

만성 신질환 환자의 신기능에 따른 LCAT 활성도 변화

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고은실, 윤혜은, 신석준, 박철휘, 양철우, 장윤식, 정성진

Lecithin: Cholesterol Acyltransferase (LCAT) Activity in Chronic Kidney Disease

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Background/Aims: The LCAT activities have been shown to decrease in ESRD, the corresponding plasma LCAT activities at the different CKD stages, however, are not known. The aim of this study was to evaluate whether LCAT activities also decrease in mild to moderate renal dysfunction groups.

Methods: The study included 186 patients whose plasma LCAT activities were measured by enzymetic method from 2011 to 2012 at a single center. Other parameters relate to lipid profile, including apolipoprotein A-I, apolipoprotein B, and lipoprotein(a) were also evaluated in an observational cross-sectional study. We calculated glomerular filtration rate (GFR) by CKD-EPI equation.

Results: The mean of plasma LCAT activities among all individuals was 65.34 ± 1.64 (U nmol/ml/hr/37°C). The LCAT activities of each CKD stage 1-5 were 77.49 ± 3.22 , 77.24 ± 4.18 , 65.59 ± 3.52 , 60.05 ± 3.89 , and 55.44 ± 2.45 , respectively (U nmol/ml/hr/37°C). The present data showed that more advanced CKD stages tend to have the lower LCAT activities, correlated with lower the HDL cholesterol level. In more advanced CKD stages, plasma apoA-I level significantly decreased, while apoB, and Lp(a) showed no differences. Multivariable regression analysis demonstrated that plasma LCAT activities were associated positively with estimated GFR ($\beta=0.233$, $p=0.012$), and negatively with age ($\beta=-0.282$, $p=0.002$), as well as with the interaction between LCAT activities and the amount of microalbuminuria ($\beta=0.289$, $p<0.001$), independent of diabetes, hypertension and BMI.

Conclusion: The plasma LCAT activities decreased at more advanced CKD stages, even after adjustment for other confounder factors. The present results support that plasma LCAT activity is as potential therapeutic target for dyslipidemia in CKD.

Key Words: 만성신부전, 고지혈증, LCAT
LCAT, Dyslipidemia, CKD