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Relationship between high-density lipoprotein cholesterol and mortality in elderly hemodialysis patients: Data from the Korean Society of Geriatric Nephrology Retrospective Cohort

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Objectives: The association between high-density lipoprotein (HDL) cholesterol and mortality in elderly hemodialysis patients has not been well-established. This study aimed to investigate this association in a Korean elderly hemodialysis patients.

Methods: We recruited 1860 incident hemodialysis patients over the age of 70 from the retrospective cohort of Korean Society of Geriatric Nephrology. The primary outcome was all-cause mortality.

Results: The mean age was 77.8 years and 1049 (56.4%) patients were men. When we grouped patients into HDL cholesterol tertiles, T1 group (HDL level <30 mg/dL in men, <33 mg/dL in women) had a higher proportion of patients with end-stage kidney disease due to diabetic nephropathy. During the median follow-up period of 3.1 years, 1109 (59.7%) deaths occurred. In a multivariable Cox regression model, the T1 group had significantly higher risk of mortality (hazard ratio [HR], 1.29; 95% confidence interval [CI], 1.10-1.50; p=0.002) compared to the T3 group. A non-linear analysis using restrictive spline curve showed that low HDL cholesterol levels were associated with increased HR when HDL cholesterol levels were below 40 mg/dL, but there was no association between HDL cholesterol and mortality when levels above 40 mg/dL. Triglyceride/HDL ratio was not significantly associated with risk of mortality (HR per 1 log increase, 1.08; 95% CI, 0.99-1.18; p=0.075).

Conclusions: Low HDL cholesterol was associated with increased risk of mortality in elderly patients with hemodialysis. However, there was no significant relationship between HDL cholesterol levels and mortality when levels were within the normal range. Therefore, HDL cholesterol lower than normal may be a useful risk factor for predicting mortality in elderly hemodialysis patients.