

## عنوان مقاله:

Vitamin D<sup>3</sup> attenuates oxidative stress and cognitive deficits in a model of toxic demyelination

## محل انتشار:

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## خلاصه مقاله:

Objective(s): Multiple sclerosis (MS) is a demyelinating disease. The prevalence of MS is highest where environmental supplies of vitamin D are low. Cognitive deficits have been observed in patients with MS. Oxidative damage may contribute to the formation of MS lesions. Considering the involvement of hippocampus in MS, an attempt is made in this study to investigate the effects of vitamin D<sup>3</sup> on behavioral process and the oxidative status in the dorsal hippocampus (CA1 area) following the induction of experimental demyelination in rats. Materials and Methods: Animals were divided into six groups. Control group: animals received no surgery and treatment; saline group: animals received normal saline; sham group: animals received ۱۵۰ μl sesame oil IP; vitamin D<sup>3</sup> group: animals received ۵ μg/kg vitamin D<sup>3</sup> IP; lysophosphatidyl choline (LPC) group (toxic demyelination's model): animals received LPC by stereotaxic intra-hippocampal injection of ۲ μl LPC in CA1 area; Vitamin D<sup>3</sup>- treated group: animals were treated with vitamin D<sup>3</sup> at doses of ۵ μg/kg IP for ۷ and ۲۱ days post lesion. The spatial memory, biochemical parameters including catalase (CAT) activities and lipid peroxidation levels were investigated. Results: Animals in LPC group had more deficits in spatial memory than the control group in radial arm maze. Vitamin D<sup>3</sup> significantly improved spatial memory compared to LPC group. Also, results indicated that vitamin D<sup>3</sup> caused a decrease in lipid peroxidation levels and an increase in CAT activities. Conclusion: Current findings suggest that vitamin D<sup>3</sup> may have a protective effect on cognitive deficits and oxidative stress in toxic demyelination's model.

## کلمات کلیدی:

Demyelination Hippocampus, Multiple Sclerosis, Oxidative stress, Vitamin D<sup>3</sup>

## لینک ثابت مقاله در پایگاه سیویلیکا:

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