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현성 단백뇨를 보이는 당뇨 환자와 비당뇨 환자에서 신장내 renin-angiotensin system활성화의 비교

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Comparative Assessment of Intrarenal Renin-angiotensin System Activation in Patients with Diabetic Nephropathy or Non-diabetic Glomerular Diseases

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Aims: Activation of the intrarenal renin-angiotensin system (RAS) sustains the pathophysiology of diabetic nephropathy. To compare the activity of intrarenal RAS between diabetic or non-diabetic glomerular disease, urinary angiotensinogen (uAGT) and urinary renin (uRenin) in patients with overt proteinuria were analyzed depending on the presence or absence of diabetes.

Methods: A multicenter, cross-sectional study was conducted. One hundred sixteen patients with overt proteinuria (urinary protein/creatinine ratio [uPCR] >1 mg/mg Cr) were included in this study. We analyzed uAGT and uRenin excretion with regard to diabetes.

Results: Thirty eight patients with diabetes and seventy eight patients with non-diabetic glomerular disease were included. urinary PCR and estimated glomerular filtration rate did not differ between groups (p-value 0.069, p-value 0.134). The natural logarithms of uAGT/urinary creatinine (ln[uAGT/uCr]) and uRenin (ln[uRenin/uCr]) levels were significantly elevated in patients with diabetes, whereas plasma angiotensinogen and plasma renin activity showed no significant difference between groups (ln[uAGT/uCr] mean±:SD; 4.16±1.13 in diabetic patients, 3.52±1.21 in non-diabetic patients, p-value=0.012/ln[uRenin/uCr] mean±:SD; 5.66±1.60 in diabetic patients, 4.29±1.48 in non-diabetic patients, p-value <0.001). In multivariate regression analysis, uRenin excretion was associated with uAGT excretion and diabetes status (Ln(uAGT/uCr); β±SE=0.068±0.064, p-value=0.014/diabetic status; β±SE=1.199±0.306, p-value <0.001).

Conclusion: Out study suggests that the activation of intrarenal RAS is more enhanced in patients with diabetes compared to patients withnon-diabetic glomerular disease.

Key Words: 안지오텐시노젠, 레닌, 당뇨
Angiotensinogen, Renin, Diabetes