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Hemoglobin, albumin, lymphocyte, and platelet (HALP) score predicts the clinical prognosis of patients with end-stage kidney disease on hemodialysis

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Objectives : Recently, the hemoglobin, albumin, lymphocyte, and platelet (HALP) score has emerged as a promising index for indicating nutritional status and systemic inflammation. Previous studies have reported its prognostic value in predicting clinical outcomes in various disease conditions. However, only a few studies have analyzed the HALP score in patients with end-stage kidney disease (ESKD) undergoing hemodialysis (HD).

Methods : This study is based on the K-cohort database, a prospective and multi-dialysis center cohort study. Of the 763 incident HD patients enrolled between 2016 and 2022, 543 with available HALP score calculation were included. Patients were divided into two groups (lower and higher HALP score groups) based on the median HALP score. We investigated the predictive value of the HALP score for the occurrence of cardiovascular events and all-cause mortality.

Results : The median HALP score in the study population was 30.7 (interquartile range 22.5-41.3). During a mean follow-up of 42-month, 89 (16.2%) patients experienced cardiovascular events, and 108 (19.7%) all-cause mortality were observed. Patients with a lower HALP score had a significantly higher incidence of cardiovascular events and all-cause mortality compared to patients with a higher HALP score. Multivariable Cox regression analysis revealed that patients with a higher HALP score had a lower risk of cardiovascular events (hazard ratio [HR] 0.540, 95% confidence interval [CI] 0.329-0.888, $p = 0.015$) and all-cause mortality (HR 0.558, 95% CI 0.363-0.858, $p = 0.008$) than patients with a lower HALP score.

Conclusions : We have shown that the HALP score is independently associated with cardiovascular events and all-cause mortality in patients with ESKD undergoing HD. The HALP score, which is easily obtained based on some indicators routinely collected during the treatment, may be a useful predictor of cardiovascular events and all-cause mortality in patients with ESKD undergoing HD.