MORPHO-PHYSIOLOGICAL ASPECTS AND WAYS OF CORRECTION OF EXPERIMENTAL TRAUMATIC BRAIN INJURY

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Relevance. The causes of TBI are diverse, having a complex pathogenesis and similar clinical manifestations, the consequence of which is disability of persons and death (mortality varies from 1.3 to 4.9%, reaching 15-30%). It is also justified by the fact that in recent years, cases of TBI have become more frequent among the younger generation, the causes of which are road accidents, household injuries, as well as injuries at work. Currently, a number of scientific research works are widely carried out all over the world, aimed at developing effective methods for determining the early diagnosis and prevention of traumatic brain injuries of various etiologies. Of particular importance are the studies aimed at the treatment and ways of correcting the consequences of traumatic brain injuries, based on effective means, in particular, of plant origin.

Goal. The study of morpho-physiological aspects and ways of correction of experimental traumatic brain injury depending on typological features.

The object of the study: 90 experimental mongrel rats, divided into 2 comparable groups.
To solve the above tasks and achieve the goals, experimental, histological, general morphological, psychoneurological, as well as statistical research methods were used.

It is determined by the use of theoretical approaches and methods, the use of a sufficient number of experimental animals, as well as morphological, psychoneurological and statistical research methods, the use of widely approved psychoneurological tests. The obtained results are based on a comparison with foreign and domestic studies, the use of various drugs for the correction of mild TBI, materials on their effect on groups of experimental animals that differ in activity. The work consists in the fact that the proven value of pathophysiological and morphological disorders in the central nervous system in the pathogenesis of TBI significantly complements the understanding of the mechanisms and risk factors for the development of this pathology. Disorders in the brain tissues are one of the risk factors that determine the short-and long-term consequences of TBI. The practical significance of the work lies in the use of therapeutic preparations of glycine, curcumin phytopreparation, as well as their complex for the correction of disorders in the brain, based on the results of experimental studies, where, depending on the typological characteristics of the animal organism, the choice of therapy methods was carried out, the dose and appropriate adjustment measures were determined.

According to the test "Walking on a raised crossbar", among the animals that did not receive treatment, it was found that there were no active movements, the time for performing the test for each indicator was lengthened, all this indicated an unfavorable course of pathology in both animals of the group with high and low activity.

Fig. 1.Results of the "Walking on a raised crossbar" test among animals of the I Group with low activity, who received and did not receive treatment

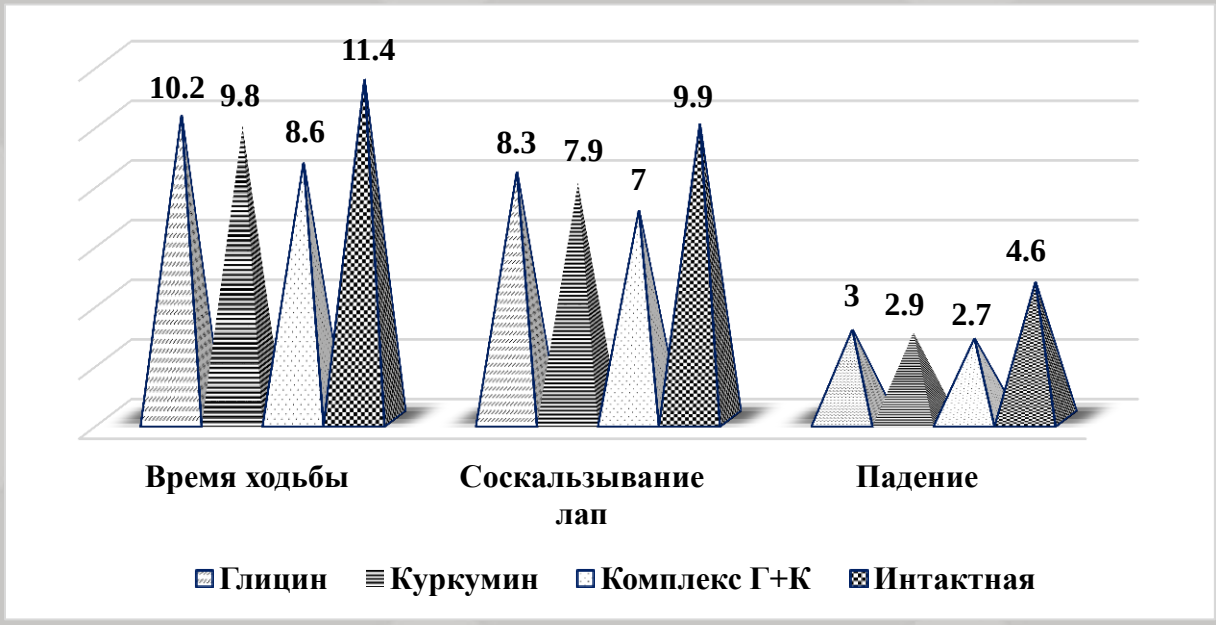

Fig. 2. Results of the "Walking on a raised crossbar" test among animals of Group I with high activity, who received and did not receive treatment.

A comparative analysis between groups I and II with different activity, as well as those who received glycine, curcumin phytopreparation, glycine+curcumin complex and those who did not receive treatment showed results indicating the effectiveness of the therapeutic properties of drugs used in the pathology of mild FM. The ways of correction of the selected drugs are justified, the most optimal doses and its form of administration are determined.

Conclusion. To assess pathomorphological disorders in the body with mild TBI, it is necessary to create an experimental model using the method "TBI as a result of falling cargo". In order to study the features of the typological status of experimental models, the "open field" test was the most objective psychoneurological method, which takes into account the behavioral activity of the organism. Morphological changes in the brain of rats with experimental mild traumatic brain injury in groups with high and low activity taking therapeutic drugs were characterized by dystrophic changes, uneven location and a decrease in the number of neurocytes in the molecular and granular layers of the brain. In the long-term post-traumatic period, on the 14th day, minor dystrophic changes in single neurocytes were detected, the density of glial cells increased, hypertrophy of preserved neurocytes was observed as a compensatory reaction. In the comparative aspect, the most pronounced changes were manifested in the group with low activity, compared with high activity. It was found that in the group of animals with high adaptive ability after TBI and treatment, the recovery processes of the structural elements of the brain are increased compared to the 1st group. Regenerative processes are characterized by the preservation of glial cells over a larger area, signs of circulatory disorders were traced to a small extent.