

중환자에서 급성신손상이 만성신부전으로 진행되는 위험인자에 대한 분석연구

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Risk Factors for Progression of Acute Kidney Injury to Chronic Kidney Disease in Critically Ill Patients

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Background: Acute kidney injury (AKI) is an independent risk factor for progression to advanced stage chronic kidney disease (CKD). Survivors after AKI episode have also increased over time. We tried to analyze the effects of AKI episode during hospitalization on the risk for CKD.

Methods: Among 602 adult (age >20 years old) patients who started continuous renal replacement therapy (CRRT) in intensive care units at Seoul National University Hospital from May 2010 to April 2013, a total of 125 surviving AKI patients at three months after initiation of CRRT were enrolled in this study. Primary outcome is composite of RRT and increased serum creatinine (sCr) level more than 50% over 3 months.

Results: The frequency of primary outcome was 30.4%. In the patients with primary outcome, sCr levels at baseline and after 3 months were 2.09 ± 2.00 mg/dL and 2.58 ± 2.08 mg/dL ($p=0.002$), respectively. Compared with the others with recovered renal function, underlying diabetic nephropathy was more frequent (15.8% vs. 4.6%, $p=0.034$), sCr level at 72 hours after initiation of CRRT was higher (1.90 ± 0.95 mg/dL vs. 1.45 ± 0.53 mg/dL, $p=0.035$), and far more patients failed in RRT weaning (60.5% vs. 4.6%, $p<0.001$). In logistic regression analysis, old age, diabetic nephropathy, increased sCr level at 24 and 72 hours after initiation of CRRT, RRT weaning failure, and longer hospital stay increased the risk for prolonged kidney injury. After adjusting other risk factors, increased sCr level at 72 hours after initiation of CRRT (Odds ratio [OR] 3.05; 95% confidence interval [CI] 1.02-9.09; $p=0.046$), RRT weaning failure (OR 20.29; 95% CI 3.45-119.26; $p=0.001$), and longer hospital stay (OR 1.03; 95% CI 1.01-1.05; $p=0.006$) were significantly associated with high risk for progression to CKD.

Conclusion: AKI episodes requiring CRRT are associated with high risk for CKD progression. Moreover, the severity of AKI is closely related to clinical outcomes, and strong predictor of development of advanced CKD.

Key Words: 중환자, 급성신손상, 만성신부전

Critically ill patients, Acute kidney injury, Chronic kidney