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보존된 신기능을 가진 제2형 당뇨 환자(남성)에서 요산의 농도와 변화량과 신기능 악화와의 관련성에 대한 연구

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Higher Level Uric Acid and its Change Value Even in Normouricemic State May be Associated with the Deterioration of Kidney Function in Type 2 Diabetic Men with GFR≥60 ml/min/1.73m2

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Aims: This study examined to explore the association with serum uric acid level within normal range and the change of kidney function in type 2 diabetic men with GFR≥60 ml/min/1.73m^2.

Method: In a retrospective longitudinal study, a total of 208 male patients with type 2 diabetes mellitus and preserved kidney function (estimated glomerular filtration rate [eGFR]≥60 ml/min/1.73m^2) and normouricemia were included. The patients were divided into two groups by eGFR level 90 ml/min/1.73m^2 (G1 and G2) at baseline. Rapid eGFR decliner was defined as ≥3ml/min/1.73m^2 per year.

Results: During follow-up, 46 patients (49.5%, G1 group) and 45 patients (39.1%, G2 group) were rapid decliners, respectively. Average decline of eGFR in rapid decliners was 8.6±4.3 (G1 group) and 6.0±2.8 ml/min/1.73m^2 per year (G2 group). In G1 group, average uric acid changes in rapid decliner were higher than non-decliners (0.2±1.1 mg/dL vs. -0.2±1.0 mg/dL, p=0.03). In G2 group, average uric acid changes in rapid decliner were higher than non-decliner (0.6±1.2 mg/dL vs. -0.05±1.2, p=0.003). Interestingly, HbA1c was negatively correlated with serum uric acid in both groups. In logistic regression analysis, there is no significant variable related rapid kidney function deterioration in G1 group. However, higher baseline uric acid even within normal limit was related with kidney function deterioration in G2 group.

Conclusions: This study showed that higher uric acid and its changes may be associated with the kidney function change even within normal limit of serum uric acid and further prospective study is necessary to confirm the relationship between high normal uric acid and prediction of deterioration of kidney function in type 2 diabetics.

Key Words: 요산, 제2형 당뇨, 신기능
Uric acid, Type 2 diabetic mellitus, Kidney function