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JOURNAL ARTICLE

The effects of the indazole carboxylic acid derivative, tolnidamine, on testicular function: I. Early changes in androgen binding protein secretion in the rat

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The indazole carboxylic acid derivative, tolnidamine, has marked antispermatogenic activity in several animal species. In this study, we assessed the effect of tolnidamine on rat Sertoli cell function both in vivo and in vitro, using androgen binding protein (rABP) as a marker. Groups of six male rats were killed 2, 4, 8, 16, 32, 64 hours and 5, 8, and 12 days following tolnidamine administration (250 mg/kg by oral gavage). There was a progressive reduction in both testicular and epididymal weights. Serum FSH levels did not change and LH showed a transient increase between 64 hours and 8 days. Except for an initial increase at 2 hours, there were no changes in serum testosterone. Epididymal rABP concentration and content declined as early as 8 hours, with the lowest values occurring at 5 and 12 days. By 16 hours, there was an increase in testicular rABP, which was also evident at 8 days and 12 days. Within 16 hours after tolnidamine, there was a rise in serum rABP, which persisted until the end of the experiment. When another indazole carboxylic acid derivative, lonidamine, was administered (250 mg/kg), similar changes were evident in epididymal and serum rABP at 32 hours, but the rapid decrease in testicular rABP suggested a different mechanism of action. In another experiment, single oral doses of tolnidamine (50, 100, 250, and 500 mg/kg) were administered to other groups of rats and the animals were killed after 24 hours and 5 days. With increasing doses of tolnidamine, there was a reduction in epididymal rABP concomitant with an increase in testis and serum rABP levels. (ABSTRACT TRUNCATED AT 250 WORDS)

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