

Effects of aqueous extract from *Asparagus officinalis* L. roots on hypothalamic-pituitary-gonadal axis hormone levels and the number of ovarian follicles in adult rats

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Abstract

Background: Asparagus is a plant with high nutritional, pharmaceutical, and industrial values.

Objective: The present study aimed to evaluate the effect of aqueous extract of asparagus roots on the hypothalamic-pituitary-gonadal axis hormones and oogenesis in female rats.

Materials and Methods: In this experimental study, 40 adult female Wistar rats were divided into five groups, which consist 8 rats. Groups included control, sham and three experimental groups receiving different doses (100, 200, 400 mg/kg/bw) of aqueous extract of asparagus roots. All dosages were administered orally for 28 days. Blood samples were taken from rats to evaluate serum levels of Gonadotropin releasing hormone (GnRH), follicular stimulating hormone (FSH), Luteinal hormone (LH), estrogen, and progesterone hormones. The ovaries were removed, weighted, sectioned, and studied by light microscope.

Results: Dose-dependent aqueous extract of asparagus roots significantly increased serum levels of GnRH, FSH, LH, estrogen, and progestin hormones compared to control and sham groups. Increase in number of ovarian follicles and corpus luteum in groups treated with asparagus root extract was also observed ($p < 0.05$).

Conclusion: Asparagus roots extract stimulates secretion of hypothalamic- pituitary- gonadal axis hormones. This also positively affects oogenesis in female rats.

Keywords

Asparagus officinalis; Hormones; Ovary; Oogenesis; Rat