

# Who is too old for aortic valve surgery?

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**TITLE** Decision making in elderly patients with severe aortic stenosis: why are so many denied surgery?

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**KEYWORDS** Elderly, symptomatic aortic stenosis.

**ABBREVIATIONS** Coronary artery by-pass graft (CABG); New York Heart Association (NYHA)

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## SUMMARY

The European Heart Survey on valvular heart disease was conducted in 2001, in 92 centres, from 25 European countries. It included 5,001 patients with valve disease. One thousand, one hundred and ninety-seven had isolated aortic stenosis (defined on Doppler echocardiography as mean gradient >25 mmHg). Four hundred and eight of these were aged >75 years, 284 of whom had severe aortic stenosis (mean gradient >50 mmHg), and 216 of them had severe symptoms, namely dyspnoea (NYHA III or IV), and/or angina. The 216 aged >75 years with severe symptomatic aortic stenosis were the study group. Predictive factors of the decision not to operate were analysed by comparing demographics, risk factors, co-morbidity, symptoms, and results of standard investigations. The Euroscore (the predicted percentage mortality) was calculated for all patients. The decision not to operate was taken in 72 patients (33%). In univariate analysis, medical treatment was preferred in those who were older, had neurological dysfunction (neurological disease severely affecting ambulation or day-to-day functioning), heart failure, atrial fibrillation, and left ventricular dysfunction. In multivariate analysis, ejection fraction <50%, neurological dysfunction, and older age were the three significant factors linked with the decision not to operate. The proportion of patients undergoing surgery was similar in Northern, Southern, Western and Mediterranean Europe. The mortality in the 30-day post-operative mortality was 5%. The mean Euroscore was 8 in those who survived compared to 9.4 for those who died, and was 8.1 in the operated group versus 9.4 in the medical group. A bioprosthetic valve was the preferred prosthesis (in 93% of patients). Either CABG or (less frequently) partial replacement of the ascending aorta was

performed in 37%. Over one year follow-up, only 4 of the 72 (5.5%) non-operated patients subsequently underwent operation. One year survival was higher in the operated group  $90.4 \pm 2.6\%$  compared to the non-operated group  $84.5 \pm 4.8\%$  ( $p=0.057$ ).

## OPINION

Up to 7% of the population aged >65 years is likely to have aortic stenosis. Calcification of a normal aortic valve is the usual pathology. There are currently no medical therapies to slow disease progression. Once symptoms start, the average survival is 2–3 years. Open heart surgery with aortic valve replacement will improve symptoms and survival. Balloon valvuloplasty is only a short-term solution. When assessing any patient for surgery the question of risk vs benefit is posed. This is particularly pertinent in the elderly who face increased operative morbidity and mortality. Little is known about elderly symptomatic patients with aortic stenosis who are refused aortic valve surgery and the reasons for refusal. It is gratifying that this paper demonstrates that practice in Europe appears uniform, or at least the proportion of patients refused surgery is uniform. The extreme elderly (none over 90 years had surgery and only half those over 85 years did), those with left ventricular impairment, and those with significant neurological dysfunction are felt to be at too high risk, and make up the third of patients refused/denied operation. Unfortunately the follow up period was too short to compare outcomes between the medical and surgical groups, as 1-year survival is partly determined by operative mortality. Percutaneous replacement of aortic valves, when universally available, may offer hope to those currently declined conventional surgery.