

## **SURGICAL TREATMENT OF ACQUIRED HEART DISEASE IN ELDERLY PATIENTS.**

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*The article analyzes the results of treatment of 143 patients aged over 65 years who underwent surgical treatment of acquired heart disease. 33 patients underwent surgery for isolated mitral or aortic valves. 110 patients underwent simultaneous operations. Of the 143 patients operated by us from various complications in the early postoperative period, three died. Overall hospital mortality was 2%.*

***Key words:** acquired heart diseases, polymorbidity, comorbidities, simultaneous surgery*

Demographic characteristics of modernity is the progressive aging of the population. The progress of medicine and pharmacology particularly caused greater life expectancy of patients with acquired heart disease that led to the need to perform surgical correction of heart diseases in elderly patients [1,2]. Arose the relevant aspects of geriatric cardiology and cardiac surgery, related to tolerability and risk of operations in valvular diseases. In all surgical risk stratifications old age is regarded as one of the major and independent risk factors [3]. Advances in the development of surgical techniques, anesthesia, myocardial protection, preparing the patient for surgery and postoperative management allowed to significantly increase the number of operations in the elderly[4,5].

### **The purpose of the study.**

To develop an algorithm for integrated diagnosis and preoperative preparation, surgical technique and anesthetic management, postoperative management and

rehabilitation for elderly patients suffering from acquired heart disease, to reduce the number of postoperative complications.

## Materials and Methods.

Of 296 patients operated in Kyiv City Heart Center in 2013 at the acquired heart disease, selected and analyzed 143 patients, aged over 65 years. The average age of patients in the selected group was  $71,1 \pm 5,9$  years. All patients initially hospitalized with a preliminary diagnosis of acquired heart disease.

Diagnosis of acquired heart disease based on clinical data and data on instrumental methods: electrocardiography (ECG) in 12-lead echocardiography , X-Ray , heart Catheterization and aortography coronary angiography. In addition, the plan included preoperative diagnostic methods such as Doppler brachiocephalic and renal arteries , coronary angiography and angiography brachiocephalic and renal artery angiography of lower limb arteries , fibroezofagogastroduodenoscopy ( FEGDS ) , ultrasound of the abdominal cavity ( U.S. ) , Holter monitoring . The examination included , except instrumental methods , biochemical blood and urine tests , the study of gas composition and acid-base status of venous and arterial blood. Calculation was carried out in glomerular filtration rate .

According to surveys of patients was found a number of comorbidities: ischemic heart disease in 91 patients (63.6 %) , stenosing atherosclerosis of the renal arteries in 29 patients ( 20.1%), stenosing atherosclerosis brachiocephalic arteries in 16 patients (11.1%) , stenosing atherosclerosis of the lower limbs in 19 patients ( 13.2%) , gastric ulcer and duodenal ulcer in 10 patients (7 %) , urolithiasis and kidney malformations with chronic renal failure in 34 patients (23.7%) , varicose veins of the lower limbs in 42 patients (29 , 3% ) , of infringement of heart rhythm in 26 patients (18.3%) , chronic obstructive pulmonary disease in 27 patients (18.9%) , uterine miomatoz requiring surgical treatment in 3 patients (2 %). The results are presented in the summary table № 1.

**Table 1.**

disease	Absolute rate	Interest rate
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ischemic heart disease	<b>91</b>	<b>63,6%</b>
stenosing atherosclerosis of the renal arteries	<b>29</b>	<b>20,1%</b>
stenosing atherosclerosis brachiocephalic arteries	<b>16</b>	<b>11,1%</b>
stenosing atherosclerosis of the lower limbs	<b>19</b>	<b>13,2%</b>
varicose veins of the lower limbs	<b>42</b>	<b>29,3%</b>
infringement of heart rhythm	<b>26</b>	<b>18,3%</b>
chronic obstructive pulmonary disease	<b>27</b>	<b>18,9%</b>
gastric ulcer and duodenal ulcer	<b>10</b>	<b>7%</b>
urolithiasis and kidney malformations with chronic renal failure	<b>34</b>	<b>23,7%</b>
uterine myomata requiring surgical treatment	<b>3</b>	<b>2%</b>

### **Results and discussion**

Patients who have been identified or that comorbidities preoperative possible were treated revealed pathology. So patients with stenotic atherosclerotic renal artery stenting was performed 29 renal arteries (20.1%). 10 (7%) of 16 patients with stenotic atherosclerotic brachiocephalic arteries performed carotid stenting. In case of failure of endovascular intervention for stenting of the brachiocephalic arteries was performed Simultaneous carotid endarterectomy - 6 (4%) patient. 5 (3.5%) of 19 patients with stenosing atherosclerosis of the lower extremities, performed stenting of lower limb arteries. In 17 (13%) patients with concomitant coronary artery disease and varicose veins of the lower extremities for coronary bypass surgery was technically unfeasible. These patients performed preoperative coronary stenting. 2 patients performed embolization of the arteries feeding the fibroids (Table № 2).

**Table 2**

<b>name of intervention</b>	<b>Absolute rate</b>	<b>Interest rate</b>
coronary stenting	<b>17</b>	<b>13%</b>
renal artery stenting	<b>29</b>	<b>20,1%</b>
stenting of lower limb arteries	<b>5</b>	<b>3,5%</b>
carotid stenting	<b>10</b>	<b>7%</b>

uterine artery embolization	<b>2</b>	<b>1,4%</b>
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Bulk of patients (7 (4.3%)), which was revealed gastric ulcer and duodenal antiulcer therapy was conducted for 12-14 days prior to surgery. Those, surgery which did not tolerate delay (3 (2%)), antiulcer therapy was performed perioperatively.

