

MOLECULAR AND BIOCHEMICAL CRITERIA OF THE SAFETY EVALUATION DURING ANTICONVULSANT THERAPY

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Epilepsy is one of the most common diseases of the nervous system. The efficacy of the treatment of epilepsy should be assessed not only by seizure frequency decrease, but also by the safety profile of the anticonvulsants.

Purpose: to identify the diagnostic potential of glutathione and nitrotyrosine levels for assessment of the safety of anticonvulsant therapy (in experiment).

Materials and Methods: Research was conducted on non-linear rats of both sexes (weight 180-220g). The influence of anticonvulsants on cognitive processes was studied on a model of one-time learning - passive avoidance (CRPA) without amnesia factor. Metrazole kindling was used as an epilepsy model to evaluate the oxidative status of anticonvulsants.

Discussion: Activation of nitrosating stress reactions on the ground of the deficiency of the recovered glutathione equivalents was established. Under endogenous neurointoxication even in the early stages, the nitrosating stress is developing, leading to nitro-replication of thiols and impacting the thiol-disulfide balance, which leads to the start of neuro-apoptosis. In the control group, the index nitrotyrosine-reduced glutathione ratio increased in 6 times compared to the intact group.

Conclusion. The dependence of nitrotyrosine index/reduced glutathione at metrazol kindling and action of anticonvulsants on cognitive processes in normal were established: as higher index is, as more negative effects anticonvulsants on cognitive function have.