

Effect of age and performance on physical, hematological and biochemical parameters in endurance horses.

ABSTRACT

Endurance horses are subjected to heightened stress even after several conditioning protocols. Hence, the goal of this study was to examine the effect of age and performance on the hematology, biochemistry, and physical parameters after an endurance race. Eighteen horses aged 6-15 years were grouped into 80-km race category. All the horses were physically examined, and blood samples were collected postrace. After physical examination, the poor (n = 9) and good (n = 9) performance horses were identified. Potassium concentration was significantly higher ($P < .05$) in the good performance horses; chloride concentration was significantly higher ($P < .05$) in the poor performance horses. The mean blood glucose concentration of the poor performance horses in all the age-groups was significantly higher ($P < .05$). The mean blood lactate concentration was significantly lower ($P < .05$) in the poor performance horses. There was significant effect of performance on heart rate ($P < .031$), capillary refill time ($P < .013$), and gut motility ($P < .05$). Univariate Fisher exact test results were significantly higher for skin recoil ($P < .03$), mucous membrane ($P < .03$), and gait ($P < .04$) in the performance categories. In conclusion, the influence of age was seen in the poor performance category in relation to lactate, but age did not influence other physical, hematological, and biochemical parameters of the endurance horses. Thus, further studies are required to determine whether physical, hematological, and biochemical parameters during training could be used to estimate performance in endurance horses based on age.

Keyword: Physical; Biochemical; Hematological; Endurance horses; Age; Performance