CHARACTERISTICS OF MORPHOLOGICAL CHANGES IN THE ADRENAL GLANDS IN THE ACUTE AND ACUTE PERIODS OF MODERATELY SEVERE SPINAL BRAIN INJURY

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Abstract: *This thesis presents the results of the analysis of morphological changes in the adrenal glands in moderately severe spinal cord injury.*

Keywords: *spinal cord injury, cortex and medulla of the adrenal glands, edema, dystrophy.*

Relevance: According to WHO, along with the rapid development of modern civilization, global problems are increasing day by day. In particular, spinal cord and spinal cord injuries resulting from various road traffic accidents account for 0.7-6-8% of total injuries, and 6.3-20.3% of bone injuries, and cause disability in middle-aged able-bodied individuals [1,2].

Data on morphofunctional changes in the adrenal glands after spinal cord and spinal cord injuries have been studied very little, and complications in the adrenal glands after spinal cord injuries and measures aimed at treating these complications have shown that finding a solution to them is not only a medical but also an economic and social problem.

Taking into account the above, at present, morphofunctional changes in the adrenal glands as a result of spinal cord injuries of various degrees and determining the degree of damage to these organs have not been sufficiently studied. All of the above determined the purpose and objectives of the study.

Materials and methods: The experiments were conducted on 20 white outbred rats of both sexes born in vivarium conditions. 3-month-old rats were recruited for the study. The experiments were carried out in accordance with the ethical rules for the use of animals and the requirements of the Helsinki Congress.

In the study, spinal cord injury was inflicted on white outbred rats using a specially developed model using the “fall from a height” method. In the experiment, the group of animals was anesthetized under light isoflurane general anesthesia and placed vertically on a mathematical model for spinal cord injury, and soft pads were placed on both sides of the body of the white rat to prevent injury to internal organs. The round ball of this model was lifted and released at an angle of 30°, 45°, 60°, and a metal ball moving at a certain speed was hit at the lumbar level of the white rat's spinal cord, causing spinal cord injury.

Using organometric, histological, histomorphometric and microscopic methods, morphological structures of adrenal glands at various levels (organ, tissue and cell level) were studied in white rats of different ages. Statistical (methodological) information was used to process the research results.

Results and Discussion: The following data were obtained at different stages of spinal cord injury in 3-month-old white rats: macroscopically, the adrenal glands of the 3-month-old white rats of the study group are a pair of organs, located above the kidneys in the

lumbar region, as their name suggests. During macroscopic analysis of the adrenal glands, they were covered with a smooth and shiny capsule on the outside, and no visible pathological changes were observed in the inner cortex and medulla.

The results of histological examination showed that in the acute, acute and early stages of spinal cord injury, thickening of the adrenal capsule and bundles of collagen fibers in it, as well as hypertrophy of the cortex and medulla, were detected. In this case, in 1 hour and 8 hours after the injury of the spinal cord, microscopic examination of the adrenal glands of rats revealed the presence of edema, dystrophy, and hemorrhagic zones in the cortex of the adrenal glands.

Conclusion: Thus, histologically, the changes in the cortical and medulla tissues of the 3-month-old white rats of the experimental group with spinal cord injury were especially evident in the acute, acute, early periods.

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