F-B10

급성 신손상의 예후 인자로서의 urine NGAL에 관한 연구

고려대학교 의과대학 내과학교실

조상경 · 김명규 · 부창수 · 조원용 · 김형규 · 양하나

RIFLE criteria and Urine Neutrophil Gelatinase-Associated Lipocalin is an Independent Predictor of Mortality and Short Term Renal Recovery in Patients with Acute Kidney Injury

Sang-Kyung Jo, Myung Gyu Kim, Chang Soo Boo, Won Yong Cho, Hyoung Kyu Kim, Ha Na Yang

Korea University Anam Hospital

Introduction : Recent several studies revealed that NGAL might be a promising biomarker for early detection of acute kidney injury (AKI), but the role of NGAL in predicting adverse clinical outcome has not been well addressed. The purpose of this study was to evaluate the usefulness RIFLE classification and also urine NGAL as an outcome predictor in patients with AKI.

Methods : This was a prospective cohort study. AKI was diagnosed according to RIFLE criteria and patients were divided into three groups (Risk, Injury and Failure). All data and outcomes were prospectively collected. Serum and urine NGAL at admission or nephrology consultation were measured by ELISA. Primary clinical outcome variable was in hospital mortality and renal function at 4 weeks defined as recovery to baseline or persistent loss of renal function.

Results : One hundred patients were enrolled in this study and 22 patients were classified into Risk, 24 patients into Injury and 54 patients were classified into Failure group. Age, sex and causes of AKI were not significantly different between groups. In hospital mortality was 12% and Failure in RIFLE was independently associated with higher mortality (odds ratio 11.16, p=0.03, Failure vs Risk, Injury). Urine NGAL at admission was also identified as an independent predictor of mortality and loss of renal function. Odds ratios for mortality for third and fourth quartile of urine NGAL were 13.1 and 16.7, respectively ($p<0.05$) and odds ratios for loss of renal function for third, fourth quartile were 20.3 and 58.9 ($p<0.05$). In the analysis of predictive performance of urine NGAL, the area under curve was 0.882 and a cutoff value of 298.28 pg/mL predicted loss of renal function with 88% sensitivity and 81% specificity.

Conclusion : This study confirmed the usefulness of RIFLE classification in predicting mortality in AKI patients and can also suggest that urinary excretion of NGAL, a new biomarker might also be served as reliable outcome predictor.

Key Words : 급성 신손상, NGAL, 예후인자
AKI, NGAL, Outcome