Asymptomatic aortic regurgitation: diastolic function and type-B natriuretic peptide as prognostic factors

M. Abellas Sequeiros, A. Garcia Martin, A. Gonzalez, R. Hinojar Baydes, L.M. Rincon Diaz, J.M. Vieitez Florez, A. Lorente Ros, A. Pardo Sanz, H. Manjon Rubio, M. Pascual Izco, J.L. Moya Mur, E. Casas, J.J. Jimenez Nacher, J.L. Zamorano, C. Fernandez Golfin

University Hospital Ramon y Cajal de Madrid, Madrid, Spain
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Introduction: The indication of valve replacement surgery in patients with severe aortic regurgitation (AR) is mainly based on the presence of symptoms or dilatation/dysfunction of the left ventricle (LV). However, diastolic function and natriuretic peptides have not been related to adverse outcomes in these patients. The aim of this study was to evaluate the prognosis impact of different diastolic function parameters as well as type-B natriuretic peptide (BNP).

Methods: Patients with moderate to severe or severe AR evaluated in the Heart Valve Clinic between 2013–2019 were evaluated. Those patients with classical indications for surgical aortic valve replacement (SAVR) at the moment of inclusion were excluded, as well as those patients with atrial fibrillation. Echocardiographic and analytical data were obtained from the medical history. End-point included cardiovascular mortality, SAVR and heart failure.

Results: A total of 126 patients were included. Median age was 65.0±17.7 years. Among them, 75 (59.5%) were men, 78 (62.4%) hypertensive, 44 (35.3%) suffered from dyslipidemia and 11 (9,6%) had ischaemic cardiomyopathy. During a median follow up of 31±17 months, 24.6% of the patients reached the combined end-point (n=5 developed heart failure, n=28 underwent SAVR, and n=4 died).

Among the diastolic parameters [E wave, A wave, E/A, E/e', left atrial volume and diameter, tricuspid regurgitation (TR) degree and pulmonary systolic pressure (PSP)], only TR degree and PSP were associated with a higher incidence of the combined endpoint: TR degree HR=2,08, p=0,039 and PSP HR= 1,1, p=0,007. BNP also showed prognostic impact for the combined endpoint (HR= 1,002, p=0,011).

Conclusions: In patients with asymptomatic significant AR, severity of TR, PSP and BNP levels are associated with worst prognosis. However, classical echocardiographic diastolic parameters do not show prognosis impact, probably due to the limitations of such parameters to identify diastolic dysfunction and high filling pressures in this population. Our findings support the use of PSP and TR over diastolic function parameters to better stratify left valvular patient risk in clinical practice.