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JOURNAL ARTICLE

Effect of 5alpha-dihydrotestosterone implants on the fertility of male rats treated with tamoxifen

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In adult male rats, tamoxifen (TAM) reduces circulating levels of luteinizing hormone (LH) and testosterone (T) with no effect on follicle-stimulating hormone (FSH) and prolactin (PRL). It reduces the male rat's ability to inseminate the female (potency), as well as its siring ability (fecundity). The objective of the present study was to test whether androgen supplementation could reverse all or some of the observed effects of TAM. To obviate the effects of estrogen, the study was designed to evaluate the beneficial or deleterious effect of 5alpha-dihydrotestosterone (DHT), a 5alpha-reduced, nonaromatizable metabolite of T, on the reproductive functions of TAM-treated adult male rats. Adult male rats received either saline or TAM (0.2 or 0.4 mg per day p.o.) for 90 days. A group of TAM-treated rats was implanted with 6 mg DHT from day 50 to day 90. A third group of untreated animals was implanted with 0-, 1-, 3-, or 6-mg DHT implants for 90 days. Mating studies were done to assess the fecundity, potency, and fertility index at the end of the treatment. Weights of testes, pituitary, and accessory sex organs were recorded, and circulating levels of LH, FSH, PRL, T, and 17-beta-estradiol were estimated. DHT did not affect the fecundity or fertility index. TAM reduced fecundity, potency, and the fertility index. DHT implants improved the fertilizing ability of the TAM-treated male rat. This study discusses and reviews the role of T and 17-beta-estradiol in sperm-fertilizing potential in light of these observations.

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