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**Short communication**

## Influence of cimetidine on the anticonvulsant activity of conventional antiepileptic drugs against pentetrazole-induced seizures in mice

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**Abstract:**

The aim of this study was to evaluate the effects of acute (1 day) and chronic (7 days) administrations of cimetidine, an H<sub>2</sub> histamine receptor antagonist, on the protective activity of conventional antiepileptic drugs (AEDs) against pentetrazole (PTZ)-induced seizures in mice. Cimetidine (up to 100 mg/kg), given alone either acutely or chronically, did not alter significantly PTZ-induced seizures in mice. However, the drug (at 20 mg/kg, administered acutely) potentiated the anticonvulsant activity of ethosuximide (ETX) by reducing its ED<sub>50</sub> from 134 to 103 mg/kg ( $p < 0.05$ ). This effect was associated with a 74% elevation of plasma ETX level ( $p < 0.01$ ). In contrast, chronic (7 days) administration of cimetidine (20 mg/kg) did not affect the anticonvulsant activity of ETX in the PTZ test and its plasma levels. On the other hand, cimetidine (20 mg/kg), given either acutely or chronically, when co-administered with valproate, clonazepam, and phenobarbital had no significant impact on the anticonvulsant properties of these AEDs against PTZ-induced seizures and their plasma levels in mice. The results indicate that there may be no risk in prescribing cimetidine for other than epilepsy reasons in patients treated with valproate, clonazepam or phenobarbital.

**Key words:**

cimetidine, antiepileptic drug, pentetrazole, drug interaction, clonic seizures

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