

# California and National News

## **The POISE Trial: More Doubt on Benefits of Beta-Blockers:**

The perioperative use of beta-blockers was recommended based on two 1990s clinical studies showing decreased adverse cardiovascular events. The American College of Cardiology and American Heart Association guidelines recommend perioperative beta-blockers for high-risk patients with known ischemic heart disease having vascular surgery, and for patients already on beta-blockers prior to surgery. However, more recent trials demonstrate no benefit for patients having cardiac surgery and vascular surgery. The PeriOperative ISchemic Evaluation trial (POISE) is the largest randomized trial investigating the effects of perioperative beta-blockers. Over 8,000 patients undergoing non-cardiac surgery received either extended release 100 mg metoprolol or placebo two to four hours prior to surgery. In the treatment's group, the first postoperative dose was administered six hours after surgery or sooner if the heart rate was greater than 80 or systolic BP greater than 100. Metoprolol patients then took 200 mg 12 hours after the first postoperative dose and daily for 30 days. Those unable to take oral metoprolol immediately postoperatively were given 15 mg IV q6h. POISE showed only marginal benefit for the composite outcome (cardiovascular death, non-fatal MI, and non-fatal cardiac arrest) at 30 days, and this was in large part due to the reduction of non-fatal MIs. However, analysis of the secondary outcomes demonstrated no benefit and may point against the routine use of beta-blockers due to the observed (but unexplained) increased incidence of 30-day mortality and stroke with the metoprolol group. POISE, however, has its own design shortcomings, including high doses of metoprolol. Moreover, many of the patients were at relatively low risk for developing cardiovascular events, based on the ACC/AHA guidelines, and therefore would not have met criteria for receipt of perioperative beta-blockers. This limits the more general application of the POISE results. POISE, therefore, adds to the evidence base that questions the routine use of beta-blockers for intermediate-risk patients. However, the ACC/AHA guidelines remain valid: high-risk patients not already on beta-blockers should have beta-blocker therapy begun at least several days prior to surgery, with the therapeutic goal being a heart rate in the low 60s, and such therapy should be continued at least one week postoperatively. Review by Cindy Mui and Nirav Shah in *The Journal of Clinical Outcomes Management*, Volume 15, #10, October 2008.

