



EQUINE

Abstract presentations



EVALUATION OF A COMBINED HEMATOLOGY AND CLINICAL CHEMISTRY BLOOD TEST TO ASSESS FITNESS IN STANDARDBREDS USED FOR HARNESS RACING

Petra Witt, DVM

Department of Equine Sciences, Faculty of Veterinary Medicine, Utrecht University, Yalelaan 114, 3584 CM Utrecht The Netherlands
p.witt@uu.nl

Results

A lower WSC_{delta} was significantly associated with better individual performance ($p=0.0046$) and higher placing ($p=0.0316$). Age, illness, lameness, expected performance and betting odds were not associated with a change in WSC_{delta} .

Discussion/conclusion

Horses with similar blood test results pre-racing and post-racing (low WSC_{delta}) performed better (closer to their personal best) compared to horses that had a high WSC_{delta} . This may be the result of a better functioning immune system to cope with oxidative stress caused by high intensity racing. This test might be useful to monitor immune function longitudinally in individual horses as a proxy for fitness. More research is needed to evaluate the usefulness of this test during training (instead of during competition racing) to allow for this test to be used pre-competition to predict fitness to compete (as a positive performance marker).

Petra Witt, DVM, Linda van den Wollenberg, DVM, Specialist Equine Internal Medicine KNMVD, Iris Kosterink, Guillaume Counotte, PhD, ERT, Mathijs J.P. Theelen, DVM, Dipl.ECEIM, Specialist Equine Internal Medicine KNMvD

Introduction

A healthy immune system is necessary for horses to reduce effects of oxidative stress during high intensity exercise. The aim of this study was to test a model based on immune parameters measured in blood to assess fitness in Standardbred horses used for harness racing.

Materials & Methods

Two blood samples were collected from 47 healthy Standardbred horses. The first sample was collected at rest, 24-36 hours before a race. The second sample was collected 24-36 hours post-racing. The hematologic and clinical chemistry parameters included in the model were: albumin, β -globulins, γ -globulins, GSH-Px, neutrophils, haptoglobin and AF. The test results of the blood samples collected at rest were used as reference and given a total score of 100 points (test score pre-racing, WSC_{pre}). Results from post-racing blood tests were compared to pre-racing blood tests and the differences were scored as WSC_{delta} . We hypothesized that a low WSC_{delta} would be indicative of a better functioning immune system ensuring that the horse could cope with oxidative stress better and perform better. Several parameters were selected to evaluate a potential association with WSC_{delta} : age, reported illness (<6 weeks), reported lameness (<6 weeks), individual performance (measured as race time related to personal record), placing in the race, expected performance (by the trainer) prior to the race and betting odds. Stepwise linear regression was used for statistical analysis.