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ABSTRACT BOOK WITH FINAL PROGRAM

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GENISTEIN AFFECTS THE ADRENAL GLAND FUNCTION IN ORCHIDECTOMIZED ADULT RATS

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To test the effects of genistein, plant substance with potent estrogen-like activity, orchidectomized adult rats were used as model that mimic milder andropause meaning that the central hippocampal and hipotalamic regulation of adrenal glands has been preserved. Orchidectomy allows examining the potential effects of compounds in the hormonal milieu deprived of physiologically interfering endogenous sex steroids. Thus, hormone blood concentrations were established in sham-operated (SO), orchidectomized (ORX), and orchidectomzyed rats treated with genistein (ORX+G) in a therapeutically relevant dose of 30 mg/kg/bw for 3 weeks. The level of plasma ACTH, in addition to aldosterone, corticosterone and DHEA levels in serum, as well as tissue corticosterone concentration were determined by the corresponding immunoassays. Orchidectomy provoked the significant ($p<0.05$) increase of plasma level of ACTH (), as well as serum levels of aldosterone and DHEA by 57%, 2.6 and 2.0 folds respectively, comparing with SO group. The concentrations of ACTH and aldosterone continued to increase after genistein application to orchidectomized rats for 46% and for 12%, while the level of DHEA was markedly lower (for 41.5%), all in comparison with the ORX group of animals. In the Orx+G group the circulating level of corticosterone (ng/ml) were higher ($p<0.05$) compared to ORX (16.3±3.9 vs 30.1±6.1), and SO group (14.2±3.3 vs 30.1±6.1). Tissue level of corticosterone (ng/mg) was also significantly enhanced in relation to both ORX (3.8±0.5 vs 1.6±0.3) and SO group (3.8±0.5 vs 1.7±0.5). In conclusion, a stimulatory action of genistein on adrenal gland synthetic ability in orhidectomized adult rats is demonstrated.