RILUZOLE ENHANCES THE ANTISEIZURE ACTION OF CONVENTIONAL ANTIPELEPTIC DRUGS AGAINST PENTETRAZOLE-INDUCED CONVULSIONS IN MICE

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Riluzole, a pre- and postsynaptic modulator of glutamate transmission, administered alone at doses of 5 and 10 mg/kg did not affect pentetrazole-evoked seizures in mice. However, it enhanced the antiseizure action of valproate, phenobarbital, ethosuximide, although not that of clonazepam, in this model of experimental epilepsy. Keeping in mind that riluzole did not change plasma levels of antiepileptic drugs, a pharmacokinetic interaction, at least in terms of free plasma levels, does not seem probable. Regarding undesired effects, riluzole (5 mg/kg) and its combination with valproate did not produce any motor or long-term memory impairment. In contrast, the concomitant treatment of riluzole (5 mg/kg) with valproate (144 mg/kg), phenobarbital (4.9 mg/kg), or ethosuximide (90 mg/kg), resulted in a moderate motor deficit, but not long-term memory impairment in the tested mice. In conclusion, the results of the present study suggest that riluzole might occur effective as an additive drug in the treatment of myoclonic or absence epilepsy in humans.

Key words: riluzole, antiepileptic drugs, pentetrazole-induced seizures

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