Aortic stenosis drives the differential in survival in patients with concomitant moderate aortic and mitral valves diseases

A. Hajj Ali 1, A. Gaballa 1, J. El Dahdah 1, Z. Popovic 1, T.K.M. Wang 1, G. Reed 1, L. Rodriguez 1, B. Griffin 1, E. Roselli 1, A.M. Gillinov 1, S. Kapadia 1, L.G. Svensson 1, M. Desai 1

1Cleveland Clinic Hospital, Cleveland, United States of America

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Background: Valvular heart diseases are common causes of morbidity and mortality worldwide. In this study we sought to assess the long-term outcomes of patients diagnosed with concomitant moderate aortic and mitral valves diseases at a tertiary center.

Methods: All 3257 patients (aged 71.7 ± 12.9 years old, 55.2% male, 83.1% white) who presented to the Cleveland Clinic between 1/2010 and 1/2018 and were diagnosed with concomitant moderate aortic and mitral valves diseases were included in this study. The patients were categorized into groups on the basis of aortic and mitral stenosis/regurgitation (AS/AR and MS/MR). The primary endpoint of the study was the composite event defined as heart failure hospitalization or all-cause mortality. The data was analyzed via Kaplan Meier and Cox proportional hazards regression analysis on SPSS.

Results: The median follow-up period was 21.8 months (range 1-155.8). All-causes mortality occurred in 1611 patients (49.5%), heart failure hospitalization in 1119 (34.4%) and the composite event in 1926 patients (59.1%). AR/MR was the most frequent group with 2090 patients (64.2%) followed by AS/MR with 866 (26.6%), AS/MS with 179 (5.5%) and AR/MS with 122 (3.7%). As presented in figure 1, patients with AR/MR had the worst outcome followed by AR/MS, AR/MR and finally AR/MS (p-value < 0.001). However, when dividing the comparison on the basis of one valve only, and even after adjusting for aortic and mitral valve interventions, no significance difference in outcomes is noted between MR and MS (p=0.755) while AS had significantly poorer outcome than AR with p<0.001.

Conclusion: In our cohort, patients with concomitant moderate aortic and mitral valves diseases had an overall high rate of death and heart failure hospitalization. Patients with AS had significantly poorer outcomes than patients with AR but no difference was noted when comparing MS to MR.

Figure 1: Kaplan Meier curve of combined event (death/heart failure hospitalization) for patients with moderate concomitant aortic and mitral valve diseases.
Figure 2: Kaplan Meier curve of combined event (death/heart failure hospitalization) for patients with moderate concomitant aortic and mitral valve diseases divided on the basis on each valve.

Figure 2