Ferric citrate may reduce dialysis patients' need for multiple medications

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A medication called ferric citrate may reduce dialysis patients' need to take multiple drugs that treat complications related to kidney disease. Clinical trial results appearing in an upcoming issue of the *Journal of the American Society of Nephrology* indicate that the medication is safe and effective and may even help cut costs.

More than 400,000 patients in the United States are on dialysis to treat their kidney disease. Most of these patients need to take medications that bind to phosphorus in their food to reduce toxic buildup of the mineral in their bodies. They also must take drugs to treat anemia, which commonly arises in patients with kidney disease because healthy kidneys are needed to generate the hormone that stimulates red blood cell production. Patients also tend to be iron deficient.

Dialysis patients usually have to take 3 different medications to overcome these 3 complications related to kidney disease: drugs that bind phosphorus, erythropoietin-stimulating agents (ESA) that boost blood cell production, and intravenous (IV) iron. Julia Lewis, MD (Vanderbilt University School of Medicine) and her colleagues in the Collaborative Study Group conducted a 441-patient randomized clinical trial to test the potential of a compound called ferric citrate to bind phosphorus, increase iron stores, and reduce the usage of IV iron and ESAs.

Patients were randomized to receive either ferric citrate or another phosphorus-binding agent for 52 weeks. This was then followed by a

4-week period in which patients taking ferric citrate were again randomized to either continue on the medication or switch to placebo.

The study investigators found that ferric citrate effectively reduced blood phosphorus levels while increasing iron stores and decreasing the need for IV iron and ESAs. "Ferric citrate binds the phosphorus in food and also increases iron in the blood, and it allows patients to need less or no IV iron and medicines to make their bone marrow produce more blood cells," said Dr. Lewis. She also noted that patients on dialysis often experience many serious adverse medical events, many of which require hospitalization, and that ferric citrate was linked with fewer of these events compared with currently available phosphorus-binding medications. "While benefiting patients, ferric citrate is estimated to also actually reduce the cost of caring for dialysis patients by reducing IV iron and ESA usage, as well as hospitalizations."

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