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Gastrointestinal Society
Canadian Society of Intestinal Research

Ulcerative Colitis

Ulcerative colitis is a chronic inflammatory bowel disease (IBD) consisting of fine ulcerations in the inner mucosal lining of the large intestine. Inflammation starts at the lower end of the colon, just above the anus, and extends upward in a continuous manner, to variable distances. When only a small portion of the lower intestine is involved, this is a milder form of the disease known as ulcerative proctitis. If this applies to you, ask for our *Ulcerative Proctitis* pamphlet.

Ulcerative colitis is unrelated to ulcers found elsewhere in the gastrointestinal tract, such as stomach or duodenal ulcers, but it has many similarities to Crohn's disease, another IBD. The main differences between Crohn's disease and ulcerative colitis are that, in Crohn's disease, the inflammation extends into the bowel muscle wall and can affect any part of the digestive tract, whereas in ulcerative colitis, disease is limited to the surface lining of the colon. For more details, ask about our *Inflammatory Bowel Disease* booklet.

The cause of ulcerative colitis is undetermined but there is considerable research evidence to suggest that interactions between environmental factors, intestinal bacteria, immune dysregulation, and genetic predisposition are responsible. There is an increased risk for those who have a family member with the condition. Although there is a range of treatments to help ease symptoms and induce remission, there is no cure.

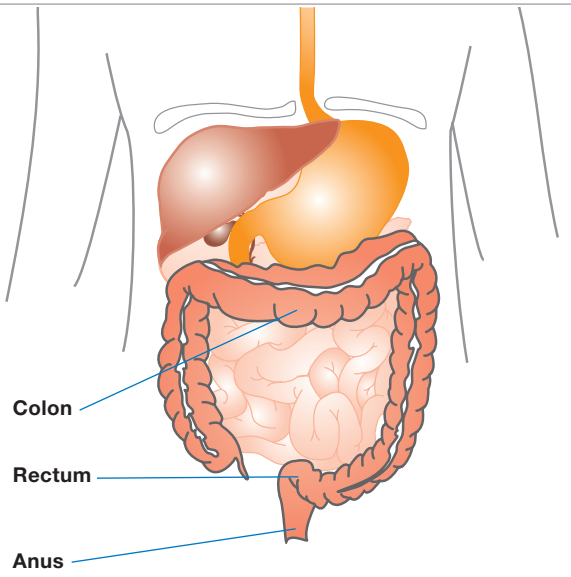
A diagnosis of ulcerative colitis can occur at any point throughout life, with a high occurrence in young children and then again around 40-50 years of age. Currently, Canada has the highest prevalence and incidence yet reported in the world, with approximately 104,000 diagnosed individuals.

Symptoms/Complications

Rectal bleeding, in varying amounts, occurs in most patients, where blood is obvious within and on the surface of the stool. The second most frequent symptom is diarrhea, accompanied by cramping abdominal pain. Symptom intensity can range from mild to severe. Low red blood cell count (anemia) can result if diarrhea and blood loss are severe. Constipation can also develop, as the body struggles to maintain normal bowel function.

Since ulcerative colitis is a systemic disease, some patients will have extra-intestinal manifestations including fever, inflammation of the eyes or joints, ulcers of the mouth, or tender, inflamed nodules on the shins.

After having ulcerative colitis for about 10-15 years, patients are at a slightly increased risk for colorectal cancer, so screening for this disease should be at an earlier and more vigilant schedule in this group than for that of the general population.



AREA AFFECTED BY ULCERATIVE COLITIS
Inflammation starts at the anus and extends up into the colon. It may involve only a short segment or as much as the entire colon.

Diagnosis

A physician carefully reviews the patient's medical history. Blood tests are useful in assessing inflammation activity level, whether blood loss has resulted in anemia, and the overall health and nutritional state of the patient. Stool sample analysis can sometimes be helpful.

It takes time to obtain a diagnosis so it is a good idea to keep a journal or diary about symptoms, when they appear, and how you feel. As you discuss these symptoms with your physician, he or she will be in a better position to form a diagnosis for you.

Your physician will determine which of several procedures is best to assess your intestinal symptoms. X-rays allow the physician to view the contours of the bowel. The procedure requires the patient to undergo a barium enema. This provides contrast that helps the intestine show up on X-ray. Scopes may help to determine the nature and extent of the disease. In these procedures, the physician inserts an instrument into the body via the anus (sigmoidoscope/colonoscope) to allow for visualization of the colon. The scopes are made of a hollow, flexible tube with a tiny light and video camera. An advantage of these procedures over a barium X-ray or virtual colonoscopy (CT scan) is that a physician may biopsy suspicious-looking tissue at any time during the examination for subsequent laboratory analysis.

Once all of this testing is complete, and other possible conditions are ruled out, your physician may make a diagnosis of ulcerative colitis.

Management

The treatment of ulcerative colitis is multi-faceted; it includes managing the symptoms and consequences of the disease along with therapies targeted to reduce the underlying inflammation. The goal is to heal the lining of the colon and to stay in remission.

