

A PROSPECTIVE, CASE-CONTROLLED STUDY OF THE EFFECT OF CONTINUOUS HEMOGLOBIN (HGB) MONITORING (CRITLINE) ON HEMOGLOBIN VARIABILITY (HV) AND ERYTHROPOIETIN (EPO) DOSING.

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Hypothesis: 12 Hgb values per month (12qm) would better predict Hv (SD of residuals from each patient's own predicted regression line) and trends in response to EPO dosing than monthly Hgb measurement (1qm). Forty nine unselected patients, comprising one dialysis facility, used Critline to assess Hgb each dialysis treatment over the course of 15 months. Each patient served as their own control. During the 3 month Baseline period Hgb was recorded at each dialysis treatment but no change was made in volume management (staff were blinded to the Critline). During the second phase (6 months) staff followed a strict protocol of fluid management based on the results of the blood volume monitor. During the last 6 months a computer algorithm (AMIE, Leeds, UK) will give suggested EPO and iron doses based on the predialysis 12qm, and be compared with the 1qm. Figure 1 demonstrates the bias of 1g/dl higher value of the lab Hgb vs the Critline Hgb measured concurrently (12 vs 11, $p < 0.001$). There is an increased estimate of Hv with 12qm (0.27) vs 1qm (0.126) ($p = 0.001$). Figure 2 (to be shown on poster) demonstrates a patient who had a cycling of the Hgb values during the month that was not apparent from the 1qm values. Hv, which may be associated with increased mortality, can be more accurately assessed with 12qm. 12qm also allow earlier detection of trends in Hgb slopes. This can alert staff to intercurrent events. The more frequent Hgb values provide early evidence of response to EPO doses, and allow more appropriate, timely and confident changes in renal anemia management. It is anticipated that the more frequent Hgb monitoring data used with a computer algorithm will reduce undesirable Hv.

