Correlation between hyperuricemia and progression of chronic kidney disease: The results from the KNOW-CKD study

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Objectives: The prevalence of hyperuricemia and chronic kidney disease (CKD) is steadily increasing. The association of hyperuricemia and chronic kidney disease remains controversial. Within this context, we evaluated the effect of hyperuricemia on the progression of chronic kidney disease.

Methods: A total 2042 patients with chronic kidney disease were analyzed in the prospective KoreaN cohort Study for Outcomes in patients With Chronic Kidney Disease (KNOW-CKD). Patients were classified as quartiles based on serum uric acid level. Renal outcome, so-called CKD progression, was defined as one or more of the following; start of dialysis or transplantation, a two-fold increase in baseline serum creatine or 50% decline of eGFR during the follow-up period.

Results: The prevalence of advanced CKD was higher in patients with high uric acid level. The risk of progression to renal failure increased 28% (hazard ratio, 1.277; 95% CI, 1.212-1.345) for each 1mg/dl increase in baseline uric acid level. In multivariate models, the highest quartile of uric acid was associated with increased risk of CKD progression (hazard ratio, 3.590; 95% CI, 2.546-5.063).

Conclusions: In CKD, hyperuricemia appears to be an independent risk factor for CKD progression.