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JOURNAL ARTICLE

Effects of two non-steroidal antiandrogens on testicular function in prepubertal rats

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The effects of two non-steroidal antiandrogens, flutamide and casodex, were evaluated in prepubertal male rats. Animals (23 days old) were subcutaneously administered vehicle or 1, 2, 5, or 10 mg/day of flutamide or casodex for 10 days. Testis weights were diminished at the 10 mg/day dose of both antiandrogens. A significant increase in serum luteinizing hormone (LH) and follicle-stimulating hormone (FSH) levels was detected. Notwithstanding, flutamide influenced LH/FSH levels more severely than casodex. No changes were observed in serum prolactin. Serum testosterone, dihydrotestosterone, and 3 alpha-androstanediol levels were increased in flutamide-treated rats from the 2 mg/day dose, whereas only 3 alpha-androstanediol was modified at 10 mg/day of casodex, suggesting a differential effect on androgen metabolism. An elevation of testicular concentration and basal production of androgens was found, indicating that flutamide and casodex administration are capable of stimulating testicular steroidogenesis, as well as 5 alpha-reduction. However, the in vitro maximal responsiveness of the gonads to human chorionic gonadotropin was preserved. Antiandrogen administration did not modify testicular androgen binding protein concentration. In conclusion, the blockade of androgen action during sexual maturation caused profound changes on the pituitary-gonadal axis in male rats.

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