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Dyslipidemia in pediatric CKD patients: results from KNOW-PedCKD (Korean cohort study for outcomes in patients with pediatric CKD)

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Objectives: It is known that the pediatric patients with chronic kidney disease (CKD) as well as adult with CKD are susceptible to cardiovascular disease (CVD) events, which increase their mortality. Dyslipidemia is thought to be one of the most contributing risk factors for developing CVD. The goal of this study was to evaluate the prevalence of dyslipidemia and to assess clinical and laboratory risk factors associated with dyslipidemia in East Asian pediatric patients with CKD.

Methods: From April 2011 to April 2016, a total of 469 patients < 20 years of age with CKD were enrolled in KNOW-PedCKD, and 356 were included in the final analysis. Cross-sectionally using the baseline data of the cohort, multivariable logistic regression was performed to assess the risk factors for dyslipidemia and sub-analysis for each lipid abnormality was done.

Results: The prevalence of dyslipidemia was 61.5% (n=219). For dyslipidemia, nephrotic range proteinuria and 25-hydroxyvitamin D deficiency significantly increased adjusted odds ratio (AOR). In sub-analysis, glomerulonephropathy origin of CKD and nephrotic range proteinuria significantly increased the risks for high total cholesterol and high LDL cholesterol. And overweight or obese BMI Z-score, elevated proteinuria, hypocalcemia, 1,25-dihydroxyvitamin D deficiency were significantly associated with low HDL cholesterol. GFR stage 3b or higher and hyperphosphatemia significantly increased the risk for high triglyceride.

Conclusions:

Long-term data accumulation and prospective analysis are needed to clarify the relationship between CKD progression and dyslipidemia, and to find additional risk factors for dyslipidemia.