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**TSAT and Serum Ferritin Increases Associated With Ferric Citrate Use
May Lead to Dialysis Cost Savings**

*Enrique Poradosu, PhD¹; Jaime Rubin, MA²; T. Christopher Bond, PhD²; Steven Wang²;
Robert Niecestro, PhD¹; Tracy Mayne, PhD²*

¹Keryx Biopharmaceuticals, New York, NY; ²DaVita Clinical Research, Minneapolis, MN

Background: Ferric citrate, an investigational phosphate binder (PB) for the treatment of hyperphosphatemia in dialysis patients (pts), has been shown in clinical trials to increase pts' serum ferritin (SF) and saturated transferrin (TSAT). This may result in reduced erythropoiesis-stimulating agent (ESA) and intravenous iron (IV Fe) use in pts receiving ferric citrate. We conducted a retrospective analysis of changes in ESA and IV Fe doses made by physicians in response to non-treatment-related increases in pts' SF and TSAT, and used the data to calculate potential cost savings associated with ferric citrate use.

Methods: We analyzed data from DaVita pts experiencing non-treatment-related rises in TSAT (>10%) and SF (15-25%) (6/1/08-12/31/10). Pts were ≥ 18 years old; prescribed a PB; on dialysis ≥ 120 d; without significant change in Fe or ESA dose (-30% to 10%) from the prior month; without change in PB type. Per session ESA and Fe use was compared for 60 d before and after index date. We constructed a cost model for ferric citrate use in medium (4500 to <9000U/session) and high (≥ 9000 U/session) ESA users considering PB, ESA, and IV Fe costs. Equivalent price and phosphorus outcomes were assumed for ferric citrate and other PBs.

Results: 2,037 concurrent rises in SF and TSAT were found. Reductions in ESA (500 U) and Fe (5.79 mg) dose per dialysis session were observed 2 months post index date. ESA reductions were greater for pts with highest baseline ESA dose (3080 U). For medium and high ESA users, monthly cost savings due to reductions in ESA and IV Fe were \$123 and \$315, respectively. For a dialysis clinic with 96 pts, assuming 70% of patients prescribed PBs, monthly savings would be \$6,071 with ferric citrate use.

Conclusion: Physicians responded to rises in SF and TSAT by reducing ESA and Fe doses, particularly in pts with high baseline use. Results indicate that increased SF and TSAT associated with ferric citrate may lead to reduced ESA and Fe costs.

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