

Stopping Statins for Surgery Boosts Perioperative Risk

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VIENNA — Stopping a patient's statin regimen for a few days during and after major vascular surgery was linked with a significant rise in cardiovascular death, myocardial infarction, and myocardial ischemia in a study of 298 patients from one center.

A regular statin regimen may be stopped temporarily at the time of surgery because there is no intravenous statin formulation, which means that patients must take the drug orally. Oral drugs often are halted for a few days at the time of major surgery.

"The pleiotropic effects of statins only last for a few hours or days, and that probably makes the difference in this study," Dr. Olaf Schouten said while presenting a poster at the annual congress of the European Society of Cardiology.

The results also indicated that patients treated with an extended-release statin formulation, extended-release fluvastatin, had significantly fewer ischemic cardiac events than did patients treated with any of several conventional-release statins.

The implication is that patients who must stop a statin for surgery should restart the drug as soon as possible, said Dr. Schouten, a vascular surgeon at Erasmus Medical Center in Rotterdam, the Netherlands. The results also suggest that if stopping a statin for a few days is un-

avoidable, patients might fare better if they take an extended-release statin for several days before surgery starts and the regimen is stopped.

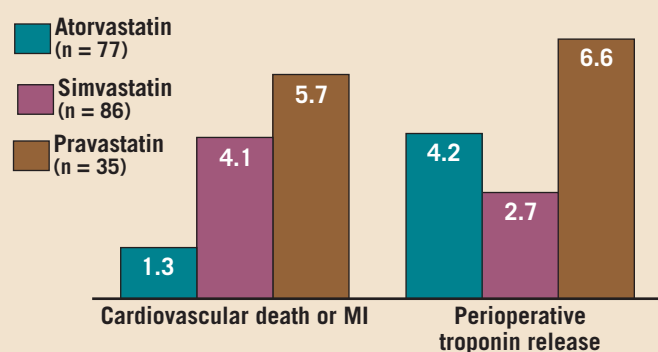
The study included 298 consecutive patients on long-term statin treatment who underwent major vascular surgery at Erasmus. About a quarter of the patients stopped their treatment for an average of 3 days, with a range of 2-8 days; the other 75% maintained treatment during and after surgery. The most common formulation used was extended-release fluvastatin, used by 100 patients. Other formulations used were simvastatin by 86 patients, atorvastatin by 77 patients, and pravastatin by 35 patients.

Because statin treatment wasn't stopped randomly, Dr. Schouten and his associates used both multivariable and propensity-score analyses to control for other variables and to assess the impact of statin discontinuation.

They found that stopping a statin was associated with a 4.6-fold increased risk of troponin release, a marker of myocardial ischemia, and with a 7.5-fold increased risk of cardiovascular death or myocardial infarction.

The analyses also showed that patients who stopped treatment with extended-release fluvastatin had significantly fewer events in the first 30 days after surgery than did patients treated with any type of immediate-release statin, including fewer deaths and myocardial infarctions as well as less troponin release. (See box.) ■

30-Day Hazard Ratios From Stopping Statin for Surgery



Notes: Compared with 100 patients who took extended-release fluvastatin. All hazard ratios are statistically significant. Source: Dr. Schouten

NT-proBNP Predicts CV Events

VIENNA — Preoperative N-terminal prohormone-B-type natriuretic peptide level is an independent predictor of postoperative cardiac events in patients undergoing noncoronary vascular surgery, Dr. Olaf Schouten said at the annual congress of the European Society of Cardiology.

In a prospective study of 419 patients undergoing aortic aneurysm repair, lower-extremity peripheral bypass, or carotid surgery, preoperative

NT-proBNP proved to be an "excellent" prognostic indicator, with a cut-off value of 300 pg/mL being optimal, according to Dr. Schouten, a vascular surgeon at Erasmus University, Rotterdam, the Netherlands.

Patients with a preoperative NT-proBNP greater than 300 pg/mL had a 5.6-fold increased risk of a postoperative cardiac event, compared with those with a lesser value.

