

ISCHEMIC POSTCONDITIONING AND ACTIVITY COMPLEMENT COMPONENT C3 IN CEREBRAL ISCHEMIC AND REPERFUSION INJURY

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Introduction: Ischemic postconditioning (IPost) is an effective mechanism to protect the cells from ischemic and reperfusion injury. Activation of the complement system in ischemic and reperfusion brain injury can cause additional damage to healthy tissue. Changes in the activity of C3 complement component in global cerebral ischemia and IPost are unknown.

Purpose: The aim of this study was to quantify the functional activity of C3 component of complement in the serum of rats at different stages of reperfusion after cerebral global ischemia and IPost. Adult male rats Wistar weighing 250-280g were used for this study. Animals were housed in a 12hours/12hours light/dark cycle with free access to water and food. Transient global cerebral ischemia-reperfusion in the rat by reversible occlusion of major vessels, extended from the aortic arch and supplied the brain with blood. With the serum of rats determined The activity of complement component C3 on the second and seventh day of reperfusion period after a ten-minute global cerebral ischemia was determined in serum of rats.

It was shown that reversible 10-minute ischemic brain injury in rats leads to increased activity of C3 component of complement in the first seven days after global ischemia, with the maximal increase in the C3 activity on the 2nd day of reperfusion. IPost leads to a significant increase in the functional activity of complement component C3 on the 7th day of reperfusion.

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Key words: ischemic postconditioning, complement component C3, brain, ischemia, rats.

"MATHEMATICAL MODEL" DIAGNOSIS OF ASTHMA IN YOUNG CHILDREN

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Introduction: The current literature is still a controversial question of the possibility constellation approach to the integrated use of indicators of clinical and immunological examination criteria as early diagnosis of bronchial asthma in children under three years with the presence of airflow obstruction syndrome, as well as the effectiveness of treatment and prognosis of asthma.

Accordingly, **the purpose** of the work was the creation of a mathematical model of asthma in young children, which is necessary for the purpose of a rational treatment strategy in patients with bronchial asthma.

Survey methods: to achieve this goal we carried out a comprehensive clinical and immunological study of 55 children aged 3 years, patients with asthma, which included a thorough investigation of allergic history, clinical signs of expression of broncho-obstructive syndrome, to determine the level of CD4 +, CD8 + lymphocytes, total Ig E, the metabolic activity of the blood eosinophil according to NBT-test,

the intracellular content of the main cytotoxic substances eosinophils (cationic protein, peroxidase).

The results: The analysis found that none of these criteria have sufficient sensitivity, specificity, to be used independently for the production or exclude the diagnosis of asthma. Multivariate analysis of clinical - laboratory data allowed to identify the major components of the factor structure of clinical - para-clinical "image" of asthma in young children. Based on a study of the factor loading main components of multi-factor matrix was established a factor structure of the image of Asthma: Asthma = 0,6 F1 + (-0,3) F2 + 0,3 F3, where F1 - particularly the immune status of the child in the form of increasing the content of blood CD4 - lymphocytes and decreased CD8, as well as improve the immuno-regulatory index (CD4/CD8) greater than 2.0. Factor loadings of the indicator 0,72; F2 - negative reserve oxygen-dependent metabolism of eosinophilic granulocytes of peripheral blood according to the spontaneous and stimulated NBT test, reduced the intracellular content of cationic proteins (<1.4 USD) and peroxidase (<1.7 USD). Factor loadings of these indicators were within 0,84 - 0,86; F3 - rates the severity of airflow obstruction syndrome during the first three days of treatment in the hospital. Factor loadings measure severity of broncho-obstructive syndrome in the first day of hospitalization was - 0.91 for the second - 0.94, on the third - 0.88;

Conclusion: Thus, our multivariate analysis using the principal component analysis allowed establishing the factor structure of diagnosis "bronchial asthma".

Key words: asthma, children under 3 years of age, clinical - immunological tests.

THE IDENTIFICATION OF INDEPENDENT PROGNOSTIC FACTORS FOR ELDERLY PATIENTS WITH RELAPSED AND/OR REFRACTORY MULTIPLE MYELOMA

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Introduction: Multiple myeloma (MM) is a malignant plasma cell disorder. It is regarded as an incurable disease with typical complications which in particular are anemia, kidney failure and congestive heart failure (CHF). Cardiac natriuretic peptides BNP and NT-proBNP can be used to screen for left ventricular systolic dysfunction in patients with symptoms suggestive of heart failure. The aim of the present study was to examine if the levels of BNP and NT-pro-BNP predicts mortality in patients with MM and concomitant CHF.

Material and method: The study population included 45 (m-16, f-30) adult patients (pts) with refractory or relapsed/refractory MM. The subjects satisfy the following criteria to be enrolled in this study: (1) availability of proven CHF with New York Heart Association (NYHA) grades I-III; (2) must be documented diagnosis of MM and estimated about its chemotherapy; (3) the presence of anemia with Hb less than 8.0 mg /dL (4) ECOG performance status score not more than 2; (5) basic therapy for CHF (inhibitor APF ± diuretic) was spent not less than within last 2 weeks. The study did not include pts with NYHA grade IV, the constant form of atrial fibrillation, heart diseases and/or a heavy arterial pathology. For the treatment of MM 28 (62 %) pts have received "salvage" chemotherapy with bortezomib, 15 (33 %) – alkylate drug therapy and 2 (5 %) – high doses of dexamethasone. Levels of NT-proBNP and a BNP-fragment in blood serum have been defined by ELIZA at the moment of enrolling in the study. ROC-curves were used to calculate the threshold concentrations of BNP and NT-proBNP. Overall survival (OS) was estimated using Kaplan-Mayer method.