
Beta-Blockers: No Improved Outcomes for Heart Bypass Patients



A new retrospective analysis of patient data suggests that the preoperative use of beta-blockers does not improve outcomes for all patients who undergo nonemergency coronary artery bypass grafting (CABG) surgery. Patients who had not experienced a heart attack in the three weeks prior to surgery, and who did not exhibit other high-risk symptoms, had no difference in perioperative mortality when they received beta-blockers in the 24 hours prior to their CABG procedure.

Beta-Blockers and Cardiac Surgery

Beta-blockers work by lowering blood pressure and slowing heart rates. Previous observational studies have shown a reduction in mortality related to CABG surgery when patients undergoing the procedure are first given beta-blockers. Preoperative beta-blocker therapy is therefore an established national quality standard in the United States.

According to the results of new research published in *JAMA Internal Medicine*, the therapy may be more effective in specific clinical scenarios, rather than being administered to all patients awaiting CABG surgery. The study was conducted by William Brinkman, MD and colleagues at the Cardiopulmonary Research Science and Technology Institute in Dallas, Texas.

No Difference In Perioperative Mortality

The researchers drew data from the Society of Thoracic Surgeons National Adult Cardiac database, which included information from American hospitals that conducted cardiac surgeries between 2008 and 2012. Of the 506,111 patients who underwent nonemergency CABG procedures and who had not had a recent heart attack or other risk factors, 86.2 percent were given beta-blockers within 24 hours of surgery.

When comparing patients who received the preoperative beta-blockers and those who did not, no difference was found in the rates of death due to the CABG operation and a number of other perioperative events including stroke, renal failure, reoperation, prolonged ventilation or deep sternal wound infection. However, there was a higher rate of new-onset atrial fibrillation in patients who received the beta-blockers compared to patients who were not given the therapy.

Retrospective vs. Prospective Studies

The study authors call for a prospective randomised trial, carefully attending to dosage and drug type, to more conclusively establish the effectiveness of beta-blockers in patients before CABG surgery. Outcomes may not be improved for the subset of patients who undergo the procedure on a non-emergency basis, without high-risk symptoms or history of a recent heart attack. However, until any hypotheses generated by the new study are empirically investigated, physicians should adhere to the current clinical guidelines as established by the American College of Cardiology/American Heart Association (ACC/AHA) regarding the preoperative use of beta-blockers in CABG patients.

[Reference: JAMA Intern Med.](#)

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