Impact of conversion from classic Fontan to total cavopulmonary connection on adults with single-ventricle short and long-term outcomes

Ankou B., Ninet J., Bozio A., Ducreux C., Bakloul M., Galoin-Bertail C., Di Filippo S.
Cardiovascular Hospital Louis Pradel, University Medical Center of Lyon, France

Objective: The aim of this study was to assess the beneficial effects of conversion from classic Fontan to total cavopulmonary connection (TCPC) in adults with univentricular heart.

Methods: all patients who underwent conversion from atriopulmonary to total cavopulmonary connection. Preoperative and postoperative clinical, echocardiographic data were collected. Long term outcome was assessed.

Results: Nine patients (7 males), all with tricuspid atresia, were converted from Fontan to TCPC at a mean age of 26.8 years. Heart failure was present in 33% of the cases, and arrhythmias occurred in 100% before conversion. Preoperative ventricular ejection fraction was 54.7%. Duration of bypass, CICU stay, hospital stay and postoperative drainage was respectively 145mn, 5.3days, 24 days and 8 days. Median follow-up after surgery was 7 years. Two early deaths occurred (22%), no late death. Survival at 1 and 10 years was 80%. NYHA class I-II patients increased from 44% to 84%, NYHA class III decreased from 56% to 17%, while heart failure decreased from 33% of the patients to 17%. Arrhythmias frequency lessened from 100% of the cases before conversion to 57% postoperatively and 33% of the patients in later follow-up. Only one patient suffered from protein losing enteropathy.

Conclusion: Despite an early postoperative mortality of 22%, conversion to TCPC in adulthood can substantially decrease arrhythmias and heart failure frequency, and improve NYHA class.