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만성콩팥병 환자에 있어 심혈관 질환의 예측인자로써 단백 크레아티닌비의 의의

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Random Urinary Protein to Creatinine as a Predictor for Adverse Cardiovascular Outcomes in the Chronic Kidney Disease Patients

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Background: Total proteinuria has been recognized as a predictor for adverse renal outcomes and mortality in patients with chronic kidney disease (CKD). Moreover, Random urinary protein to creatinine ratio (Up/cr) is revealed as a convenient predictor, and as effective as 24-hour urine protein for predicting outcomes. However, to our knowledge, there is no study on the association between Up/cr and cardiovascular (CV) events.

Method: A total of 169 patients, who had been diagnosed of CKD and followed up between January 2007 and December 2008, were collected retrospectively. Baseline Up/cr and other biomarkers including serum blood urea nitrogen and creatinine were measured at the time of enrollment. These patients were divided into three groups based on the tertile value of baseline Up/cr (<150 mg/g, 150-500 mg/g, and >500 mg/g). Kaplan-Meier plots and multivariate Cox analyses for CV mortality and events were conducted.

Results: During a median follow-up of 36.4 months, CV mortality occurred in 8 patients (18.2%) in the third tertile of Up/cr compared to 4 patients (4.9%) and 3 patients (2.1%) in the first and second tertile ($p<0.05$). In addition, patients in the third tertile of Up/cr exhibited higher CV composite outcomes than those in other tertiles ($p<0.05$). Moreover, Kaplan-Meier plots showed that there were significantly increased CV mortality and events in the third tertile group compared with the first and second tertile groups ($p=0.03$). Furthermore, in a multivariate Cox regression analysis adjusted for Up/cr was independently associated with an increased risk of CV mortality and events (CV mortality; HR, 1.43; 95% CI, 1.30-1.56; and CV events; HR, 1.96; 95% CI, 1.76-2.18).

Conclusion: This study showed that Up/cr predicted CV mortality and events in CKD patients, suggesting that measurement of Up/cr at the time of diagnosis of CKD might be useful and convenient for predicting cardiovascular outcomes.

Key Words: 단백 크레아티닌비, 심혈관 질환, 예측인자
Up/cr, Cardiovascular outcomes, Predictor