No influence of sedation on the clinical outcome of radial extracorporeal shock wave-treatment of the proximal suspensory desmopathy in sports horses

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Device and producing company:
Swiss Dolor Clast (EMS-Switzerland).

Introduction:
Extracorporeal shock wave therapy (ESWT) is being used to treat desmopathies and tendinopathies in horses (Kersh 2006). Radial extracorporeal shock wave therapy (rESWT) is a useful treatment modality for chronic or recurrent proximal suspensory desmopathy when combined with controlled exercise (Crowe 2004). The rESWT cause pain/nociception while being administered. Usually, horses receive this treatment under sedation (light-moderate). Sedation is recommended so the horse remains still so the treatment is applied accurately, targeted to the specific treatment location, and if fractious, the veterinarian is protected. Our clinical experience has shown that a total dose 0.5 ml DomosedanTM and 0,5-1.0 ml Torbugesic'rM affords effective, safe sedation in horses above 200 kg bodyweight. In humans, the influence of local anesthesia on the clinical outcome of ESWT is in discussion. The results of ESWT on plantar heel spur without local anaesthesia has been significantly better than with local anesthesia (Auersperg 2002, Rompe 2004, Labek 2005). The aim of this study was to evaluate the influence of sedation on the clinical outcome of rESWT of the proximal suspensory desmopathy in sports horses.

Methods:
18 sports horses were recruited based on the following criteria: 1.- Proximal suspensory desmopathy in the front limb with lameness for at least three months. 2.- Docile horse. Not aggressive/rebellious horse. 3.- Sex: female o castrated male. Lameness was graded from 0 to 5 using a AAEP scale (American Association of Equine Practitioners) The horses were randomly assigned to two groups: Group A (n=9): rESWT with sedation. The intravenously administration of a sedative combination of 0.1 ml DomosedanTM/100 kg (equivalent to 12 microg. detomidine hydrochloride/kg) and 0.1 ml Torbugesic TM/ 100 kg (equivalent to 10 microg. butorphanol tartrate/kg) Group B (n=9): rESWT without sedation The 18 horses were treated 3 times at 2-week intervals with 4000 shockwaves per session. Pressure of 3,5 bar (Energy flux density: 0,14 mJ/mm2 approx.) and 8 Hz of frequency. Device used: Swiss Dolor Clast (EMS-Switzerland). The affected leg was lifted and the superficial and deep flexor tendon was pushed laterally and medially in order to be as close as possible to the origin of the proximal suspensory ligament. 2000 shockwaves were applied from each side (medial and lateral). Evaluation of lameness was performed before the treatment, 30 days after last rESWT and 90 day after last rESWT: A special training program was elaborated for the time between the sessions and post shock wave therapy. Analyses: The differences between groups were carried out using U of Mann-Whitney test. Some factors that had no effect, such as age, sex and duration of lameness, were checked out using multivariate logistic regression analysis. The statistical analysis was carried out without knowledge of the treatments used (rESWT with sedation or rESWT without sedation)

Results:
There were no statistically significant differences between the two groups. (P>0.05). In the group A (rESWT with sedation): 90 days after last rESWT, 6 horses were free of lameness (return to full work), 2 horses had a distinct lameness reduction and I horse showed
no improvement. In the group B (rESWT without sedation): 90 days after last rESWT, 5 horses were free of lameness (return to full work) and 4 horses had a distinct lameness reduction. In both groups, side effects and complications were not observed. Discussion: In humans, the simultaneous application of local anesthesia interferes with clinical outcome. In humans, is important to feel pain during the ESWT? Conclusion: In horses, the sedation applied before treatment no reduced the efficacy of rESWT. The decision to sedate to a horse before apply rESWT should be the security of the horse and of the veterinary one. Further studies of significantly larger groups of horses are necessary to underline the results of this investigation.