

عنوان مقاله:

The effects of raloxifene treatment on oxidative status in brain tissues and learning process of ovariectomized rats

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خلاصه مقاله:

Background: The effects of estrogene on central nervous system are still controversial. **Objective:** We aimed to investigate the effects of raloxifene on the antioxidant enzyme [superoxide dismutase (SOD) and catalase (CAT)] activities and malondialdehyde (MDA) levels in brain homogenates of ovariectomized female rats and its effect on cognitive process of learning. **Materials and Methods:** Female Sprague Dawley rats (n=24) were divided into three groups. Three weeks after ovariectomy; nonovariectomized group (control group) (n=8) was given physiological saline (SP) as placebo. First ovariectomized group (n=8) received raloxifene 1mg/kg dissolved in a 1% solution of carboxymethylcellulose (CMC) subcutaneously (sc) and second group of ovariectomized rats were given 1 % CMC 1mg/kg (sc) every day for 14 days. Learning behaviors of rats were evaluated in active avoidance cage with using sound and electrical stimulation. The levels of oxidative stress (MDA) and antioxidant enzymes (SOD, CAT) in different regions of the brain homogenates were compared between three groups of decapitated rats. **Results:** Raloxifene had a significant attenuating effect on the levels of MDA in brain tissues suggesting raloxifene's effect against lipid peroxidation at the end of training days. With the comparison of brain regions, cortex showed the highest average activity of SOD and CAT and cerebellum had the lowest average levels for both. Its effects on learning and cognitive process with active avoidance task were considered insignificant. **Conclusion:** Raloxifene treatment may have preventive effects for the brain against oxidative stress and lipid peroxidation in rats.

کلمات کلیدی:

Oxidative stress, Raloxifene, Active avoidance task, Cognitive process

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