

# Preoperative statins associated with reduced events after noncardiac surgery

September 1 2015

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Preoperative statins are associated with a 17% reduction in cardiac complications and a 43% reduction in mortality after noncardiac surgery, according to results from the VISION Study presented for the first time today at ESC Congress by Dr Otavio Berwanger, director of the Research Institute HCor, Hospital do Coração (Heart Hospital) in São Paulo, Brazil. The findings suggest that statins have the potential to prevent cardiovascular complications in patients undergoing noncardiac surgery.

"Among the 200 million adults worldwide who undergo [noncardiac surgery](#) annually, more than ten million will suffer a cardiovascular complication in the first 30 days after surgery," said Dr PJ Devereaux from McMaster University, chair of the VISION Steering Committee. "Despite the magnitude of the problem, no intervention has been shown to be both safe and effective in the prevention of cardiovascular complications such as heart attack, death due to cardiac causes and stroke."

The Vascular events In noncardiac Surgery patients cOhort evaluation (VISION) Study is a large international, prospective, cohort study evaluating major complications after cardiac surgery. One of the study objectives was to identify promising interventions that might reduce the incidence of perioperative complications for testing in subsequent trials. Thus, the current analyses assessed the effects of perioperative statin usage on cardiovascular complications (including death) at 30 days.

A total of 15 478 patients aged 45 years and above undergoing noncardiac surgery were recruited from 12 centres in eight countries in North and South America, Africa, Asia, Australia, and Europe from August 2007 to January 2011. The primary endpoint of cardiovascular complications was a composite of all-cause mortality, myocardial injury after noncardiac surgery or stroke at 30 days. Secondary endpoints were the individual components of the primary endpoint. The researchers compared complication rates in patients who received a preoperative statin with patients who did not.

To make "comparable" groups the investigators conducted an analysis called "propensity score" which corrects for confounding by creating balanced groups according to prognostic baseline variables such as recent high-risk coronary artery disease. The difference between groups would therefore be preoperative statin use. The matched populations consisted of 2 845 patients (18.4%) treated with a statin and 4 492 patients (29.0%) who did not receive a statin.

The researchers found that preoperative use of statins was associated with a 17% lower risk of cardiovascular complications (the primary endpoint) ( $p=0.007$ ). They also found that statins were associated with a 43% lower risk of all-cause mortality ( $p=0.004$ ), 52% lower risk of cardiovascular mortality ( $p=0.004$ ) and 14% lower risk of myocardial injury ( $p=0.02$ ) after noncardiac surgery.

"Our finding of reduced major cardiac complications and all-cause mortality after noncardiac surgery in patients taking statins suggests that there may be a new indication for this drug, but these findings should not be taken as a formal recommendation to use these drugs before surgery," said Dr Devereaux. "Rather, our results should be considered hypothesis-generating and can be helpful to inform the design of a large and definitive randomised study to assess the efficacy and safety of statins in the perioperative setting. Statins may offer protection from

complications for patients undergoing noncardiac surgery such as hip replacements through their pleiotropic effects."

Dr Berwanger concluded: "In a representative sample of patients undergoing noncardiac surgery, preoperative statin therapy was independently associated with a lower risk of cardiovascular complications at 30 days. The VISION Study results are consistent with other observational studies and small randomised (experimental) studies that evaluated statins in the perioperative context. Our findings suggest that statins are a potentially beneficial intervention to prevent [cardiovascular complications](#) in patients undergoing noncardiac [surgery](#)."

**More information:** Dr Berwanger will present the abstract 'Association between Pre-Operative Statin Use and Major Cardiovascular Events among Patients Undergoing Noncardiac Surgery: The VISION Study'

Provided by European Society of Cardiology

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