МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ
БУКОВИНСЬКИЙ ДЕРЖАВНИЙ МЕДИЧНИЙ УНІВЕРСИТЕТ

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106-ї підсумкової науково-практичної конференції
з міжнародною участю
професорсько-викладацького колективу
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Матеріали підсумкової 106-ї науково-практичної конференції з міжнародною участю професорсько-викладацького колективу Буковинського державного медичного університету (м. Чернівці, 03, 05, 10 лютого 2025 р.) – Чернівці: Медуніверситет, 2025. – 450 с. іл.

У збірнику представлені матеріали 106-ї науково-практичної конференції з міжнародною участю професорсько-викладацького колективу Буковинського державного медичного університету (м. Чернівці, 03, 05, 10 лютого 2025 р.) зі стилістикою та орфографією у авторській редакції. Публікації присвячені актуальним проблемам фундаментальної, теоретичної та клінічної медицини.

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ключем для щелепно-лицевої та пластичної хірургії носа, особливо при травмах різного генезу.

СЕКЦІЯ 3
НЕЙРОІМУНОЕНДОКРИННА РЕГУЛЯЦІЯ В НОРМІ ТА ПРИ ПАТОЛОГІЇ

Bukataru Y.S.

CEREBROPROTECTIVE EFFECT OF SUBSTANCE ZNM

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Introduction. Traumatic brain injury (TBI), the frequency and severity of which has increased today, is one of the main causes of mortality and disability. Given the hypoxic component of TBI and damage to the metabolism of nervous tissue during it, the use of antihypoxant protective agents is appropriate. Despite the fact that antihypoxants serve as means of etiotropic treatment of TBI, they can be used in the complex therapy of the consequences of brain injury and prevention of secondary brain damage.

The aim of the study was to establish the impact of 2-benzamido-2-(2-oxoindolin-3-iliden) acetic acid derivative ZNM on the activity of pro-oxidant-antioxidant balance in TBI rats.

Material and methods. The research was conducted on 32 white nonlinear mature male rats weighting 180-200 g, divided into 4 groups (n = 8): the first group was injected intraperitoneally with the substance ZNM in a dose of 15 mg/kg in the form of an aqueous suspension stabilized by Tween 80 prior the TBI of moderate severity modeling; the second group was administered prior the TBI the reference drug mexidol in a dose of 100 mg/kg; the third (control) group was administered an equivalent amount of solvent; the fourth group - intact control (ether anesthesia without TBI). TBI of moderate severity was modeled under the ether anesthesia with a standardized weight-drop device (0.0495 kg, 0.315 J) inducing a focal blunt injury over the unprotected parietal-occipital head area. Drugs were administered in a prophylactic and therapeutic regimen 3 days before (last - 30 minutes prior to TBI) and 2 days after it, after which the animals were decapitated under light ether anesthesia. The animals were kept under the standard vivarium conditions at a constant temperature and humidity with free access to food and water. All manipulations were carried out in accordance with European Union Directive 2010/63/EU on the protection of animals used for scientific purposes.

To study the indicators of pro-oxidant-antioxidant balance the plasma and homogenates of the animals' brains were used. Statistical analysis of the results was performed using SPSS Statistics 17.0 and Microsoft Excel 2013. Statistical significance was evaluated using parametric Student's t-test (for normal distribution) and non-parametric Mann-Whitney U-test (in case of non-normal distribution). The critical level of significance was accepted with $p<0.05$.

Results. The substance ZNM exhibits a pronounced cerebroprotective effect under the conditions of closed cranial brain injury of medium severity, normalizing indicators of pro-oxidant-antioxidant balance in the brain and blood, as well as improving energy metabolism in the brain, causing a significant ($p<0.05$) increase in the activity of succinate dehydrogenase by 2.5 times and Na+, K+ ATPase by 1.2 times and reducing the activity of lactate dehydrogenase by 1.3 times, and lactate content by 1.3 times. At the same time, the substance ZNM exceeds the effect of mexidol in terms of antioxidant effect, increasing the activity of glutathione peroxidase in blood plasma by 1.2 times and the content of SH groups by 1.6 times, and expanding the content of reduced glutathione in brain homogenates by 1.8 times and reducing the content of malondialdehyde by 17.1%. At the same time, no significant difference was found between the effectiveness of ZNM and Mexidol regarding the impact on other investigated biochemical parameters in blood plasma and the brain.

