strategies: insights from a single-centre 10-year experience. *Heart*. 2013;99:474–479.

Suraj Khanal*
Assistant Professor of Cardiology, PGIMER, Chandigarh, India

*Department of Cardiology, 3rd Floor, Block-C, Advanced Cardiac Center, PGIMER, Chandigarh 160012, India. Tel.: +91 (0) 9878222526.
E-mail address: khanal.s@rediffmail.com

http://dx.doi.org/10.1016/j.ihj.2014.03.018

Yaling Han, Guoying Zhu, Lixian Han, Fengxia Hou, Weijian Huang, Huiliang Liu, Jihong Gan, Tiemin Jiang, Xiaoyan Li, Wei Wang, Shifang Ding, Shaobin Jia, Weifeng Shen, Dongmei Wang, Ling Sun, Jian Qiu, Xiaozeng Wang, Yi Li, Jie Deng, Jing Li, Kai Xu, Bo Xu, Roxana Mehran, Yong Huo, Short-term rosuvastatin therapy for prevention of contrast-induced acute kidney injury in patients with diabetes and chronic kidney disease. J Am Coll Cardiol (JACC) 63 (2014) 62–70.

Objectives: This study sought to evaluate the safety and efficacy of rosuvastatin in preventing contrast-induced acute kidney injury (CI-AKI) in patients with diabetes mellitus (DM) and chronic kidney disease (CKD).

Background: CI-AKI is an important complication after contrast medium injection. While small studies have shown positive results with statin therapy, the role of statin therapy in prevention of CI-AKI remains unknown.

Methods: We randomized 2998 patients with type 2 DM and concomitant CKD who were undergoing coronary/peripheral arterial angiography with or without percutaneous intervention to receive rosuvastatin, 10 mg/day ($n = 1498$), for 5 days (2 days before, and 3 days after procedure) or standard-of-care ($n = 1500$). Patients' renal function was assessed at baseline, 48 h, and 72 h after exposure to contrast medium. The primary endpoint of the study was the development of CI-AKI, which was defined as an increase in serum creatinine concentration $\geq$0.5 mg/dl (44.2 mmol/l) or 0.25% above baseline at 72 h after exposure to contrast medium.

Results: Patients randomized to the rosuvastatin group had a significantly lower incidence of CI-AKI than controls (2.3% vs.3.9%, respectively; $p = 0.01$). During 30 days' follow-up, the rate of worsening heart failure was significantly lower in the patients treated with rosuvastatin than that in the control group (2.6% vs. 4.3%, respectively; $p = 0.02$).

Conclusions: Rosuvastatin significantly reduced the risk of CI-AKI in patients with DM and CKD undergoing arterial contrast medium injection.

1. Perspective

CI-AKI risk increases dramatically in patients with DM or CKD. Besides these, other risk factors for CI-AKI are: 1) presentation as ACS 2) advanced NYHA Class 3) anaemia and 4) decreased eGFR. Because these risk factors can be easily identified, prophylactic measures for the prevention of CI-AKI should be considered in these patients.

Present day strategies to prevent CI-AKI include: 1) intravenous hydration with saline 2) reduced use of contrast and preferably an iso-osmolar agent like iodixanol and 3) N-acetyl cysteine (NAC).

The present study is the first of its kind, which has evaluated short-term (5 days) low dose rosuvastatin (10 mg/day) started 2 days prior to angiography or PCI in patients with DM and stage 2 or 3 CKD. The incidence of CI-AKI was significantly lower in patients receiving rosuvastatin in comparison to those receiving standard treatment strategies. 62.5 patients would need to be treated to prevent one case of CI-AKI.

The strength of the present study is its large sample size (3000 patients), all diabetics and with mild CKD. Rosuvastatin prevents CI-AKI even in patients with normal lipid levels. The most beneficial effect was seen in patients with stage 2 (mild CKD).

Statins are known to exert pleiotropic effects and have anti-inflammatory action via reduced hsCRP levels. The preventive effects of rosuvastatin on CI-AKI can be because of 1) anti-inflammatory action 2) prevention of direct contrast toxicity like apoptosis of renal cells.

In my opinion, identification of patients at risk of CI-AKI and institution of measures like intravenous hydration and use of low volume of contrast is of paramount importance. Patients undergoing angiography and PCI anyway receive statins. The present study only re-emphasizes this point. The extra knowledge this study has added is that even in patients with mild CKD, emphasis should be given to prevent CI-AKI and low dose short duration statins are a newer addition to the present day preventive measures for CI-AKI.

Suraj Khanal*
Assistant Professor of Cardiology, PGIMER, Chandigarh, India

*Department of Cardiology, 3rd Floor, Block-C, Advanced Cardiac Center, PGIMER, Chandigarh 160012, India. Tel.: +91 09878222526.
E-mail address: khanal.s@rediffmail.com

http://dx.doi.org/10.1016/j.ihj.2014.03.012