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More Frequent Hemoglobin (Hb) Measurements and Erythropoiesis-Stimulating Agent (ESA) Titrations Are Not Associated With Increased Time in Target Hb Range

T. Christopher Bond, PhD¹; Jaime Rubin, MA¹; Carol Farthing, BSN, RN, CNN¹; Steven Wang¹; Alex Yang, MD²

¹DaVita Inc., Denver, CO; ²Affymax, Inc., Palo Alto, CA

Background: New economic bundling rules and changes in FDA labels for ESAs have renewed the focus on current practices to achieve greater control of Hb by frequent measurement and more precise ESA dose titrations. We conducted a retrospective database analysis to quantify frequency of ESA dose titrations and Hb measurements and their relationship to maintaining patients (pts) within an Hb range of 10-12 g/dL.

Methods: We assessed data from prevalent (≥ 120 days), adult (> 18 years old) hemodialysis pts dialyzed at DaVita dialysis clinics ≥ 3 times/week between 1/1/2009 and 12/31/2010. Dose titration was defined as a difference of $> 10\%$ between any of: the mean dose of 2 consecutive stable periods (≥ 3 doses during which the dose did not change more than 10%); the mean dose of a stable period and next/previous dose in a transition period; or 2 consecutive doses within a transition period. Time in Hb target range was defined as total pt-time in range/total pt-time. Assessments of associations used Pearson product-moment correlation (adjusted for race, vascular access, comorbidities, age, vintage, and BMI).

Results: We assessed data from 81,464 pts at 1,336 facilities. The mean number of titrations was 13.6 ± 2.83 (mean \pm SD)/pt/yr. The mean number of Hb measurements was 36.3 ± 8.24 /pt/yr. The mean percent of pt-time in range among these facilities was $57.1\% \pm 5.8\%$. At the facility level, after adjustment for case mix factors, the frequency of Hb measurements was associated with ESA dose titrations ($r = 0.47$; $p < 0.0001$). The annual number of dose titrations and Hb measurements per pt were not associated with time within 10-12 g/dL Hb range ($p = 0.12$, $p = 0.47$; respectively).

Conclusions: More frequent Hb testing is associated with more frequent ESA dose titration. However, neither was associated with increased time in Hb range. The associations found in this cross-sectional study highlight the need to assess titration practices.

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