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JOURNAL ARTICLE

Induced hypoprolactinemia and testicular steroidogenesis in man

M. O. Suescun, C. Scorticati, V. A. Chiauzzi, H. E. Chemes, M. A. Rivarola and R. S. Calandra

The effects of short-term hypoprolactinemia on the pituitary-gonadal axis were evaluated in a group of patients with untreated prostatic carcinoma. Each patient was studied prior to and during 7-day oral administrations of bromocriptine (2.5 mg q.i.d.). Serum LH, prolactin (PRL), androst-4-ene-3,17 dione (androstenedione), testosterone, and 5 alpha-androstane-3 alpha, 17 beta-diol (5 alpha-Diol) levels, as well as intra-testicular testosterone, dihydrotestosterone (DHT), 5 alpha-Diol and zinc (Zn) concentrations, were determined. Daily administration of bromocriptine caused a marked suppression of serum PRL (mean +/- SEM, 23.8 +/- 2.5 vs. 6.4 +/- 1.0 ng/ml) without concomitant changes in serum LH levels (mean +/- SEM, 8.3 +/- 1.6 vs. 8.9 +/- 2.1 ng/ml). Hypoprolactinemia induced a significant decrease (P less than 0.05) in the mean peripheral testosterone levels; but 5 alpha-Diol and androstenedione remained unchanged. However, in testicular tissues, bromocriptine treatment resulted in significant increases in mean concentrations of total androgens (P less than 0.001), testosterone (P less than 0.001) and DHT (P less than 0.02). Testicular levels of 5 alpha-Diol were not significantly altered. There was no change in Zn levels in basal conditions and during bromocriptine administration. These results indicate that short-term suppression of serum PRL levels in man affects basal testicular function without altering serum LH. However, a direct action of bromocriptine on the human gonad cannot be excluded.