Accepted Manuscript

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PII: S0737-0806(14)00172-5

DOI: 10.1016/j.jevs.2014.05.005

Reference: YJEVS 1726

To appear in: *Journal of Equine Veterinary Science*

Received Date: 12 January 2014

Revised Date: 30 April 2014

Accepted Date: 9 May 2014

Please cite this article as: Andriichuk A, Tkachenko H, Kurhaluk N, Gender Differences of Oxidative Stress Biomarkers and Erythrocyte Damage in Well-Trained Horses During Exercise, *Journal of Equine Veterinary Science* (2014), doi: 10.1016/j.jevs.2014.05.005.

GENDER DIFFERENCES OF OXIDATIVE STRESS BIOMARKERS AND ERYTHROCYTE DAMAGE IN WELL-TRAINED HORSES DURING EXERCISE

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ABSTRACT

The aim of this study was to determine the effects of gender differences on the blood oxidative stress biomarkers, antioxidant defenses and resistance of erythrocytes to hemolytic agents of trained horses before and after exercise. The study was carried out on 9 mares and 14 stallions of Ukrainian Warmblood well-trained horses, involved in jumping, eventing and dressage. Oxidative stress biomarkers, antioxidant defenses, and osmotic resistance of erythrocytes were assessed. Trained stallions showed a decrease in lipid peroxidation and higher glutathione reductase activity, while mares presented a higher superoxide dismutase activity after exercise. The resistance of erythrocytes was similar in female and male. No statistically significant differences in the percentage of haemolysed erythrocytes between post-exercise and before exercise were observed. A correlations between the oxidative stress biomarkers and antioxidant defenses in the stallions after exercises were observed, which may indicate a protective response of superoxide dismutase and catalase against exercise-induced oxidative stress.