

중환자실입원환자에서 RAS억제제사용과 급성신손상의 발생 관련성

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Prevalent Use of Renin-angiotensin System Blockade is associated with an Increased Risk of Acute Kidney Injury in Critically Ill Patients

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Background and objectives: Acute kidney injury (AKI) is a major clinical problem and a predictor of patient outcomes, particularly in critically ill patients in intensive care units (ICUs). Renin-angiotensin system (RAS) blockers are commonly used but can cause AKI during intercurrent illness. The aim of this study was to evaluate whether the prevalence of the use of RAS blockers affected the incidence of AKI in ICU patients.

Methods: From a total of 26,287 patients who were admitted to the ICU from January 2003 to December 2013 were included in the final analysis. AKI was defined according to the Acute Kidney Injury Network (AKIN) criteria. The primary outcome was the incidence of AKI based on the prescription of RAS blockers. The secondary outcomes were all-cause mortality at 90 days, the length of hospital stay, and the length of ICU stay.

Results: RAS blocker users showed higher primary endpoint of AKI ($p < 0.001$) and remained an independent predictor of AKI (odds ratio [OR], 1.56; 95% confidence intervals [CI], 1.37-1.79; $p < 0.001$). The length of hospital stay ($p < 0.001$) and length of ICU stay ($p < 0.001$) were also significantly greater in the RAS blocker user group. There were no significant differences in the cumulative 90-day survival rates between the RAS blocker users and non-users ($p = 0.381$). However, the adjusted mortality risk associated with AKI was 1.38 (95% CI, 1.22 to 1.56; $p < 0.001$) and increased as the AKI stage increased: 1.17 (1.02-1.36), 1.77 (1.45-2.16), and 1.93 (1.55-2.41; $p < 0.01$ for the trend).

Conclusions: RAS blocker use was associated with a greater incidence of AKI and a prolonged length of ICU stay. Large, multi-center randomized trials are needed to confirm whether temporarily withholding these medications can affect ICU patient outcomes.

Key Words: 급성신손상, 중환자실, RAS 억제제
Acute kidney injury, Intensive care unit, RAS blocker