عنوان مقاله:

The effects of myricitrin and vitamin E against reproductive changes induced by D-galactose as an aging model in female mice: An experimental study

محل انتشار:

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تعداد صفحات اصل مقاله: 10

نویسندگان:

Mina Omidi - *Department of Physiology, Faculty of Medicine, Student Research Committee, Ahvaz Jundishapur University of Medical Science, Ahvaz, Iran.*

Akram Ahangarpour - *Physiology Research Center, Department of Physiology, Faculty of Medicine, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran.*

Seyed Ali mard - *Physiology Research Center, Department of Physiology, Faculty of Medicine, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran.*

Layasadat Khorsandi - *Department of Anatomical Sciences, Faculty of Medicine, Cellular and Molecular Research Center, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran.*

خلاصه مقاله:

Background: Aging is accompanied by decreasing general function in the cells and tissues. D-galactose (D-gal) induces aging and plays a role in the pathogenesis of it. Myricitrin is a plant-derived antioxidant. Objective: The present study was performed to evaluate the effects of myricitrin on antioxidant defense, sex hormone levels, uterus, and ovarian histology in D-galinduced aging female mouse model. Materials and Methods: In this experimental study, 72 female adult NMRI mice, weighing 30-35 gr, 3-4 months old, were randomly divided into six groups (n = 12/each): (I) Control (vehicle; normal saline), (II) D-gal at 500 mg/kg/d for 45 days, (III-V) D-gal + myricitrin-treated groups (these groups received myricitrin at 5, 10, and 20 mg/kg/d, and (VI) D-gal + 100 mg/kg/d vitamin E orally for the last 28 days. The antioxidant indices were done on the basis of colorimetric method, and sex hormone levels were measured by using enzyme-linked immunosorbent assay kits. Histological assessment of the uterus and ovaries were also evaluated. Results: D-gal impaired the estrous cycle, also degenerative changes occur in the ovarian follicles and damage to the uterus and ovarian tissue occurs. In D-gal group, the level of sex hormones ($p = 0.03$) and the total antioxidant capacity ($p = 0.002$) decreased, while the level of malondialdehyde and gonadotropins increased ($p = 0.03$). Myricitrin at lower doses and vitamin E ameliorated the D-gal effects. Conclusion: These findings suggest that myricitrin at low doses can effectively prevent D-gal-induced oxidation and aging in mice. The effect of myricitrin was equivalent and sometimes better than vitamin E.

کلمات کلیدی:

Aging, D-galactose, Mice, Myricitrin, Vitamin E

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