

Effect of new preventive medicine on pentylenetetrazol-induced kindled mice using database analyses

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Objective: Despite the availability of more than 20 antiepileptic drugs in clinical, approximately 30 percent of people with epilepsy do not respond to antiepileptic drugs treatment. It is important to develop antiepileptic products with new mechanisms. At present, we also evaluated data from one of the largest global database to find drugs with antiepileptic effects. Therefore, the present study was undertaken to clarify the effect of combination of anti-epileptic drugs and valacyclovir in epileptic seizure using kindling model.

Methods: To induce kindling, pentylenetetrazol at a dose of 40 mg/kg was injected once every 48 h. Behavioral seizures were monitored for 20 min following pentylenetetrazol administration. In this study, valacyclovir was orally administered 30 min before antiepileptic drugs injected in kindled mice.

RESULTS: Valacyclovir showed inhibitory effects on pentylenetetrazol -induced kindled seizures. In addition, simultaneous use of levetiracetam and valacyclovir caused more potent inhibition of seizure activities. The other hand, the inhibitory effect of valproic acid or diazepam with valacyclovir was not augment epileptic seizure in kindled mice.

CONCLUSIONS: The findings of the present study indicate that a combination of levetiracetam and valacyclovir show anticonvulsive effects on pentylenetetrazol -induced kindled epileptic seizures. These results suggested that valacyclovir may have antiepileptic effect in patients with epilepsy.