

Dexamethasone: Impact on Testicular Activity

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Abstract : Dexamethasone (Dex) is a synthetic glucocorticoid that is used in therapy. However prolonged treatments with high doses are often required. This causes side effects that interfere with the activity of several endocrine systems, including the gonadotropic axis. The aim of our study is to determine the effect of Dex on testicular function in prepubertal Wistar rats. Newborn Wistar rats are submitted to intraperitoneal injection of Dex (1µg of Dex dissolved in NaCl 0.9% / 5g bw) for 20 days and then sacrificed at the age of 40days. A control group received NaCl 0.9%. The rat is weighed daily. The plasmatic levels of testosterone, LH and FSH were measured by radioimmunoassay. A histo-morphometric study was performed on sections of testis. Treated groups showed a significant decrease in body weight ($p < 0.05$), testis weight ($p < 0.05$) and plasma levels of testosterone ($p < 0.05$), of LH ($P < .05$) and FSH ($p > 0.05$). There is a reduction of seminiferous tubules average diameter and also of the seminiferous epithelium thickness with an increasing of lumen tubular. The diameter of the Leydig cells and Sertoli cell nucleus is also significantly reduced. Spermatogenesis is blocked at the stage round spermatid unlike witnesses or elongated spermatid stage is found. These results suggest that Dex administered during neonatal life influences testicular activity in the long term.

Keywords : dexamethasone, FSH, LH, rat, testis, testosterone

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