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**PROTECTION OF DIFFERENT DOSE OF
SIMVASTATIN ON RENAL FUNCTION IN
PATIENTS WITH ACUTE CORONARY SYNDROME
UNDERGOING ELECTIVE PERCUTANEOUS
CORONARY INTERVENTION**

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Objective To observe the protection and possible mechanism of different dose of Simvastatin on renal function in patients with acute coronary syndrome (ACS) undergoing elective percutaneous coronary intervention (PCI).

Methods From October 2009 to December 2010, a total of 162 ACS patients admitted in our hospital undergoing elective PCI were enrolled into this randomised study, and were randomly divided into and Group B. Patients in Group A received 20 mg while Group B received 40 mg of simvastatin daily 3 days before PCI. Non-ionic low-osmolar CM and Endeavour drug-eluting stents were used in PCI. Intravenous hydration was given to all patients after PCI. The levels of serum creatinine (Scr), endogenous creatinine clearance rate (Ccr), C-reactive

protein (CRP) as well as urinary α 1-microglobulin (α 1-MG) was detected at one day before and the first, the second and the third days after PCI, respectively.

Results There were no significant differences in baseline characteristics, coronary lesions, the amount of CM and the volume of hydration fluid between group A and group B (all $p>0.05$). In both group (A and B), the level of Scr was significantly increased at the first day after PCI, significantly decreased at the second day, and returned to the baseline level at the third day. The levels of Ccr (ml/min) was significantly decreased at the first day after PCI, significantly increased at the second day, and returned to the baseline level at the third day. The levels of urinary α 1-microglobulin (μ g/ml) increased significantly at the 1st day after PCI, decreased significantly at second day, and returned to the baseline level at 3rd day. However, compared with group A, there was the trend of further improvement in the indicators of group B. The concentrations of CRP (mg/dl) in group A at the time of baseline, 1st, 2nd and 3rd day after PCI were 2.40 ± 1.95 , 3.21 ± 2.43 , 3.34 ± 2.47 , 3.32 ± 2.46 , respectively. The concentrations of CRP (mg/dl) in group B were 2.63 ± 1.98 , 3.09 ± 2.24 , 3.23 ± 2.30 , 3.29 ± 2.27 , respectively. Compared with group A, there was the trend of further improvement in CRP of group B.

Conclusions Pre-treatment with Simvastatin 3 days before PCI can alleviate the renal impairment of glomerular and tubular function caused by contrast agent with an anti-inflammatory effect on protecting renal function.