

## MP2-1

### **Additional antegrade pulmonary blood flow after partial cavopulmonary connection – impact on hemodynamics and pulmonary artery branch growth. A 14-year single center experience.**

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Background: Partial cavopulmonary connection (PCPC) is a widely used procedure for providing pulmonary blood flow in patients with a functional single ventricle. Controversy exists on whether additional antegrade pulmonary blood flow (AAPBF) is beneficial after PCPC operation. This study aims to investigate the impact of AAPBF after PCPC on hemodynamic parameters and pulmonary artery branch growth.

Methods: Medical files of patients who underwent PCPC between 2004 and 2017 were reviewed. Patients with missing data were excluded from the study. We divided the patients with PCPC in two groups according to AAPBF: group 1- patients with AAPBF, group 2 - patients without APBF. Cardiac catheterization data immediately before total cavopulmonary connection (TCPC) were analyzed and compared between the two groups. Data were presented as medians with range or as means  $\pm$  standard deviation. A non-parametric Mann-Whitney U test integrated in the statistical software SPSS 24.0 was used. A value of  $P < 0.05$  was considered significant.

Results: 77 patients were operated for 14 years. 71 patients were included in the study. Median age at PCPC was 10 months (2-44). In 34 patients (48%) AAPBF was preserved (group 1) and in 37 patients (52%) AAPBF was interrupted (group 2). There was no statistical significance between group 1 and group 2 concerning hemodynamic measurement just before TCPC - oxygen saturation 81 % (63-93) versus 79 % (65-93), pulmonary artery pressure 14 mmHg (7-23) versus 13 mmHg (8-17), pulmonary vascular resistance 1.12 Wood units (0.47-2.24) versus 1.34 Wood units (0.41 – 3.9), ventricular end-diastolic pressure 10 mmHg (4-18) versus 10 mmHg (6-16), ejection fraction 62 % (47-87) versus 59% (45-85). Concerning the pulmonary artery growth, there was a statistical significance between group 1 and group 2 in left pulmonary artery dimensions with z-scores 1.57 versus 0.27 ( $p=0.001$ ), with no statistically significant difference in right pulmonary artery dimensions with a z-score 0.83 versus 0.67. Conclusion: Our data suggest that preserving the AAPBF at PCPC stage, has no adverse effect on hemodynamics at the time of Fontan completion. Moreover, there was an increase in pulmonary artery growth in the presence of AAPBF.