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Can ferric citrate improve the outcome of predialysis patients?

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A late breaking clinical study [1] at the ERA-EDTA Congress in Copenhagen showed that the phosphate binder ferric citrate improves multiple aspects of abnormal mineral metabolism and raises hemoglobin in patients with advanced chronic kidney disease (CKD), who do not have abnormal levels of blood phosphate or anemia. Furthermore, the study group observed that the time to renal replacement therapy (RRT; dialysis or transplantation) or death was significantly longer in the treatment group. According to Principal investigator, Professor Geoffrey A. Block, Denver/USA, these results represent a strong signal and a larger, randomized, placebo-controlled trial should follow to validate the observed effect of ferric citrate on patient outcomes.

Chronic kidney disease (CKD) is a long-term condition that currently has no cure. Early diagnosis and treatment of the underlying cause or initiation of secondary preventive measures (e.g. control of blood pressure) may delay or, in some cases, halt disease progression. However, in a minority of patients, CKD continues to progress despite these measures, and they eventually need RRT with dialysis or transplantation.

As CKD progresses to its advanced stages, patients are increasingly likely to develop abnormalities of mineral metabolism, such as hyperphosphatemia, and iron-deficiency anemia. Ferric citrate is an intestinal phosphate binder that is indicated for the control of hyperphosphatemia in adults with CKD. Previous research has shown that ferric citrate improves levels of transferrin saturation (TSAT), serum ferritin, and hemoglobin in predialysis patients with anemia.[2]

In the late breaking clinical trial [1] presented by Geoffrey A. Block at the ERA-EDTA Congress in Copenhagen patients with eGFR ≤ 20 ml/min and who were not anticipated to start RRT within 8 weeks were randomized 2:1 to received fixed dose ferric citrate (FC, 210 mg, two per meal) or standard of care treatment (SOC). 203 patients were randomized and 199 attended at least 1 follow up visit. As compared to the SOC arm, treatment with FC resulted in statistically significant increases in mean TSAT, ferritin, and hemoglobin, and
statistically significant reductions in mean serum phosphate, and intact FGF23. Patients randomized to FC were significantly less likely to receive ESA or intravenous iron. Time to RRT or death was significantly longer overall and in the subgroup of patients with diabetes.

Block comments: “We thought that there was a strong rationale for reducing serum phosphate, reducing FGF23, improving iron stores and increasing hemoglobin before patients needed dialysis. In our study we saw that time to RRT or death was significantly longer in the treatment group”. Block claims that this is a strong signal and that larger, randomized, placebo-controlled trial should follow to validate the observed effect on patient outcomes.


About ERA-EDTA
With more than 7,500 members, the ERA-EDTA (“European Renal Association – European Dialysis and Transplant Association”) is one of the biggest nephrology associations worldwide and one of the most important and prestigious European Medical Associations. It supports basic and clinical research in the fields of clinical nephrology, dialysis, renal transplantation and related subjects. It also supports a number of studies as well as research groups and has founded a special “Fellowship Programme” for young investigators as well as grant programmes. In order to involve young nephrologists in all its activities, ERA-EDTA has created the “Young Nephrologists’ Platform” (YNP), a very active committee whose board includes members who are 40 years old or younger. In addition, it has established various working groups to promote the collaboration of nephrologists with other medical disciplines (e.g. cardiology, immunology). Furthermore, a “European Renal Best Practice” (ERBP) advisory board was established by the ERA-EDTA to draw up and publish guidelines and position statements. Another important goal of the ERA-EDTA is education: The series of CME courses combined with the annual congress offer an attractive scientific programme to cover the need for continuous medical education for doctors working in the fields of nephrology, dialysis and transplantation. The association’s journals, NDT (Nephrology, Dialysis, Transplantation) and CKJ (Clinical Kidney Journal), are currently the leading nephrology journals in Europe; furthermore NDT-Educational is the online educational journal of the society, with free access for all users, as well as being a very important and useful feature of the NDT-Educational “Literature Review”. The ERA-EDTA Registry is a large epidemiologic database comparing countries by assessing nephrology practices throughout Europe. ENP, the European Nephrology Portal, is the latest new initiative of ERA-EDTA, where all those interested in the activities of the Society can find everything that is happening, all in one place. Finally, ERA-EDTA is a member of the European Kidney Health Alliance (EKHA), a consortium of patients, nurses and foundations relating to renal issues that actively interacts with the European Parliament. For more information, please visit www.era-edta.org