

# Ventricular Status Should Drive Valve Replacement

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WASHINGTON — Having symptoms is not the only reason a patient with aortic stenosis may need a new aortic valve.

Left ventricular hypertrophy, left ventricular dysfunction, and age are other critical factors when deciding whether a patient needs valve replacement, Dr. Tomislav Mihaljevic said at the annual meeting of the American Association for Thoracic Surgery.

“We hope our findings will lead to changes in the management of patients with asymptomatic aortic stenosis,” said Dr. Mihaljevic, a thoracic surgeon at the Cleveland Clinic Foundation. Currently, the presence of symptoms is the primary

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criteria for replacement of the aortic valve in patients with severe aortic stenosis. This means that repair is usually not done until the advanced stages of the disease, with the result that patient survival following valve

replacement is often not ideal, he said. “Symptoms alone are inadequate for clinical decision making.

“We need to pay attention to the ventricular effects of valvular heart disease. Ultimately, these patients will not die from aortic stenosis but from the effects of aortic stenosis on the ventricle, causing left ventricular failure. Left ventricular hypertrophy should not be seen as a benign side effect of aortic stenosis that’s reversed once you replace the aortic valve. Left ventricular hypertrophy is a significant risk factor for bad outcomes even after” the aortic valve is replaced. Hence, in many patients it’s important to fix an aortic stenosis before it causes symptoms and before it has a chance to trigger left ventricular hypertrophy and ventricular failure, Dr. Mihaljevic said.

“This study is potentially a landmark. It’s likely to change the management of patients with critical aortic stenosis,” commented Dr. Michael J. Mack, a cardiothoracic surgeon at a cardiopulmonary research institute in Dallas. These results “may lead to earlier operative management of patients with aortic stenosis.”

The study reviewed 3,049 patients who underwent valve replacement for severe aortic stenosis at the Cleveland Clinic during 1991-2004. All patients received a bovine bioprosthesis valve. The 10-year survival of these patients was assessed against the expected survival of a comparison group that was matched by age, gender, and race. The average age of the patients was about 72 years.

The analysis identified several risk factors that were linked with worse-than-expected survival. For example, patients who did not have left ventricular hypertrophy at

the time of valve replacement had an “excellent” 10-year survival rate of about 65%. These patients had a left ventricular mass index of less than 100 g/m<sup>2</sup> in women and less than 135 g/m<sup>2</sup> in men. In contrast, patients with severe left ventricular hypertrophy, a mass index of 185 g/m<sup>2</sup> or greater, had a 10-year survival rate of only 35%. This finding highlights the need for cardiac surgeons to use echocardiography to measure hypertrophy, Dr. Mihaljevic said.

Patients without left ventricular dysfunction had about a 55% 10-year survival rate, while those with dysfunction before surgery had a survival rate of about 30%.

The size of the prosthetic valve used also significantly influenced survival, but only in younger patients. Patients younger than 65 years who received a valve that was more than 1.5 standard deviations smaller than what was required had a significantly worse outcome. In such patients, the best strategy is to use the largest prosthe-

sis possible. But in older patients, surgeons should “not expose elderly patients to the additional risk of an annulus-enlargement procedure” to accept a larger valve because it won’t improve outcomes.

Dr. Mihaljevic stressed that the patients in this series were representative of typical aortic-stenosis patients. Coronary artery disease was common, and about 35% also had aortic regurgitation. In addition, about half the patients also underwent coronary artery bypass surgery. ■

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