

Management of Iron Deficiency Anemia in the Gastroenterology Patient

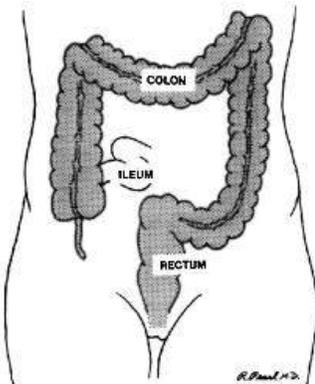
Anemia is one of the most common systemic complications in people with Inflammatory Bowel Disease (IBD).¹ Despite the high number of IBD patients who develop anemia, it is sometimes not diagnosed or remains untreated. Mild iron deficiency may be asymptomatic (without symptoms), and by the time you have recognizable signs of anemia and are diagnosed, it may be considered moderate-to-severe. Furthermore, people with IBD can often adapt as the symptoms of anemia gradually appear and don't realize how much better they could be feeling if their anemia were corrected.

A common symptom of anemia is an ongoing feeling of tiredness. Because there is ongoing blood loss from the gut and inadequate uptake or insufficient absorption of dietary iron, the body's iron stores begin to deplete and the ability of the red blood cells to deliver oxygen around the body is reduced.^{1,2} The symptoms of iron deficiency anemia may further compound existing tiredness associated with IBD, and this could have a significant impact on quality of life.

Irritable Bowel Syndrome (IBS) /Inflammatory Bowel Disease (IBD) aka Ulcerative Colitis (UC)

Irritable bowel syndrome (IBS) is a common disorder that may affect over 15% of the general population. It is sometimes referred to as spastic colon, spastic colitis, mucous colitis or nervous stomach. IBS should not be confused with other diseases of the bowel such as inflammatory bowel disease, also called ulcerative colitis, or Crohn's disease. IBS is a functional disorder where the function of the bowels may be abnormal but no structural abnormalities exist.

Ulcerative colitis is an inflammation of the lining of the large bowel (colon and rectum). Symptoms include rectal bleeding, diarrhea, abdominal cramps, weight



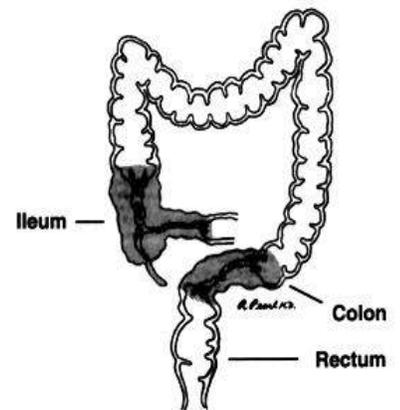
loss, and fevers. In addition, patients who have had extensive ulcerative colitis for many years are at an increased risk to develop large bowel cancer. The cause of ulcerative colitis remains unknown although causes have been linked to genetics and inappropriate immune system response.

People who have IBS/IBD/UC are at risk for anemia. One reason for this is the poor absorption of vitamins and minerals that can occur because of inflammation or diarrhea. If the intestines can't absorb enough iron, folate, vitamin B12, and other nutrients, the body won't have what it needs to create more red blood cells.

Crohn's Disease

Crohn's disease is a chronic inflammatory process primarily involving the intestinal tract. Although it may involve any part of the digestive tract from the mouth to the anus, it most commonly affects the last part of the small intestine (ileum) and/or the large intestine (colon and rectum).

Crohn's disease is a chronic condition and may recur at various times over a lifetime. Some people have long periods of remission, sometimes for years, when they are free of symptoms. There is no way to predict when a remission may occur or when symptoms will return



Crohn's disease can cause complications that result in a significant amount of blood loss, thus leading to iron-deficiency anemia. One of the most common complications of Crohn's disease are ulcers, or open sores, along your digestive tract. When ulcers develop, they cause a significant amount of internal bleeding. Occasionally, blood will appear in the stool. Crohn's

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disease can also cause anal fissures, which is a cut or crack in the skin of the anus. Anal fissures can also lead to significant blood loss.

What Causes Iron Deficiency Anemia in People with IBD?

There are different reasons why anemia occurs in people with IBD. The most common cause is blood loss from the intestines. Another cause is a reduced level of iron in the diet, as people with IBD may have to follow a restrictive diet and may have problems absorbing enough iron from the gut due to inflammation.^{1,2} Reduced absorption may also be a result of bowel resection surgery due to Crohn's or UC; 30-40% of UC patients and 70-80% of CD patients require some type of surgery in their lifetime as a result of IBD.³

Iron balance in the body is usually achieved through control of the amount of iron absorbed from the intestines.¹ If iron stores are low, the intestines usually absorb more iron from food in order to increase these stores. However, in people with IBD, the amount of iron absorbed can be impaired.¹

Inflammation is the major cause of reduced availability of iron. During episodes of inflammation, the transport and storage of iron can be affected.^{1,2} This can result in less iron being available for the production of red blood cells. This type of anemia is called anemia of chronic disease.

Other causes of anemia in people with IBD

People with ulcerative colitis or Crohn's disease may also be diagnosed with vitamin deficiency anemia or drug-induced anemia or combination anemias, although these forms are much less common than iron deficiency anemia.

Vitamin deficiency anemia is most often caused by inadequate absorption of vitamin B12 and folic acid from the diet.^{4,5} Although rare, drug-induced anemia can be caused by certain antibiotics⁵ or anti-inflammatory drugs.⁶

Anemia after Bariatric Surgery Surgical Procedures for Weight Loss

Morbid obesity is one of the most common causes of illness and death in the United States. In the next twenty

years it is anticipated that 40% of the population will be obese with a Body Mass Index (BMI) greater or equal to 30.⁷

Surgery has become an effective way to achieve lasting weight control and a healthy body weight. Surgical procedures for morbid obesity like gastric banding, laparoscopic sleeve gastrectomy, and the Roux-en-Y gastric bypass (RYGB, the most widely performed procedure), are becoming more popular.⁷

Nutritional deficiency problems have been observed in patients after gastric bypass surgery.^{8,9} Iron absorption is impaired after RYGB surgery due to the changes in the gastrointestinal (GI) anatomy. Iron deficiency anemia (IDA) is a common result of this procedure. Decreased iron intake, GI bleeding, or bleeding after the surgical procedure itself increases the risks for a patient developing iron deficiency anemia.

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