

ANALYSIS OF THE ACTIVITIES OF THE PEDIATRIC CARDIAC SURGERY SERVICE IN THE KARAGANDA REGION

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Goal: To study the structure of the operated congenital heart defects in the pediatric cardiac surgery department of the regional cardiac surgery center of Karaganda depending on the defect options: simple, combined, complex, and to assess the level of surgical activity during 7 years.

Methods: The analysis of data of 684 children with congenital heart defects admitted to the pediatric cardiac surgery department unit for the surgical correction of the malformation during the department functioning were analyzed 2011–2017. Age of children: from the neonatal period to 18 years.

Results: An analysis of the work of the pediatric cardiac surgery service in the Karaganda region showed that for 7 years since the opening of the children's department (from 2011 to 2017), 684 children with congenital heart defects (CHD) were surgically corrected. All CHD are divided into 3 categories: simple, combined and complex. The simple ones include the CHD with 1 developmental defect: atrial septal defect, ventricular septal defect, open arterial duct, aortic coarctation, aortic stenosis, valve stenosis of the pulmonary artery, mitral valve stenosis. Combined include a combination of 2–3 defects. Complicated CHDs include Fallot's tetrad, partial and complete abnormal pulmonary vein drainage, atrioventricular communication (complete and incomplete), transposition of the great vessels (complete and corrected), abnormal coronary arteries.

In the structure of surgical treatment of CHD in the Karaganda region, traditionally the leading place was taken by simple (isolated) CHD, their proportion was 68,1% in total, of which: in 2011 – 73,2%, 2012 – 63,2%, in 2013 year – 54,2%, in 2014 – 73,9%, in 2015 – 78,4%, in 2016 – 80,7%, in 2017 – 63,4%. The second rank position was taken by combined defects: in 2011 – 17,1%, 2012 – 28,4%, 2013 – 31,7%, 2014 – 18,8%, 2015 – 11,4%, 2016 – 9,1%, in 2017 – 25,6%. Complicated heart defects, requiring highly trained specialists, in all years were in last place in terms of frequency and were: 9,7% – 8,4% – 14,1% – 7,3% – 10,2% – 10,2% – 11,0% (respectively).

Conclusions: An analysis of the activities of pediatric cardiac surgery for children with CHD showed that 68.1% of the total number of corrected CHD were simple (isolated) defects, 21,% were combined forms and 10,2% were complex. The peak of operational activity occurred in the 2nd and 3rd year of work, when the proportion of children with combined CHD was maximum: 28,4% – in 2012, 31,7% in 2013. In the dynamics of the following years, this indicator decreased, and the proportion of children with simple CHD increased to the level of 73–80%. These data reflect the regularity of the activities of the pediatric cardiac surgery service and the continuity of work with the outpatient service

THE FIRST EXPERIENCE OF MULTICOMPONENT PLASTIC MK WITH STRENGTHENING OF THE ANNULUS WITH VASCULAR PROSTHESIS

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The rapid progression of the disease and the low effectiveness of conservative treatment determine the need for early diagnosis and surgical correction. Surgical treatment of the pathology of the mitral valve (MV) is a constant subject of clinical and scientific

interest, despite the progress made in surgery of the MV. Until recently, in the overwhelming majority of cases, patients underwent mitral valve replacement (MVR), which forced only patients with a fairly pronounced clinic of heart failure who had a prosthesis

implantation to operate on. However, valve prosthesis, on the one hand, solves the problem of mitral defect recurrence, on the other hand, it determines the risk of left ventricular (LV) remodeling with impairment of its function.

