

## PW4-3

### **Cardiac catheterization yields significant information and improves outcome in otherwise unidentifiable hemodynamic instability early after congenital heart surgery**

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Objective: Hemodynamic instability in the early post operative period is a challenge after surgery for congenital heart disease (CHD). In some patients a cause is not identifiable by clinical and non-invasive means.

Aim of the study: evaluation of therapeutic options and outcome of patients undergoing an early cardiac catheterization (CC) within 30 days after surgery for CHD.

Methods / results: Between 2008 and 2011, 1940 patients (pts) with CHD were operated at our centre. Of these 151 (7.8%) needed an early CC including 37 patients with HLHS. Mean age of these pts was 2.8 yrs (SD 7.8; range: 1day–72yrs), mean weight 11.4 kg (SD 19.4; range: 1.7 – 127 kg).

Indications for CC were low cardiac output syndrome (LCOS) or hemodynamic instability in 50 patients, cyanosis (44 patients), chronic effusions (17 patients), respiratory insufficiency (6 patients), thrombosis (17 patients), and miscellaneous causes (18 patients). 20 patients were on ECMO during CC. Mean time between operation and CC was 9 days $\pm$ 10.

Treatment: In 64 (42%) pts CC was followed by medical treatment only, but in 31 of these 64 pts CC findings lead to essential changes of medical treatment. 46 (30%) pts had catheter interventions (pulmonary arterial interventions: 19, closure of aorto-pulmonary or veno-venous collaterals: 11, angioplasty or stentimplantation because of acute aortopulmonary/Sano-shunt stenosis or closure: 11, angioplasties +/- lytic therapy of thrombosed caval veins: 5, two interatrial septum interventions, one coronary artery-stenting, one LPSVC-closure after TCPC, and one valvuloplasty of the pulmonary and aortic valve). In some patients more than a single intervention was done. There was no intraprocedural mortality during CC. 33 pts (22%) had reoperations, and nine pts a catheter intervention and a reoperation. Clinical improvement was achieved in 123 pts. (80%). 23 (15%) pts (10 on ECMO) died: 3 after intervention, 8 after reoperation, 2 after intervention and reoperation, 10 under medical treatment/compassionate care.

Conclusion: Cardiac catheterization is an important diagnostic tool in the early post operative period to decide on further treatment options. Even in these hemodynamically compromised patients CC can safely and effectively be performed. In 78% of our patients CC findings led to causative treatment.