Dietary and Lifestyle Modifications

As most nutrients are absorbed higher up in the digestive tract, persons with ulcerative colitis generally do not have nutrient deficiencies; however, other factors may influence the patient's nutritional state. Disease symptoms may cause food avoidance, leading to food choices that might not provide a balanced diet. If bleeding is excessive, problems such as anemia may occur, and modifications to the diet will be necessary to compensate for this.

Better overall nutrition provides the body with the means to heal itself. Depending on the extent and location of inflammation, patients may have to follow a special diet, including supplementation. It is important to follow *Canada's Food Guide*, but this is not always easy for individuals with ulcerative colitis. We encourage each patient to consult a registered dietitian, who can help set up an effective, personalized nutrition plan by addressing disease-specific deficiencies and the patient's sensitive digestive tract. Some foods may irritate the bowel and increase symptoms even though they do not affect the disease course.

In more severe cases, it might be necessary to allow the bowel time to rest and heal. Specialized diets, easy to digest meal substitutes (elemental formulations), and fasting with intravenous feeding (total parenteral nutrition) can achieve incremental degrees of bowel rest.

Symptomatic Medication Therapy

The symptoms are the most distressing components of ulcerative colitis, and direct treatment of these symptoms, particularly pain and diarrhea, will improve quality of life for the patient. A number of treatments exist to address diarrhea and pain. Dietary adjustment may be beneficial and anti-diarrheal medications have a major role to play. For painful symptoms not controlled by other drugs, analgesics can be helpful, with acetaminophen (Tylenol®) being the preferred choice.

There are two types of anti-diarrheal medications directed at preventing cramps and controlling defecation. One group alters the muscle activity of the intestine, slowing down content transit. These include: nonnarcotic loperamide (Imodium®); narcotic agents diphenoxylate (Lomotil®), codeine, opium tincture and paregoric (camphor/opium); and anti-spasmodic agents hyoscyamine sulfate (Levsin®), dicyclomine (Bentylol®), propantheline (Pro-Banthine®), and hyoscine butylbromide (Buscopan®).

The other group adjusts stool looseness and frequency by soaking up (binding to) water, regulating stool consistency so it is of a form and consistency that is easy to pass. These work in different ways; some, such as Metamucil® or Prodiem®, come from plant fibres, whereas cholestyramine resin (Questran®) is a bile salt binder. Interestingly, plant fibres are also useful for constipation, due to their stool regulating effects.

If extra-intestinal signs of ulcerative colitis occur, such as arthritis or inflamed eyes, the physician will address these conditions individually, as the patient may require referrals to other specialists. If anxiety and stress are major factors, a program of stress management may be valuable. Ask for our pamphlet on *Stress Management*.

Individuals with ulcerative colitis may be anemic from chronic blood loss. Adding dietary supplements could help improve this condition, with heme iron polypeptide (Proferrin®) being the preferred choice, due to its quick-acting and low side effect profiles.

The most widely prescribed antibiotics are ciprofloxacin (Cipro®) and metronidazole (Flagyl®, Florazole ER®). Broad-spectrum antibiotics are important in treating secondary manifestations of the disease, such as peri-anal abscess and fistulae.

Anti-inflammatory Medication Therapy

This comes in many forms, using various body systems to effect relief. A physician may prescribe any of the following medications alone or in combination. It could take some time to find the right mix for any specific patient, as each case of ulcerative colitis is unique. Depending on the location of your disease, the combination of drug delivery method (oral and rectal) could help to ensure that all areas of the disease are covered.

5-Aminosalicylic Acid (5-ASA)

5-ASA medication is safe and well tolerated for long-term use in mild cases of ulcerative colitis. These medications, taken orally, include mesalamine (Asacol®, Asacol 800®, Mesasal®, Mezavant®, Pentasa®, Salofalk®) and olsalazine sodium (Dipentum®). Quicker results might occur when medication is used in a topical form, taken rectally. Salofalk® is available in 500mg and 1g suppositories. Salofalk® 1g and Pentasa® 1g suppositories are once-a-day therapies. In a more difficult case, you may receive 5-ASA enema therapy (Salofalk® 4g & 2g/60mL and Pentasa® 1g, 2g, or 4g/100mL) for a short course, followed by suppositories, as the inflammation improves. Some patients may benefit from a combination of orally and rectally administered 5-ASA therapies in cases that do not respond to rectal therapy alone.

Patients use rectal medications nightly at first and, as the disease improves, treatments become less frequent. Sometimes your doctor will stop treatment and start it again if there is a flare up, and sometimes maintenance therapy two to three times a week may be required long-term. Typically, a patient starts on one type of preparation and if there is inadequate response, then switches to another type.

5-ASA helps to settle acute inflammation and, when taken on a long-term basis (maintenance), it tends to keep the inflammation inactive. It is important to keep up your medicine regimen even if your symptoms disappear and you feel well again. Maintenance therapy can be at the full initial dosage or at a reduced dosage and interval, depending on the disease response.

Corticosteroids

To reduce inflammation for the short-term in moderate to severe cases of ulcerative colitis, corticosteroids can help. These are prednisone and budesonide (Entocort®) taken orally, although prednisone tends to have greater side effects. These medications can be helpful to induce remission but should not be used long-term, or for maintenance.

