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**THE RELATION BETWEEN GALECTIN-3 CONCENTRATION AND**

**CORONARY ARTERY ATHEROSCLEROTIC LESIONS SEVERITY IN**

**PATIENTSWITH ACUTE MYOCARDIAL INFARCTION AND**

**ABDOMINAL OBESITY**

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**Introduction.** Despite the improvement and progressive development of diagnostic and therapeutic

approaches, ischemic heart disease (IHD) is one of the leading causes of morbidity and mortality

worldwide. A number of traditional scales, such as the GRACE, TIMI scale, are currently used as

objective non-invasive means for assessing the severity of coronary artery disease. Nowadays,

engaging in routine practice of new parameters is considered as a promising direction of modern

medicine. One of such parameters is galectin-3, which is involved in cell differentiation, fibrosis and

immune-inflammation. The aim is to study the state of the coronary arteries in patients with acute

myocardial infarction and concomitant obesity by angiography and an assessment of the presence and

character of the relationship between atherosclerotic lesions of coronary arteries, calculated by

Gensini score, and the concentration of galectin-3.

**Materials and methods.** The study involved 31 patients with acute myocardial infarction (AMI) and

concomitant obesity at the age of 58.42 ± 3.27 years who were treated in the infarction department of

the Kharkiv City Clinical Hospital №27. This cohort of patients was performed angiography of the

coronary arteries with the subsequent stenting of the infarction-dependent coronary artery within 12

hours from the onset of pain syndrome. The degree of severity of coronary atherosclerosis by

angiography of the coronary arteries was determined using the Gensini scale. Galectin-3 was

determined using the Human Galectin-3 ELISA Kit (China).

**Results.** The number of affected vessels ranged from 1 to 4. In 19 (61.3%) patients with AMI with

concomitant obesity, according to angiographic examination, a combined arterial artery scarring was

found. The most frequent combination of lesions in the right coronary artery (RCA), left anterior

descending coronary artery (LAD) and circumflex artery (LCX) was observed in 8 cases (25.8%).

The analysis of the frequency of major coronary artery lesions has shown that the most commonly

occurring was atherosclerotic lesion of LAD - 89% of cases, RCA - 59,3%, about half of patients

with AMI and obesity (48,1%) had a defeat of circumflex artery. The left main coronary artery was

the least frequently affected in patients with AMI with concomitant obesity - 11%. Galectin-3

concentrations rising to 23.48 - 41.42 ng/ml in patients with AMI and obesity was associated with an

increasing in the number of affected vessels with high Gensini scores. In patients with AMI and

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obesity, a strong direct correlation was found between the concentration of galectin-3 and the Gensini

scale (r=0.72; p<0.05), the number of affected vessels (r=0.69; p<0.05), the number of affected

segments (r=0.71; p<0.05).

**Conclusion.** Thus, in patients with acute myocardial infarction and obesity, the increasing of serum

levels of galectin-3 is accompanied by an increasing in the severity of atherosclerotic damage of

coronary artery.