

High dose Atorvastatin Pretreatment for Preventing Contrast-Induced Nephropathy in Patients Receiving Primary Percutaneous Coronary Intervention

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Background: Controversies persist whether statin pre-treatment can prevent contrast-induced nephropathy (CIN). **Methods:** We studied whether atorvastatin 80mg loading and subsequent use for 5days (high dose group [HD]) could prevent CIN as compared to those received atorvastatin 10mg (routine dose group [RD]) with same schedule in patients with ST-elevation myocardial infarction undergoing primary angioplasty. Primary endpoint was incidence of CIN, defined as a $\geq 25\%$ or ≥ 0.5 mg/dL increase in baseline serum creatinine within 5 days after contrast administration. Secondary endpoint was 1- and 6-month renal function change and composite of all cause mortality, renal failure, heart failure and target vessel revascularization. **Results:** One hundred and ten patients were allocated to HD and 108 to RD from August 2007 to February 2009. CIN incidence was 5.5% (6/110) in HD and 10.2% (11/108) in RD, a nonsignificant difference ($p=0.193$). CIN occurred significantly less in HD than RD, 0% vs. 16.7% ($p=0.024$) in subgroups of renal insufficiency (creatinine clearance [CrCl] <60 mL/min) and 4% (1/25) and 23.1% (6/26) respectively, ($p=0.048$) in old patients ≥ 70 . Composite of clinical outcomes at 6-month was comparable in HD and RD (7.9% and 13.1%, $p=0.26$). CrCl at 1-month tended to be higher, in HD than in RD, 81 mL/min and 72.6 mL/min ($p=0.059$) but similar at 6-month, 80.2 mL/min and 72.2 mL/min ($p=0.167$). **Conclusion:** High dose atorvastatin treatment does not prevent CIN in patients receiving primary angioplasty. However it demonstrated potential of lowering CIN in patients with renal insufficiency and elderly.