



## Microscopic Colitis

### The Invisible Inflammation of the Colon

Microscopic colitis is a lesser-known but common form of chronic inflammatory bowel disease and is an umbrella term used to describe two conditions: collagenous colitis and lymphocytic colitis. Both are characterized by chronic, non-bloody, watery diarrhea.

In medicine, the suffix "-itis" signifies inflammation - such as appendicitis, tonsillitis, diverticulitis, etc. The term "colitis" refers to inflammation of the colon or large intestine. You may have heard of ulcerative colitis and Crohn's colitis. Unlike these forms of inflammatory bowel disease, which cause visible colonic inflammation, the inflammation of microscopic colitis is not visibly apparent during colonoscopy. In fact, the lining of the colon appears perfectly normal. However, when biopsy specimens are taken and examined under a microscope, the inflammatory changes of microscopic colitis are visible. Thus, the term "Microscopic Colitis."



### How common is Microscopic Colitis?

Surprisingly, it is common. As gastroenterologists, we find microscopic colitis every week, especially when performing a colonoscopy on an older patient with chronic non-bloody watery diarrhea.

### What causes Microscopic Colitis?

The cause of microscopic colitis is unknown, and there is no cure. The exact cause of microscopic colitis remains elusive. However, studies have identified several factors that increase the risk of developing the condition:

- Being middle-aged or older. Most patients with microscopic colitis are over 50 years of age, with the majority being diagnosed between the ages of 50 and 60. However, around a quarter of patients are under 25 years of age at diagnosis.
- Being female. Women are three times more likely than men to be affected.
- Patients with celiac disease have a 70X risk of developing microscopic colitis.
- Having autoimmune disorders such as type 1 diabetes, autoimmune thyroiditis, and inflammatory arthritis.
- Smoking is an independent risk factor.
- Use of certain medications, including NSAIDs, proton pump inhibitors, beta-blockers, and statins. While these drugs might exacerbate diarrhea, they aren't believed to cause it directly.
- Changes in the intestinal microbiome have been observed, but these findings are still preliminary.

### **What are the symptoms of Microscopic Colitis?**

The characteristic symptom of microscopic colitis is chronic, non-bloody, watery diarrhea. Diarrhea can occur suddenly or develop progressively, with a frequency reported up to 15 times a day. Diarrhea may also be present at night, which helps distinguish it from irritable bowel syndrome. Some patients experience mild nausea, abdominal cramping, or bloating. There may be fecal urgency and incontinence. Eating often triggers a watery bowel movement, and a patient's fear of having a bowel movement can limit food intake, resulting in unintentional weight loss.

### **Why diarrhea?**

After your small intestine digests your hamburger and fries and all the nutrients have been absorbed into your bloodstream, the remaining liquid waste enters your colon for processing. Acting like a "water filter," your colon's job is to absorb and purify the excess water and recycle it back into your bloodstream. Any remaining solids are stored in the rectum and expelled as a stool or bowel movement when convenient.

In microscopic colitis, this colon "filter" malfunctions and fails to efficiently reabsorb enough fluid, causing loose stools and watery diarrhea. Unlike more severe forms of colitis, such as ulcerative colitis or Crohn's disease, microscopic colitis is non-destructive. It does not damage the colon wall. It does not cause rectal bleeding. It does not turn into cancer and seldom requires surgery. It just makes life miserable.

### **Types of Microscopic Colitis**

There are two different subtypes of microscopic colitis based on the appearance under the microscope. The symptoms and treatment are the same regardless of the subtype.

1. Collagenous (Kuh-LAJ-uh-nus) colitis, in which a thick layer of protein (collagen) develops under the intestinal lining. This form is more common in women.
2. Lymphocytic colitis, in which the number of white blood cells called lymphocytes increases in the colon tissue.

### **Making the Diagnosis**

No blood test, stool test, or x-ray can diagnose microscopic colitis. Other causes for diarrhea, including intestinal infection, must first be ruled out. It is also essential to exclude celiac disease, which is strongly associated with microscopic colitis. This can be done using a simple blood test. Once microscopic colitis is suspected, a colonoscopy is performed. Performed painlessly under MAC anesthesia, colonoscopy is usually performed to exclude other causes for diarrhea and to obtain biopsy specimens of the inner lining of the colon wall for microscopic examination. Multiple random biopsies are obtained as the diagnostic changes can be patchy.

