Assessment of scintigraphic, thermographic and histological changes after focused extracorporeal shock wave therapy on the origin of the suspensory ligament and fourth metatarsal bone in sound horses

Summary / Zusammenfassung
Objective- Extracorporeal shock wave therapy (ESWT) has gained increasing importance in the treatment of orthopaedic injuries in horses, although no studies evaluating this technique’s effect on physiology of bone and adjacent structures are available. We chose to study these effects by means of bone imaging, thermography and histology.

Animal Population- 6 sound warmblood horses.

Procedure- The origin of the suspensory ligament at the metacarpus (OSL-MC) and the metatarsus 4th were treated at 2 different time-points (day 0, day 16) with 2000 shocks applied by a focused ESWT device at an energy flux density of 0.15mJ/mm2. One fore- and one hindlimb were treated and the contralateral legs served as control legs.

Bone scans (day -1, 3, 16 and 19) and thermography (before and 1 hour after each ESWT, day 1, 3, 8 and 19 after 1st ESWT) were performed to document the short and long term effect of focused ESWT. Histologic evaluation of the origin of the suspensory ligament and the 4th metatarsal bone was performed 5 days after last shockwave therapy.

Results- Scintigraphically a significant variation in activity of the OSL-MC was detected for both the treated and control legs, however no significant differences could be detected with thermography and bone scanning between the treated and control legs at any time-point.

Histological evaluation is in progress.

Preliminary conclusion and clinical relevance- After two sessions of focused ESWT no effect on the physiology of the studied structures could be demonstrated by skeletal scintigraphy or thermography.

At currently used ESWT settings no damage to the bone/bone-tendon junction should occur.

Publications / Publikationen
Simone K. Ringer, Christoph J. Lischer, Gottlieb Ueltschi (2005)
ASSESSMENT OF SCINTIGRAPHIC AND THERMOGRAPHIC CHANGES AFTER FOCUSED EXTRACORPOREAL SHOCK WAVE THERAPY ON THE ORIGIN OF THE SUSPENSORY LIGAMENT AND FOURTH METATARSAL BONE IN SOUND HORSES
Am J Vet Res (accepted for publication)

Keywords / Suchbegriffe
Shock wave therapy horse, suspensory ligament desmitis, scintigraphy, thermography

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Funding Source(s) / Unterstützt durch

Project 5869.
High medical technology (HMT) Kreuzlingen

In Collaboration with / In Zusammenarbeit mit
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Duration of Project / Projektdauer
Jan 2002 to Dec 2005