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High-energy extracorporeal shock wave therapy (ESWT) has positive effects on shoulder function and pain in patients with tendinosis calcarea of the shoulder

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Introduction:

Extracorporeal shock wave therapy (ESWT) with relatively high energy levels (0.28 mJ/mm²) is used for destruction of calcifications in patients with tendinosis calcarea of the shoulder since 1990¹. ESWT with low energy (~0.1 mJ/mm²) has analgesic effects, but is less effective in reduction of calcifications³. So far, local anesthesia was necessary before ESWT therapy with high energy levels. In this study ESWT was applied with a novel ESWT-device (Orthospec), which can be used without pre-treatment local anesthesia.

Methods:

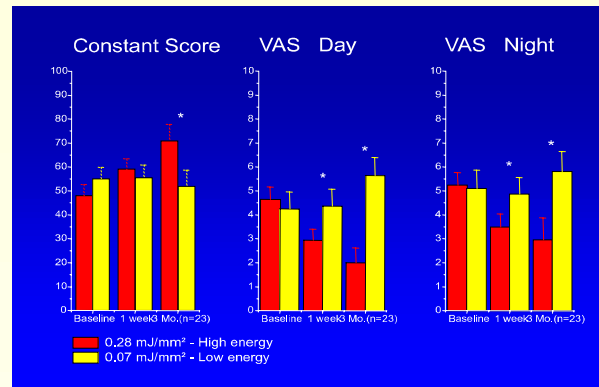
31 patients (43 shoulders), with radiologically verified tendinosis calcarea, were included in a randomized, double blinded study. 17 patients (23 shoulders) were treated with the Orthospec, using h-energy (0.28mJ/mm²), 14 patients (20 shoulders) received low energy ESWT (0.08 mJ/mm²). Both groups received 2000 shocks on two different days, two weeks apart. Before and 1 week and 3 months after treatment shoulder function (Constant Score) and the Visual analogue Scale (VAS) for pain were assessed by a physician, blinded for the therapy-regimen.



Treatment of tendinosis calcarea with the Orthospec ESWT-device.



The Orthospec ESWT-device. ESWT with high energy levels (0.28 mJ/mm²) can be applied without local anesthesia.



Impact of ESWT on the Constant Score and the VAS for pain at day and at night. (*P<0.05, between groups, ANOVA).

Results:

The Constant Score was raised in patients receiving high-energy ESWT from 48.0±4.7 at baseline to 59.0±4.4, 1 week and to 70.9±6.9 3 months after treatment, respectively (p<0.05). The Constant Score was improved in this group in 17 shoulders (73.9%) one week after treatment and in 88% (8 out of 11) after 3 months. Shoulder pain was also significantly reduced in the high-energy group (p<0.05). Orthospec treatment with low-energy had no significant effects on shoulder function and pain.

Conclusion:

Treatment with Orthospec with high energy (0.28 mJ/mm²) was tolerated without local anesthesia and had positive effects on shoulder function and pain 1 week and 3 months after treatment. The analgesic effects of low-energy ESWT, described in the literature², could not be observed in this study, using the Orthospec ESWT device.

References:

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- 2 Meier M, Dürr HR, Köhler S, Staupendahl D, Pfahler M, Refior HJ Analgetische Wirkung niederenergetischer extrakorporaler Stoßwellen bei Tendinosis calcarea, Epikondylitis humeri radialis und Plantarfasziitis. *Z Orthp* 2000; 138: 34-38
- 3 Rompe JD, Burger R, Hopf C, Eysel P Shoulder function after extracorporeal shock wave therapy for calcific tendinitis. *J Shoulder Elbow Surg* 1998; 7(5): 505-509