

Publisher:

Issue 14

February 25, 2009

Division of General IM

University of Missouri

Columbia, Missouri

Editor:

Robert Folzenlogen MD

Hospitalist Update

Perioperative Statins in Non-cardiac Surgery

Robert Lancey MD

Preoperative cardiac risk stratification has taken on an important role in inpatient medicine. But perhaps of even greater importance is the subject of perioperative medical management. Given the mounting evidence that preoperative revascularization is largely ineffective for improving postoperative survival over medical management, perioperative medical therapy to reduce surgical morbidity and mortality has gained importance. The evidence in favor of perioperative beta-blockers has recently come into question but the literature looking at the benefit of HMG-CoA reductase inhibitors (statins) appears quite promising.

Perioperative statins have been studied extensively in the setting of cardiac surgery. A recent meta-analysis of multiple RCTs by Hindler et al (4) showed a perioperative mortality benefit of 39% for statins in cardiac surgery patients. The same meta-analysis showed a 59% relative risk reduction in favor of statins after high-risk vascular surgery. However, data on statins in intermediate-risk, noncardiac surgery is sparse, with only one large retrospective database survey available to evaluate the benefits of statins in this cohort of patients.

The data supporting the benefit of statins in noncardiac surgery includes one small randomized trial and several retrospective studies. In 2004, Durazzo et al (1) randomized 100 patients to either atorvastatin 20 mg qd or placebo, starting at least 30 days prior to elective major vascular surgery. Primary outcome measures included mortality and cardiovascular events; at 6 months, 8% of the atorvastatin group vs. 26% of the placebo group had met an endpoint ($p=0.03$). Similarly, a large retrospective chart review by Lindenhauer et al (3) demonstrated a significant reduction in mortality between patients on statins at the time of surgery versus those not on statins. In 2007, Le Manach et al (2) studied the question of what happens when statins are discontinued perioperatively; in their retrospective review of almost 700 patients who had undergone AAA repair, the occurrence of myonecrosis was assessed with troponin I levels. Patients who received continuous statin therapy had a 5-fold lower incidence of (cont)



Inside this issue:

Hospitalist Update

Case of the Month

From the Journals

ID Corner

Calendar

Comments

(cont) elevated troponins than did those patients whose statin therapy was discontinued for at least four days postoperatively.

In conclusion, the data thus far strongly suggests that perioperative statin therapy is beneficial in patients undergoing noncardiac surgery. Unfortunately, due to a lack of randomized trials, the evidence is far from definitive; nevertheless, the early evidence is compelling and may already be able to guide therapy in two areas. First, discontinuing statins perioperatively likely increases the rate of adverse cardiac events; second, starting statins at least four weeks prior to noncardiac surgery seems to provide cardiovascular benefit for patients who are at increased cardiac risk. More robust data is expected in the near future and, hopefully, will give hospitalists another management resource for their perioperative toolkit.

1. Durazzo et al., *Reduction in CV Events after Vascular Surgery with Atorvastatin: a Randomized Controlled Trial*, J Vasc Surg 2004; 39:967-976
2. Le Manach et al., *The Impact of Postoperative Discontinuation or Continuation of Chronic Statin Therapy on Cardiac Outcome after Major Vascular Surgery*, Anesth Analg 2007; 104:1326-1333
3. Lindenhauer et al., *Lipid-Lowering Therapy and In-Hospital Mortality following Major Noncardiac Surgery*, JAMA 2004; 291:2092-2099
4. Hindler et al., *Improved Postoperative Outcomes associated with Preoperative Statin Therapy*, Anesthesiology 2006; 105:1260-1272

CASE OF THE MONTH

Kyle Moylan MD

Orthopedic Surgery requested an inpatient Internal Medicine consultation for evaluation of an 81 year old woman with multiple vertebral fractures of possible pathologic origin. The patient had been in excellent health with no chronic medical problems and took no medications. Three months prior to admission, she presented to an outside ER with the acute onset of midline thoracic back pain that started immediately after lifting a gallon of milk. The pain was severe but she had no associated neurologic symptoms. A plain radiograph revealed a vertebral compression fracture (level not specified); no labs were obtained and she was sent home with analgesics and a referral to orthopedic clinic in one month. At that visit, she was prescribed Tylenol and offered vertebroplasty but the patient declined. She presented to the University Hospital ER one month later with worsening pain, uncontrolled by the Tylenol; a plain radiograph revealed severe T-6 and L-4 vertebral compression fractures; these were not present on films obtained one month prior. A T-11 anterior wedge deformity, presumably the original fracture, was unchanged. The patient was seen by Orthopedic Surgery in the ER; she was prescribed cyclobenzaprine, ibuprofen and a Jewett brace and was set up for an outpatient MRI and an orthopedic spine surgery appointment. There was some discussion of an inpatient evaluation but the patient had declined. With this management, the mid thoracic pain improved but she experienced worsening pain in the upper lumbar and thoracolumbar area.

(continued on page 3)