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Stimulation of sperm production by human chorionic gonadotropin after prolonged gonadotropin suppression in normal men.

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Abstract

The precise hormonal milieu required for quantitatively normal spermatogenesis in man is unclear. The authors previously have shown that both supraphysiologic dosages of human chorionic gonadotropin (hCG) and physiologic dosages of human luteinizing hormone (hLH) can reinitiate sperm production in short-term (four months) gonadotropin-suppressed normal men who have prepubertal FSH levels. To determine whether normal FSH levels were necessary to stimulate sperm production after a prolonged period of gonadotropin and testicular suppression, the authors administered hCG to four normal men whose endogenous gonadotropin levels and sperm production were suppressed by prolonged exogenous testosterone (T) administration. After a 3-month control period, all subjects received 200 mg of T enanthate intramuscularly (im) each week to suppress LH and FSH for a total of 9 months and until successive sperm concentrations (performed twice monthly) revealed azoospermia or severe oligozoospermia (mean sperm concentration less than 3×10^6 spermatozoa/ml) for 6 months. Then, while continuing the same dosage of T enanthate, all four men simultaneously received 5000 IU of hCG im three times weekly for 6 months, replacing LH-like activity and leaving FSH activity suppressed. The effect on sperm production of the selective FSH deficiency produced by hCG plus T administration after the period of prolonged gonadotropin suppression was determined. Exogenous T administration resulted in severe suppression of sperm concentrations from $79 \pm 7 \times 10^6$ spermatozoa/ml (mean \pm SEM) during the control period to $0.8 \pm 0.5 \times 10^6$ /ml after 12 weeks of T treatment.(ABSTRACT TRUNCATED AT 250 WORDS)

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