

ESTRADIOL EFFECT ON THE ADRENAL CORTEX CITOMORPHOLOGY IN RATS ACCLIMATED TO DIFFERENT ENVIRONMENTAL TEMPERATURES

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Many lines of evidence have stressed that estradiol provokes changes on the adrenal cortex (Malendowicz and Jachimowicz, 1982; Gorzalka and Moe, 1994). The literature concerning hyperthermia and the effect of estradiol on the citological characteristics of the adrenal cortex is unclear. The aim of this study was to determine the effect of estradiol on the cytohistology of the adrenal cortex of testectomized (Wistar strain) rats, acclimated to room (18-22°C) and a hyperthermic (34-36°C) environment. The control animals were intact and testectomized rats from both ambient temperatures. The acclimation of the animals to the hyperthermic environment was performed continuously: 30 days in a warm chamber at 34-36°C and relative humidity of 35-45%. On the animals was carried out a bilateral testectomy. Estradiol (estradiol dipropionat- + - 3,17β-dipropioniloxi-1,3,5¹⁰ - estratriena, Galenika) was administrated intramuscularly, in doses of 1 mg/100 g body mass (volume 0.1ml). The treatment was during four days, and sacrifice of the rats was 24 hours after the last dose. The results show that the treatment with estradiol significantly increased the adrenal mass, independently of the previous thermal acclimation (p<0.001), in comparison to the control and testectomized rats. The presence of the lipids vacuoles in the corticocytes in the testectomized and estradiol treated rats was slowly expressed in the rats from room temperature despite warm acclimated rats. From the results obtained, it can be seen that in the testectomized and estradiol treated rats, the presence of the zona intermedia was significantly prominent. The hyperemia of the adrenal cortex (especially in the rats from high temperature) was increased. The disturbance and de-organization of the histoarchitecture, especially in some parts of the adrenal cortex, was evident. Mitosis of the spongocytes was observed. These changes were more prominent in the animals acclimated to room temperature (18-22°C).

Gorzalka, B.B., Moe, I.V. 1994. Adrenal role in proceptivity and receptivity induced by two modes of estradiol treatment. *Physiol. Behav.* 55, 29-34.

Malendowicz, L.K., Jachimowicz, B. 1982. Sex differences in adrenocortical structure and function. XI. Autoradiographic studies on cell proliferation and turnover in the adrenal cortex of the male and female rat and its dependence on testosterone and estradiol. *Cell Tissue Res.* 227, 651-657.

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