Optimal Therapeutic Management Improves Long-Term Survival in ST-Elevation Myocardial Patients With Altered Glomerular Filtration Rate. A Propensity Score Comparison.

Purpose:

Decreased glomerular filtration rate (GFR) is associated with an increased risk of cardiovascular events following acute ST elevation myocardial infarction (STEMI). However, patients with chronic kidney disease have more comorbidities and will receive fewer evidence-based therapies

In a prospective STEMI patient cohort we assessed the effect of an optimal therapeutic management (OTM) according to GFR categories on long-term all-cause mortality.

Methods:

In a single tertiary referral center, 1,199 patients admitted for acute STEMI were enrolled between 2007 and 2011. We classified patients into 4 categories according to estimated GFR, <45, 45 to 60, 60 to 90, and >90 mL/min/1.73 m2 with the Chronic Kidney Disease Epidemiology Collaboration (CKD EPI) equation. Optimal therapeutic management was defined as a combination of reperfusion within 12 hours of symptom onset, primary percutaneous coronary intervention (PCI), double anti-platelet regimen, angiotensin converting enzyme inhibitors, statins, beta blockers, and anti-aldosterone treatment (if left ventricle ejection fraction <40%) upon discharge. The effect of OTM on survival according to GFR categories was analysed in a multivariate survival model including other risk factors and using a propensity score method Long-term mortality was the principal endpoint.

Results:

Patients were followed-up for a median of 4.7 years and 148(12.3%) patients died. OTM was applied in 431 (39.1%) patients of our cohort and overall, was associated with a significantly lower mortality (HR of 0.43 [95% CI, 0.26-0.70; P<0.001). There was a significant mortality reduction in the OTM group compared to the non-OTM group that tended to increase with increasing levels of renal dysfunction (HR of 0.28 [95% CI, 0.13-0.61] in the eGFR<60 ml/min patient subgroup; P=0.001) (Figure 1).

Conclusion:

In a retrospective propensity score analysis, OTM lowers long-term mortality whatever the eGFR category and with a trend towards increased efficiency with increasing levels of renal dysfunction.