

Impact of Acute Kidney Injury on Clinical Outcomes after ST Elevation Acute Myocardial Infarction

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Purpose: This study aimed to compare the incidence and clinical significance of transient versus persistent acute kidney injury (AKI) on acute ST elevation myocardial infarction (STEMI).

Materials and Methods: The study was a retrospective cohort of 855 patients with STEMI. AKI was defined as an increase of ≥ 0.3 mg/dL in creatinine level at any point during hospital stay. The study population was classified into 5 groups: 1) patients without AKI; 2) patients with mild AKI that resolved by discharge (peak Cr ≥ 0.3 – 0.49 mg/dL higher than admission creatinine, transient mild AKI); 3) patients with mild AKI that did not resolve by discharge (persistent mild AKI); 4) patients with moderate/severe AKI that resolved by discharge (peak Cr ≥ 0.5 mg/dL higher than admission creatinine, transient moderate/severe AKI); 5) patients with moderate/severe AKI that did not resolve by discharge (persistent moderate/severe AKI). The primary end point of the study was 1-year all-cause mortality after hospital discharge. The relation between AKI and 1-year mortality after STEMI was analyzed.

Results: AKI was occurred in 74 (8.7%) patients during hospital stay. Adjusted hazard ratio for mortality was 3.139 (95% CI 0.764 to 12.897, $p=0.113$) in patients with transient, mild AKI and 8.885 (95% CI 2.710 to 29.128, $p<0.001$) in patients with transient, moderate/severe AKI compared to patients without AKI. Persistent moderate/severe AKI was also independent predictor of 1 year mortality (hazard ratio, 5.885; 95% CI 1.079 to 32.101, $p=0.041$).

Conclusion: Transient and persistent moderate/severe AKI during acute myocardial infarction is strongly related to 1-year all cause mortality after STEMI.

Key Words: 급성신손상, 심근경색증, 사망률

Acute kidney injury, Myocardial infarction, Mortality