

## Effect of acute and chronic ellagic acid administration on penicillin induced epileptiform activity in rats

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One of the flavonoids found in some fruits and plants such as pomegranates, nuts, and apples is ellagic acid (EA). This compound has antidepressant, anxiolytic, antioxidant, and anti-inflammatory effects. Aim of this study was to investigate the effects of EA on experimental penicillin-induced epilepsy model electrophysiologically in rats. In this study, 70 adult male Wistar rats were divided into acute and chronic main groups. Only EA, and 10, 50 and 100 mg/kg doses of EA were the subgroups of the study. Sham and control groups were used as common groups for acute and chronic main groups. Substances were given to the acute group 30 min before the epileptiform activity started but for 21 days to the chronic group. Rats were anaesthetized with urethane. Electrodes were placed on the left somatomotor area. Electroencephalography (EEG) recording was started and then penicillin was injected into the rats to induce epileptiform activity. 120 min more EEG recordings were taken after penicillin was injected. In sham and only EA groups there was no epileptiform activity. Both acute and chronic groups of EA significantly increased the latency time to onset of the first spike-wave ( $P<0.05$ ) and decreased the frequency and amplitude except for some time periods ( $P<0.05$ ). Consequently, the administration of EA has an antiepileptic effect in penicillin-induced epilepsy in rats. Therefore it may be a potential anti-epileptogenic drug in the future.

**Keywords:** Antiepileptic, Electroencephalography, Neuroprotective, Onset of first epileptiform activity