

Blocking of β -adrenergic receptors during the subfertile period inhibits spontaneous ovarian cyst formation in rats

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As aging proceeds, fertility problems arise, and the success rate of in vitro fertilization declines. During reproductive aging, rat ovaries present spontaneous formation of cysts, followed by a concomitant increase in sympathetic nerve activity, causing infertility and cessation of ovarian function. β Adrenergic receptors, which are activated by noradrenaline (NA), modify follicular development and steroid secretions; thus, increased nerve activity has been associated with the development and maintenance of cystic structures. The purpose of this work was to block the effect of this sympathetic activity through in vivo administration of propranolol (a β -adrenergic receptor antagonist) to determine whether it delays cyst formation and cessation of the ovarian function in rats that had reached the subfertile period. Propranolol was administered daily to 8- and 10-month-old rats for 2 months. Estrous cycling activity was monitored by vaginal smear, serum concentration of the steroidal hor