

Short-term Variability of Hemoglobin Levels in ESRD Patients

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Anemia management is an important aspect of care for ESRD pts. Stability of hemoglobin (Hb) levels under erythropoietin (EPO) treatment has been a challenge with the target range being narrow at 11-12.5 g/dL. Over time few pts appear to remain within the target range in part secondary to medical complications. What has been less well defined is how often Hb levels move up and down, contributing to the difficulty of maintaining pts within the K/DOQI target. We hypothesize that the nature of the target range, payment policies, and the quality assurance problems associated with reducing the number of pts with low Hb levels leads to cycling of Hb levels around the target range. To study this, we defined pts with stable Hb levels, high and low amplitude swings in Hb levels to determine the stability of achieved Hb levels over time. We studied ESRD pts who survived the first 6 mos of 2003, had Medicare as primary payer and EPO claims in each of the first 6 mos of 2003 (N=152,846). Pts were classified into Hb groups for each month: <11.0 g/dL or low, 11.0 to <12.5 g/dL or mid, and ≥12.5 g/dL or high. We then defined low amplitude swings as Hb levels crossing into the adjacent Hb group, and high amplitude swings as Hb levels in all three Hb groups during the 6 mo study period. 10.3% of pts remained in the same Hb classification for the entire 6 mo period; 39.5% of pts were classified as high amplitude and the remaining pts (50.2%) as low amplitude swings around the upper and lower boundary for the K/DOQI target Hb. An idealized representation of these patterns is shown in figure 1. The data show the majority of ESRD pts have cycling of Hb levels over time. The causes of cycling may be secondary to the narrow target, medical complications, and/or payment policy. Further studies are needed to define predictors of the amplitude and frequency of cycling.

