

Circulating gonadotropins and ovarian adiponectin system are modulated by acupuncture independently of sex steroid or β -adrenergic action in a female hyperandrogenic rat model of polycystic ovary syndrome

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© 2015 Elsevier Ireland Ltd. Acupuncture with combined manual and low-frequency electrical stimulation, or electroacupuncture (EA), reduces endocrine and reproductive dysfunction in women with polycystic ovary syndrome (PCOS), likely by modulating sympathetic nerve activity or sex steroid synthesis. To test this hypothesis, we induced PCOS in rats by prepubertal implantation of continuous-release letrozole pellets (200 μ g/day) or vehicle. Six weeks later, rats were treated for 5-6 weeks with low-frequency EA 5 days/week, subcutaneous injection of 17 β -estradiol (2.0 μ g) every fourth day, or a β -adrenergic blocker (propranolol hydrochloride, 0.1 mg/kg) 5 days/week. Letrozole controls were handled without needle insertion or injected with sesame oil every fourth day. Estrous cyclicity, ovarian morphology, sex steroids, gonadotropins, insulin-like growth factor I, bone mineral density, and gene and protein expression in ovarian tissue were measured.

Low-frequency EA induced estrous-cycle c