Performing a valve-preserving operation is considered more preferable than prosthetics for a number of objective reasons: a favorable p/o course, the absence of lifelong administration of anticoagulants, no risk of thromboembolic complications. The most common methods of mitral valve repair in case of its insufficiency are methods of multicomponent plastics using various artificial support rings and half-rings (rigid, semi-rigid, flexible). The aim of the study was to present the first experience of multicomponent plastic MV with strengthening of the annulus with a vascular prosthesis. In the department of faculty RSCPMCS nam.af.akad.Vahidova from 2010 to 2019 y. 94 multicomponent plastics on the MC were performed, while FR annuloplasty was performed according to the original method. Considering the rheumatic etiology of the valve leaflets, all patients were also dissected and mobilized supporting chords, resected secondary chords of the BD MV. After multicomponent reconstructions, a hydraulic test was carried out, during

which the regurgitation on the MV did not exceed the I st. To prevent the postoperative fibrous ring from dilating, in order to strengthen the posterior semicircle of BD MV, all patients underwent implantation of a strip from a vascular prosthesis on separate U-shaped sutures Etibond 2/0. The length of the strip was selected taking into account the developed nomograms and coefficients for the calculation of individual standard values of the diameter of the MV. Repeated hydraulic test showed almost disappearance of residual regurgitation, which was also determined on intraoperative TE-EchoCG. The average area of the mitral orifice was $2.8 \pm 0,2$ sq. Cm. The average gradient on the MV was $4,3 \pm 0,5$ mm Hg. The average aortic clamping time was $88.5 \pm 10,2$ min. The average term of the p / o MV was 8 ± 2 hours, the average stay in the ICU was a day, all patients were discharged for 7–8 days with a sinus rhythm, with a recommendation to take indirect anticoagulants for 6 months. under the control of the INR. Conclusion: The first experience of multicomponent plastic MV with strengthening of the fibrous ring with a vascular prosthesis shows the possibility of restoring the locking function and competence of the stored native valve without using the support rings.

SAFETY OF OFF-PUMP CORONARY ARTERY BYPASS GRAFTING IN PATIENTSWITH ACUTE CORONARY SYNDROME

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Objective. Conventional on-pump coronary artery bypass surgery (CABG) in patients with acute coronary syndrome (ACS) is associated with higher risk of complications and mortality. There is a lack of data on results of off-pump CABG operations (being popularised in the last 2 decades) in such a group of high-risk patients. The aim of the study was to assess feasibility and results of off-pump CABG operations in patients with ACS.

Material and methods. A comparative analysis of the results of off-pump myocardial revascularization surgery in 450 patients operated on in our centre during the period 2015–2017 yy was performed. All patients were divided into two groups according to the presence of ACS – Group I – 139 patients with ACS (30.9%) and Group II – 311 patients with stable angina (69.1%). Both groups were similar by age, gender and clinical and functional parameters. 58 patients of the 1st group (41,7%) and 136 patients of the 2nd group (43,7%) had left mainstem coronary artery disease.

Results. The mean quantity of grafts in patients of the 1st group was $3,18 \pm 0,72$ (range, 1 to 6 grafts) and $3,07 \pm 0,68$ in the 2nd group (range, 1

to 6 grafts). The mean duration of the operations in the 1st and 2nd group was $226,3 \pm 10,9$ mins and $234,6 \pm 12,2$ mins, respectively ($p=0,625$). Inotropic support was required intraoperatively and immediately after surgery in 59 patients of the 1st group (42,4%) and in 76 patients of the 2nd group (24,4%) ($p=0,04$). The mean ICU stay was $44,2 \pm 4,1$ hours in the 1st group and $40,3 \pm 2,1$ hours in the 2nd group. There was no significant difference in the quantity of non-fatal complications which occurred in 16 patients (11,5%) of the 1st and 34 patients (10,9%) of the 2nd group ($p=0,333$). Mortality was 1,5% (2 patients) in the I group and 0,7% (2 patients) in the II group ($p=0,212$).

Conclusions. Although the inotropic support was required more often in patients with ACS, the overall results of off-pump CABG surgery in our patients showed no statistical difference between the groups. This results support the view that off-pump myocardial revascularization is a feasible and safe option in treatment of patients with ACS.