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Infective endocarditis after PPVI with the Melody® valve Is residual RVOT gradient important?

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Introduction: Melody® valve used for percutaneous pulmonary valve implantation (PPVI) is susceptible to infective endocarditis (IE). Multiple risk factors have been postulated. We analyzed the presence of residual RVOT gradient, age and sex as risk factors for developing IE in Melody.

Patients and methods: Single center analysis of Melody® valve implanted between 2006 and 2014.

Analysis of valve function by echocardiography. Screening of patients records for IE and other events.

Results: 133 Melody® valves were implanted in 132 patients with mean age 19,9 years (range 3,9 to 81,6y), and a total of 302,2 patient years of follow-up (mean follow-up 2,3y; maximum follow-up 7,6y).

IE occurred in 10 patients (7,5%), after a mean period of 2,0 years (range 0,7 to 4,0y). Freedom from

IE was 78,93% after 5 years. Male patients with a Melody® valve are clearly more prone to development of IE ($p = 0,0451$) and young age (between 10-20 years) gives an increased tendency to develop IE, however not significant (hazard ratio <1 ; $p = 0,2323$). Residual gradient over the RVOT ($p = 0,1085$) or rapid increase of RVOT velocity ($p = 0,0811$) appear not to be independent risk factors or predictors for IE.

Conclusions: With current data IE in Melody valve can not be predicted by residual gradient in the RVOT. Male adolescents are clearly more prone to develop IE in Melody. Prevention and instructions remain important.