Background: Contrast-induced nephropathy (CIN) is associated with increased short- and long-term mortality. Recent studies have showed that statin therapy may prevent the development of CIN after percutaneous coronary intervention (PCI). The aim of this study was to investigate the preventive effect of post-procedural statin therapy on the development of CIN in patients with acute myocardial infarction (MI) undergoing primary PCI.

Methods: A total of 456 consecutive patients with acute MI undergoing primary PCI were retrospectively enrolled. We excluded patients with end-stage renal disease requiring renal replacement therapy (n=2). Patients were divided into two groups as follows: patients who received early post-procedural statin therapy within 48 hours after primary PCI (n=321, 70.7%) or patients who didn’t (n=133, 29.3%). CIN was defined as either ≥25% increase from baseline or absolute increase of 0.5 mg/dL in serum creatinine level within 48-72 hours after contrast administration. The incidence of CIN and in-hospital mortality was compared in both groups.

Results: Baseline serum creatinine and estimated glomerular filtration rate were similar between the two groups. Patients with early post-procedural statin therapy had a lower incidence of CIN, compared with patients not receiving statin therapy within 48 hours after procedure (7.4% vs. 13.7%, p=0.039). The incidence of in-hospital mortality was significantly lower in patients with early post-procedural statin therapy than that in patients without statin therapy within 48 hours (2.2% vs. 19.8%, p<0.001).

Conclusions: Early post-procedural statin therapy is significantly associated with the lower incidence of CIN and in-hospital mortality in patient undergoing PCI for acute MI. These results may lend further support to initiation of statin therapy early after primary PCI.