

The motor and emotional behavior of animals exposed to chronic anakinetic stress

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Abstract

Background. Starting from existing studies on the influence of acute anakinetic stress on the motor and emotional behavior of rats, we studied the influence of chronic anakinetic stress on the same indicators.

Aims. The influence of experimental chronic anakinetic stress on aerobic exercise capacity, on spontaneous motility and emotional behavior was studied.

Methods. Groups (n = 10 animals/group): group I – exercise trained animals for 42 days; group II – training (21 days) preceded by anakinetic stress through immobilization (21 days); group III – training (21 days) preceded by anakinetic stress alternating with physical exercise (21 days). Anakinetic stress was induced by the immobilization of the rats for 3 hours/day. In order to determine exercise capacity, the running test was used. The monitored indicators were emotional behavior and motility. The time moments included in the study were T₁, T₂₁, and T₄₂. Statistical calculations were performed using the SPSS 13.0, Statistica 8.0 and Microsoft Excel applications.

Results. Experimental immobilization contributes to the diminution of hyperkinetic stress controlled by exercise, as well as of involuntary motility and emotional behavior. Training determines significant increases in aerobic exercise capacity and significant decreases in the spontaneous motility and emotional behavior score, which might contribute to the improvement of physical performance in athletes.

Conclusions. Anakinetic stress followed by physical exercise has an unfavorable influence on aerobic exercise capacity, it increases the spontaneous motility score and decreases the emotional behavior score. Training preceded by alternating anakinetic and hyperkinetic stress determines significant increases in aerobic exercise capacity, insignificant decreases in the motility score, and significant decreases in the emotional behavior score.

Keywords: anakinetic stress, physical exercise, open field test, rats.