Off-Pump Bypass Surgery Protects Renal Function

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PHILADELPHIA — Performing coronary bypass surgery off-pump helps preserve renal function in patients who have renal insufficiency before surgery, according to results from a randomized study with 116 patients.

The benefit from off-pump surgery was greatest in two subsets of patients: diabetics and hypertensives, Dr. Lokeswara R. Sajja said at the annual meeting of the American Association for Thoracic Surgery.

"Off-pump surgery is renal protective in patients who are not on dialysis. Preoperative assessment of renal function by GFR [glomerular filtration rate] is needed to risk stratify patients" and identify patients who need off-pump surgery to maintain their renal function, said Dr. Sajja, a cardiac surgeon at CARE Hospital in Hyderabad, India.

The study enrolled patients at CARE Hospital who required coronary-artery bypass surgery and had stage 3 or 4, non–dialysis dependent renal insufficiency during August 2004-October 2005. All patients had a calculated GFR of 60 mL/min per 1.73 m^2 or less. Sixty patients were randomized to on-pump surgery, and 56 were treated off pump. At baseline, the patients were well-matched for demographic and clinical features.

In patients who had on-pump surgery, the GFR fell from an average of 51.7 mL/min per 1.73 m^2 at baseline to 40.5 mL/min per 1.73 m^2 following surgery, an average drop of 22%. GFR decreased by 20% or more in 55% of the patients treated on pump.

By contrast, among those patients whose surgery was done off pump, GFR fell from an average of 52.2 mL/min per 1.73 m^2 at baseline to 49.7 mL/min per 1.73 m^2 after surgery, an average decline of 5%. In this subgroup, 30% had their GFR fall by 20% or more.

The impact of bypass surgery was more dramatic in those patients who had diabetes or hypertension.

In the subgroup with diabetes, among the 32 patients treated with on-pump surgery 84% had a 20% or greater rise in their serum creatinine level, compared with 48% of the 33 patients who underwent off-pump bypass surgery.

A 20% or greater drop in GFR occurred in 56% of the diabetic patients treated with on-pump surgery compared with 36% of those treated with off-pump surgery.

In the subgroup with hypertension, of the 46 patients treated with on-pump surgery 65% had a 20% or greater rise in serum creatinine levels, compared with 35% of the 37 the hypertensive patients who received off-pump surgery. ■

Bad Grades on CABG Report Card Don't Affect Hospital Market Share

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A review of New York state's report card on coronary artery bypass graft surgery has found that mortality risks were 50% lower when the procedure was done by higher-performing surgeons or at higher-rated hospitals, compared with those that were done by lower-performing surgeons or at lower-rated facilities.

However, the study authors—Dr. Ashish K. Jha, of the department of health policy and management at the Harvard School of Public Health, Boston, and Arnold Epstein, chair of the department—also found that the reports, whether positive or negative, did not change hospital market share.

"We found no evidence that purchasers or patients are using these reports to drive market share to higher-performing providers," they wrote (Health Aff. [Millwood]. 2006;25:844-55).

But the data "seemed to have a critical impact on practicing surgeons' livelihood," wrote Dr. Jha and Dr. Epstein, who also noted that those surgeons who received lower grades were more likely to retire or stop practicing.

The researchers looked at data collected from 1989 to 2002 as part of the New York State Cardiac Surgery Reporting System.

Hospital data, which are reported annually, include risk-adjusted mortality and the number of cases per facility. The mortality data for individual surgeons were available, but only over 3-year periods. The authors were able to identify those surgeons who had dropped out of reporting and they attempted to follow up with all of them either by phone or e-mail.

To analyze the data, the authors divided hospitals and surgeons into four categories: the top decile, top quartile, bottom quartile, and bottom decile. Thirty-three hospitals performed CABG during the study years. Two were excluded because they had less than 3 years' experience.

CABG hospitals were more likely to be teaching facilities, to be located in New York City, and to be larger, with a mean 644 beds, compared with 315 for non-CABG facilities.

During the study period, 168 surgeons performed CABG.

Overall, patients in top-decile hospitals had an average risk-adjusted mortality of 1.59, compared with 2.78 for those in the bottom-decile facilities.

Those patients who were operated on by top-decile surgeons had a risk-adjusted mortality of 1.58, compared with 3.20 for the patients of bottom-decile surgeons.

After the report card was published, 20% of bottom-quartile surgeons quit performing CABG, compared with 5% of those in the top three quartiles; 31 surgeons—with a median age of 61 years—left practice.

Follow-up data were available on 25 of the surgeons (2 others died): 9 were still doing CABG outside of New York, 9 retired, and 7 had taken nonclinical positions. Of the 18 surgeons who had answered survey questions, 10 said that the report card had not influenced their decision. ■

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