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대사 이상의 중복 합병은 비당뇨병 환자에서 알부민뇨 발생의 예측인자이다

성균관의대 강북삼성병원 신장내과

현영울, 김향, 이규백

Combined Metabolic Abnormalities Predict Albuminuria in Non-diabetic Patients

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Objective: Metabolic syndrome is a well-known risk factor for chronic kidney disease. Hyperfiltration, endothelial dysfunction, inflammatory stress, oxidative stress, RAS activation is thought to be the mechanism causing renal injury in metabolic syndrome. We investigated whether metabolic abnormalities other than classic components of metabolic syndrome could predict the development of albuminuria in non-diabetic patients.

Methods: We analyzed 24,978 participants who underwent health check-up in Kangbuk Samsung hospital. They had check-up in 2002-2004 and had follow-up check-up 5 years later in 2007-2009. We excluded participants who had diabetes or dipstick albuminuria at baseline exam. Albuminuria was defined as dipstick albumin more than trace. Logistic regression analysis was used to estimate the odds ratio for new-onset albuminuria. This analysis was adjusted for age, sex, hypertension, cardiovascular disease, current smoking status and eGFR.

Results: Metabolic abnormalities included high insulin resistance (HOMA-IR>2), obesity (BMI>25) and dyslipidemia (total cholesterol >220mg/dL or history of dyslipidemia). Participants were divided into group 0-3 according to the numbers of comorbid metabolic abnormalities: group 0 (n=9,702), group 1 (n=8,325), group 2 (n=5,097) and group 3 (n=1,863). Baseline BMI (21.86±1.91 vs 23.59±2.38 vs 26.15±2.32 vs 27.53±2.02, p=0.0000), presence of hypertension (8.93% vs 15.14% vs 26.19% vs 34.41%, p=0.000), presence of dyslipidemia (0% vs 32.85% vs 49.52% vs 100%, p=0.000) and eGFR (83.84±10.14 ml/min/1.73m² vs 81.65±10.23 ml/min/1.73m² vs 79.65±9.6 ml/min/1.73m² vs 78.35±9.55 ml/min/1.73m², p=0.0000) were different between groups. After 5 years, 531 cases of new albuminuria were observed. Multivariate analysis revealed that age, presence of hypertension, current smoking, eGFR and presence of 3 comorbid metabolic abnormalities were associated with the development of albuminuria. The odds ratio of group 3 for albuminuria was 1.790(1.327-2.415, p=0.000).

Conclusion: Combined metabolic abnormalities were associated with new-onset albuminuria in relatively short period of 5 years. This finding suggests that we should pay special attention to those high risk patients with metabolic abnormalities to prevent future renal injury and cardiovascular morbidities.

Key Words: 대사 이상, 비만, 알부민뇨

Metabolic abnormalities, Obesity, Albuminuria