

**Tailored approach to transcatheter palliation of critically reduced pulmonary blood supply.
Data on long term follow up**

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Introduction: Proper development of pulmonary tree is the single most important determinant of the outcome of patients with congenital heart disease and critical pulmonary blood supply. The most appropriate algorithm of treatment is still a matter of debate, in particular regarding the role of transcatheter palliation. We present the long term outcome of tailored transcatheter palliation of this group of patients.

Methods: We retrospectively analysed data on patients who had undergone trans-catheter palliation of duct dependant congenital heart disease Between 2005 and 2017 in our institution. Arterial duct or RVOT PTA /stenting were performed according to a prespecified algorithm.

Results: Overall 47 patients underwent either AD stenting (N=42) or RVOT PTA/Stenting (N=5). Median age at catheterization was 13 days (3-686). Median weight was 3 Kg (1,5-4). There was one procedural death (2%). The procedure was unsuccessful in 8 patients (10%). Mean follow up was 1127±886 days. Eleven patients out of 46 died (23,9%). One year, five year and ten year survival were 82% (95% CI 68-90); 75%(95% CI 60-85); 60% (95% CI 27-81), respectively. At Cox regression analysis weight and univentricular physiology remained independently associated with long term mortality, HR 0.3 (95% CI 0.12-0.88), p=0,03; HR 5 (95% 1,3-20,2) p=0,02, respectively. In the whole population 23 patients (50%) needed further intervention before surgical repair or definite palliation, overall median time to reintervention was 146 days (83-1087). Central pulmonary arteries grew in all patients but to a much higher extent in patients submitted to RVOT stenting.

Conclusions: Tailored trans-catheter management of congenital heart disease associated with critically reduced pulmonary flow resulted in proper maturation of pulmonary tree allowing surgical repair or definite palliation. Patient with severely hypo plastic pulmonary arteries should be elected to undergo antegrade pulsatile flow restoration