

The role of minocycline on amygdala kindled seizures in rat

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Background and Purpose: Minocycline is an anti-biotic and anti-inflammatory drug. In addition its neuroprotective effects have been shown. As far as there is interaction between cell death and seizure, the aim of this study is examination of the role of minocycline on amygdala kindled seizures in rat.

Methods and Materials: In three group animals, after stereotaxic surgery and 1 week recovery period, rats received twice daily kindling stimulations. In fully kindled animal of groups 1-3, minocycline in 12.5, 25 and 50 mg/kg (60 min before stimulation) was injected intraperitoneal, respectively. After discharge duration (ADD) stage 4 latency (S4L), Stage 5 Duration (S5D) and Seizure Duration (SD) were recorded and compared with related control groups (the same animals that had received saline 1 day before). Data analyzed with Repeated measure ANOVA and Post hoc tukey test in Statistica software.

Results: In fully kindled animals whose was received minocycline (50 and 25 mg/kg) ADD significantly decreased 88.6% ($P<0.001$) and 3% respectively. When minocycline was delivered, S5D decreased 38.3% ($P<0.001$), 34% ($P<0.05$) and 100% ($P<0.001$) respectively in 12.5, 25 and 50 mg/kg group animals. S4L and SD parameters increased 37.7% ($P<0.05$) and decreased 85.7% ($P<0.001$) only in group 50 mg/kg.

Conclusion: According to obtained results it may be concluded that in fully kindled rats application of minocycline have anticonvulsant effect on kindling model of epilepsy.

Article keywords: minocycline, seizure, kindling, rat