

Effects of acute administration of Tramadol upon effort capacity in rats

Andreea-Marilena Ionescu¹, Simona Tache²

¹. Medical rehabilitation clinic, Elias emergency hospital, Bucharest

². "Iuliu Hațieganu" University of Medicine and Pharmacy, Cluj-Napoca

Abstract

Aims. Our study goal was to assess the effects of Tramadol on aerobic exercise capacity, psychological state and oxidative stress in trained rats.

Material and method. We studied 24 male rats, Wistar breed, for a 14 day period. Animals were divided in two groups: Group I – Tramadol study (10 mg/kg i.p. days 2, 5, 9 of the study) and Group II – the same procedure and equivalent quantity physiological serum i.p. Both groups were trained on a treadmill daily, assessing maximal aerobic capacity, physiological state, and oxidative stress (MDA, HD from animal serum).

Results. Aerobic exercise capacity significantly improved for animals in Group I compared with Group II and this effect was maintained. Tramadol significantly influences tail-suspension-test results, reaction time was significantly greater in Group I compared with Group II. MDA decreased and HD increased significantly in Group I compared with control group.

Conclusions. Improvement of aerobic effort capacity after acute administration of Tramadol can be assigned to antioxidant and ergotrope effects.

Keywords: Tramadol, effort capacity, oxidative stress, antioxidants, dopping.