Abstract: P4715
Association of heart failure duration with clinical prognosis after transcatheter mitral valve repair

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Background/Introduction: Transcatheter mitral valve repair (TMVR) in patients with heart failure (HF) and severe mitral regurgitation (MR) entails better clinical and symptomatic status. While emerging evidence indicate that HF duration is linked to adverse outcomes in patients with HF, it is not known whether the HF duration before TMVR has an effect on adverse outcomes.

Purpose: We aimed to assess the association between duration of HF before TMVR and clinical prognosis after the procedure.

Methods: We retrospectively enrolled a total of 345 patients who underwent TMVR procedure with MitraClip or Cardioband system for the treatment of symptomatic MR after guideline recommended therapy. The patients were divided into 2 groups according to the duration of HF (>18 months: n=161, ≤18 months: shorter HF group, n=184). Cox proportional hazards analysis was performed to assess the association between duration and two-year composite endpoint (all-cause mortality, unexpected hospitalization due to HF, and repeat mitral valve therapy).

Results: Patients with longer duration of HF were more likely to be male, had greater incidence of coronary artery disease (77.0% vs. 51.6%, p<0.001), had received more frequently implantable cardioverter defibrillator or cardiac resynchronization therapy (41.0% vs. 10.3%, p<0.001), and had more decreased left ventricular ejection fraction (41.1±14.5% vs. 49.3±16.0%, p<0.001) compared to patients with shorter duration of HF. Two-year event-free survival rate was significantly lower in patients with longer duration of HF (66.3% vs. 83.8%, Log-rank p=0.01) compared to those with shorter duration of HF. Similar trends were observed for all-cause mortality (84.8% vs. 95.9%, p=0.06) and repeat mitral valve therapy (93.4% vs. 100%, p=0.02). In the Cox proportional hazard analysis, longer duration of HF was independently associated with increased risk of adverse outcomes (Hazard ratio, 2.26; 95% confidence interval, 1.11–4.62; p=0.02) compared with shorter duration of HF.

Conclusion: Patients with the longer duration of HF before TMVR is independently associated with increased risk of adverse outcomes after the procedure. It is, however, accompanied by higher prevalence of cardiac co-morbidities in these patients. Our findings suggest that a longer duration of HF is a risk indicator and should be considered into in future clinical trials of TMVR.