Conclusion. The derivative of 2-benzamido-2-(2-oxoindolin-3-iliden) acetic acid ZNM doesn't concede significantly to the effect of reference drug mexidol under the conditions of a closed traumatic brain injury of moderate severity in the normalization of energy metabolism in nerve cells of rats and prooxidant-antioxidant balance in plasma and brain. This confirms the

antioxidant and cerebroprotective properties of the ZNM substance in the conditions of closed traumatic brain injury of medium severity.

Dudka Y.A.

STABILIZATION OF ADAPTATION POTENTIAL WITH THE HELP OF CORRECTIVE TECHNIQUES AS AN IMPORTANT POINT DURING THE PERIOD OF WAR

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Introduction. The present dictates new conditions for us and requires resources for rapid adaptation. The healthcare system faces new challenges because the future of the state directly depends on the mental and physical health of the young generation. According to various authors, the state of health and the course of various diseases cannot be considered without taking into account the body's adaptation processes. A person is able to physiologically adapt to any changes in the external or internal environment, using various mechanisms. The physiological essence of adaptation is a set of functional mechanisms that ensure adequate adaptation of the organism to the influence of the environment, harmonious development, and preservation of the proper level of homeostasis parameters.

The aim of the study. To investigate how empirical and practical knowledge about the possibilities of one's own psyche affects the adaptation potential of children, and their physical and mental health, through the use of a correctional program for teaching special techniques. To determine whether there is a relationship between adaptive potential, corrective techniques, and the quality of learning.

Materials and methods. We conducted a survey and testing using validated methods before and after a series of training sessions under the program "Children and War: Teaching Healing Techniques" among 2 groups of children (50 students of 6th grade) to compare the level of adaptive potential. They used theoretical (the method of analysis and generalization of scientific literature to find out the state of research on the problem of adaptation potential of children); empirical (observation method); conversation method; method of psychodiagnostic research (event impact scale); anthropometry, determination of blood pressure according to the Korotkov method, assessment of adaptation potential according to the R.M. Baevsky method, and mathematical (statistical analysis of the obtained results to determine the average values and the average error of the studied indicators and the significance of the differences in the obtained results).

Results. During the screening-diagnosis of 6th graders using the AP formula, it was found that only 10% of children had satisfactory adaptation. In the majority of the examined, 38 (76 %) noted the tension of adaptation mechanisms, and in 7 (14 %) children, adaptation was unsatisfactory. Along with the changed functional state of adaptive reactions, primarily of the cardiovascular system, a decrease in its reserve was found. Thus, 16 children (32%) had a lower IR among the participants in the study, 29 children (58%) had a low level, and 5 (10%) schoolchildren had an average level. The Ruffier index in 90% of schoolchildren did not correspond to a sufficient reserve of the circulatory system. The analysis of the results of the measurement of morphofunctional indicators showed that the highest level of adaptation potential belongs to students who mainly practiced in sports sections, and the third and fourth levels of AP include children who have excess body weight and deviations in the work of the cardiovascular and respiratory systems. Re-evaluating the indicators of the 1st group of children, there was an improvement in results by 15% in all parameters of the scale of the impact of events and a decrease in the level of intrusions.

Conclusions. Neglecting the anatomical, physiological, and psychological characteristics of children will lead to the complication of adaptation. The level of adaptation potential in the conditions of constant triggers during a full-scale war depends on the child's ability to self-soothe and psychological self-stabilization and directly affects the state of health.