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Published: April 17, 2012

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Action Points

Giving statins before cardiac surgery may improve outcomes, a systematic review showed.

In pooled results from 11 randomized trials, patients who received preoperative statins had a significantly lower rate of postoperative atrial fibrillation (19% versus 35.6%, OR 0.40, $P < 0.01$), according to Oliver Liakopoulos, MD, of the University of Cologne in Germany, and colleagues.

In addition, statin-treated patients had significantly shorter stays in the intensive care unit and in the hospital. There also were nonsignificant trends toward reduced rates of myocardial infarction (MI) and renal failure, the researchers reported in a Cochrane review.

No statin-related side effects were reported.

"Thus, the beneficial effects of statins presumably overbalance the inherent risks that are associated with ... statin pre-treatment," the authors wrote.

Use of preoperative statins for all patients "seems premature," they wrote, but "it appears reasonable and in compliance with existing guidelines to advocate an intensified preoperative statin treatment, followed by a rigorous postoperative re-initiation regimen, in all hyperlipidemic patients with multiple cardiac risks and coronary heart disease scheduled for cardiac surgery."

Evidence from randomized controlled trials, including a [recent systematic review](#), has shown that preoperative statins reduce periprocedural cardiovascular events after percutaneous coronary interventions and noncardiac surgery. Results are conflicting, however, for patients undergoing cardiac surgery, with some studies showing a benefit and others showing no effect.

To explore the issue, Liakopoulos and colleagues collected information from 11 randomized trials that compared any statin treatment before cardiac surgery with either no preoperative statin therapy or placebo. The analysis included a total of 984 patients (71.5% male, mean age 65), who mostly underwent on-pump coronary artery bypass grafting (CABG).

Six trials used atorvastatin (Lipitor), two used simvastatin (Zocor), and one each used fluvastatin (Lescol), rosuvastatin (Crestor), and pravastatin (Pravachol).

Statin treatment before surgery was associated with a reduction in postoperative atrial fibrillation -- with a number needed to treat of seven -- but no effect on mortality through an average follow-up of 16.4 days (0.6% in each group) or postoperative stroke (1.1% versus 1.6%, $P=0.67$).

Statin therapy was associated with less time spent in the intensive care unit (by an average of 3.39 hours, $P=0.005$) and in the hospital (by an average of 0.48 days, $P=0.013$).

"Both findings might be driven by the higher incidence of atrial fibrillation in statin-untreated

patients, which is known to be associated to postoperative complications and prolonged duration of hospital stay," the authors noted.

Patients who received preoperative statins had lower rates of MI (1.3% versus 2.7%) and renal failure (3.2% versus 7.1%), although neither difference reached statistical significance ($P>0.05$ for both).

The authors noted that the results may not be generalizable to patients undergoing cardiac surgery other than CABG.

Future studies, they added, should examine preoperative statin use in high-risk patients, the use of newer statins, compliance to statin therapy, quality of life effects, and the cost-effectiveness of using statins before cardiac surgery.

The authors reported no conflicts of interest.

Primary source:The Cochrane Library

Source reference:

Liakopoulos O, et al "Preoperative statin therapy for patients undergoing cardiac surgery" *Cochrane Database of Syst Rev* 2012; DOI: 10.1002/14651858.CD008493.pub2.

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