

Aortic Valve Surgery Risk Tied to Hypertension

Operative mortality reached 9% in those with pulmonary hypertension and 5% in those without.

BY MITCHEL L. ZOLER

FROM THE ANNUAL MEETING OF THE AMERICAN ASSOCIATION FOR THORACIC SURGERY

TORONTO — Pulmonary hypertension poses a risk to patients undergoing aortic valve replacement, based on a review of more than 1,000 patients who underwent open aortic valve surgery at one U.S. center during 1996-2009.

Patients who entered surgery with severe pulmonary hypertension, 60 mm Hg or greater, were at greatest risk, and did not have their severe status resolved to a lower level of pulmonary hyperten-

sion by surgery, Dr. Spencer J. Melby said at the meeting.

Roughly 10% of the 1,080 patients in the series had severe pulmonary hypertension prior to their aortic valve replacement and continued to have severe pulmonary hypertension post surgery, said Dr. Melby, a cardiothoracic surgeon at Washington University, St. Louis.

He and his associates have begun to treat patients with refractory pulmonary hypertension following valve replacement with a regimen designed to lower their pulmonary pressure, such as inhaled nitric oxide or intravenous epoprostenol, but so far the group does not have data on the impact of such treatment on the long-term outcomes of these patients.

Another benefit of knowing the increased risk faced by patients with pulmonary hypertension is in counseling. "You can decide if [aortic valve replacement] surgery is the right thing to do" in individual patients, Dr. Melby said in an interview. "We're not suggesting that patients with severe pulmonary hypertension not undergo aortic valve replacement, but we need to better understand their risk." Several prior reports documented a pulmonary hypertension preva-

lence of 30%-70% in patients undergoing aortic valve replacement, he noted.

The review involved 506 patients with pulmonary hypertension (47%) and 574 patients who were free of pulmonary hypertension when they underwent aortic valve replacement. The patient's average age was 71, and two-thirds had New York Heart Association class III or IV heart failure; patients with pulmonary hypertension were slightly older (average age 72), and had a higher prevalence, 77%, of severe heart failure.

Operative mortality reached 9% in the pulmonary hypertension subgroup and 5% in the patients without pulmonary hypertension, a statistically significant difference. The pulmonary hypertension group also had a significantly higher need for prolonged ventilation, 26%; increased length of stay, an average of 8 days; and a greater need for intra-arterial balloon pump, 11%. In a multivariate analysis, pulmonary hypertension was linked with a significant 50% increased risk for operative death. Other significant factors in this analysis included renal failure, diabetes, and prior cardiac pump bypass.

Among the subgroup with pulmonary hypertension, roughly a third had mild hypertension, 35-44 mm Hg; a third had a moderate level of 45-59 mm Hg; and about a third had severe pulmonary hy-

pertension of 60 mm Hg or greater. Many patients in the moderate and severe subgroups had substantial drops in pulmonary pressure following aortic valve replacement, but other patients did not.

Average follow-up reached 3.4 years in the patients with pulmonary hypertension at baseline, and 4.4 years in the patients without pulmonary hypertension at the time of their surgery. Severity of preoperative pulmonary pressure functioned as a significant risk factor for long-term survival. The researchers found a 5-year, actuarial survival rate of 60% in patients without pulmonary hypertension, 68% in those with mild pulmonary hypertension, 57% in patients with moderate pulmonary hypertension, and 52% in those with severe pulmonary hypertension at surgery.

Severity of pulmonary hypertension following valve replacement acted as an even stronger determinant of long-term survival. Patients with no pulmonary hypertension following surgery had 78% actuarial 5-year survival. Patients with mild hypertension after surgery had a 77% 5-year survival rate, those with moderate hypertension after surgery had a 64% 5-year survival rate, and patients with severe postoperative pulmonary hypertension had a 45% 5-year survival rate. ■

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Major Finding: Patients with pulmonary hypertension had a significant 50% increased risk of operative death during aortic valve replacement. Patients with severe pulmonary hypertension (60 mm Hg or greater) following aortic valve replacement had a significantly worse 5-year survival, 45%, compared with 78% survival in patients with no pulmonary hypertension following valve replacement.

Data Source: The 1,080 patients who underwent open surgical aortic valve replacement at Washington University, St. Louis, during 1996-2009.

Disclosures: Dr. Melby said that he had no disclosures. Dr. Ralph J. Damiano Jr., a study coauthor, is a consultant to AtriCure, Medtronic, and ATS Medical, and has received research support from Estech and Edwards Lifesciences.

Early Follow-Up May Lower Readmission in Heart Failure

BY JANE ANDERSON

FROM JAMA

Heart failure patients discharged from hospitals with high levels of early post-discharge follow-up are less likely to be readmitted to the hospital within 30 days, according to a large study.

However, most heart failure patients do not visit a physician within 7 days of discharge.

The study, which looked at hospital-level rates of early outpatient follow-up after discharge, included data on more than 30,000 heart failure patients from 225 hospitals. It found that the median rate of follow-up within 7 days of discharge was 38% (JAMA 2010;303:1716-22).

"For patients with heart failure, the transition from inpatient to outpatient care can be an especially vulnerable period because of the age of the patients, complex medical regimens, the large number of comorbid conditions, and the multiple clinicians who may be

involved," wrote Dr. Adrian F. Hernandez of Duke University, Durham, N.C., and his coauthors. "Our findings highlight a need for improvement and greater uniformity in coordination of care from inpatient to outpatient settings."

Overall, about 21% of heart failure patients were readmitted to the hospital within 30 days of discharge. Patients in hospitals with higher rates of early follow-up had a lower risk of re-admission, the study found.

After adjustment for case mix, admission laboratory results, provision of discharge instructions, and length of stay, the risk-adjusted hazard of 30-day readmission was 15% lower in the hospitals with higher rates of early follow-up, the study found. Whereas 20% of patients whose initial hospital stay took place in a hospital with the highest rates of early follow-up were readmitted, 23% of patients in the hospitals with the lowest

follow-up rates were readmitted, a significant difference.

Still, the authors only found differences in rehospitalization rates in the hospitals that ranked in the lowest quartile of posthospitalization follow-up;

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rates at the other 75% of hospitals were similar.

The researchers did find some racial differences: The proportion of black patients was "markedly higher" among hospitals with the lowest rates of early follow-up. They also found that patients discharged from hospitals with the highest rates of early follow-up by a cardiologist had lower risk of 30-day mortality, which they noted is consistent with other studies of cardiology care for heart failure.

Most follow-up during the transitional period, especially the first week, is handled by general internists, the study authors found. More than two-thirds of patients hospitalized for heart failure are evaluated by a cardiologist during their inpatient stays, but fewer than 10% see a cardiologist within 7 days of hospital discharge.

However, neither early follow-up with a cardiologist nor continuity of care from the same physician seen during the hospitalization was a significant predictor of 30-day readmission, they wrote.

Documentation of discharge instructions, which many physicians presume helps to ensure early follow-up and better outcomes, also was not associated with lower readmission rates. "This finding raises the possibility that discharge instructions are becoming rote processes that do not adequately address elements of care that ensure a safe

transition," the authors wrote.

The study provides evidence in support of guidelines recommending the use of postdischarge systems of care, the authors said. "Achieving early follow-up may be difficult for some physician practices, but models of care that include nurse practitioners or physician assistants under physician supervision may result in increased access to and timeliness of care."

In addition, they said, early follow-up is a potential quality measure that could be used as part of heart failure performance measure sets. ■

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