The serum uric acid is an independent predictor of 1-year Renal outcomes in chronic kidney disease patients with hypertension.

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Objectives: Serum uric acid (UA) is one of potential risk of renal disease progression. We investigate the serum UA has an association with renal disease progression in patients with chronic kidney disease (CKD) with hypertension.

Methods: We recruited 270 CKD patients with hypertension from 4 centers in Korea through the APrODiTeg study and followed for 1 year. Serum UA was evaluated as a continuous value and categorical variables. The renal outcomes were an increase in random urine protein/creatinine ratio (PCR) than baseline value or estimated glomerular filtration rate (eGFR) deterioration which means a decrease in eGFR ≥ 5 (ml/min/1.73m²).

Results: Baseline serum UA was 6.58 ± 1.73 mg/dl and 6.52 ± 3.59 mg/dl after 1 year. For proteinuria progression, a 1 mg/dl higher serum UA has an independent correlation in multivariate regression (odds ratio (OR): 1.272; 95% confidence interval (CI): 1.031-1.568; P = 0.024). The higher quartile of serum UA showed a correlation with the odd ratio than lower quartile (OR: 2.243; 95% CI: 0.862-5.837; P = 0.098, OR: 3.417; 95% CI: 1.275-9.152; P= 0.015, OR: 2.754; 95% CI: 1.013-7.488; P < 0.047). In subgroup analysis, the patients with late CKD stage (3-5) showed serum UA has a positive correlation with proteinuria progression (OR: 1.311; 95% CI: 1.022-1.682; P= 0.033) and the highest quartile group was correlated with the increased odds ratio compared to the lowest quartile (OR: 3.811; 95% CI: 1.153-12.59; P = 0.028). For eGFR deterioration, the highest quartile of UA was positively correlated with the odd ratio in only univariate analysis.

Conclusions: Serum UA level has an independent correlation with proteinuria progression in especially late CKD patient with hypertension. Whereas for eGFR deterioration, serum UA did not show a significant correlation.