

Survival of patients with moderate aortic stenosis: propensity score matching analysis

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Introduction and purpose: Data on the survival of patients with moderate aortic stenosis (AS) is conflicting. The purpose of the current analysis was to assess survival of moderate AS patients.

Methods: SHARE is an historical retrospective cohort of all cardiovascular patients evaluated in an Israeli tertiary hospital between 2007 and 2019. The current analysis included all patients who underwent echocardiographic evaluation. Aortic stenosis severity was extracted for all patients from the echocardiographic reports. All-cause mortality and was available for all patients. Subjects with severe AS or aortic valve replacement were excluded from the analysis.

Results: Cohort included 97,561 subjects of whom 42,187 (43.2%) were outpatients. Final cohort included 93,889 patients with a mean age of 66 ± 17 (58% men). There were 2,949 (3%) with moderate AS. During a median follow up of 52 [IQR 22–89] months 17,173 (18%) patients died. Kaplan-Meier survival analysis demonstrated worse cumulative probability of death of $51\% \pm 2\%$ vs. $20\% \pm 0\%$ at 5 years for patients with moderate AS

vs. mild or no AS, respectively (p Log rank < 0.001). Sub-analysis of 32,745 patients for whom clinical laboratory and medication data was available yielded consistent results in a comprehensive multivariate model such that patients with moderate AS ($N=1,381$) were 26% more likely to die (95% CI: 1.17–1.37, $p < 0.0001$). Finally, a propensity score matching of patients with moderate AS and controls with no or mild AS ($N=1,381$) successfully demonstrated that patients with moderate AS were 40% more likely to die during follow up (95% CI 1.25–1.57, $p < 0.001$; FIGURE). Four-years mortality rates were 2 fold higher for patients with moderate AS compared with controls (OR = 1.96, 95% CI 1.6–2.4, $p < 0.001$). Interaction analysis demonstrated that the association of moderate AS with survival was not dependent on left ventricular ejection fraction.

Conclusion: Moderate AS is associated with worse survival. Our findings underscore the importance of careful clinical observation as well as the need for further studies.

