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SOCIETIES**

“PHYSIOLOGY WITHOUT FRONTIERS”

May 15-18, 2016

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**Congress Center of the Slovak Academy of Sciences, Bratislava,
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Analysis of the influence of chronic treatment with testosterone-enanthate (TE) in supraphysiological dose on antidepressant effect of exercise in rats using tail suspension test parameters

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The aim of this study was to evaluate the effects of extended swimming protocol and chronic TE treatment in supraphysiological dose on depression-like behavior in rats. Total number of 32 Wistar albino male rats was divided in four groups: control (C), testosterone-enanthate (T), exercise (E) and testosterone-enanthate plus exercise (T+E) group. T and T+E group received TE (20 mg/kg/w, s.c.) for six weeks. Exercise protocol (swimming training, 1h/day, six weeks) was performed alone (E), and along with TE (T+E group). Swimming protocol produced antidepressant effect by means of tail suspension test (TST) parameters - latency to first immobility (increase by 24%, n.s.), total duration of immobility (decrease by 25%, $p < 0.05$) and average duration of immobility episode (decrease by 31%, $p < 0.05$), comparing to control. TE induced the opposite effect on depressive state when compared to both control and exercise group - decrease in latency to first immobility (34% and 47%, $p < 0.05$, respectively), increase in total duration of immobility (20%, $p < 0.05$ and 60%, $p < 0.001$) and increase in average duration of immobility episode (29%, $p < 0.05$ and 87%, $p < 0.001$). Also, simultaneous administration of TE along with swimming protocol attenuated the beneficial effect of exercise on depressive state reversing the parameters of TST to the values observed in control group. Still, antidepressant effect of exercise was observed in combined group by means of decrease in total duration of immobility (30%, $p < 0.001$) and in average duration of immobility episode (33%, $p < 0.001$) comparing to T group. There was no change in number of episodes of immobility in all investigated groups. Results of our study suggest that TE chronic treatment resulted in clear depressive-like behavior, even abolishing beneficial antidepressant effect of exercise in TST. Furthermore, average duration of immobility episode may be considered as useful parameter in evaluation of results obtained in TST.