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Persistent renal injury among myocardial infarction patients treated by primary percutaneous intervention

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Topic(s):
ST-Elevation Myocardial Infarction (STEMI)

Citation:
Objectives: Limited data is present on persistent renal impairment following acute kidney injury (AKI) among ST elevation myocardial infarction (STEMI) patients undergoing primary percutaneous coronary intervention (PCI).

Purpose: We evaluated the incidence and prognostic implications of acute kidney disease (AKD), defined as reduced kidney function for the duration of between 7 and 90 days after exposure to an AKI initiating event, as well as long term renal outcomes among STEMI patients undergoing primary PCI who developed AKI.

Methods: We retrospectively studied 225 consecutive STEMI patients who developed AKI. Patients were assessed for the occurrence of AKD and long term renal outcomes based on serum creatinine levels measured at 7 days/hospital discharge and within 90-180 days of renal insult. Mortality was assessed at 90 days and over a period of 1271 ± 903 days (range 2-2130) following renal insult.

Results: Progression to AKD occurred in 81/225 patients (36%) and was associated with higher 90 day and long term mortality (p<0.001). Normalization of serum creatinine to a level equal/ lower than hospital admission level at 90 days from renal insult occurred in 41% patients with AKD. New chronic kidney disease (CKD) was diagnosed in 24%, while 35% demonstrated progression of preexisting CKD at 90 days from renal insult. In contrast, only 7% of patients without AKD had progression of preexisting CKD, while in the rest serum creatinine remained stable.

Conclusion: Progression to AKD following an acute renal insult in STEMI is frequent and associated with adverse long term renal outcomes.
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