HD CATHETERS AND INFLAMMATION ARE DETERMINANTS OF ERYTHROPOIETIN (EPO) REQUIREMENTS.

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The response to the administration of EPO among HD patients is variable. Studies have shown that inflammation is associated with EPO unresponsiveness. We recently showed that hemodialysis catheters (HC) are a major determinant of the inflammatory state in dialysis patients, suggesting a potential role of HC in EPO responsiveness. In this study we evaluated if the presence of a hemodialysis catheter (HC) is independently associated with EPO responsiveness. A total of 128 HD patients [56.6 yrs (range: 19-90), 68% AA, 62% males, 39% diabetics] were followed from Jan 2002 to Feb 2004. The mean follow up time was 12 months (range: 2-26 months). Data were collected monthly on HC use, high sensitivity-C reactive protein (hsCRP) concentration, and EPO dose during the entire follow up period. All patients received maintenance IV iron per protocol to keep a transferrin saturation>20%. The median weekly EPO dose was higher in individuals that had a HC at least once (N=45, median 18,000 Units per week) vs. in individuals that never had a HC during the entire period of follow up (N=82, median 12000 Units per week) (p=0.038). The median hsCRP was also higher in individuals that had a HC at least once (N=45, median 8.0 mg/L) vs. in individuals that never had a HC (N=82, median 4.7 mg/L) (p=0.03). Over the entire period of follow up, the median weekly EPO dose for subjects with a median hsCRP<5 mg/L was 12000 Units per week and for those subjects with a median hsCRP> 5 mg/L was 18000 Units per week (0=0.018). Multivariate analysis showed that the presence of a HC was an independent predictor of the median EPO weekly dose (p=0.05), after adjusting for age, sex, race, vintage, diabetes, and hospitalizations. However, when log transformed hsCRP (lnhsCRP) was introduced into the model, HC was no longer a predictor (p=0.08) but LnhsCRP was (p=0.008). There was no significant interaction between lnhsCRP and HC (p=0.8). Avoiding HC may improve inflammation and EPO requirements.