NATRIURETIC PEPTIDE LEVEL IN ACUTE CORONARY SYNDROME

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Introduction: The study of the content of natriuretic peptide (NT- proBNP) in patients with acute coronary syndrome (ACS) depending on the presence and severity of heart failure is still relevant.

Objective: to evaluate NT- proBNP levels in patients with ACS depending on the presence and severity of heart failure.

Materials and methods: 238 patients with ACS (167 men and 71 women, mean age 60±9.2 years) urgently delivered to "invasive" and " non-invasive " hospitals were examined. Subsequently, myocardial infarction (MI) was diagnosed in 147 patients, unstable angina (UA) in 91 patients. Acute heart failure (AHF) was diagnosed in accordance with the National Guidelines for the Diagnosis and Treatment of Acute Heart Failure (2006). Chronic heart failure (CHF) was diagnosed in accordance with the National Guidelines for the Diagnosis and Treatment of Chronic Heart Failure (2013). All patients had venous blood collected on an empty stomach on days 1-3 of hospitalization and NT- proBNP content was determined using the enzyme immunoassay (reagents from Vector-Best, Novosibirsk). According to the manufacturer's instructions, NT- proBNP values up to 200 pg /ml were considered normal. Treatment was performed according to generally accepted standards. Statistical data processing was performed using STATISTICA 10.0, MedCalc 9.3.7.0 programs. The results are presented as medians and quartiles (P25; P75); the strength of the relationship between qualitative dichotomous and quantitative features was assessed using the γ-correlation method. The diagnostic significance of NT- proBNP in relation to the development of AHF in patients with ACS was assessed using ROC analysis. The differences were considered statistically significant.

Results and discussion: the NT- proBNP level in ACS patients was 457 (100; 959) pg /ml. The median NT- proBNP in MI [605 (210; 1260)] was 3 times higher than that in UA patients [209 (53; 780)], p = 0.001. On the first day of hospitalization, AHF was diagnosed in 24 (10%) ACS patients. Cardiogenic shock (CS) developed in 6 ACS patients (in 3 of them, the development of CS was preceded by the development of acute left ventricular failure), K illip II - in 14 patients with MI, cardiac asthma - in 4 patients with UA. The NT- proBNP level in ACS patients with developed The level of AHF [1156 (524; 2657)] was almost 3 times higher than in patients without the development of AHF [423 (96; 831)], p=0.002. A direct relationship of medium strength was revealed between the level of NT- proBNP and the development of AHF (γ=0.374; p=0.0002). It was found that the 35th value of the area under the ROC curve in relation to the development of AHF in ACS was obtained for the level of NT- proBNP >696.55 pg /ml (AUC 0.687 (95% CI 0.624 – 0.745), p=0.004). The sensitivity value of NT- proBNP in

our sample was 70.8% (95% CI 48.9 – 87.4%), specificity – 68.7% (95% CI 62 – 74.8%), diagnostic efficiency – 69.8%, the likelihood ratio for positive results was 2.26, and for negative results – 0.42. At the time of discharge, stage I CHF was detected in 48 (20%), IIa – in 190 (80%) patients with ACS. Moreover, the NT- proBNP level in patients with stage I [168 (27; 565)] was 3.5 times lower than in stage IIa CHF [582 (131; 1260)].

Conclusion:

1. The NT- proBNP level was significantly higher in MI than in UA.

2. In patients with acute heart failure, the NT- proBNP level was statistically significantly higher than in its absence.

3. With regard to the development of acute heart failure, the diagnostic value of NT-proBNP >696.55 pg / ml was obtained, with a sensitivity of 70.8% and a specificity of 68.7%.

4. The NT- proBNP level was higher in more severe stages of chronic heart failure.

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