The level of brain-specific protein S 100B in patients with acute coronary syndrome associated with anxiety-depressive disorders

Authors:
T Poponina¹, K Gunderina², Y Poponina², ¹Siberian State Medical University - Tomsk - Russian Federation, ²Cardiology Research Institute, Tomsk NRMC - Tomsk - Russian Federation,

Topic(s):
Pharmacotherapy

Background: In clinical medicine, there is still a need for a highly sensitive laboratory marker that reflects brain damage. In some cases, myocardial infarction proceeds with aggravation of cerebral ischemia, stroke, psychosomatic disorders. One of the candidates for laboratory diagnosis of brain damage is the S 100B protein.

Aim of the study: to analyze the level of brain-specific protein S 100B in blood plasma in patients with acute coronary syndrome associated with anxiety-depressive disorders.

Methods and Results: All patients were diagnosed with clinically severe anxiety of 55.2 [40; 64] points and depression of an average degree of 24.5 [19; 28] points. In the hospital, blood samples were taken for S 100B protein. The intragroup analysis of the S 100B protein level revealed that in 3 patients (5%) the S 100B protein level was below the normal limit 42.56 [32.6; 52.6] ng/L, in 13 patients (24%) the S 100B was within the normal range of 84.1 [75.27; 86.57] ng/L. In 38 patients (70%), the concentration of S100B protein was increased to 129.65 [110; 144] ng/L. The analysis of the group with a high concentration of S 100B protein found that the highest indicators of the S 100B protein level were in patients suffering from carbohydrate metabolism disorders, with a long history of hypertension, high levels of anxiety and depression. When studying the mental status of patients, a positive correlation was found between the concentration of the S100B protein and the level of anxiety (p = 0.00065). In 5 patients (9%), the maximum increase in the level of protein S 100 B 184.6 [166.26; 209.34] ng/L was revealed. These patients aged 60 to 70 years, had stroke in the past, had a long history of ischemic heart disease, type 2 diabetes, the course of AMI proceeded with a decrease in left ventricular ejection fraction to 34-40%. Patients with a protein level of 84.1 [75.27; 86.57] ng/L were younger, age 50-60 years, without a history of diabetes, with preserved left ventricular ejection fraction.

Conclusion: An increase in the S 100B protein level was observed in polymorbid patients, with a history of possible impairment of the blood-brain barrier permeability, which could have formed due to the toxic effect of the S 100B protein. This group of patients has more pronounced anxiety-depressive symptoms. Thus, the S 100B protein can be considered as a potential therapeutic target.