

What is the risk of a patient with severe aortic stenosis while waiting for aortic valve intervention?

A. Marques, R. Cale, I. Cruz, I. Joao, A.R. Pereira, S. Alegria, A. Biosa, J. Santos, D. Sebaiti, H. Pereira

Hospital Garcia de Orta, Cardiology, Almada, Portugal

Funding Acknowledgement: Type of funding source: None

Introduction: Severe symptomatic aortic stenosis is associated with high mortality without intervention. However, true waiting times for aortic valvular intervention (AVI) and the risks associated with it are not known.

Objectives: To measure the waiting time between referral and AVI. To determine the impact of the waiting time for AVI by assessing the occurrence of adverse events during this period. To assess predictors of adverse outcomes during this period in view to identify patients (pts) who may require earlier AVI.

Methods: Retrospective single-center study of consecutive outpatients referred for AVI (either surgically or transcatheter (TAVI)) since 2014 to 2018. The primary endpoint was hospitalization due to heart failure or death from any cause, occurring in the waiting time for AVI. Cox regression analysis was performed.

Results: Were included 120 pts (54% male, mean age 75±9 years). 113 (94%) pts had high-gradient aortic stenosis. They were mainly in NYHA class II (56%). Fatigue was the main symptom (83%). The median NT-proBNP value was 819 (IQR 319–1780) ng/L. The mean peak velocity was 4.5±0.5 m/s, median gradient of 45 (IQR 42–54) mmHg, mean VTIs ratio of 0.21±0.04, with a mean estimated valvular area of 0.7±0.2 cm² (0.4±0.1 cm²/m²).

During a mean follow-up of 24±14 months since referral, 108 (90%) pts were submitted to AVI (75 pts underwent surgery; 33 pts underwent TAVI). The median waiting time for AVI was 4 (IQR 2–6) months (0–35 months). The median waiting time for surgery was 3 (IQR 2–6) months and for TAVI was 4 (IQR 3–8) months (p=0.25).

The primary endpoint occurred in 19 (16%) pts: 13 (11%) pts were hospitalized due to heart failure and 7 (6%) pts died. The median time between referral and the occurrence of the primary endpoint was 3 (IQR 1–9) months.

In univariate analysis, age >80 years, NYHA class ≥3, prior stroke and NT-proBNP were positively associated with the occurrence of the primary endpoint (p<0.05).

After multivariate analysis, prior stroke (HR 5; 95% CI 1.2–24; p=0.03) and NT-proBNP (HR 1/unit; 95% CI 1–1.001; p=0.01) were independently associated with events occurrence. NT-proBNP was an independent predictor of events with a good discriminative value (area under the ROC curve 0.73; 95% CI 0.61–0.83; p=0.004). NT-proBNP cut-off value of >1207ng/L identified pts with an event while waiting AVI with a sensitivity and specificity value of 69 and 73%, respectively.

Left ventricle ejection fraction, severity parameters of aortic stenosis, systolic pulmonary artery pressure, concomitant coronary artery disease and the time between diagnosis and referral were not associated with the primary endpoint.

Conclusion: Mortality and worsening of heart failure while waiting for aortic valvular intervention occurred frequently. Factors such NT-pro-BNP and personal history of stroke can help to identify pts who may benefit from earlier intervention.