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상염색체우성다낭신 환자에서 고요산혈증과 신기능과의 관련성

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Association of Hyperuricemia with Renal Outcomes in Autosomal Dominant Polycystic Kidney Disease

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Background: Serum uric acid (SUA) has been linked to both hypertension and chronic kidney disease, and the evidence indicates that hyperuricemia may be associated with progression of chronic kidney disease. The aim of this study is to evaluate whether SUA would be correlated with the renal function decline and the progression to end stage renal disease (ESRD) in autosomal dominant polycystic kidney disease (ADPKD).

Methods: This study was performed as a single center, retrospective, observational cohort study. Among 606 patients who registered to the ADPKD clinic at Seoul National University Hospital from Aug 1999 to Dec 2011, a total of 399 ADPKD patients with estimated glomerular filtration rate (eGFR) $\geq$15ml/min/1.73m^2 who followed up for over 12 months were included in our analysis. The creatinine was measured by Jaffe method and the GFR was estimated by using IDMS-MDRD equation. The rate of eGFR decline and the incidence of ESRD were analyzed as the outcomes.

Results: The mean age was 43.1$\pm$12.3 years and mean follow-up duration was 70.4$\pm$42.5 months. The SUA was examined as gender specific quartiles: quartile 1-4 in man <5.3, 5.4-6.1, 6.2-7.2, >7.3 mg/dL; Quartile 1-4 in women <3.7, 3.8-4.3, 4.4-5.2, >5.3 mg/dL. The SUA was negatively correlated with concurrent eGFR (R^2=0.172, p<0.001). In addition, the progression rate to ESRD was higher in the 4th quartile than those in 1st and 2nd quartiles (24% vs 2% vs 2%, p<0.001). Among 53 patients who have received hypouricemic treatment, eGFR was improved overtime in the patients with the initial CKD stage I or II.

Conclusion: This study shows that SUA levels are associated with concurrent renal function in ADPKD patients. Reducing the SUA levels with hypouricemic agents may preserve kidney function in hyperuricemic patients in CKD stage I or II.

Key Words: 고요산혈증, 요산, 상염색체우성다낭신
Hyperuricemia, Uric acid, ADPKD