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Testosterone Pretreatment and the Response of Pituitary LH to Gonadotropin-Releasing Hormone (GnRH) in the Male Dog

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To characterize the effects of testosterone (T) pretreatment on the response of pituitary LH secretion to exogenous gonadotropin-releasing hormone (GnRH), intact male dogs were injected subcutaneously with either oil or 500 µg/kg of T in oil at 1, 3, 6, 12, or 24 hours prior to intravenous GnRH administration (50 ng/kg).

The pre-GnRH levels of plasma LH were reduced in all groups of T-treated dogs except in animals given T 1 hour before GnRH. The concentrations of plasma LH during both the peak-response period and the recovery period following GnRH administration in animals injected with T did not differ from those in animals injected with oil. These results indicate that T pretreatment has no effect on the ability of the pituitary to respond to exogenous GnRH at all time periods tested, and imply that direct feedback of T on the pituitary may not be acutely involved in steroid negative feedback in the male dog. Unexpectedly, however, there was some indication that the time of injection of either oil or T could affect the response of the pituitary to GnRH, and this may represent a stress phenomenon.

Key words: GnRH, LH-response, testosterone, dog

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