

## **The state of metabolic oxygen-dependent reactions and troponin level in patients with acute myocardial infarction accompanied with arterial hypertension against the background of non-alcoholic steatohepatitis**

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Patients with non-alcoholic steatohepatitis (NASH) are known to have high prevalence and severity of acute myocardial infarction (AMI) due to the synergism of pathogenetic mechanisms of metabolic syndrome, coronary artery disease and arterial hypertension (AH).

The **purpose** of the research was to determine the severity of myocardial injury by evaluation of troponin level and state of metabolic oxygen-dependent reactions in patients with AMI comorbid with AH and NASH.

**Methods.** 96 patients with AMI were examined (55 men, 41 women; mean age  $62,36 \pm 10,52$  years, duration of AH  $12,6 \pm 5,2$  years). Patients were divided into three groups: 1-patients with AMI (31), 2-AMI and AH (33), 3- AMI, AH and NASH (32). The amount of troponin I was determined in blood of all patients. Also the data of liver ultrasound and liver biopsy in patients with NASH were analyzed. The state of metabolic oxygen-dependent reactions was determined by spectrophotometric method; the levels of malonic dialdehyde (MDA,  $\mu\text{mol/l}$ ) and diene conjugates (DC,  $\text{u.opt.d.}$ ) were analyzed.

**Results.** The highest level of troponin I ( $\text{ng/ml}$ ) was detected in group 3 ( $62,63 \pm 6,48$ )  $p < 0,05$  in comparison with group 1 ( $41,56 \pm 5,19$ ) and 2 ( $46,71 \pm 7,12$ ). There was no statistically significant difference between troponin I levels in groups 1 and 2 ( $p = 0,098$ ). Disorders of metabolic oxygen-dependent reactions were determined in patients of all groups. However, group 3 demonstrated reliably higher levels of MDA ( $6,74 \pm 0,14$ ) and DC ( $0,305 \pm 0,011$ ),  $p < 0,05$  while in groups 1 and 2 they were lower and differed from each other insignificantly (MDA  $5,27 \pm 0,12$  and  $5,38 \pm 0,13$  respectively, DC  $0,227 \pm 0,012$  and  $0,246 \pm 0,009$  respectively).

**Conclusions.** Patients with AMI accompanied with AH and NASH are prone to more significant myocardial injury than patients with AMI alone or AMI comorbid with AH. Obviously, the presence of NASH leads to more profound metabolic, hormonal and clinical disorders in patients with AMI, and therefore requires more intensive treatment of such patients.