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## Chronic Administration of Atrial Natriuretic Peptide Reduces Testosterone Production of Testes in Mice

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The purpose of the present study was to examine the effect of the long-term administration of human atrial natriuretic peptide (ANP) on testosterone production in male mice. Twenty-five mice received ANP (20 ng/hour/g body weight) for 7 days via mini-osmotic pump, and the other group (n = 25) received twice-daily intraperitoneal injections. After death, levels of follicle-stimulating hormone, luteinizing hormone (LH), and testosterone in plasma, pituitary gland, and testis were measured by radioimmunoassay. Five mice from each group were examined histologically. In the minipump group, pituitary and plasma levels were significantly higher than those in the control group ( $771.2 \pm 43.6$  vs  $644.8 \pm 24.9$  ng/mg and  $6.7 \pm 0.6$  ng/mg vs  $2.5 \pm 0.6$  ng/mL, respectively). In the intraperitoneal group, plasma LH levels were significantly higher in the ANP-treated group than that in control mice ( $9.6 \pm 0.3$  ng/mg vs  $3.8 \pm 0.5$  ng/mL), whereas pituitary levels did not differ significantly. In both studies, testicular and plasma testosterone levels were significantly lower than those in control mice ( $P < .02$ ). Histological features of the testes in ANP-treated mice revealed structural disorganization and inhibition of spermatogenesis. We conclude that the chronic administration of ANP may result in reduced testosterone production due to testicular damage.

Key words: ANP, spermatogenesis, testosterone

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