Is nitric oxide involved in the anticonvulsant action of antiepileptic drugs?

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Experimental data indicate that nitric oxide (NO) may play a role in the pathophysiology of epilepsy. It is also possible that NO-mediated events are involved in the expression of the anticonvulsant action of some antiepileptics. The aim of this review was to assemble current literature data on the role of NO in the anticonvulsant action of antiepileptic drugs (AEDs). The influence of various NO synthase inhibitors (NOSI) on antiseizure activity of AEDs was tested in many animal experimental models of epilepsy (electrically and pharmacologically evoked seizures, sound-induced convulsions, amygda-lkindled seizures). Although some NOSI were able to modify the anticonvulsive properties of AEDs, the involvement of NO pathway in the mechanisms of action of AEDs in most cases does not seem probable, since the effects of NOSI were not reversed by L-arginine, a NO precursor.

Key words: nitric oxide, nitric oxide synthase inhibitors, antiepileptic drugs, seizures

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