

The influence of some preparations for the maintenance and recovery of exercise capacity

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Abstract

Background. The optimization of sports training involves two components: biological training for competition and performance and recovery with the protection of the health of the athlete.

Aims. The effect of the administration of some preparations for the maintenance and recovery of aerobic exercise capacity was monitored.

Methods. Research was performed in 5 groups of white male Wistar rats, as follows: group I – control group, exercise trained; group II – exercise trained and supplemented with Preparation I before exercise; group III – loaded with 15% of weight, exercise trained and supplemented with Preparation I before exercise; group IV – exercise trained and supplemented with Preparation II after exercise; group V – loaded with 15% of weight, exercise trained and supplemented with Preparation II after exercise. For aerobic exercise capacity, the treadmill running test was used. The timing included in the study was: T₁ - day 1; T₃ - day 3; T₅ - day 5; T₇ - day 7; T₉ - day 9; T₁₁ - day 11; T₁₃ - day 13; T₁₅ - day 15; T₁₇ - day 17; T₁₉ - day 19; T₂₁ - day 21. The pharmacological preparations used were: Preparation I – a complex for nutritional support, containing taurine, inositol, policosanols, vitamin C; Preparation II – a complex for post-exercise recovery, containing lycopene, polyphenols, β-carotene, vitamin E, vitamin C, and selenium. Administration was daily, by oropharyngeal gavage.

Results. In group I, exercise trained, there was a significant increase in the running time starting with moment T₃ until moment T₁₃, compared to groups III and V, and a significant decrease in the running time compared to groups II and IV, after moment T₁₃ until moment T₂₁. In group II, there was a significant increase in the running time from moment T₃ until the end of the experiment, compared to group III, and from moment T₁₃ to moment T₁₉, compared to groups I, III and V. The highest values were reached at moment T₂₁. Group III had the lowest significant values of the running time during the experiment compared to groups I, II and IV. Group IV had the highest significant values compared to groups I, II, III and V until moment T₁₉ of the experiment. Group V had the lowest significant values of the running time compared to the rest of the groups and particularly group IV.

Conclusions. 1) The preparations for the maintenance and recovery of aerobic exercise capacity in animals have different effects depending on the duration and intensity of exercise. 2) Preparation I, for maintenance, is more effective in the long term. 3) Preparation II, for recovery, is more effective in the short term. 4) An increase in the intensity of physical exercise by loading results in a decrease in aerobic exercise capacity both in animals supplemented with Preparation I and those supplemented with Preparation II; decreases are more important after supplementation with Preparation II.

Keywords: exercise capacity, complex for the maintenance of exercise capacity, complex for the recovery of exercise capacity.