

Trends in the Prevalence of Acute Kidney Injury in Patients with Acute Myocardial Infarction

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Introduction

Acute kidney injury (AKI) is common in patients (pts) with acute myocardial infarction (AMI), and associated with permanent renal impairment and death. While guidelines increasingly emphasize the importance of AKI prevention, whether the rates of AKI changed over time is unknown.

Methods

We studied 35,425 pts hospitalized with AMI in 66 U.S. centers from 2000-08 using Health Facts, a national database with detailed information on in-hospital renal function. AKI was defined as absolute creatinine increase of ≥ 0.3 mg/dL or relative increase of $\geq 50\%$. Temporal trends in AKI during the 9-year study period were evaluated using hierarchical logistic regression, adjusting for secular changes in baseline creatinine and other known AKI predictors.

Results

From 2000-08, mean age increased (66.9 vs 68.8 yrs), as did baseline creatinine (1.4 vs 1.5 mg/dL), rate of cardiogenic shock (5.1 vs 6.3%), diabetes (30.4 vs 35.8%), coronary angiography (57 vs 68%), and PCI (30.2 vs 45.2%, $P < 0.001$ for all comparisons). Despite increase in AKI risk factors, the rates of AKI declined steadily (Figure). The trend of decreasing AKI rates persisted after multivariable adjustment ($P = 0.01$).

Conclusions

While AKI still affects nearly 1 in 4 AMI pts, the rates of AKI declined significantly from 2000-08, despite the aging population and rising prevalence of AKI risk factors. These findings may reflect the impact of increased clinician awareness, better risk stratification, and AKI prevention efforts during this time period.