Journal of Andrology, Vol 7, Issue 5 298-302, Copyright © 1986 by The American Society of Andrology

JOURNAL ARTICLE

Testicular and serum testosterone variations in squirrel monkeys during seasonal cyclicity

T. Pasqualini, O. Colillas and M. A. Rivarola

The seasonal testicular maturation of squirrel monkeys (Saimiri sciureus) was used as a model of maturational hormonal regulation of the testis. Testicular testosterone and serum testosterone concentrations were determined during the circannual variations of body weight and testicular volume. These data have been correlated with changes in the germinal epithelium. According to individual weight curves and time of the year, the monkeys were divided into five groups: group A1, maximal weight, April-May; A2, July; A3, November; A4, minimal weight, February-March; and A5, March-April. Variations in testicular volume followed very closely variations in body weight. Sexual activity started at A1 and persisted in A2. A marked drop in the mean width of the germinal epithelium and the diameters of the seminiferous tubules was observed in A3, followed by a recovery during A4 and A5. Testicular testosterone showed two annual elevations. The first peak, 3.91 +/- 0.31 micrograms/g (mean +/- SE), coincided with the serum testosterone peak when body weight and testicular volume were high and the trophic response of the germinal epithelium was complete. The second peak reached levels of 5.21 +/- 1.48 micrograms/g and was observed before the reinitiation of spermatogenesis. This was accompanied by a moderate increase in serum testosterone. The second peak of testicular testosterone, which has been reported to occur in the rat and in humans, might represent a local androgen need for initiation of spermatogenesis, while the first peak might represent the androgen need for full stimulation of spermatogenesis.

This article has been cited by other articles:

J. Wistuba, A. Schrod, B. Greve, J. K. Hodges, H. Aslam, G. F. Weinbauer, and C. M. Luetjens
Organization of Seminiferous Epithelium in Primates: Relationship to Spermatogenic Efficiency, Phylogeny, and Mating System
Biol Reprod, August 1, 2003; 69(2): 582 - 591.
[Abstract] [Full Text] [PDF]

A. Tsujimura, Y. Koikawa, S. Salm, T. Takao, S. Coetzee, D. Moscatelli, E. Shapiro, H. Lepor, T.-T. Sun, and E. L. Wilson
Proximal location of mouse prostate epithelial stem cells: a model of prostatic homeostasis
J. Cell Biol., June 24, 2002; 157(7): 1257 - 1265.
[Abstract] [Full Text] [PDF]