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The Association Of Cardiac Risk Factor At Kidney Replacement Therapy Initiation With The Risk Of Cardiovascular Disease In Peritoneal Dialysis Patients

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Objectives : Patients who undergo peritoneal dialysis (PD) have a higher risk of metabolic complications and cardiovascular disease (CVD) due to glucose exposure in dialysate, chronic volume overload, and accompanying comorbidities. However, target lipid levels to improve cardiovascular outcomes in PD patients have not been specified. We investigated the association of cardiac risk factor (CRF), the ratio of total cholesterol to high-density lipoprotein cholesterol, with the risk of cardiovascular disease in patients who undergo PD.
Methods : This retrospective study included 60 patients who underwent PD for at least 6 months at a single center between Apr 2019 and Jan 2024. We measured CRF at kidney replacement therapy (KRT) intiation and categorized patients into two groups by CRF cutoff value of 3.5.
Results : 27 (45.0%) patients underwent HD before switching to PD, and 32 (53.3%) started PD from the beginning. At the time of KRT initiation, 28 (46.7%) patients had diabetes, and 38 (63.3%) had dyslipidemia. The median CRF of patients was 3.51 (2.64, 5.13), and 50% of patients had CRF below 3.5. After KRT initiation, 17 (28.3%) patients developed CVD. Patients with CRF below 3.5 had a lower incidence of CVD than those with CRF more than 3.5 (43.3% vs. 13.3%, P = 0.01). Multivariable analysis revealed that CRF more than 3.5 was independently associated with CVD risk compared to CRF below 3.5 (hazard ratio (HR) 3.59, 95% Confidence Interval (CI) 1.13–11.39, P = 0.03) after adjusting age, sex, and diabetes status. This association was valid in subgroup analysis in patients who already used statin before KRT initiation (HR 6.21, 95% CI 1.05–36.74, P = 0.04).
Conclusions : CRF at KRT initiation was independently associated with the risk of CVD in patients who maintained PD.