

76. EFFECT OF ESTRADIOL-17 β , ESTRIOL AND 2-HYDROXYESTRADIOL ON PROLACTIN SECRETION IN THE OVARECTOMISED RAT.

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Plasma prolactin, in the anaesthetized rat, under basal conditions and 5 min after TRH (50 ng, I.V.) administration was compared on treatment with estradiol-17 β (E₂), estriol(E₃) and 2-hydroxyestradiol (2-OHE₂) (2 injections/day, for 4 days, S.C.). Responses to 0.5 - 10 μ g E₂ and 1 - 100 μ g E₃ were studied. Treatment with both steroids increased basal plasma prolactin and the response to TRH and the data fitted sigmoid dose response curves. The maximal responses were similar for E₂ and E₃ but E₂ was 13 times more potent than E₃ in both cases. E₃(4 μ g) given with E₂(2 μ g) potentiated the responses to E₂(2 μ g) given alone; E₃(4 μ g) alone does not yield a response. 2-OHE₂(25 μ g) increased basal plasma prolactin and the prolactin response to TRH. However, these responses were significantly lower than those to E₂(1 μ g). 2-OHE₂(25 μ g) given with E₂(1 μ g) significantly depressed the responses to E₂. These results suggest that the relative pharmacological activity of E₂, E₃ and 2-OHE₂ on the lactotroph differ from that found on rat uterine growth where both E₃ and 2-OHE₂ can show partial agonistic activity.

77. GLUCOCORTICOID AND PITUITARY GONADOTROPHIN SECRETION IN THE ADULT MALE RAT.

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Plasma gonadotrophin levels were determined in male Wistar rats, 7 days after adrenalectomy (ADX). A reduction in plasma FSH levels (328±22 ng/ml s.e.m.) was detected compared to sham operated controls (392±25 ng/ml s.e.m.). Dexamethasone (DXM) treatment 50 μ g/100b.w. twice daily, significantly raised plasma FSH in ADX rats (425±23 ng/ml), with no effect on controls. Plasma LH was not affected by either treatment. DXM treatment increased pituitary FSH content in intact rats compared to saline treated controls, together with similar plasma FSH levels 45 min. after LHRH stimulation, after orchidectomy, pituitary FSH content was elevated significantly only in saline treated animals. No modifications could be detected by DXM in pituitary LH content both basally or after castration. It was concluded that DXM effects on pituitary gonadotrophins seems to be restricted to FSH. This work was supported by grant n° 4290 of Com. Asesora de Investigación Científica y Técnica. The gift of FSH and LH kits by NIH in gratefully acknowledged.

78. THE EFFECTS OF ANDROSTENEDIONE UPON THE LH RESPONSE TO OESTROGEN POSITIVE FEEDBACK IN WOMEN

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Androstenedione (Δ^4 A) facilitates the positive feedback release of LH in sheep in response to oestrogen (Van Look & Scaramuzzi, 1976). To determine whether a similar situation occurs in women, the LH response to an oestrogen provocation test (ethinyl oestradiol (EE) 100 μ g daily for 3 days) was examined before and during (days 11-14) oral administration of Δ^4 A (10mg 4 hourly for 14 days) in 5 post-menopausal women. Plasma levels of gonadotrophins had been reduced to pre-menopausal levels by long term oestrogen therapy (20 μ g EE/day) for the previous 8 weeks and was continued throughout the study. Concentrations of Δ^4 A in plasma doubled in response to androgen therapy while those of testosterone increased six-fold. There was no change in oestrone levels. The negative and positive feedback response of LH to oestrogen were the same in spite of the elevated levels of androgens. These findings suggest that neither androstenedione nor testosterone have a direct effect on the hypothalamo-pituitary response to oestrogen in women.