عنوان مقاله:

Locus coeruleus lesions and PCOS: role of the central and peripheral sympathetic nervous system in the ovarian function of rat

محل انتشار:

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خلاصه مقاله:

Background: Polycystic ovary syndrome (PCOS) is a complex endocrine and metabolic disorder associated with ovulatory dysfunction . Autonomic and central nervous systems play important roles in the regulation of ovarian physiology . The noradrenergic nucleus locus coeruleus (LC) plays a central role in the regulation of the sympathetic nervous system and synaptically connected to the preganglionic cell bodies of the ovarian sympathetic pathway and its activation is essential to trigger spontaneous or induced LH surges. This study evaluates sympathetic outflow in central and peripheral pathways in PCO rats. Objective: Our objectives in this study were (1) to estimate LC activity in rats with estradiol valerate (EV)-induced PCO; (2) to antagonized alpha2a adrenoceptor in systemic conditions with yohimbine. Materials and Methods: Forty two rats were divided into two groups: 1) LC and yohimbine and 2) control. Every group subdivided in two groups: eighteen rats were treated with estradiol valerate for induction of follicular cysts and the remainders were sesame oil groups. Results: Estradiol concentration was significantly augmented by the LC lesion in PCO rats ($p<0.001$), while LC lesion could not alter serum concentrations of LH and FSH, like yohimbine. The morphological observations of ovaries of LC lesion rats showed follicles with hyperthecosis, but yohimbine reduced the number of cysts, increased corpus lutea and developed follicles. Conclusion: Rats with EV-induced PCO increased sympathetic activity. LC lesion and yohimbine decreased the number of cysts and yohimbine increased corpus lutea and developed follicles in PCO rats.

کلمات کلیدی:

Polycystic ovary syndrome, Locus coeruleus, Gonadotropines, Estradiol, Ovary morphology, Rat