P-236

Outcome after surgical repair of atrioventricular canal defects in patients with trisomy 21

Schäper K.(1), Schneider H.(2), Großmann M.(1), Ruschewski W.(1), Paul T.(2), Tirilomis T.(1)
(1) Dept. for Thoracic, Cardiac, and Vascular Surgery, University Hospital Göttingen, Germany;
(2) Dept. of Pediatric Cardiology, University Hospital Göttingen, Germany

Introduction: Trisomy 21 is often associated with heart defects and especially of the atrioventricular canal (AV-canal). The aim of the study was the analysis of outcomes after correction of AV-canal defects comparing surgical techniques, complications, and results in patients with and without trisomy 21.

Methods: We performed a retrospective study of 241 patients undergoing surgical repair of AV-canal defects during the years 1986 and 2016. One-hundred twenty-four patients (51%) had had trisomy 21 (group D). The data of these patients were compared to the data of patients without trisomy 21 (group non-D; n=117). Mean follow-up was 113 months.

Results: Twenty-one patients had undergone previous cardiac surgery; there was no significant difference between the groups (10.5% group D vs. 6.8% non-D). Trisomy 21 patients had had more often complete AV-canal defect (77.4% vs. 30% group non-D, $p<0.05$) and more often pulmonary hypertension (78% of patients in group D vs. 29% in non-D group, $p<0.05$). Down-patients were significantly younger at the time of surgery (24.8±56.6 months vs. 51.5±109.1 months in non-D-group) and subsequently smaller. After surgery, Down-patients required a longer period of mechanical ventilation (4.9±8.3 days vs. 1.8±3.2 days, $p<0.001$) and they needed catecholamine therapy for a longer time (2.9±3.5 days vs. 1.5±5.1 days, $p<0.05$). The 30-days mortality was comparable between the two groups (n=9 in group D vs. n=5 in group non-D, p=0.37). There was also no difference in the need for re-operation or intervention during follow-up (16.1% group D vs. 12% group non-D, p=0.35). The most common indications for re-operation were mitral valve regurgitation and left ventricular outflow tract obstruction. Echocardiographic examination at last follow-up appointment demonstrated a better mitral valve function in patients with trisomy 21.

Conclusions: Outcome after repair of AV-canal defects is very good with low re-operation rate during follow-up. Although patients with trisomy 21 had a more complex defect morphology and were younger at surgery, they have an equal chance for good outcome after surgical correction.