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7409P Health Systems APPE

REQUEST

What alternative oral options exist for the treatment of iron deficiency anemia in patients with inflammatory bowel disease?

RESPONSE

BACKGROUND

Anemia, or clinically low hemoglobin, is a disease that affects many throughout the world. It is estimated that roughly 25% of the worlds population has anemia, and of that subset, 50% of all anemia patients are diagnosed with iron deficiency anemia (IDA). IDA, is further defined by a low concentration of serum ferritin, iron, and transferrin saturation.[1] IDA is currently treated through the replenishment of iron. This can be done via oral or intravenous route. Oral replacement therapy remains the preferred option as it is less expensive, can be done in an outpatient setting, and is easier for the patient. Ferrous sulfate (FeSO4) is the most used iron replacement medication and is generally well tolerated, however, it is also associated with gastrointestinal adverse effects such as constipation. Patients with inflammatory bowel disease may want to avoid these particular side effects due to the nature of their disease. Ferric maltol is a new oral iron formulation that uses ferric iron (Fe^{3+}) rather than the conventional ferrous iron (Fe^{2+}).

DESCRITPTION OF AVAILABLE LITERATURE

Gasche et al.[2] looked to complete a phase 3 trial comparing efficacy and tolerability of ferric maltol to placebo in patients who have previously failed oral ferrous therapy. They used 2 identical trials to evaluate patients with Ulcerative Colitis (UC) and Crohn's disease (CD). This was a randomized, double-blinded, placebo-controlled study that took place from August 2011 to December 2013 across sites in Europe. This trial met power and 1:1 randomization resulted in similar groups where patients received either 30 mg oral ferric maltol or matched placebo twice daily. UC patients in the treatment arm had statistically significant change in mean hemoglobin at week 12 compared with placebo (n=29 for both groups [2.52 vs. 0.21, one-sided 97.5% confidence limit (CL) 1.77, $p<0.0001$]). Adverse effects were similar between groups and of note, only 1 patient in the treatment arm reported worsening UC. This trial showcases that this is an option for those who have previously failed other oral iron medications. This study does have some limitations. First, this study would have potentially had stronger evidence if the treatment arm would have been compared to an active comparator.

Howaldt et al.[3] looked to further increase evidence for ferric maltol in a phase 3b trial comparing oral ferric maltol to intravenous ferric carboxymaltose. The goal was to determine if oral ferric maltol was non-inferior to IV ferric carboxymaltose using a NI margin of -0.2. This was a on open label, randomized trial that took places across the United States and Europe from January

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2016 to January 2019. This trial had similar inclusion criteria to that of the previous trial. 1:1 randomization resulted in fairly similar groups, with difference in sex, number of black patients, and mean ferritin between groups. Patients were either to receive 30 mg oral ferric maltol BID or IV ferric carboxymaltose administered according to local prescribing information for 12 weeks. Overall this study showed that oral ferric maltol increased hemoglobin but did not show non-inferiority versus IV ferric carboxymaltose at week 12. Per protocol population responder rates at week 12 (68% vs. 85%, Risk difference -0.17, 95% CI [-0.30-0.005], p=0.341). The adverse effects shown from this trial were consistent with previous studies. Initially this trial was planned to last for 52 weeks but was altered due to slow rate of enrollment. In the population studied to 52 weeks, ferric maltol showed similar hemoglobin response as IV ferric carboxymaltose. The authors mention that even though oral ferric maltol did not show non-inferiority is it still a tolerable and safe option that can be used as an alternative agent in patients with IBD.

EVIDENCE BASED CONCLUSION

Iron deficiency anemia is a disease that has multiple treatment options. In patients with inflammatory bowel disease, ferric maltol has shown to be an effective alternative for patients concerned for side effects with conventional ferrous sulfate. Ferric maltol seems like the perfect option, it does have one major downside, cost. According to GoodRx 60 capsules of ferric maltol costs around $500.[4] Overall, ferric maltol should be considered if patients cannot tolerate ferrous sulfate or have a need to avoid potential gastrointestinal side effects.

References:

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