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Background Contrast-induced nephropathy (CIN) is a commonly occurring complication associated with the use of contrast media in radiological studies. It impairs clinical outcome in patients undergoing angiographic procedures.

Objectives The aim of this study was to investigate whether short-term high-dose atorvastatin would decrease the incidence of CIN after percutaneous coronary intervention (PCI) in patients with ST-segment elevation myocardial infarction (STEMI).

Methods Statin-naïve patients with STEMI undergoing PCI (n=268) randomly received high-dose atorvastatin (80 mg 12 h before intervention, n=130) or low-dose group (20 mg 12 h before intervention, n=138). All patients had long-term atorvastatin treatment thereafter (40 mg/day in high-dose group and 20 mg/day in low-dose group). Primary end point was incidence of CIN defined as postintervention increase in serum creatinine ≥ 0.5 mg/dl or $>25\%$ from baseline.

Results Baseline demographic characteristics and nephropathy risk factors were similar between groups. 4.8% of patients in the high-dose group developed CIN versus 7.6% of those in the low-dose group ($p < 0.05$). In the high-dose group, postprocedure serum creatinine was significantly lower (1.08 ± 0.42 vs 1.14 ± 0.38 mg/dl, $p < 0.05$), creatinine clearance was decreased (78.9 ± 22.2 vs 72.0 ± 36.6 ml/min, $p < 0.05$), multivariable analysis showed that high-dose atorvastatin pretreatment was independently associated with a decreased risk of CIN (OR 0.31, 95% CI 0.22 to 0.86, $p < 0.05$).

Conclusions Short-term pretreatment with high-dose atorvastatin prevents CIN in patients with STEMI undergoing PCI.

Kidney and cardiovascular disease

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EFFICACY OF SHORT-TERM HIGH-DOSE ATORVASTATIN FOR PREVENTION OF CONTRAST-INDUCED NEPHROPATHY IN PATIENTS WITH ST SEGMENT ELEVATION MYOCARDIAL INFARCTION UNDERGOING PERCUTANEOUS CORONARY INTERVENTION

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