

Radial Extracorporeal Shock Wave Therapy For Hip

Authors:

B Bockstahler, DVM*; M Müller, MVM*;
M Skalicky DTP?, D Lorinson, DVM, DECVS*

Institution:

University of Veterinary medicine, Project Group Motion Analysis in Dogs,
*Department of companion animals, Department of natural science , Vienna, Austria.

Introduction:

Recently Radial Shock Wave Therapy (RSWT®) was introduced in small animal veterinary medicine, although only few studies have been published. RSWT is recommended for different orthopaedic conditions like osteoarthritis and tendinopathies. Although a lot of good results are emphasized, controlled clinical studies are rare. This clinical prospective study analysed the effect of radial shock wave therapy in dogs with coxarthrosis using a treadmill system with four force plates.

Materials and methods:

Thirteen dogs of different breeds with coxarthrosis have been included in this study. Radial shock waves were generated by the Swiss DolorClast Vet® (EMS Electro Medical Systems, Nyon, Switzerland) and three treatments on a weekly basis were performed in the hip joint-region. Ground reaction forces (GRF) were measured before each treatment and one week, one and three months after last RSWT. Symmetry indices (SI) were evaluated as described (1) for each dog using the following parameters: peak maximal force (Fz), mean vertical force (Fm) and impulse (Imp). After calculation of SI percentage deviation of absolute symmetry was described. The results were compared to the values of 10 healthy dogs. To compare values of healthy dogs and patients we used an unpaired t-test. To compare patients values during the course of the study we used a paired t-test ($p < 0.05$ was considered as statistically significant).

Results:

A significant difference between values of healthy dogs and patients was found over the whole treatment period, except for Fz (one week) and Impulse (one week and one month). Comparison of patients pre-treatment values with the subsequent values showed no significant difference for Fz, whereas Fm and Impulse showed a significant improvement at one week (Fz, Imp), one month (Imp) and three months (Fm, Imp).

Discussion:

Our preliminary results with RSWT showed positive effects of ground reaction forces in dogs with coxarthrosis. Although values of healthy dogs were not reached, Radial Shock Wave Therapy seems to help reducing pain and discomfort during locomotion. Although studies using a greater number of dogs and longer evaluation periods are necessary, we recommend RSWT as an alternative treatment 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. Am J Vet Res 1993;54:10:1569-157.