

## MP2-8

### Valve prosthesis in the right ventricular outflow tract: An analysis of the German National Register for Congenital Heart Defects

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Background: Replacement of the pulmonary valve is required for native valve vitals or after pulmonary artery intervention. The durability of the prostheses (homo- and heterografts) is limited for several reasons in children, adolescents and adults. This necessitates replacement of the prostheses during the course of life and thus re-operations / interventions are needed. The choice of operation time and type of prosthesis is therefore of great importance to the patient and the attending physician.

Methods: The starting point for the present data analysis is the National Register for Congenital Heart Defects (NRCHD). The NRCHD currently has more than 53,000 patients with congenital heart disease (CHD) registered. The database was systematically screened for patients undergoing pulmonary valve intervention. In total, 1,202 patients were identified who had a native pulmonary valve vitium [Fallot's tetralogy (TOF), pulmonary valve stenosis (PS)] or re-pulmonary-valve-vitium [e.g. after ROSS-OP, after arterial switch surgery or after correction Truncus arteriosus (TAC)], pulmonary valve replacement and prosthesis types (homograft, heterograft or mechanical prosthesis), size and type of valve.

Results: In the 1,202 patients (526 (43.8%) female, 676 (56.2%) male) the mean age was  $25 \pm 12.8$  (minimum 2 years, maximum 84 years). The three most common primary cardiac diagnoses are TOF (53.6%), TAC (14.7%) and congenital aortic valve stenosis (9%). The most commonly used prostheses for pulmonary valve replacement were the aortic homograft (33.6%), the Contegra valve (32.7%), and the interventional pulmonary valve replacement with a melody valve (18.6%). Only 1% of patients received a mechanical valve replacement. In total, 2,132 surgical and/or interventional pulmonary valve replacements were documented in 1,202 patients. 632 patients received more than one prosthesis. The TOF patients were those with the highest number of replaced pulmonary valves (644 interventions), followed by 177 interventions in patients with TAC and 108 interventions in patients with congenital aortic valve stenosis.

Conclusion: Overall, many interventions/operations were made with replacement of the pulmonary valve. Most patients get the first surgical valve replacement in childhood. The effects of the later required surgical and interventional re-interventions/operations on the individual disease process must be further investigated.