

عنوان مقاله:

The effects of thymoquinone on lipopolysaccharide induced learning and memory impairments, hippocampal cytokine level and brain tissues oxidative damage in rats

محل انتشار:

هشتمین کنگره علوم اعصاب و پایه و بالینی (سال: 1398)

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خلاصه مقاله:

Background and Aim : In this study, the effects of thymoquinone (TQ) on lipopolysaccharide (LPS) - induced learning and memory impairments, hippocampal cytokine level and brain tissues oxidative damage was investigated in rats. **Methods :** The rats were divided into five groups and treated: (1) Control (saline), (2) LPS (1 mg/kg i.p.), (3-5) 2, 5 or 10 mg/kg TQ extract 30 min before LPS injection. The treatment was started since two weeks before the behavioral experiments and continued during the behavioral tests (LPS injected 2 h before each behavioral experiment). Finally, the brains were removed for biochemical assessments. **Results :** In Morris water maze (MWM) test, LPS increased escape latency compared to control group whereas TQ decreased them compared to LPS group. In passive avoidance (PA) test, the latency to enter the dark compartment in LPS group was shorter than control group while, in TQ treated groups it was longer than LPS group. LPS increased interleukin-6 (IL-6), tumor necrosis alpha (TNF- α) in the hippocampal tissues, and also increased malondialdehyde (MDA) and nitric oxide (NO) metabolites and decreased thiol content, superoxide dismutase (SOD) and catalase (CAT) in both hippocampal and cortical tissues compared to the control group while, TQ decreased IL-6, TNF- α , MDA and NO metabolites and increased thiol content, SOD and CAT compared to LPS group. **Conclusion :** Findings of current study indicated that TQ improved LPS-induced learning and memory impairments induced by LPS in rats by attenuating the hippocampal cytokine levels and brain tissues oxidative damage.

کلمات کلیدی:

Lipopolysaccharide, Thymoquinone, Memory, Oxidative damage, Cytokine

لینک ثابت مقاله در پایگاه سیویلیکا:

