P-109

소변 알부민 크레아티닌 비, 단백 크레아티닌 비 소변 시험지봉 검사의 관계

서울대학교 보라매병원[1], 서울대학교 의과대학[2]

김선문[2] · 정은숙[1] · 오윤규[1] · 김연수[2] · 김성권[2] · 임춘수[1]

The Association between Albumin to Creatinine Ratio (ACR) the Protein to Creatinine Ratio (PCR), and Urinary Reagent Strips

Sun Moon Kim[2], Eun Sook Jung[1], Yun Kyu Oh[1], Yon Su Kim[2], Suhnggwon Kim[2], Chun Soo Lim[1]

Seoul National University Boramae Medical Center[1]
Seoul National University College of Medicine[2]

Background/Aims : The persistent proteinuria is the evidence of kidney damage and the quantification of urinary protein excretion is essential for the diagnosis and monitoring of chronic kidney disease. In this study, we examined the relationship between albuminuria and proteinuria and assessed the equivalence between albumin to creatinine ratio (ACR) and the protein to creatinine ratio (PCR) in the patients with renal diseases. The sensitivity and the specificity of the reagent strips used for the detection of clinical proteinuria were also assessed.

Methods : A total of 808 patients were enrolled from a renal outpatient clinic. Random urine samples were tested for ACR, PCR and urinary dipstick. Urinary albumin, total protein and creatinine were measured on the Hitachi 7180 autoanalyzer by immunoturbidimetry, pyrogallol red-molybdate colorimetric method and kinetic Jaffe methods. The associations with various parameters and the amount of proteinuria or albuminuria were analyzed using multiple regression models.

Results : Urine albumin excretion was correlated with total protein excretion [β=1.11 (95% CI 1.06-1.15) p< 0.001, R^2=77.6%], particularly among the patients with renal impairment (estimated GFR <60 ml/min/1.73m^2) and with ACR >300 mg/g. The proportion of urine albumin increased at the higher level of total protein (PCR >800 mg/mg) excretion (p<0.001). With ACR >300 mg/mg as a criterion, the sensitivity and specificity of dipstick test was 96.3% and 86.1%, respectively. With PCR >200 mg/mg as a threshold, the sensitivity and specificity of dipstick test was 77.9% and 94.3%, respectively.

Conclusion : The ACR and PCR was highly correlated in the patients with renal disease, and dipstick test also had an acceptable sensitivity and specificity.

Key Words : 알부민뇨, 단백뇨, 신질환
Albuminuria, Proteinuria, Renal disease