

STUDIES ON THE FEEDBACK ACTIVITY OF 5 α -REDUCED METABOLITES OF TESTOSTERONE

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SUMMARY

A longitudinal study of the effects of median eminence (ME) and of intrapituitary (IP) implants of testosterone (T), 17 β -hydroxy-5 α -androstan-3-one (DHT), 5 α -androstan-3 α ,17 β -diol (3 α -diol) and 5 α -androstan-3 β ,17 β -diol (3 β -diol) on serum levels of LH has been performed in adult castrated male rats. Blood was collected before implantation and 1, 3 and 9 days thereafter. Sham-operations did not affect serum levels of LH. T, DHT and 3 α -diol reduced serum LH titers when implanted in the ME; 3 β -diol was ineffective. The effect of T was more transient than that of either DHT or 3 α -diol. IP implants of T and DHT did not influence serum levels of LH. Similar implants of 3 α -diol induced a pronounced and long-lasting increase in serum LH levels while IP implants of 3 β -diol reduced serum titers of the hormone. The administration of 10 ng of LH-RH to animals bearing ME implants of all steroids induced an elevation of serum LH which however was lower than that found in sham-operated controls. Surprisingly, the response to LH-RH was higher in the days when the direct LH-suppressing effect of the steroids was more pronounced. These studies suggest a modulatory role of T and of its 5 α -reduced metabolites on the release of LH both at hypothalamic and at pituitary level (Supported by a Ford Foundation Grant).