Reinterventions and reoperations in patients with transposition of the great arteries after arterial switch operation (ASO).


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INTRODUCTION: ASO is currently the method of choice for treatment of the transposition of the great arteries (TGA). Good early and late outcomes are well proved, however still remaining complications which needs to be followed. Neoaortic regurgitation, supravalvular pulmonary stenosis and coronary insufficiency are the most important ones.

The aim of this study was to establish occurrence and the most frequent reasons for reoperations and reinterventions in patients with TGA after ASO.

METHODS: We reviewed retrospectively all 690 arterial switch procedures performed between years 1991–2014 in Department of Cardiosurgery of Polish Mother’s Memorial Hospital in Lodz including patients with simple TGA(424pts;62%), TGA associated with VSD(182pts;26%), TGA with aortic arch anomalies(64pts;9%) and 2 stage operation with pulmonary artery banding prior to the ASO(20pts;3%). All of the operations were performed with modifications introduced by JJM. Patients after ASO are followed in Department of Cardiology and the complete TGA patients database contain clinical, operation and laboratory data as well as results of echocardiographic and other imaging examinations. This data are updated prospectively during each ambulatory or clinical visit.

RESULTS: The overall mortality after ASO was 7,2% and mean clinical follow was 9,4(SD:5,9) years. In the early, perioperative period(30 days) 31 pts(4,5%) needs emergency operation. In this group 45% procedures were related to the postoperative bleeding, 29% - delayed closure of the sternum, 10% - severe condition and hypotension, 10% - ECMO and 6% - tamponade. During late follow up 23pts(3%) were reoperated (29 procedures) – most frequently because of recoarctation of the aorta(reCoA;20%) and supravalvular pulmonary stenosis(SVPS;17%). Intervventional treatment was performed in 22pts(3%;31 procedures). Major part of this procedures constitute balloon plasty of SVPS(39%) and reCoA(39%). Among analyzed risk factors in multiple regression analysis only associated cardiac anomalies were an independent risk factor for reoperation (RR-2,94;CI95%;1,81-4,81;p<0,001). Cardiac anomalies associated with TGA (RR-2,3;CI95%;1,5-3,53;p<0,001) and coronary anomalies (RR-3,16;CI95%;1,28-7,79;p=0,012) were independent risk factors for reinterventions.

CONCLUSIONS: Frequency of reoperation and reintervention in patients with TGA after ASO remains low. Majority of the procedures are performed because of SVPS and reCoA. Cardiac anomalies associated with TGA have significant impact on the incidence of reoperation and reinterventions.