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Effect of Short-Distance Road Transport on Thyroid Function, Rectal Temperature, Body Weight and Heart Rate of Stallions

E. Fazio, P. Medica, C. Cravana, E. Giacoppo and A. Ferlazzo

Department of Morphology, Biochemistry, Physiology and Animal Production - Unit of Veterinary Physiology, Faculty of Veterinary Medicine, University of Messina, Polo Universitario Annunziata, 98168 Messina, Italy

Aim of study was to investigate the effects of transport stress on thyroid response, body weight, rectal temperature and heart rate changes in one hundred twenty-six healthy stallions in basal conditions, before and after short road transport. One hundred twenty-six Thoroughbreds and crossbreds stallions with previous travelling experience, aged 4 to 15 yr, were transported by road in a commercial trailer for a period of 3 h (distance <300 km). Blood samples and physiological parameters were collected at 0800 (basal I) and at 1100 (basal II), in each horse's box, one week before the loading and transport in basal conditions, and one week later, at 0800 immediately before loading (pre-transport), and after 3 h period of transport and unloading, on their arrival at the breeding stations (post-transport), in each new horse's box, within 30 min. Increases in circulating T_3, T_4 and fT_4 levels ($P < 0.01$), but not for fT_3 levels, were observed after transport, as compared to before loading values, irrespective of different breed. Lower T_4 and fT_4 levels were observed in basal II ($P < 0.01$) than basal I and before loading values (pre-transport). After transport Thoroughbreds showed higher fT_3 ($P < 0.05$) and fT_4 ($P < 0.01$) levels than crossbred stallions. No significant differences for T_3 and T_4 changes were observed. A significant increase in rectal temperature ($P < 0.01$) and heart rate ($P < 0.05$) was observed after transport, as compared to before loading values (pre-transport). No differences between basal I, basal II and before loading values (pre-transport) for physiological parameters were observed.
The highest T_3, T_4 and fT_4 levels recorded after short transport seem to suggest a preferential release from the thyroid gland. The results indicate that short road transport stress contributes significantly to thyroid hormone changes, according to different breed, and to the increase in rectal temperature and heart rate. No differences related to different age were observed.

Corresponding author: esterina.fazio@tin.it (Esterina Fazio).