Intraoperative all, without exception, patients were monitored depth of anesthesia. As the anesthetic technique used gas anesthetic sevoflurane. Average cardiopulmonary bypass time was 98 min. In a number of cases (10 patients (7%)) operation to isolated mitral valve replacement were performed under moderate hypothermia without cardioplegia - on heart fibrillation. Reducing the time of aortic clamping, opting out of the aortic cross-clamping in interventions on the mitral valve and coronary artery bypass surgery have also played a role in protecting the myocardium. 78 patients (54.5%) was carried out simultaneous operations - one or two prosthetics valves in combination with coronary artery bypass grafting. In patients with chronic renal failure during cardiopulmonary bypass further filtration columns used and procedures carried out ultrafiltration and hemodialysis. In 6 cases (4%) in the presence of atrial fibrillation intervention on the valve combined with ablation estuaries pulmonary vein. Types of operations and the value shown in Table № 3.

**Table 3.**

name of operation	Absolute rate	Interest rate
Aortic valve replacement	<b>29</b>	<b>20,2%</b>
Aortic valve replacement + carotid endarterectomy	<b>2</b>	<b>1,4%</b>
Mitral valve replacement	<b>14</b>	<b>10%</b>
Mitral valve replacement + MAZE	<b>3</b>	<b>2%</b>
Aortic and mitral valve replacement	<b>18</b>	<b>12,6%</b>
Aortic valve replacement + CABG	<b>52</b>	<b>36,5%</b>
Aortic valve replacement + CABG+ carotid endarterectomy	<b>3</b>	<b>2%</b>

Mitral valve replacement+ CABG	<b>6</b>	<b>4%</b>
Mitral valve replacement+ CABG+ MAZE	<b>3</b>	<b>2%</b>
Aortic and mitral valve replacement+ CABG	<b>14</b>	<b>10%</b>
Aortic and mitral valve replacement + CABG+ carotid endarterectomy	<b>1</b>	<b>0,7%</b>

In the early postoperative period, much attention has focused on reducing the time of mechanical ventilation, early mobilization of patients, breathing exercises and massage the chest drain, constant monitoring of central hemodynamics, water balance, gas composition and acid-base balance of arterial and venous blood, biochemical and clinical indicators .

Among the postoperative complications, neurological dominated. Ischemic stroke occurred in 4 patients (2.7%), encephalopathy was seen in 15 (10%) patients. There were also mesenteric thrombosis - 3 (2%), exacerbation of chronic renal failure 10 (6.2%), exacerbation of chronic obstructive pulmonary disease, 4 (2.7%), gastrointestinal bleeding 1 (0.7%).

All measures aimed at timely detection, treatment and prevention of opportunistic diseases, given the high polymorbidity in this group of patients, helped to minimize the severe complications in intra-and postoperative treatment than significantly reduce mortality. Perioperative mortality was not. Postoperative mortality was 3 patients, which corresponds to 2%. Causes of mortality in the two cases was the thrombosis of mesenteric vessels, and in one case of ischemic stroke.

## **Conclusions.**

1. Advanced age of patients is not a contraindication for surgical treatment of acquired heart diseases, provided a high level of surgical technique, anesthetic management, adequate myocardial protection and wary conducting pre-and postoperative period, chalks away reduces the amount of postoperative complications and hospital mortality indicators.

2. Polymorbidity characteristic of elderly patients increases the risk factors for surgical treatment of heart diseases, manifesting postoperative complications (gastric bleeding gastric ulcer or gastritis, the development of acute renal failure with chronic renal disease, cerebrovascular accident with cerebral arteriosclerosis, etc. ).
3. 3. Timely detection, treatment and prevention of opportunistic diseases, given the high polymorbidity in the group of elderly patients, to minimize serious complications in intra-and postoperative treatment than significantly reduce mortality.

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## **ХІРУРГІЧНЕ ЛІКУВАННЯ НАБУТИХ ВАД СЕРЦЯ У ХВОРИХ ПОХИЛОГО ВІКУ**

Тодуров Б.М., Ковтун Г.І., Шелудько С.О., Ревенко О.В., Михайлова А.В.

*У статті проаналізовано результати лікування 143 хворих віком старше 65 років, яким було проведено хірургічне лікування набутих вад серця. У 33 пацієнтів була виконана операція ізольованого протезування мітрального або аортального клапана. У 110 пацієнтів виконувалися симультанні операції. Із 143 прооперованих нами хворих від різних ускладнень в ранньому післяопераційному періоді померло троє. Загальна госпітальна летальність склала 2%.*

*Ключові слова: набуті вади серця, поліморбідність, супутні захворювання, симультанні оперативні втручання.*

## **ХИРУРГИЧЕСКОЕ ЛЕЧЕНИЕ ПРИОБРЕТЕННЫХ ПОРОКОВ СЕРДЦА У БОЛЬНЫХ ПОЖИЛОГО ВОЗРАСТА**

Тодуров Б.М., Ковтун Г.И., Шелудько С.А., Ревенко А.В., Михайлова А.В.

*В статье проанализированы результаты лечения 143 больных в возрасте старше 65 лет, которым было проведено хирургическое лечение приобретенных пороков сердца. У 33 пациентов была выполнена операция по изолированному протезированию митрального либо аортального клапанов. У 110 пациентов выполнялись симультанные операции, включавшие, кроме коррекции порока, еще и хирургическое лечение сопутствующей патологии. Из 143 прооперированных нами больных от различных осложнений в раннем послеоперационном периоде умерло 3 пациента. Общая госпитальная летальность составила 2%.*

*Ключевые слова: приобретенные пороки сердца, полиморбидность, сопутствующие заболевания, симультанные оперативные вмешательства*