Journal of Andrology, Vol 14, Issue 3 164-169, Copyright © 1993 by The American Society of Andrology

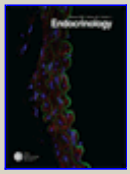
JOURNAL ARTICLE

Recovery of pituitary-gonadal function in male rats after long-term suppression induced by a single injection of microcapsules of LH-RH antagonist cetrorelix (SB-75)

J. Pinski, T. Yano, K. Szepeshazi, K. Groot and A. V. Schally
Endocrine, Polypeptide and Cancer Institute, Veterans Affairs Medical Center, New Orleans, Louisiana.

The clinical utility of luteinizing hormone-releasing hormone (LH-RH) analogs can be greatly enhanced by a sustained delivery system, which could maintain elevated peptide levels in the blood for prolonged periods of time, up to several weeks. Recently, we developed long-acting microcapsules and microgranules of the LH-RH antagonist SB-75. In this study, we examined the suppressive effects of a single injection of microcapsules of antagonist SB-75 on gonadotropin and testosterone secretion, as well as on fertility, in male rats and the reversibility of those effects. Serum SB-75 levels were measured by RIA. A dose of 20 mg of microcapsules/rat containing 3.58 mg of antagonist in poly(D,L-lactide-co-glycolide), administered intramuscularly produced SB-75 levels higher than 20 ng/ml for approximately 24 days, and a significant elevation was maintained until day 90. Serum testosterone was decreased to castration values for 164 days and LH levels were suppressed below the detection limit of the RIA for a period of 102 days. Serum FSH was suppressed by more than 90%, as compared to control animals, for a period of 58 days and remained significantly decreased until day 164 after the injection. This treatment also caused a significant decrease in the weights of the testes, seminal vesicles, and ventral prostate 30 days after peptide administration. The histology of the testes from the treated rats showed that spermatogenesis was totally depressed. No mature elongated or round spermatids were found in the seminiferous tubules, spermatocytes being the most advanced germ cell form in 99.5% of the testicular tubules.(ABSTRACT TRUNCATED AT 250 WORDS)

This article has been cited by other articles:



K. Kananen, Rilianawati, T. Paukku, M. Markkula, E.-M. Rainio, and I. Huhtanemi
Suppression of Gonadotropins Inhibits Gonadal Tumorigenesis in Mice Transgenic for the Mouse Inhibin {alpha}-Subunit Promoter/Simian Virus 40 T-Antigen Fusion Gene

Endocrinology, August 1, 1997; 138(8): 3521 - 3531.
[Abstract] [Full Text]