عنوان مقاله:

Ceftriaxone improves senile neurocognition damages induced by D-galactose in mice

محل انتشار:

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خلاصه مقاله:

Objective(s): Ceftriaxone (Cef), a beta-lactam antibiotic, is accompanied by antioxidant and anti-inflammatory properties. It has been shown that Cef has beneficial effects on Alzheimer's disease. In the current investigation, the effect of Cef in a mice model of aging was investigated. Materials and Methods: Forty male mice were equally aliquoted into four groups as follows: Control (as healthy normal animals), D-galactose (DG) group (treated with 500 mg/kg/day DG for 6 weeks), DG + Cef group (treated with DG plus Cef 200 mg/kg/day for 6 weeks), and Cef group (treated with Cef 200 mg/kg/day for 6 weeks). A battery of behavioral tests was done to evaluate age-related neurocognitive changes. The activities of catalase (CAT), glutathione peroxidase (GPx), and superoxide dismutase (SOD), as well as the level of malondialdehyde (MDA) in the brain, were measured by biochemical methods. Also, to determine the brain damage, histopathological alterations in the hippocampus were measured using hematoxylin and eosin (H&E) staining. Results: Our results indicate that neurobehavioral dysfunctions of DG can be prevented by co-administration of Cef. We also found that Cef increases the activity of SOD, GPx, and CAT as well as decreasing the level of MDA in the brain of aged mice. Conclusion: Based on our findings, Cef declines neurocognitive dysfunctions .in the DG-induced model of aging, possibly through its antioxidative properties

کلمات کلیدی:

Aging, Ceftriaxone, D-galactose, Mice, Oxidative stress