**UDC: 616.12-089+616.12-008.315**

**CORONARY ARTERY BYPASS GRAFTING IN PATIENTS WITH ACUTE CORONARY SYNDROME**

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This article presents the experience of coronary artery bypass grafting performed in 24 patients with different kinds of acute coronary syndrome up to 28 days since the beginning of the disease. The absence of mortality, no significant postoperative complications and satisfactory short-term results show that the active surgical tactics in this group of patients is effective and safe.

**Key words:** coronary artery bypass grafting, acute coronary syndrome.

**Introduction.**  The treatment tactics of acute coronary syndrome (ACS) is currently one of the important problems of modern cardiology. There is no doubt, that active invasive strategy in the form of timely primary angioplasty and stenting of the compromised coronary artery is the most effective. As a result, an increasing percentage of patients in case of ACS is directed to the catheterization laboratory as soon as possible. However, the number of patients in which, for many reasons, conducting of complete invasive revascularization is impossible.

Until recent years, surgical coronary artery bypass grafting in the case of acute coronary syndrome has been associated with very high risk of mortality and complications. However, in recent years some research results have been investigated which demonstrate the benefits of active surgical treatment [1,2,3,4].

**The purpose of the article** is to assess the results of coronary artery bypass grafting operations in patients with ACS, in cases of whom the adequate invasive revascularization could not be performed for various reasons.

**Material and methods.** During the period from June 2012 to January 2015 in Ivano-Frankivsk National Medical University, at the Medical and Clinical Diagnostic Centre "Simedgroup" 92 isolated coronary artery bypass grafting operations in patients with coronary heart diseasehave been performed. 24 (26.1%) patients have been operated in the case of various ACS forms in terms up to 28 days from the onset of the disease. The classification of patients according to forms of ACS, age, sex and the term from the beginning of the ACS till operations are presented in the table below.

Table 1.

**Characteristics Of The Groups Of Patients With Acute Coronary Syndrome (n = 24)**

|  |  |  |  |
| --- | --- | --- | --- |
|  | [Unstable angina](https://www.google.com.ua/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0CBwQFjAA&url=http%3A%2F%2Fen.wikipedia.org%2Fwiki%2FUnstable_angina&ei=IXkuVaKkDYGjsgGDp4HQDA&usg=AFQjCNGjJQnDwxblnmgZVzNOz_K121FwLw&sig2=43i9KtwADbr0dog54I6a2g&bvm=bv.90790515,d.bGg) | Acute myocardial infarction without ST-segment elevation | Acute myocardial infarction with ST-segment elevation |
| Total number of patients | 6 | 11 | 7 |
| Gender  (male/female) | 5/1 | 8/3 | 7/0 |
| Age, years | 70,3±6,9 | 61,7±8,1 | 56,3±8,3 |
| Period from the beginning of ACS till surgical intervention, days | 12,7±8,3 | 17,3±6,0 | 23,1±6,9 |
| Preoperative left ventricular ejection fraction,% | 50,0±5,8 | 50,3±4,4 | 45,3±3,8 |

In 5 patients (20.8%) in the acute period of myocardial infarction the primary angioplasty and stenting of the infarct-dependent coronary artery were conducted. 2 of them had a myocardial infarction with ST-segment elevation, and the other 3 had a myocardial infarction without ST-segment elevation. In 4 patients, the infarct-dependent was right coronary artery, and in 1 – the anterior interventricular branch of the left coronary artery. Multivessel coronary artery disease with hemodynamically significant stenosis was diagnosed in all of the patients. The unstable angina, requiring more action on the issue of early surgical revascularization was diagnosed in all the cases after the invasive intervention.

In 6 patients (25%) in the case of coronary angiography, a significant stenosis of the left coronary artery trunk was diagnosed (75%). The indications for surgical intervention were LCA trunk stenosis of more than 75%, multivessel coronary artery disease with damage to the anterior proximal of the interventricular branch (of more than 75) .

**Results and discussion.** The age regularity of ACS forms should be noted. The unstable angina and acute myocardial infarction without ST-segment elevation is more likely to occur in older patients, whereas acute myocardial infarction with ST-segment elevation is more likely to occur among young patients.

In all cases, coronary bypass surgery was carried out under artificial circulation using hyper-potassium blood cardioplegia in order to protect a myocardium. The left internal thoracic artery was used to perform artery bypass grafting, and a large subcutaneous vein of the lower extremities was used for bypassing the other areas. The average number of shunts on a patient was 3.6, and when using left internal thoracic artery was 100%. In one case left internal thoracic artery was used for the coronary artery bypass grafting of the anterior interventricular branch and diagonal artery in the form of sequential anastomosis. The average time of the intervention main stage (distal anastomosis imposition on a compressed aorta) was 88,7±13,1 min. The hospital mortality among patients undergoing surgery did not take place. There were no significant postoperative complications. On the average period after surgical intervention (8.1 bed-days), the patients were moved for rehabilitation to the Regional Clinical Cardiology Clinic.

Short-term results (median observation time is 8.7 months, from 1 to 30 months) show the effectiveness and safety of active surgical tactics of treatment of such category of the patients. Namely, the mortality was not observed, most patients have a satisfactory quality of life and there are no clinical signs of angina. In 3 months after surgery, in 1 case (4.1%) in a female patient with insulin-dependent diabetes mellitus and chronic kidney disease (4 shunt aortic mammaric coronary bypass grafting) the recurrence of angina happened. The coronaroshuntography was performed, the occlusion of one of the autovenous grafts to marginal branches of the circumflex artery was detected and stenting of this artery was performed.

**Conclusions**

1. The absence of mortality, significant postoperative complications and satisfactory short-term results demonstrate the effectiveness and safety of active of surgical tactics in patients with acute coronary syndrome.
2. The unstable angina and acute myocardial infarction without ST-segment elevation dominate among the forms of acute coronary syndrome in older patients.

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