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Higher serum total cholesterol to high-density lipoprotein cholesterol ratio was associated with increased mortality among incident peritoneal dialysis patients

Hee Won Noh, Kyu Yeun Kim, Jeong-Hoon Lim, Hee-Yeon Jung, Ji-Young Choi, Sun-Hee Park, Chan-Duck Kim, Yong-Lim Kim, Jang-Hee Cho
Department of Internal Medicine-Nephrology, Kyungpook National University Hospital, Korea, Republic of

Objectives:

A few studies have shown that serum total cholesterol to high-density lipoprotein cholesterol ratio (TC/HDL-C) was a risk factor for cardiovascular mortality in the general populations. This study aimed to evaluate the association of TC/HDL-C with mortality in incident peritoneal dialysis patients.

Methods: We enrolled Total of 630 incident peritoneal dialysis patients from 2008 to 2015 in a multi-center, prospective cohort study of Korea. Participants were stratified into quintiles according to the baseline TC, HDL-C, or TC/HDL-C. The association between all-cause mortality and each lipid profile was evaluated using multivariate Cox regression analysis.

Results: During a median follow-up period of 70.3 ± 25.2 months, 185 deaths were recorded. The median TC/HDL-C was 4.54 ± 2.51 . Highest TC/HDL-C group showed highest body mass index, percentage of diabetes, and serum albumin level. Multivariate analysis revealed that the highest quintile of the TC/HDL-C (>5.60) was associated with increased risk of all-cause mortality (hazard ratio 1.69, 95% confidence interval 1.04 to 2.76; $P = 0.036$), whereas neither of TC and HDL were associated with mortality. Increased serum TC/HDL-C was also independent risk factor for mortality in the patients with old age over 50 years, non-diabetes, and any cardiovascular disease.

Conclusions: The single lipid marker of TC or HDL-C could not predict mortality in PD patients. However, non-traditional lipid profile such as increased serum TC/HDL-C ratio was independently associated with an increased risk of all-cause mortality in PD patients.