



## ORIGINAL RESEARCH

### Cauliflower (*Brassicae oleracea*) extract restores hormonal imbalance, resumes follicular maturation, and down regulates oxidative stress in oestradiol valerate-induced polycystic ovary syndrome in Sprague-Dawley rats

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#### ABSTRACT

**Background:** Polycystic ovary syndrome is a common cause of anovulatory infertility.

**Objectives:** This study investigated the ameliorative effect of ethanolic extract of cauliflower in oestradiol valerate-induced polycystic ovary syndrome in Sprague-Dawley rats.

**Method:** Twenty five female rats weighing between 120-160 g were used. They were grouped into five (Groups 1-5; N=5). Polycystic ovary syndrome was induced using oestradiol valerate (16 mg). Groups 1 and 2 served as negative and positive control respectively, groups 3-5 received cauliflower (200, 500 and 1025 mg/kg body weight) for four weeks. Animals were sacrificed; blood and ovarian tissues were collected for biochemical analysis and histology.

**Results:** The relative weight of the ovary was increased significantly in all the groups compared to the control. This significantly reduced when high dose cauliflower group was compared to EV-group. MDA and SOD levels increased significantly in EV-only groups compared to control. Treatment with cauliflower successfully reduced MDA and SOD levels in comparison to EV-only groups. On the other hand, GSH and catalase did not show any significant differences when the treatment groups were compared to control. FSH and progesterone reduced significantly while LH, testosterone, and oestrogen levels increased significantly in EV-only groups compared to control. Treatment with cauliflower was able to ameliorate these effects. Histological sections showed cystic follicles in EV-only treated group compared to control. Treatment with cauliflower extract in increasing doses was able to rescue growing follicles from cystic formation.

**Conclusion:** Cauliflower extract restores hormonal imbalance, recues follicles from cystic formation, and combats oxidative stress in oestradiol valerate-induced polycystic ovary syndrome in Sprague-Dawley rats.

**Keywords:** Oestradiol Valerate; Polycystic Ovarian Syndrome; Cauliflower; Ovary; Hormones