

INVESTIGATION OF FUNCTIONAL AND BIOCHEMICAL INDICATORS IN THE RATS UNDER GLUTAMATE TOXICITY

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One of the main causes which generally leads to increasing of morbidity in the population is the eating large amounts of food which contains the flavor enhancers (such as monosodium glutamate (MSG)). In the present work the glutamate influence on organism was investigated and biologically active substances for the prevention and treatment of the glutamate toxicity searched as the relevant issue of the modern pharmacy. An experimental research has been carried out on rats weighing 180-220 g. Grouping were as follows: the group of intact animals (n=6); the group of control's pathologies animals which treated sodium glutamate at doses 4 g/kg daily throughout 30 days (n=6); the group of animals treated with the polyphenols complex from grape cultural (CPG) at a dose of 90 mg/kg for 40 minutes before daily dosing of monosodium glutamate. The functional performance of central nervous system by open-field test and state of lipid peroxidation-antioxidant system (LPO-AOS) have been investigated.

It has been established that the administration to rats's food ration sodium glutamate excess at a dose of 4 g/kg resulted to development of excitotoxicity which characterized primarily by significant disruption of the central nervous system functional activity on indicators of open-field test. The development of oxidative stress was established on the LPO products increasing (increase of thiobarbituric acid reactive substances by 2.1 times, diene conjugates by 1.8 times) and decreased activity of the AOS (reduced glutathione refurbished by 1.5 times, α -tocopherol by 2.4 times).

Adding to the food ration of grape's seed concentrate has reduced of excitotoxicity. All studied parameters of central nervous system (locomotor and research activity and autonomic responses) were within the physiological range, and as the increase urination then it can not be explained to the diuretic effect of the CPG. The administration of CPG normalized all indicators prooxidant-antioxidant balance in the study group.

On the basis of this investigations has been following recommendations: necessary to minimize the content of monosodium glutamate in the daily food ration.

One of the effective ways to preventing of the glutamate toxicity development is the addition to the food ration the grapes polyphenols complexes, possibly in the form of dietary supplements.