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Results of transcatheter pulmonary valvulation in children < 30 kg.

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Introduction: Although widely accepted, indications for percutaneous pulmonary valve replacement (PPVr), are limited to prosthetic conduits in the right ventricle outflow tract (RVOT) in patients ≥ 30 kg.

Aim: To evaluate the outcomes of Melody valve insertion in patients <30Kg.

Methods: We analysed procedural and outcomes data from 25 patients <30 kg (9 patients <20 kg), who underwent Melody valve implantation for a native/patched RVOT(N=12), prosthetic conduit (12) and bioprosthesis (N=1).

Results: Median age and weight was 6.9 years (1.5-13) and 21.2kg (9-29.8). PPVr indication was regurgitation in 11, stenosis in 1 and mixed in 13. All procedures were successful. PPVr was performed through the femoral vein in 16 cases, jugular vein in 8 cases and transapical-perventricular in 1 case. Pre-stenting was performed in 95% of cases, 18/24 in the same procedure. No significant regurgitation was recorded after the procedure, and the trans-pulmonary gradient was significantly reduced. Early minor complications occurred in 3 cases (10%) The median hospital stay was 3 days (2-5). Median follow-up was 44 months (4-82). During follow-up, one patient underwent a new PPVr (valve-in-valve procedure); one patient required overdilation of the prosthesis; and one patient developed stent fracture. Follow-up with MRI demonstrated significant improvements in right ventricular volumes and function.

Conclusion: PPVr is highly feasible in children <30 kg, in both, native RVOT and prosthetic conduits, and mid-term follow-up, demonstrates good haemodynamic results and appears promising.