عنوان مقاله:

Antioxidant effect of genistein on ovarian tissue morphology, oxidant and antioxidant activity in rats with induced polycystic ovary syndrome

محل انتشار:

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خلاصه مقاله:

Background: Oxidative stress is the most frequent cause of female infertility disordersincluding polycystic ovary syndrome (PCOS). Genistein as a major component ofsoybean isoflavone scavenges free radicals by antioxidant activities.Objective: The present study examines the antioxidant effects of genistein on ovariantissue following experimental PCOS in rats.Materials and Methods: Twenty female Wistar rat were randomly divided into thefollowing groups (n=5 each group): (I) control group (no treatment); (II) induced PCOS(injection of estradiol valerate); (III) genistein-treated non-PCOS (received genistein);and (IV) genistein-treated PCOS groups. The weight of rats were measured and theblood samples collected and centrifuged. The oxidant and antioxidant activity ofplasma and ovaries were measured. All rats were sacrificed under anesthesia, andovaries were collected and weighted. Histological examination and follicular qualitywere assessed by staining.Results: In histological observation, the induced PCOS rats displayed more numberof atretic follicles and the follicular quality in genistein-treated rats was similar to thecontrol groups. The plasma and ovaries malondialdehyde levels significantly increasedin PCOS rats ($p < 0.001$), while the total antioxidant capacity levels, glutathioneperoxidase, and superoxide dismutase activities significantly decreased ($p < 0.001$).The plasma and ovary malondialdehyde levels significantly decreased in PCOS ratsthat were treated with genistein ($p < 0.001$) and the total antioxidant capacity ($p < 0.05$),glutathione peroxidase, and superoxide dismutase activities significantly increased ($p< 0.001$).Conclusion: Treatment with genistein preserved follicular quality .by increasingantioxidant activities and scavenging oxidant levels in PCOS rats

کلمات کلیدی:

Genistein, Antioxidant, Ovary, Polycystic, Follicle, Rats