

Preliminary Results of Radial Extracorporeal Shockwave Therapy in Five Dogs With Cubarthritis

Authors:

M Müller, DVM*; B Bockstahler, DVM*; DVM, DECVS; M Skalicky? DTP, D Lorin-son*

Institution:

University of Veterinary Medicine, Project Group Motion Analysis in Dogs,

*Department of companion animals,

?Department of natural science, Vienna, Austria

Introduction:

Although RSWT has been used in small animals with orthopaedic disorders for some years only a few studies exist detailing this kind of treatment in dogs. At the present time the authors are unaware of any prospective study using ground reaction forces evaluated on a treadmill-system. The purpose of this study was to show results of RSWT in dogs with cubarthritis. To document the effectiveness of RSWT ground reaction forces (GRF) measured on a treadmill-system were evaluated.

Material and Method:

Five client-owned dogs of different breeds with cubarthritis were included in this study. Age ranged from 6 to 11 years, bodyweight from 15.7 to 48 kilograms. Three dogs had bilateral and two dogs unilateral cubarthritis. Radial Shock Wave Therapy was performed with the Swiss DolorClast Vet® (EMS Electro Medical Systems, Nyon, Switzerland). Treatment was given three times on a weekly basis using 1,000 radial shockwaves with a pressure of 2.0 bars were applied at the medial and lateral side of the affected elbow. Before first RSWT ground reaction forces were measured using a treadmill with four force plates. Parameters chosen for evaluation were peak maximal force (Fz), mean vertical force (Fm) and Impulse (Imp). Mean values of five valid steps were calculated and symmetry indices were calculated as described (1). Deviation of absolute symmetry was expressed as a percentage. Re-evaluation was performed before subsequent treatments and one month after last RSWT. A paired t-test was performed to compare pre-treatment GRF values with values of each evaluation point, $p < 0.05$ was considered as statistically significant.

Results:

Percentage of deviation from symmetry before first RSWT was 16.59 (± 9.89) % for Fz, 18.66 (± 5.60) % for Fm and 25.48 (± 9.01) % for Impulse. No significant difference in values was found after the first RSWT. One month after last RSWT® all three values showed significant improved values compared to the basic GRF data: percentage of deviation of Fz was 4.79 (± 4.20) % ($p=0.38$), of Fm 7.59 (± 8.69)% ($p=0.34$) and of Impulse 9.55 (± 8.73)% ($p=0.001$).

Discussion:

Our preliminary results show that dogs with cubarthritis responded well to Radial Shock Wave Therapy. Although studies with more animals and long term controls are needed, we recommend Radial Shock Wave Therapy as a non-invasive treatment option for dogs with degenerative joint diseases.

References:

1. Budsberg SC, Jevens DJ, Brown J, et al. Evaluation of limb symmetry indices, using ground reaction forces. *AmJVetRes* 1993;54:10:1569-1575