine the internal system (Long and Drossman, 2010). Both these procedures provide a look at the extent of inflammation, ulcers, and bleeding in the intestine as well as the colon.

The clinical manifestations for the diagnosis of Ulcerative Colitis involve similar diagnostic tests as for Irritable Bowel Syndrome such as endoscopy of the large intestine, stool culture test, Sigmoidoscopy, and a CT scan of the abdomen or pelvis, a standard X-ray to examine the perforated colon, and tissue biopsy. All these diagnostic tests are conducted to confirm the diagnosis of UC in the large intestine, how much of the intestine is affected, and what other potential health problems Ulcerative Colitis can rule out due to the severity of the symptoms (Colitis-Pathophysiology, 2003).

A health care professional uses these diagnostic tests to diagnose the signs of infections or inflammations in the large intestine as well as colon and risk of other related diseases. A pathologist conducts a tissue biopsy by passing an instrument through the endoscope that takes a piece of tissue from the lining of the large intestine, colon, or rectum to meticulously examine the tissue under the microscope. Some of the basic clinical tests a doctor conducts during a physical exam of the patient involve checking temperature, blood pressure, pulse rate, heart rate, and rectum exam through a stethoscope by pressing it on the abdomen to check the masses or tenderness through the sounds within the abdomen.

# Treatment

Ulcerative Colitis and Irritable Bowel Syndrome are treated with both medicines and surgery based on how severe the condition is and how much of the large intestine or colon is inflamed or affected due to fulminant Ulcerative Colitis or IBS. In case of severity of Ulcerative Colitis and Irritable Bowel Syndrome symptoms, a patient may be recommended surgical procedures if he/she has colorectal cancer, rectal bleeding, perforation of the large intestine, dysplasia (development of precancerous cells), or side effects due to long-term use of Corticosteroids (Long and Drossman, 2010). Common

surgeries to treat these conditions are *ileostomy*- an ostomy pouch attached to an abdominal opening known as a stoma through which stool is collected in the bag and *ileoanal reservoir surgery*- another surgical method in which an internal reservoir is attached to the end part of the small intestine which is further attached to the anus from where the stool is collected in the internal pouch. In patients with UC, surgery is used to remove the colon so that the disease would not come back as this disorder is only limited to the colon and does not affect other related organs or functions. The condition can also be treated with medicines to reduce inflammation in the large intestine as well as colon such as *Immunosuppressant* to treat the severity of UC in patients who do not respond to the other medications, *Aminosalicylates* to treat mild to moderate symptoms of Ulcerative Colitis to maintain remission, a steroid called *Corticosteroids* is prescribed to the patients who do not respond to aminosalicylates, and certain biologics to treat moderate to severe Ulcerative Colitis symptoms to help people stay in remission (Colitis-Pathophysiology, 2003).

# Goals of the Treatment

The goal of treatment for the pathophysiology of Ulcerative Colitis is remission for the time when the symptoms of the disorder disappear as people with UC require life-long treatment with medications to relieve the complications. Whereas the goal of treatment for the pathophysiology of Irritable Bowel Syndrome is self-care as patients with IBS symptoms can only bring relief to their symptoms through dietary changes such as doctor will suggest a low-fiber diet or low-residue diet to relieve symptoms of abdominal pain and diarrhea. Another aspect of the goal of IBS treatment through self-care is to learn how to manage stress, create time for oneself, and meditate to eliminate the things from the patient's daily routine that may worsen the symptoms. Something that amazes about Lord God is that He also stresses the maintenance of mental health through compassion as He empathizes with His creation "For God gave us a spirit, not of fear but power and love and self-control" (ESV, 2 Timothy 1:7). This verse sums up a Christian's belief that he/she must find comfort and ease in all their fears and anxieties they go through with their disorders.

# Conclusion

In the nutshell, Ulcerative Colitis and Irritable Bowel Syndrome under the umbrella term of Inflammatory Bowel Diseases (IBD) are disorders that inflamed the intestine and colon and their symptoms come and go over a period of many years. However, a patient can manage his/her condition through self-care to stay as healthy as possible for the long term despite the mild symptoms.

## References

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