Short-term whole body vibration exercise in adult healthy horses

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Abstract

The purpose of this study was to analyze the acute effect of whole body vibration exercise (WBVE) on clinical parameters and blood values in horses. Seven horses were exposed to a 10 min WBVE at a frequency of 15-21 Hz. Clinical parameters and venous blood samples were taken before and directly after WBVE. Acute short-term WBVE produced a decrease in serum cortisol (p=0.02) and creatine-kinase (p=0.02) values. Clinical parameters, hematology, fibrinogen, lactate, IGF-I, GGT, creatinine, myeloperoxidase activity and bone marker values were not significantly changed by WBVE. In adult sound horses WBVE was well tolerated and did not cause any sign of measured discomfort.

Key words: horse, vibration exercise, cortisol, creatine kinase, bone

Introduction

Mechanical vibration applied as an alternative to exercise is of increasing interest. The effect of whole body vibration exercise (WBVE) on vital parameters, muscle and bone has been investigated and it has been widely suggested that WBVE might be an alternative to resistance training for stimulation of the musculoskeletal system. Furthermore, non-pharmacological therapies are interesting alternatives for the treatment of various diseases, e.g. osteoporosis. Aim of this preliminary study was to analyze the acute effect of WBVE on clinical parameters and blood values in horses.

Materials and Methods

Seven sound adult horses (four geldings, three mares), aged 8 to 27 years (14 ± 5.9 yr) were box-rested 18 h before starting WBVE with a Marquis® VMS device (Marquis® Tiermedizin GmbH, Germany). For WBVE the horses were standing on four separate platforms, which independently...