—Bruce Jancin

THE EFFECTIVE PHYSICIAN

Perioperative Cardiovascular Consultation

BY WILLIAM E. GOLDEN, M.D., AND ROBERT H. HOPKINS, M.D.

Background

The American College of Cardiology recently released an update to its 2002 guidelines for perioperative cardiovascular evaluation for noncardiac surgery.

Conclusions

The largest number of surgical procedures is performed in patients 65 years of age and older, and it is predicted that the prevalence of heart disease in this same group will increase more than 25% over the next 3 decades.

Communication among the consulting physician, the surgeon, and other members of the operative and postoperative care team is essential to optimal patient care. The principal benefits of perioperative consultation are in assessment of risk, optimization of medical conditions prior to and following surgery, and coordination of optimal care for the patient.

Implementation

A complete history—which should include an assessment of functional capacity, a physical examination, and review of a resting electrocardiogram—should be sufficient to guide initial assessment of perioperative risk in most patients.

Patients who have unstable or severe angina, myocardial infarction within 1 month of evaluation, decompensated heart failure, significant arrhythmias, and/or severe mitral or aortic stenosis are at the highest risk for perioperative cardiovascular events and require assessment and optimization of their cardiac status prior to any surgical procedure. All but emergent surgeries are likely to require delay or cancellation.

Patient risk factors that can indicate a need for further evaluation include the presence of diabetes mellitus or renal insufficiency and/or history of prior ischemic heart disease, heart failure (HF), or ischemic stroke.

Perioperative evaluation of left ventricular function is not recommended routinely in patients with no history of HF, and its value is not well established in patients with stable HF.

Noninvasive stress testing is reasonable in patients with one or two risk factors and poor functional capacity (exercise capacity less than 4 metabolic equivalents) in whom it will change management prior to vascular or intermediate-risk noncardiac surgery.

β -Blockers should be continued in the perioperative period in patients treated for angina, symptomatic arrhythmias, hypertension, or other cardiac indications.

In patients without contraindications to β -blockers, β -blockade should be initiated in the perioperative period in patients with coronary artery disease (CAD) or more than one clinical risk factor for CAD who are to undergo vascular surgery or intermediate-risk procedures. The usefulness of β -blockers in patients with lesser cardiac risk is uncertain.

Statins should be continued in the perioperative period in patients who are already taking these agents. The initiation of statins prior to vascular surgery is reasonable.

Perioperative hypertension control with α_2 -agonists may be considered in patients with CAD or at least one risk factor for coronary disease who do not have contraindications to the use of these medications.

Elective noncardiac surgery is not recommended within 4 weeks of balloon angioplasty. Similarly, elective noncardiac surgery is not recommended within 4-6 weeks of bare-metal coronary stent placement, or within 12 months of drug-eluting stent implantation in patients in whom aspirin and thienopyridine treatment will need to be stopped perioperatively.

In patients with drug-eluting stents who need to undergo surgery that requires interruption of thienopyridine therapy, aspirin should be continued if possible, and thienopyridine should be resumed as soon as possible.

Coronary revascularization prior to noncardiac surgery is useful in patients with angina and the following limited circumstances: significant left main coronary stenosis, three-vessel disease, two-vessel disease including proximal left anterior descending coronary artery stenosis with left ventricular ejection fraction under 50% or ischemia on noninvasive testing, high-risk unstable angina, or acute MI.

A clinical algorithm for perioperative cardiac risk assessment is presented in the full text guideline.

Measurement of troponin biomarkers is recommended in postoperative patients with ECG changes or clinical presentations consistent with ischemia. Troponin measurement is not established for clinically stable postoperative patients following vascular or intermediate-risk procedures. Troponins should not be measured in stable asymptomatic patients following low-risk surgeries.

Reference

Fleisher LA, et al. ACC/AHA 2007 guidelines on perioperative cardiovascular evaluation and care for noncardiac surgery: A report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Writing Committee to Revise the 2002 Guidelines on Perioperative Cardiovascular Evaluation for Noncardiac Surgery). *J. Am. Coll. Cardiol.* 2007;50:e159-241.



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