

Cardiac function and heart failure treatment in Fontan patients - Impact of right and left ventricular physiology.

Kampf K. (1), Lehner A. (2), Dalla-Pozza R. (2), Hagl C.(1), Haas NA.(2), Ulrich S.(2), Hakami L.(1)
(1) Hospital of the Ludwig-Maximilians-University (LMU) Munich, Heart Surgery, Munich, Germany,
(2) Hospital of the Ludwig-Maximilians-University (LMU) Munich, Pediatric Cardiology, Munich,
Germany

Objectives: The impact of the ventricular morphology in patients who underwent Fontan procedure on midterm and late outcomes are discussed controversially. We compared the postoperative outcomes in single left ventricle and single right ventricle morphology regarding the ventricular function and the need of subsequent chronic heart failure therapy.

Methods: Fontan palliation was performed in 168 patients with a single ventricle morphology (median age 2.6 years, median weight 12.4 kg, female n=68, 40.2%; male n=101, 59.8%) between 2003 and 2012.

Group I: n = 116 with hypoplastic left heart syndrome (HLHS) s/p Blalock-Taussig-Shunt (BT-Shunt) n=39, RV-PA-Conduit n= 67 or hybrid procedure n= 10. Group II: n = 35 with hypoplastic right ventricle were s/p pulmonary artery banding (PAB, n=8), Damus-Kaye-Stansel anastomosis (n = 3) and s/p BT-Shunt (n = 24). Cardiac function and heart failure treatment was assessed 6, 12, 60, 120 and 160 month post Fontan palliation.

Results: Patients with right ventricular morphology had a significant higher need of medical heart failure therapy pre-Fontan ($p=0$) and after six ($p< 0.02$), twelve ($p< 0.04$) and sixty months ($p< 0.004$). After 10 and 13 years we could not find a significant difference. Echocardiographic evaluation of ventricular function showed no significantly higher occurrence of decreased ventricular function in the groups.

Conclusion: The midterm and late outcomes of patients with single left or single right ventricle at our hospital are similar with international results.