## Treatment

As microscopic colitis is a non-destructive form of colitis, the overall goal of treatment is symptomatic improvement. The need for therapy depends on the severity of symptoms. The symptoms of microscopic colitis can come and go and sometimes resolve on their own.

Some patients find that dietary adjustments can help minimize symptoms, including the FODMAP diet.

Smoking cessation and medication review may also be helpful.

Some benefit from simple anti-diarrheal therapy, such as Imodium (loperamide), which is safe for long-term use up to 16 mg daily.

The most common drug prescribed for active symptoms is budesonide. Budesonide is a synthetic steroid like prednisone that decreases inflammation. However, since prednisone is absorbed directly into the circulatory system and has a systemic effect on all body organs, it has many immediate and long-term side effects. Budesonide has been shown to improve symptoms in 8 out of 10 people with a limited side effect profile.

Budesonide is poorly absorbed into the bloodstream and has the advantage over prednisone by only affecting the inner lining of the intestinal tract. What little medication is absorbed is destroyed by the liver before it can enter the central circulatory system, so-called "first-pass metabolism." Therefore, budesonide does not have the long-term systemic side effects of prednisone and can be used more safely. The usual starting dose is 9 mg (three 3-mg tablets) taken all at once each morning for a maximum of eight weeks. The dosage is then tapered over the next several months. Budesonide has been very effective in controlling symptoms of microscopic colitis but does not cure the disease. The recurrence rate is relatively high, requiring additional therapy courses as needed. A low-maintenance dose is often prescribed, taking just one or two tablets each morning. One problem with budesonide is the expense as health insurance coverage varies.



An alternative therapy to budesonide would be Pepto-Bismol (bismuth subsalicylate), taking three tablets 3 times daily for eight weeks. This therapy is not as effective as budesonide but is an effective alternative when the cost is prohibitive. Bismuth subsalicylate cannot be taken long-term, but no adverse effects have been reported related to an eight-week course of therapy. The pill burden is significant, and patients are warned that this therapy will turn their bowel movements black, which can be startling but is harmless.

Microscopic colitis may also alter the metabolism of liver and gallbladder bile within the intestinal tract. Bile malabsorption can worsen diarrhea. Medications to absorb excess bile, so-called bile salt sequestrants such as cholestyramine, are often prescribed to minimize symptoms. Just as sawdust can soak up an oil spill, cholestyramine absorbs and deactivates excessive bile. It cannot be taken within 3 hours of any other oral medication as it may prevent beneficial drug absorption. It is in powder form and taken after mixing with water once daily before lunch. Unfortunately, it is not very palatable.

Mesalamine is a drug that patients with ulcerative colitis often use to heal intestinal inflammation. Evidence of its benefit is variable and is usually not prescribed.

Although there are no random controlled clinical trials to suggest that any probiotic is beneficial, research is being done with the microbiome in hopes of finding a beneficial therapy. Studies are being performed to evaluate the role of fecal transplant in microscopic colitis.

In very severe refractory cases, more powerful immunosuppressive and biologic drugs have been used with varying success. They are usually prescribed as rescue drugs prior to surgical intervention.

The role of surgical management in microscopic colitis has lessened since budesonide became available. Surgery still has a role in severe and unresponsive cases. In such cases, part or all of the colon is surgically removed resulting a permanent ileostomy or colostomy “bag.”

### **Prognosis**

The diagnosis of microscopic colitis should be suspected in patients presenting with chronic or recurrent watery diarrhea, especially among female patients and in individuals with autoimmune disease and increasing age. It is important to note that microscopic colitis is NOT associated with an increased risk of colorectal cancer. While the diagnosis of microscopic colitis does not alter mortality or longevity, it certainly can affect the quality of life. However, with current therapy, most patients can lead normal lives.

The care of patients with microscopic colitis continues to evolve. Further work is ongoing to explore long-term safety outcomes with budesonide and the role of immunomodulators and newer biologic agents for patients with complex, refractory disease. As the condition is quite common, considerable research is being undertaken, and hopefully, more effective and curative therapies will be available soon.



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