

Poster presentation

## Anticonvulsive effects of rutin in a rat model of absence seizure: a novel compound to treat seizure

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### Background

Rutin is a flavonoid of the flavonol type, is found in many typical nutrimental plants and is an important dietary constituent of food and plant-based beverages. It has biological and pharmacological activities, rutin exhibits antioxidant, anti-inflammatory, anti-carcinogenic, antithrombic, cytoprotective and vasoprotective activities [1-4].

### Materials and methods

Adult male rats were cannulated into intracerebroventricular (i.c.v). The anticonvulsant effects of rutin were investigated using the pentylenetetrazole (PTZ)-induced seizure model. The animals were placed individually in plastic boxes and observed immediately after PTZ injection for a period of 30 min. Rutin, diazepam and normal saline were injected i.c.v. at the doses (25-150 nmol), (10 ml/kg) and (5mg/kg) respectively 30 minutes before PTZ (90 mg/kg, i.p). The latency to minimal clonic seizure (MCS), generalized tonic-clonic seizure (GTCS) and percent of mortality protection were recorded, as well as the percentages of protection against the mortality.

Also, for investigating the mechanism of rutin, flumazenil (5 mg/kg) and naloxone (10 mg/kg) were also injected 5 minutes before rutin.

### Results

In this study In PTZ-induced epileptic seizures, the i.c.v. injection of rutin at doses of 150 mg/kg prolonged the time MCS and reduced the GTCS latency. The protective

effect of rutin against lethality was 20%. In this study, flumazenil (5 mg/kg, i.c.v.) reversed the anticonvulsant activity of rutin. Also, pretreatment with naloxone (10 mg/kg, i.c.v.) antagonized the prolongation of tonic-clonic seizure latency as well as the reduction in seizure duration induced by rutin (200 mg/kg, i.c.v.).

### Conclusions

As the results it seems that rutin as a flavonoid, could inhibit PTZ-induced epileptic seizures and may have anticonvulsant activity.

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