Abstract Type : Poster exhibition
Abstract Submission No.: A-0261
Abstract Topic : Dialysis

Hemoglobin Variability and Clinical Outcomes in Korean Peritoneal Dialysis Patients: A PDOPPS Analysis

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Objectives : Hemoglobin (Hb) variability is a common phenomenon in patients undergoing peritoneal dialysis (PD), yet its clinical implications remain unclear. Previous studies have suggested that fluctuations in Hb levels may be associated with adverse outcomes in patients with hemodialysis. However, data specifically examining the impact of Hb variability on mortality and hospitalization rates in PD patients are limited. This study aims to evaluate whether Hb variability influences all-cause mortality and hospitalization rates in PD patients.
Methods : This study analyzed data from the Peritoneal Dialysis Outcomes and Practice Patterns Study (PDOPPS), focusing on Korean patients. We included patients who had all seven hemoglobin (Hb) measurements recorded during the first two years of PD treatment. Hb variability was assessed using standard deviation and coefficient of variation. Patients were followed for an additional two years to evaluate all-cause mortality, hospitalization rates, and the occurrence of cardiovascular complications. Cox proportional hazard models and multivariable regression analyses were used to assess the association between Hb variability and clinical outcomes.
Results : After excluding incident PD patients, a total of 286 patients were included in the final analysis from a cohort of 490 prevalent PD patients. Patients were categorized into three groups based on hemoglobin (Hb) variability: SD <1, SD 1–2, and SD ≥2. The mean Hb levels in each group were 10.4 [9.5, 11.3], 10.0 [9.1, 10.7], and 10.8 [9.2, 11.2], respectively, with a significant difference among groups ($p = 0.018$). However, there were no significant differences among the three groups in terms of all-cause mortality, hospitalization due to cardiovascular complications, or peritonitis incidence.
Conclusions : In this study, Hb variability did not show a significant association with clinical outcomes, including mortality, hospitalization, cardiovascular complications, or peritonitis, in PD patients.