

عنوان مقاله:

Fenofibrate protects the brain against seizure-induced damage in PTZ-induced also at the same time checked The effect of anxiety behaviors and depression in male rats

محل انتشار:

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خلاصه مقاله:

Background and Aim : the effect of continuous immobilization stress on anxiety-like behaviour, spatial learning and memory, and a forced swim test in NMRI male mice was examined in the present study. the plasma cortisol changes and the brain-derived neurotrophic factor (BDNF) were also evaluated. Epilepsy is one of the most common and serious neurological chronic disorders of the brain. In present study, we evaluated the protective effects of fenofibrate (peroxisome proliferator-activated receptor-alpha, PPAR- α agonist) on seizure-induced brain damage in pentylenetetrazole (PTZ)-induced kindle mice. Methods : the male NMRI mice were divided into control and stress groups (n=10 per group). the stress group was placed in pvc cylinders (25 mm in diameter and 20 cm in length) for 360 minutes. twenty-four hours later, the mice were tested for spatial learning and memory, anxiety-like behaviour, and depression using the barnes maze, an elevated plus maze and a forced swim test, respectively. also, plasma cortisol level and brain BDNF content assessed by the elisa method. Four groups of male mice (NMRI) were randomly selected (n=12); control, seizure and two seizure treated groups. Seizures were induced by the intraperitoneal injections of PTZ (65mg/kg) every 48 hours. PTZ injection was continued till day 29 and the latency times of seizures were recorded. Treatment groups were administered orally fenofibrate in two different doses (30 and 50 mg/kg) every day. At termination of experiment, the levels of serum cortisol and brain-derived neurotrophic factor (BDNF) as well as brain BDNF were assessed by ELISA method. Also, blood-brain barrier (BBB) permeability, malondialdehyde (MDA) content and mRNA transcript of P53 protein were assessed. Results : It was observed a progressive reduction in latency times of seizures in the next injections of PTZ, whereas fenofibrate in both doses reduced these times. Inductions of the seizures increased the serum content of BDNF and cortisol as well as the brain contents of BDNF and MDA. Also, the seizures significantly increased the BBB permeability and the mRNA transcript of P53 protein in brain tissue. Administration of fenofibrate in kindle mice particularly in high dose (50 mg/kg) significantly decreased the BBB permeability and MDA content. Fenofibrate by two doses in seizure mice reduced the serum and brain contents of BDNF as well as the serum cortisol also the results indicated that the mice in the stress group had ... elevated plasma cortisol. in addition, there were no differences between the stress and control groups in the

کلمات کلیدی:

Blood-brain barrier; Brain-derived neurotrophic factor; Cortisol; Epilepsy; Fenofibrate; Oxidative damage; anxiety; depression

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