Heart transplantation in children in Croatia – our first experiences


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Introduction: According to the ISHLT register between 350 and 400 pediatric heart transplantations (PHT) are performed worldwide each year (10% of all). Basic criteria for PHT are: stage D cardiac insufficiency (need for continuous use of inotropes, mechanical ventilation), stage C (abnormal cardiac structure or function with inherent symptoms of cardiac insufficiency) with reactive pulmonary hypertension (PH); PVR < 6 Wood Units (WU); TPG < 15 mmHg. There are three main indication areas for PHT: 1. Cardiomyopaties, 2. Congenital heart defects (with no possibility of anatomical correction, high operative fatality, and after palliation; e.g. failing Fontan), 3. Retransplantation.

Objective: Presenting first experiences with PHT in Croatia.

Results: The first (adult) HT in Croatia (Zagreb) was performed in 1988, heart transplantation in children are performed since 2011. Indications for PHT had been set for 8 children. All had cardiac insufficiency due to cardiomyopathies. Four of the transplanted patients had a dilated cardiomyopathy as a result of earlier myocarditis and two had restrictive cardiomyopathy (RCMP) of undetermined etiopathogenesis. Two patients age 6 with DCMP (one had Carvajal CMP) died before HT. Mean age was 10 (4-12 years). All patients with DCMP had stage D heart failure and PVR below 6 WU. Two with RCMP had stage C (NYHA III) with PVR around 6 WU. Average time between making the diagnosis and need for HT was 18 months. Early post transplantation complications were: diastolic dysfunction of left ventricle with PH needing ECMO and one patient died due to septic shock and right ventricle failure. Late complications included chronic renal insufficiency (stage III), transitory PH, bradycardia needing permanent pacemaker and transitory iatrogenic Cushing syndrome. Immunosuppression is performed with corticosteroids, tacrolimus and mycophenolate mofetil. Myocard biopsy for rejection analysis is performed 1, 2, 3, 6, 12 months and yearly after. Time of monitoring is 6 months to 3 years, status of all five patients is NYHA I.

Conclusion: Pediatric heart transplantation, when all the transplantation criteria are strictly adhered to, saves lives, improves the quality of life and allows normal physical activity and a normal “schoolchild” life.