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**CONGENITAL HEART DISEASE STRUCTURE IN OPERATED ADULTS**

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Keywords: cardiac surgery, congenital heart surgery in adults

In the article there were estimated results of cardio surgical care experience in ACHD, in GI «The scientific practical children’s cardiac center» (Kyiv, Ukraine) for identify the course operation, and creating strategy for cardiology care in the late postoperative period. The surgical care improving in adult with congenital heart disease increased the number of patients undergoing surgery and increased number of patients and procedures, with decreasing mortality (from 2.0% to 0.6%). There were decreased amount of simple CHD, initial Tetralоgy of Fallot and Double outlet right ventricle repair in age over 16 years in a structure of all defects with increasing number of procedures and operations in LVOT, and RVOT, surgery procedures for univentricular heart patients

*Keywords*: cardiac surgery, congenital heart disease, surgery in adults

In developed countries, as a result of improving follow up results of pediatric cardiology and cardiac surgery, there is increasing the amount of adults with congenital heart disease (ACHD) [2,3,4]. Congenital heart anomalies occur 7-10 per 1000 live newborns and 95% of these patients due to successful cardiac surgery survive to 18 years [1,2,3,4]. Medical care for these patients should require analysis of the structure of CHD, and complications in follow up postoperative period, the amount of re- interventions, development of ACHD guidelines [1,3]. Optimizing clinical recommendations will improve the quality and term of life for ACHD.

**Objective**: The purpose of study was to estimate results of cardio surgical care experience in ACHD, identify the course operation, for creating strategy for cardiology care in the late postoperative period.

**Material and methods.** In The Scientific Practical Children’s Cardiac Center (Kiev) during the period from 01.01.1999 to 31.12.2014 there were performed 615 cardiac surgery procedures (operation, electrophysiology and cath procedures) for 558 ACHD. Mortality was 0.89% (5 patients). Age at time of surgery was 16 to 87 years, mean age -25.50 ± 0.53 years. There were identified 3 periods of investigations: period 1 - from 1999 to 2004 (77 patients), period 2 - 2005-2009 (134 patients), the period 3 - 2009 2014 (347 patients). All congenital heart defects were distributed according to the Short Lists of the European Paediatric Cardiac Code and the International Congenital Heart Surgery Nomenclature and Database [5]. There were excluded patients with myxomatous valvular diseases (Barlow's disease), congenital complete AV blockade primary cardiomyopathy.

**Results and discussion**.

There were increasing numbers of ACHD over this study from 77 patients in the period 1 to 134 patients in period 2, and to 347 - in period 3. Surgical mortality at 30 days generally was 0.9% (5patients), depending on periods: there was 2.6% in period 1, 1.7% in period 2, 0.6% in period 3. Surgery operation was prevalence in period 1 by the 109 patients (99%). 1 patient had angioprocedure (1%). In period 2 there were increasing of interventional procedures (angio and electrophysiology procedures) for 13 cases (13%). In period 3 interventional procedures had significant increasing (n=103) that made 1/3 of all cardiac surgery procedures from 2010 to 2014

Distribution of performed cardiac surgery procedures, depending on the observation periods present in Figure 1. In period 1, there were predominant patients with simple CHD, such as atrial Septal Defect (ASD), Ventricular Septal Defect (VSD) and Patent Ductus Arteriosus (PDA). This group (32 patients) made up about half of all operated patients during this time. 12 patients had Ross procedure. 8 patients had performed LVOT (ventricle outflow tract, aortic valve and aortic root) procedures. 7 patients had performed Partial anomalous pulmonary veins connection (PAPVC), 3 – Atrio Ventricular Communication repair (AVSD). Four adults had the initial Tetralogy of Fallot (ToF) and Double outlet right ventricle (DORV) repair in age over 16 years. Angioprocedures in the Right ventricle outflow tract (RVOT) had performed for 3 patients. Single ventricle patient had one bi directional Glenn anastomosis.

In the second period of observation on the increasing amount patients with simple CHD (54 patients) but distribution of performed cardiac surgery procedures decreased to 40%. The amount of LVOT operations increased in three times (24 patients). Ross procedures decreased to 6 from the previous period. PAPVC repair had had performed for 5 patients, AVSD increased to 7 patients. 10 patients had performed surgery on RVOT, 4 patients ToF. Univentrical way correction had performed in 5 patients: one Total cava pulmonary connection (Fontan operation) and 4 bi directional Glenn anastomosis.

Fig. 1. Performed cardiac surgery procedures distribution, depending on the observation periods. Abbreviations in the text.

There were a significant increase amount all cardiac surgery procedures from 2010 to 2014 with increasing the number of simple CHD (121 patients) but with decreased their part (for34%) compared with two previous periods. Amount of RVOT procedures (40 patients) were significantly increased too with twice increasing comparative part. LVOT procedures in this period twice increased (54 patients), but decrease their relative amount (16%). Ross and David/Yacoub procedures had performed for 20 and 4 patients, PAPVC repair for 19 patients, AVSD for 7 patients. Cardiac surgery procedures for Univentrical heart presented 13 patients (5%), after Total cava pulmonary connection (Fontan operation), 2 adults - bi directional Glenn anastomosis. Two patients had performed ToF/DORV repair, 5 - Ebshtein anomaly repair. There were 9 patients with Cоarctation of the aorta repair (CоAo) 9 in the second period and 18 in the third, that confirm the general trend of changes in ACHD.

**Conclusions**.

1. The surgical care imprоving in adult CHD increased the number of patients undergoing surgery and increased number of patients and prоcedures, with decreasing mоrtality (from 2.0% to 0.6%). 2. There were decreased amount of simple CHD in a structure of all defects with increasing number of procedures and operations in LVOT, and RVOT. Most of these procedures are reoperations. 3. There were increasing amount of cardiac surgery prоcedures for univentrical heart patients (5% of all patients at last period after Total cava pulmonary connection (Fontan оperation). 4 Decreasing amount patients with initial Tetralоgy of Fallot and Double outlet right ventricle repair in age over 16 years was justified and related of an earlier correction these defects in the early childhood.

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