NEUROSPECIFIC PROTEIN INDICATORS IN ETHANOL INTOXICATION MODEL

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Log in. It is known that the clinical manifestations of alcohol intoxication are mainly characterized by disorders of the nervous system. Autoimmune mechanisms play an important role in the pathogenesis of diseases accompanied by disorders of the nervous system. Changes in the indicators of autoantibodies to neurotropic antigens indicate early signs of disorders of the specific structure of nerve tissue.

Goal. Dynamic study of the level of autoantibodies to neurospecific proteins in ethanol poisoning.

Materials and methods. To conduct the study, a model of alcohol intoxication was induced by injecting a solution of ethanol into the stomach of rats for 1, 2, 3, 4 weeks. By enzyme-linked immunosorbent assay, using the "ELI-N-Test" complex (Russia), the level of neurotropic autoantibodies to the following proteins was determined in blood serum: NF-200 (specific axon protein), GFAP (specific glial fibrillar acid protein of the brain, forming intermediate filaments of the astrocyte cytoskeletal system), MBP (main protein of the myelin sheaths of axons), S100β (highly specific Ca2+binding protein for the nervous system, located mainly in the cytoplasm of astrocytes), VGCC (potential-dependent calcium channels).

Results. According to the results of our study, under the chronic influence of ethanol, a difference in the level of autoantibodies to various nerve tissue proteins began to appear in the 1st week compared to the indicators of the intact group. The level of autoantibodies to neurospecific proteins involved in the regulation of the neuromediation process, such as GFAP, C-100, VGCC, NF-200, and MBP, tended to increase. As the time of introduction of the toxicant increased, the indicators of auto-AT in relation to neurospecific proteins in the blood serum of experimental animals reliably increased. In particular, by the 4th week of the study, the level of autoantibodies to the NF-200 protein reliably increased by 1.44 times; 2.03 times compared to the GFAP protein; 1.65 times compared to the protein C-100β; It was found that MBP increases 1.7 times compared to the protein and the latter protein increases 1.63 times compared to VGCC. Based on the obtained results, it can be said that the early and sharp changes in ethanol poisoning were characteristic of GFAP and S-100 proteins. In our opinion, it can be assumed that the increase in autoantibodies to neurospecific proteins in chronic ethanol poisoning is associated with impaired permeability of the blood-brain barrier under the influence of ethanol and its metabolites, dystrophic processes in astrocytes, damage to the neuroglia, changes in neurotransmission processes, damage to axons and

myelin fibers. Determination of autoantibodies to these proteins in chronic ethanol poisoning allows for early diagnosis and therapeutic and preventive measures for brain damage.

Conclusion. Thus, the results of the study show an increase in the level of autoantibodies to neurospecific proteins, which can be used as a predictor of brain injury in alcohol intoxication.