Prospective study of patients with percutaneous implantation of Melody valve in pulmonary position: incidence of infective endocarditis and evaluation of risks factor for infective events


Introduction:
Percutaneous pulmonary valve replacement (PPVI) is used to treat dysfunctional right ventricular outflow tract. The mid-term hemodynamic results of the Melody valve are good but there are increasing reports of infective endocarditis (IE) with some fatal outcome.

Objective:
We sought to review the patients who received a Melody valve in pulmonary position from 2009 to 2012. We identified patients with IE and studied the potential risks factors.

Results:
86 patients were eligible. 5 patients had previous history of IE on the tube stented with a Melody. 5 cases of IE were identified during survey. Overall, mean age at implantation was 23.8 years. 58% were male. Mean follow-up was 25 months. Mean residual RV/PA gradient after procedure was 12 mmHg. In the group of patients with IE, mean age was 29.8 years and mean follow-up at the time of IE was 14 months, there was no history of previous IE. 4 patients were male. Mean residual RV/PA gradient was 12mmHg. 3 presented with severe obstruction, 2 patients died within 48 hours and one needed cardiac catheterisation to relief obstruction then surgery. The two remaining patients were treated medically. Bacterial identification was possible in all cases and probable source of infection was found in four cases. When reviewing potential risks factors, we found no association with previous stent implantation or with the length of procedure. When looking at the incidence of invasive procedure done post Melody implantation (cardiac catheterisation or other medical invasive procedure) we found statistical difference between the 2 groups. There were four death during follow-up: two due septic shock, one due to biventricular heart failure in a patient who had a Melody valve endocarditis and one in a patient with biventricular failure who refused to have heart transplantation. In this review, death was associated with IE.

Conclusion:
IE is a real issue with PPVI, a relatively new technology. Risk factors include male sex, post implantation invasive procedure and not previous IE. Careful follow-up of these patients is required. In case of IE, aggressive treatment should not be delayed as fatal outcome is possible.