

## MP2-13

### **Risk of significant pulmonary regurgitation after percutaneous balloon valvuloplasty for congenital pulmonary stenosis in long-term follow-up**

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#### Introduction:

The percutaneous balloon pulmonary valvuloplasty (PBPV) has become the golden standard for treatment of congenital pulmonary stenosis (PS). Earlier studies have shown excellent outcome in regards of stenosis relief and neglectable risk of pulmonary regurgitation (PR) if proper balloon diameter was selected. Recently it has been shown, that in long term follow-up, this procedure carries a risk of functionally significant PR. This study aims to assess the degree of PR and its effect on right ventricular (RV) dimension and function by MRI which is considered the reference method.

#### Methods:

Fifty-six patients treated by PBPV underwent echocardiography according to the current guidelines protocol after a median of 13,6 (5,7 – 24,2) years of observation. None qualified for late repeat PBPV for restenosis. On the basis of PR grade 21 patients (all cases of severe, random half of moderate) were enrolled in MRI study. Data is presented as mean  $\pm$  standard deviation or median (range) dependently on distribution.

#### Results:

MRI was conducted 16,3 (10,3 – 23,2) years after PBPV at 22,0 (10,6 – 45,5) years of age, 52% were female. The RV end diastolic volume index (RVEDVI) was  $119,0 \pm 29,0$  ml/m<sup>2</sup> exceeding normal in 50% and exceeding 150 ml/m<sup>2</sup> (a threshold value for PV replacement (PVR) in tetralogy of Fallot survivors) in 4 patients (20% of the examined by MRI and 7% of the study cohort). End systolic (RVESVI) was  $53,6 \pm 17,3$  ml/m<sup>2</sup>, exceeding normal in 45% and fulfilling PVR criteria in 1 (5% of MRI and 2% of the study cohort).

RV ejection fraction was  $54,8 \pm 6,1\%$ , ranging from 42% to 68% - within normal in all patients. PR fraction was 15% (2% – 47%) – mild in 60%, moderate in 30%, severe in 10% (2 patients, 4% of the study cohort). None of patients with moderate PR by echocardiography had severe abnormalities by MRI.

#### Conclusions:

Survivors of PBPV for congenital PS require life-long follow-up. Despite mostly excellent outcomes, there is low but considerable risk of severe PR in the long-term.