The study of isoindole derivatives on PTZ and MES-induced clonic and tonic seizure in male mice.

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**Background and Aims:** Longterm Treatment by Antiepileptic drugs can cause various side effects and drug toxicity. Recently researchers are working on new Isoindole derivatives in order to find more efficient drugs, with a better safety profile, the mechanism of action of Isoindole derivatives is similar to phenytoin. In the present study, the anticonvulsant activity of 14 analogs of Isoindole were evaluated.

**Methods:** In order to study the effect of 14 analogs of Isoindole, different doses (20, 40, 80 mg/kg) were injected intraperitoneally to male mice. Intravenous pentylentetrazole and Maximal electroshock were used in order to induce convulsion after intraperitoneal administration.

**Results:** The Anticonvulsant properties of studied analogs are dose-dependent and the maximum effect was observed at 60 minutes after injection. All 14 compounds increased significantly PTZ-induced clonic seizure threshold in mice. And 10 analogs showed protection against tonic seizure induced by MES.

**Conclusions:** It seems that all 14 analogs had anticonvulsant effect in PTZ-induced clonic seizure. And 10 analogs exhibited antiseizure effect in MES-induced tonic seizure.

**Keywords:** Convulsion; Isoindole derivatives; Maximal electroshock; Phenytoin