For topical relief in the colon, budesonide (Entocort®) and hydrocortisone (Betnesol®, Cortenema®, Cortifoam®, Proctofoam®) are available for patients to administer rectally (enemas, foams, and suppositories). However, if the patient has significant diarrhea, then the rectal medications may be difficult to hold. Cortifoam® is a foam preparation of a smaller volume so the patient may retain the treatment in the rectum longer, thereby increasing the amount of time it has to work.

Physicians can prescribe hydrocortisone (Solu-Cortef®) and methylprednisolone (Solu-Medrol®) for administration intravenously in-hospital.

Immunosuppressive Agents

These drugs are used to treat ulcerative colitis, to reduce dependence on steroids, and for those who have steroid-resistant disease. They include azathioprine (Imuran®), cyclosporine, mercaptopurine/6-MP (Purinethol®), and methotrexate sodium (Rheumatrex™). It could take up to six months or more of therapy to see results.

Biologics

Biologic medications are important treatment options for those who have moderate to severe ulcerative colitis. Biologics are specially developed antibodies, which selectively block molecules that are involved in the inflammatory process. Gastroenterologists routinely prescribe biologics, which include infliximab (Remicade®), golimumab (Simponi®), adalimumab (Humira®), and most recently, vedolizumab (Entyvio®), to control symptoms (induce clinical remission).

Remicade® was approved in 2006 to induce and maintain clinical remission and mucosal healing, and for reducing or eliminating corticosteroid use. Simponi® was approved in 2013 to induce and maintain clinical remission and mucosal healing. Humira® was approved in 2013 to induce and maintain clinical remission. Entyvio®, a humanized, anti-a4b7 integrin monoclonal antibody was approved in 2015 for the treatment of adult patients with moderate to severe ulcerative colitis who have had an inadequate response, loss of response to, or were intolerant to, ether conventional therapy or infliximab.

Both Humira® and Simponi® are self-administered under the skin (subcutaneously), Humira® every 2 weeks, and Simponi® every 4 weeks. A health care professional administers Remicade® by intravenous (IV) infusion every 8 weeks, usually in a Janssen-provided BioAdvance® clinic. A health care professional administers Entyvio® by IV infusion, about every eight weeks, following a few initial doses. Some treatment intervals might change depending on response.

Surgery

In patients with ongoing active disease that fails to respond to all forms of medical management, surgery may be necessary.

Since ulcerative colitis only involves the large bowel, removing this organ will remove the disease but it is not a cure; removing the colon can lead to other symptoms and complications. Although there are many variations to possible surgical procedures,

typically, after removing all or part of the colon (colectomy), a surgeon brings the end of the remaining intestine through a new surgical opening in the abdominal wall (ostomy) to which the patient can attach a removable appliance to collect stool. An ostomy may be either temporary or permanent, depending upon the particular situation.

In recent years, new techniques have arisen whereby surgeons can preserve the anal muscle and create an internal pouch, or reservoir, from the remaining intestine. Emptying pouch contents via the anus more closely resembles the normal anatomical route. However, with the loss of colon function, bowel movements have very high water content and move very frequently. This means that even after surgery, patients could face troublesome gastrointestinal symptoms. One complication that can occur is pouchitis, which is inflammation within the surgically-created pouch.

An emerging surgical therapy is intestinal transplantation, but there are barriers yet to overcome, such as tissue rejection and inflammation in the newly transplanted organ.

Outlook

Ulcerative colitis is a chronic, systemic inflammatory disease manifesting in the colon. Intensity of this condition varies greatly from person to person and during a lifetime. Some patients may have an initial episode and then go into remission for a long period, some may have occasional flare-ups, and some others may have ongoing disease. Although there is no cure, ulcerative colitis patients require ongoing medical care, and must adhere to a proper nutrition and medication regimen, even when things appear to be going well. Your physician will work with you to create an appropriate treatment plan for you and to monitor your disease regularly, even during periods of remission. For more information on ulcerative colitis, visit www.badgut.org.

Find Out More

Ongoing research continues to reveal more about the symptoms, causes, cures, treatments, and preventative measures associated with GI and liver conditions. It would be our pleasure to send you a full information package on this topic.

Your Voice Matters to Us

Reach us at info@badgut.org with your comments or suggestions to help us make this booklet more valuable for you and other readers.

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ABOUT US

As the Canadian leader in providing trusted, evidence-based information on all areas of the gastrointestinal (GI) tract, the Gastrointestinal Society is committed to improving the lives of people with GI and liver conditions, supporting research, advocating for appropriate patient access to healthcare, and promoting gastrointestinal and liver health.

The *Inside Tract*® newsletter provides the latest news on GI research, disease and disorder treatments (e.g., medications, nutrition), and a whole lot more. If you have any kind of digestive problem, then you'll want this timely, informative publication.

Please subscribe today!

The GI Society, in partnership with the Canadian Society of Intestinal Research, produced this pamphlet under the guidance of affiliated healthcare professionals. This document is not intended to replace the knowledge, diagnosis, or care of your physician.

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