

Surgeon Recommends Off-pump Coronary Artery Bypass Grafting Be Abandoned



In a Special Report in the current issue of *Circulation*, Boston Medical Center cardiothoracic surgeon Harold Lazar, MD, has found that off-pump coronary artery bypass graft (OPCAB) surgery has failed to show any significant improvement in short-term morbidity or mortality as compared to the traditional on-pump coronary artery bypass graft (CABG) surgery. He recommends that the technique be abandoned, unless surgeons who perform off-pump surgery can show that their own results are as good as results reported with the traditional on-pump surgery.

During off-pump coronary artery bypass graft surgery, the heart is still beating while the graft attachments are made to bypass a blockage. While performing on-pump CABG surgery, the heart is stopped and a heart-lung machine takes over the work for the heart and lungs. This method has been an effective, safe and time-proven technique and is considered the gold standard with which all other surgical revascularization methods have been compared. However, performing coronary revascularization this way can result in myocardial ischemic injury, neurocognitive deficits, and strokes and activate inflammatory pathways that contribute to pulmonary, renal and hematologic complications.

In order to accurately compare the advantages and disadvantages of OPCAB and to determine what, if any, role it should have in the practice of surgical coronary artery revascularization, Lazar examined clinical data from numerous studies worldwide and found the OPCAB technique had failed to show any significant improvement in short-term morbidity or mortality.

According to Lazar a major impetus for performing OPCAB was to avoid the possible detrimental effects of cardiopulmonary bypass, which include activation of inflammatory pathways, changes in neurological and cognitive function and alterations in quality of life. "However, patients undergoing OPCAB have not shown any benefits in these areas," said Lazar, a professor of surgery at Boston University School Medicine. "Even in those studies in which OPCAB has resulted in a small improvement in early postoperative outcomes, these improvements are no longer apparent on long-term follow-up," he added.

In fact, several studies suggest that long-term survival may be significantly reduced in OPCAB patients compared with patients in whom on-pump techniques were used. Lazar explains that this may be attributable to the significant increase in incomplete revascularization seen in OPCAB patients and may be responsible for the increase in recurrent angina and need for revascularization procedures seen in OPCAB patients.

"Unless individual surgeons can demonstrate that they can achieve short- and long-term outcomes with OPCABG that are comparable to on-pump CABG results, they should abandon this technique," said Lazar.

Source: Boston Medical Center via [EurekaAlert!](#)

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