A Case Study of Iron Deficiency in Ulcerative Colitis

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By Jeffrey Hertzberg, MD, MS [1]

All patients with inflammatory bowel disease are at risk for anemia at any stage of their illness. In the past few years, there has been increasing acceptance of the safety, efficacy, and speed of correcting deficiency with intravenous iron. Here: the pros and cons of oral vs IV supplementation.

Presenter: Alan Moss, MD, FEBG, FACG, Beth Israel Deaconess Medical Center/Harvard Medical School

The patient is a 42-year-old man with 4 years of left-sided ulcerative colitis (UC) who was in clinical remission with mesalamine until admission in January 2013 with an ulcerative colitis flare. He was treated successfully with IV corticosteroids and discharged home on a regimen of oral prednisone taper. Continued disease activity required a slow taper, so azathioprine was added. Soon after, he was seen by his primary care physician complaining of fatigue. His hematocrit was 25%, with decreased ferritin and iron, and increased total iron binding capacity. Oral iron supplementation was started, and the patient was referred back to the gastroenterology service for consultation.

What would you do next?

a. Increase oral iron dose
b. Blood transfusion
c. Iron infusion
d. Erythropoietin

Before answering (or reading the answer below), consider the setting. Patients with UC and all patients with IBD are at risk for anemia at any stage of their illness. Because of disruption and ulceration of the bowel wall, iron can be lost directly through the stool, and this can be expected to worsen during UC flares (it did for the patient in the case study). In addition to treating the flare to decrease losses, iron must be replaced, and this can be done orally in mild cases.

In the past 3 years, there has been increasing acceptance of the safety, efficacy, and speed of correcting deficiency with IV iron. On the other hand, oral iron supplementation is inexpensive and—contrary to received wisdom of years past—it does not worsen IBD nor is its use associated with flares. But it corrects anemia, restores iron stores slowly, and is associated with gastrointestinal intolerance that can limit its usefulness.

Intravenous iron is better tolerated, and works faster, which can be a major consideration if the anemia is severe enough to limit activity. For severe anemia, it can be a much better choice than oral iron. For hemoglobin levels < 10 g/dL, a current European guideline (ECCO 2013) specifies an absolute indication for intravenous iron supplementation.

But the anemia seen in UC is often multifactorial, most often with superimposed anemia of chronic disease that will respond to erythropoietin if managing flares does not improve it. Dr Moss feels that erythropoietin is “underutilized, and that gastroenterologists are undertreating anemia of chronic disease.”

Primary care has a role to play here: if a patient with UC is poorly responsive to iron, there is probably superimposed anemia of chronic disease, even if ferritin stores are low. Don’t rely on the gastroenterologist to go beyond the management of the colitis—consider initiation of erythropoietin.

But these patients can also have bone marrow suppression from medications, drug-induced hemolysis, and vitamin B12/folate deficiency. Blood smears can be confusing when multiple factors are affecting red cell morphology—so ask questions when a colitis patient’s anemia doesn’t resolve when the flare is treated and iron stores return to normal.

Answer to the quiz question: With a hematocrit of 25% (meeting ECCO’s absolute indication) and severe limitation of activity, Dr Moss began IV iron infusion (choice c). Oral iron (choice a) could have been tried if anemia had been less severe, assuming patient tolerance and whether symptoms were acceptable during repletion. In the absence of acute loss, dyspnea, or angina, blood transfusion (choice b) was avoided. Erythropoietin was not tried as a first-line agent because the iron profile was clearly consistent with iron deficiency anemia and the patient responded well to intravenous iron and treatment of his UC flare.