Abstract: P285

Improvement in the severity of mitral regurgitation in patients with severe symptomatic aortic stenosis treated with transcatheter aortic valve implantation

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Background: Aortic stenosis (AS) is the most common valve disease in developed countries, followed by mitral regurgitation (MR). Mitral regurgitation is a common finding in patients diagnosed with severe aortic stenosis who will undergo transcatheter aortic valve implantation (TAVI).

Purpose: 1) Analyze the prevalence of significant mitral MR in patients who are going to undergo TAVI implantation, determining their baseline clinical and echocardiographic characteristics, 2) Analyze the degree of improvement of MR after TAVI, 3) Evaluate its impact on the events that occurred during its follow-up.

Methods: Prospective study in which consecutive patients diagnosed with symptomatic severe AS underwent TAVI, after having been agreed upon in Heart Team, between June 2010 and March 2017.

Results: Data were collected from a total of 140 patients. Patients were classified according to MR grade 0-2 (119 patients, 85%) or MR grade 3-4 (21 patients, 15%). Patients with MR grade 3-4 presented higher logistic EuroScore and STS score. 38.1% of patients with MR grade 3-4 also had moderate-severe or severe aortic regurgitation. In addition, patients with MR grade 3-4 had a higher prevalence of ventricular dysfunction and pulmonary hypertension. The LV end-diastolic and end-systolic volumes were significantly higher in patients with MR grade 3-4. No significant differences were observed regarding the number of days of admission, in-hospital complications after the procedure, in-hospital death, death or 30-day events, or in terms of death or 1-year events among patients with a lower or higher degree of MR before TAVI. Of the 20 patients who presented MR grade 3-4 before the procedure and who survived, the echocardiogram 2-4 months after the procedure showed: mild MR in 15 patients (75.0%), moderate MR in 4 patients (20.0%) MR severe in 1 patient (5.0%). Patients with MR grade 0-2 did not undergo significant modification (0.69 vs 0.73, p = 0.580) whereas patients with previous MR grade 3-4 significantly reduced the MR grade (2.8 vs 1.77, p = 0.030). We observed a greater tendency to the presence of events in the follow-up, as well as a greater number of hospital admission days in patients with higher residual residual MI, however in no case was statistical difference reached.

Conclusion: The presence of significant MR was observed in 15% of the patients with symptomatic AS subjected to TAVI. These patients had a higher degree of ventricular dysfunction, ventricular dilatation, aortic regurgitation and pulmonary hypertension. No differences were observed in the events that occurred in the follow-up between patients with previous MR grade 0-2 and MR grade 3-4. Patients with moderate/severe MR presented a significant reduction in the degree of MR after TAVI. Although the difference was not significant, a tendency to a greater number of events was observed in the follow-up in patients with a higher degree of residual MR.