EXPERIMENTAL DEFINING OF THE RANGE OF ANTICONVULSANT ACTIONS OF PERSPECTIVE PHYTOGENIC ANTICONVULSANTS

Tsyvunin V.V., Prokopenko Yu.S., Zaginaychenko B.A., Shtrygol' S.Yu.
The National University of Pharmacy, Kharkiv, Ukraine
tsyvunin-vad@ukr.net

Epilepsy is a chronic psychic disease with complex etiology and pathogenesis. Modern possibilities of epilepsy therapy with implementing the existing anticonvulsant drugs do not make the problem less urgent. A remedy should have a complex influence on separate elements of the development of convulsive syndrome. That is why it is important to develop new anticonvulsant drugs, including the ones of herbal origin, the complex composition of which will allow to solve the problem of single-vector mechanisms of existing antiepileptic medicines.

The aim of the present study is to examine the range of anticonvulsant actions of four perspective antiepileptic drugs of herbal origin using the experimental models of seizures with different neurochemical mechanisms.

Materials and methods. As the objects of study the leaders of previous screening were chosen: dry extract of fumitory (*Fumaria schleicheri Soy.-Willem., Fumariaceae*) aqueous (FSDE), dry extract of basil (*Ocimum basilicum L., Lamiaceae*) aqueous (OBDE) and dry extracts of motherwort (*Leonurus cardiaca L., Lamiaceae*) aqueous (LCDEAq) and ½ alcohol (LCDEAl). The research was held on 174 random-bred male albino mice. The experimental seizure models were chosen with the aim to determine the neuromediated profile of extracts action: picrotoxin-induced, thiosemicarbazide-induced, strychnine-induced seizures and seizures induced by camphor.

Results and discussion. Pharmacological analysis suggests that the LCDEAq and the LCDEAl influence mainly on separate elements of epileptogenesis. They were effective on the models of thiosemicarbazide-induced seizures and convulsions induced by camphor. At the same time the FSDE and the OBDE have a complex influence on different pathochemical mechanisms of convulsions development: they improve the GABA- and glycinergic inhibitory processes, decrease the glutamate-induced activation, regulate the exchange of catecholamines in the brain.

Conclusions. According to the results of investigation it was established that all the chosen herbal extracts have a complex influence on the mechanisms of convulsions development. But the most efficient remedies which showed the potent activity in the conditions of all experimental models are the FSDE and the OBDE.