

Abstract Type : Oral

Abstract Submission No. : OR-1575

What is the best predictable subfraction for cardiovascular outcomes in patient with chronic kidney disease?

Yaerim Kim¹, Kyungdo Han², Seung Seok Han³, Hajeong Lee³, Jung Pyo Lee⁴, Kwon Wook Joo³, Chun Soo Lim⁴, Yon Su Kim³, Dong Ki Kim³

¹Department of Internal Medicine-Nephrology, Keimyung University Dongsan Medical Center, Korea, Republic of

²Department of Biostatistics, The Catholic University of Korea, Seoul St. Mary's Hospital, Korea, Republic of

³Department of Internal Medicine-Nephrology, Seoul National University Hospital, Korea, Republic of

⁴Department of Internal Medicine-Nephrology, SMG-SNU Boramae Medical Center, Korea, Republic of

Objectives: Dyslipidemia is an important parameter for prediction of cardiovascular disease (CVD). We aimed to investigate the most valuable subfraction of lipid for predicting CVD in patients with chronic kidney disease (CKD).

Methods: We retrospectively reviewed the National Health Insurance Service (NHIS) database for a people who received nationwide health check-up in 2009. The population was divided as control, early CKD (eGFR 45-60 ml/min/m²), and advanced CKD (eGFR <45 ml/min/m²) by estimated glomerular filtration rate. Each subfraction of lipid profile including LDL, TG, HDL, and TG/HDL was categorized by decile, and the reference was the fifth decile. The end-point of the study was major adverse cardiovascular events (MACCE) such as fatal, non-fatal myocardial infarction, revascularization, acute ischemic stroke, and heart failure. The hazard ration (HR) of MACCE was calculated using Cox regression models after adjustment of multiple covariates.

Results: A total of 3,634,915 examiners were included in this study with 66,810 (1.8%) and 404,315 (11.1%) in advanced and early CKD, respectively. For all populations, LDL, TG, and TG/HDL showed a linear relationship to MACCE, the tenth decile for each subfraction showed highest adjusted HR: 1.45 (1.42-1.49) in LDL; 1.25 (1.22-1.28) in TG; 1.30 (1.27-1.33) in TG/HDL. Moreover, HDL showed inversed relation with lowest HR 0.88 (0.85-0.90) in the tenth decile. In the subgroup analysis for LDL and TG/HDL, control and early CKD showed similar patterns for HR with significantly increasing from the sixth decile. In advance CKD, TG/HDL showed significant HR in the tenth decile as 1.19 (1.05-1.34). However, there was no significance of LDL for MACCE in advanced CKD.

Conclusions: The pattern and significance of lipid subfraction were different according to the grade of renal function. Thus, TG/HDL should be additionally considered with LDL as a target variable in patients with advanced CKD.