Clinical Outcome in Patients With Aortic Stenosis: Is the Prognosis Worse in Patients With Low-Gradient Severe Aortic Stenosis?

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Background:
Recent studies have provided contradicting results regarding the prognosis of patients with low-gradient severe aortic stenosis (AS) and preserved left ventricular ejection fraction (LVEF). The purpose of this study was to examine the outcome of patients with AS in relation to aortic valve area (AVA) and mean pressure gradient (mPG).

Methods:
Patients with moderate or severe AS and LVEF ≥50% (n=618; age 76±11 yr, 40% male) were classified into 4 subgroups according to AVA (1 cm^2 cutoff) and mPG (40 mmHg cutoff). Clinical data were available in 368 patients who were hospitalized at the time of the echocardiographic examination. The relationships between demographics, comorbidity, AVA/mPG subgroups and outcome (mortality, aortic valve replacement [AVR]) were examined.

Results:
During a median follow-up period of 32 months, 184 patients (30%) died and 212 (34%) underwent AVR. Kaplan-Meier survival analysis showed no difference in overall survival between the 4 AVA/mPG subgroups (P=0.22; graph). Patients with high-mPG severe AS were more frequently referred to AVR than other subgroups (P<0.001). By multivariate Cox analysis: 1) Age and Charlson comorbidity index were independent predictors of mortality, whereas gender, AVA/mPG subgroup (P=0.62) and valvulo-arterial impedance were not. 2) Younger age, male gender, and AVA/mPG subgroup were independent predictors of AVR. Patients with high-mPG severe AS were most frequently referred to AVR (hazard ratio 9.4 versus low-mPG moderate AS [95% confidence interval 6.5-13.4]) and patients with low-mPG severe AS were less frequently operated (hazard ratio 3.5 [2.1-5.8]).

Conclusions:
In contrast to previous reports, survival of patients with low-mPG severe AS does not differ from other subgroups of patients with AS, despite lower referral rate to AVR. Thus, the presence of low mPG in patients with severe AS does not appear to be a marker of high risk.