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Relationship between Transient or Persistent Acute Kidney Injury and Long-term Mortality in Patients with Myocardial Infarction

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Background: Limited information is available regarding the impact of acute kidney injury (AKI) during hospitalization on clinical outcomes after myocardial infarction (MI), and the effect of transient kidney injury (KI) on long-term mortality has not been validated.

Methods and Results: We retrospectively analyzed 2,289 patients diagnosed with MI. AKI patients were classified into a transient KI group and a persistent KI group based on serum creatinine levels at discharge. The end point of the study was 3-year mortality after MI.

Results: We included 2,110 patients of whom 237 patients (11.2%) developed AKI during hospitalization. Of these 237 patients, 154 (65.0%) had transient KI and 83 (35.0%) had persistent KI. Multivariate analysis showed that age, left ventricular ejection fraction, estimated glomerular filtration rate on admission, and Killip class were significantly associated with developing AKI during hospitalization. The adjusted hazard ratios for 3-year mortality were 1.78 (95 % CI: 1.14-2.79) for AKI patients with transient KI and 2.06 (95% CI: 1.25-3.40) for AKI patients with persistent KI, compared with no AKI.

Conclusion: AKI was associated with an increased risk of death for patients who experienced MIs and survived during hospitalization. Although renal function had completely recovered in many AKI patients at discharge, these transient KI patients are also at a great risk of death after MI.

Key Words: 급성 신손상, 심근경색, 일시적 신손상
AKI, Myocardial infarction, Transient kidney injury