Ten-year Clinical and Echocardiographic Follow-up of Third Generation Biological Prosthesis in Aortic Position

Objective: Third Generation Biological Prosthesis Perimount Magna Ease (PME) have been widely implanted for Aortic Valve Replacement (AVR). Although some studies reported excellent data at mid-term follow-up, long-term clinical and echocardiographic outcome up to 10 years are still unknown. It is the aim of this study to evaluate 10-year results with PME for AVR.

Methods: 970 consecutive patients underwent isolated or combined AVR with PME, 689 of whom had complete 10-year follow-up. Kaplan-Meier curves were used to assess overall survival, cardiovascular survival, freedom from reoperation on the aortic prosthesis, and from endocarditis. Short-term to long-term echocardiographic data were assessed. Time-dependent effect of valve performance was assessed with 2-way ANOVA. The incidence of Structural Valve Deterioration (SVD) according to Dvir D et al. and Para-Valvular leak (PVL) were analysed up to 10-years.

Results: Overall Survival at 5 and 10 years was 87.3% and 62.4%, whereas cardiovascular survival at 5 and 10 years was 97.2% and 89.6% respectively. Freedom from AVR-reintervention and from endocarditis at 10 years were 94.5% and 94.0% respectively. Grade-3 SVD at 10 years was 2.2%, while mild-to-moderate PVL at 10 years was 7.3%. Echocardiographic data were stable and satisfactory at long-term follow-up (Gmean 11.6±4.4 at 3-6 years vs. 12.6±7.4 at 7-10 years, p<.01; Vpeak 2.2±0.4 at 3-6 years vs. 2.3±0.5 at 7-10 years, p<.01). An early left ventricular reverse remodelling was noted (diastolic: preoperative: 140.2±58.5 ml, 3-6 years: 110.9±34.9ml, 7-10 years: 105.3±33.7ml, p<.01; systolic: preoperative: 58.3±32.1 ml, 3-6 years:44.1±21.1, 7-10 years:44.9±21.1, p<.01).

Conclusions: Third Generation Biological Prosthesis PME reported excellent clinical and echocardiographic outcome at 10 years of follow-up.

Alessandra Francica (1), Luciana Benvegnù (1), Filippo Tonelli (1), Cecilia Rossetti (1), Giovanni Battista Luciani (1), Giuseppe Faggian (1), Francesco Onorati (1), (1) Department of Cardiac Surgery, University of Verona Medical School, Verona, Italy