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Glomerular Filtration Rate and Cardiovascular Outcomes after Acute Myocardial Infarction: Results from Korea Acute Myocardial Infarction Registry

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Background: Renal dysfunction is associated with one of the highest risks, but relation between chronic kidney disease (CKD) stage and cardiovascular outcomes after acute myocardial infarction (AMI) is not well defined.
Methods: As a part of the Korea Acute Myocardial Infarction Registry (KAMIR), we identified 12,636 patients with acute Myocardial infacrtion between November 2005 and July 2008. The glomerular filatration rate (GFR) was estimated by means of the four-component Modification of Diet in Renal Disease equation, and the patients were grouped according to GFR. Primary end points were death and complication in hospital courses. Secondary end points were major adverse cardiac event (MACE) during follow-up.
Results: The median follow-up was 404±61 days, the mean age was 64±13 years, and 70.4 percent of the group were men. A graded association was observed between GFR and clinical outcomes. The group IV and V independently predicted in-hospital death and MACE (hazard ratio, 2.004, 6.106; p<0.001; 1.869, 4.789; p<0.001). Diabetes mellitus (DM) was not associated with in-hospital MACE, while an independent risk factor for MACE during follow up (hazard ratio, 1.183; 95% CI, 0.978 to1.431, p=NS vs. 1.191; 95% CI, 1.051 to1.351, p=0.006). Use of beta blocker, angiotensin converting enzyme inhibitors (ACEi) or angiotensin receptor blockers (ARB) and statin was associated with reduced risk for MACE.
Conclusion: Severe renal dysfunction and DM were an independent risk factor for the mortality and complications of AMI, while use of beta-blockers, ACEIs or ARB and statin reduced risk for MACE.

Key Words: Acute myocardial infarction, GFR, Major adverse cardiac event