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A New Application for ESWT Treatment

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Over several years Extracorporeal Shock Wave Therapy (ESWT) has been proven to be a safe and effective mode of treatment for a variety of orthopedic applications. In the following abstract we report our experience in the treatment of spinal pathologies using the Medispec – Orthospec™ ESWT. The Orthospec™ is characterized by its patented large focal zone or therapy area, which eliminates the need for imaging during treatment, and its low treatment pressure, which allows for treatment administration without sedation. A total of 15 patients with lumbo-sacral and cervical spinal pathologies were treated simultaneously using both ESWT and physiotherapy.

Seven out of the fifteen patients were treated for lumbo-sacral pathologies. Of the 7 patients four had vertebral osteophytes at intervertebral levels L5-S1 with radiological documentation (XR, CT, MRI). Three patients had suffered from discopathies at levels L4-S1 as documented by MRI. The gender diversity was 6 male and 1 female patients. The mean age of the patients was 49.0 yr, 38 to 57 years of age. Pain severity was graded as follows: 1-no pain, 2-mild pain, 3-moderate pain, 4-severe pain. Function level was graded as follows: 1-normal activity, 2-slight limitation, 3-severe limitation, 4- total limitation. The pre-treatment low back pain assessment resulted in grade 4. All patients reported of referred pain to the lower limb. Pre-treatment pain duration ranged between: 3-6 months. Pre-treatment function assessment was 2-3. Treatment characteristics: Patients were treated in 3-5 repeated sessions with the Orthospec™. Shock wave intensity was- 0.21-0.32 mJ/mm² (energy level 4 - 7 on the Orthospec's shock wave intensity scale), with a frequency of 150 pulse/min. Total number of shock waves per treatment was 1500-3000, with treatment duration of-30-45 min. (Shock Wave Therapy duration: 10-20 min. and Manual Therapy duration: 15-20 min.). Six out of seven patients showed significant improvement both in pain intensity and in function. All patients have improved from grade 4 of pain intensity to 1 or 2 post- treatment. In 3 of the above patients function has improved from function level 3 to 1, and in the other 3- from function grade 2 to grade 1. Only one patient diagnosed as suffering from 3 intervertebral disc protrusions at levels L2-L3, L3-L4, L4-L5 and 4 vertebral osteophytes at levels L2-L3, L3-L4, L4-L5, L5-S1 shown no improvement following the treatment series. Patients' follow-up ranged from 1 to 3 months, and at present the patients are still under physician's supervision. No adverse events were evident during or following ESWT treatment.

Eight of the fifteen patients were treated for cervical pathologies. Of these, three had vertebral osteophytes at levels C4-C6 with radiological documentation (XR, CT). 5 patients have suffered from discopathies at levels C4-C7 as documented by CT. All patients were males. The patients were 42 to 64 years of age. The pre-treatment upper back pain assessment resulted in grade 4. All patients reported of referred pain to the upper limbs and neuropathy expressed by numbness. Pre-treatment pain duration ranged between: 2 months to 1 year. Pre-treatment function assessment was grade 2 in 3 patients and grade 3 in 5 patients. Treatment characteristics: Patients were treated in 3-5 repeated sessions with the Orthospec™. Shock wave intensity was- 0.21-0.32 mJ/mm², with a frequency of 150 pulse/min. Total number of shock waves per treatment was 1000-2500, with mean treatment duration of 30-45 min (including manual therapy duration). All patients shown significant improvement both in pain intensity (a decrease from grade 4 to grade 1 to 2 post-treatment), and function (a decrease from function level 2-3 to function level 1 post-treatment). Patients' follow-up ranged from 1 month to 3 months. No Adverse events were evident during or following ESWT treatment.

Conclusion:

These preliminary results indicate of the great potential of Orthospec™'s effectiveness in the treatment of spinal pathologies. Nevertheless, due to the relatively small number of patients presented in this summary, it is recommended to conduct an additional clinical study in order to further study the different aspects related to spinal treatment with ESWT.