DSKESWT

FACT SHEET

The effect of shockwave on Achilles tendinopathy

INTRODUCTION

Definition

- Chronic inflammation of the Achilles tendon and its tendon sheath
- Typically occurs when the patient neglects the symptoms of an acute peritendonitis or microruptures with tendinitis and degenerative changes occur in the tendon (tendinosis)
- Also occurs as age-related degenerative change

Occurrence

- The disorder is primarily seen in athletes

Etiology and pathogenesis

- Long-term stress causes small micro-ruptures in the collagen fibres, and reactive inflammation, granulation tissue and finally fibrosis occur
- Typically occurs after changes in activity level, wearing the wrong footwear, training on hard non-slip surfaces, cold climates
- In some cases, pathoanatomical changes are detected in the surrounding tissue without the tendon being significantly affected
- In certain chronic irritations, there are rarely inflammatory changes in the tendon, but fibrosis in the peritendinous tissue

METHOD

Searched with the following search string:

Search: Extracorporeal Shock Wave Therapy OR ESWT OR shockwave for Achilles AND Tendinopathy Filters: Meta-Analysis, Review, Systematic Review, in the last 5 years, Humans, English Sort by: Most Recent

Next similar articles:

Latest meta-analyses:

Paantjens, M. A., Helmhout, P. H., Backx, F. J. G., van Etten-Jamaludin, F. S., & Bakker, E. W. P. (2022). Extracorporeal Shockwave Therapy for Mid-portion and Insertional Achilles Tendinopathy: A Systematic Review of Randomized Controlled Trials. Sports medicine - open, 8(1), 68. (2)

RESULTS

Below is an overview of the methods and effects of the included studies.

7 studies included

3 Midportion
4 Insertional

The treatment effect measured at:

Baseline, 4 months
Baseline, 1, 16 months
Baseline, 2 , 6 months
Baseline, 2,3,4,12 and 24 weeks

1 study with fESWT
6 studies with rESWT

1 bar = 0.1 mJ/mm2

1MPa = 10 bar

Assessment:

Visual Analogue Scale (VAS)
Victorian Institute of Sports Assessment—Achilles

STUDY	DOSE	CONTROL GROUP	EFFECT	METHOD
Rompe et al.(3) rESWT	3 treatments, 1 week apart 2000 pulses, 8Hz, 3 bar Eccentric: 2 x daily, 7 days a week, 12 weeks	A: rESWT B: eccentric training C: wait and see	rESWT and eccentric exercises equally effective at 4 months check-up	Prone, focus on most painful area

75 included Mid				
Rompe et al. (4) rESWT 64 included Mid	A: Eccentric: 2 x daily, 7 days a week, 12 weeks plus 3 treatments, 1 week apart 2000 pulses, 8Hz, 3 bar 4 weeks after the training course B: Eccentric: 2 x daily, 7 days a week, 12 weeks	A: rESWT + eccentric B: eccentric	Progress in better groups, rESWT + eccentric exercises with the greatest improvement	Prone, focus on most painful area
Abdelkader et al. (5) rESWT 50 included mid	A: eccentric training (: 2 x daily, 7 days a week, 12 weeks) + stretching exercises (gastroc + soleus. 2 x day) + rESWT (2000 pulses, 8Hz, 3 bar. 4 treatments, 1 week apart) B: as above but with sham rESWT	A: rESWT B: sham rESWT	Improvement in both groups, but greatest improvement in the group with rESWT	Prone, focus on most painful area
Rompe et al.(6) rESWT 50 included mid	rESWT: 3 treatments 1 week apart 2000 pulses, 8 Hz, 2.5 bar Eccentric exercises (2 x daily, 7 days a week, 12 weeks)	A: rESWT B: eccentric	Both groups are improving, but the rESWT group is achieving the most improvements	Prone, focus on most painful area
Pinitkwamdee et al.(7) rESWT 31 included mid	A:rESWT: 4 treatments 1 week apart 2000 pulses, 8-12 Hz, 2.5-3.5 bar + rest, painkillers, handling load, stretch + heel wedge B: as above with sham rESWT	A: rESWT B: rESWT	rESWT+ exercises significant difference to sham rESWT up to 12 weeks sham rESWT significantly improved at 12 and 24 weeks At 24 weeks no difference	Prone, focus on most painful area
Notarnicola et al. (8) fESWT	3 treatments 3-4 days apart, 1600 pulses, 0.05-0.07 mJ/mm2	A: fESWT B: CHELT	Both groups achieve significant improvement.	Prone

60 included mid	A: fESWT + eccentric exercises + stretching B: CHELT (Cold air (-30 degrees) and high-energy laser therapy) + eccentric exercises + stretching (10 day treatments)		CHELT achieves faster and better results than ESWT, including greater patient satisfaction (note the dose)	
Mansur et al.(9) rESWT 119 included mid	3 treatments 2 weeks apart 2000-3000 pulses, 7-10 Hz, 1.5-2.5 bar eccentric exercises (2 x daily, 7 days a week, 3 months)	A: rESWT B: sham rESWT + exercises	Both groups have significant improvement. No difference between the groups.	Prone, focusing on the area where the tendon has the greatest thickening

The authors' own conclusion when comparing all the results found in the included studies:

"The findings of this systematic review indicate that adding ESWT to a tendon loading program in mid-AT results in a clinically important improvement on the VISA-A.

Our findings cannot support the use of ESWT for ins-AT, with two double-blind RCTs indicating that this treatment is ineffective.

Although we were able to include several recently published studies, the availability of controlled studies, eligible to answer our review question, appears limited at present.

It should be emphasized that the number of RCTs included in this systematic review was limited, and the pooled sample of mid-AT and ins-AT patients was relatively small. Future high-quality RCTs are needed to support our findings. "

CONCLUSION

There is evidence that ESWT can relieve pain and improve the level of function of Achilles tendinopathy.

This effect is enhanced when combined with exercises. This has previously also been shown in at least 2 review articles. (10)(11)

CHELT is a form of treatment with laser that is not very common in Denmark, but is possibly a method for the more acute Achilles problems, and ESWT is more suitable for the chronic cases.(8)

It should be noted that CHELT requires 10 daily treatments, which entails increased costs, and possibly increased disadvantages in relation to getting to the treatment for the individual patient.

RECOMMENDATION

Lying forward with your foot over the couch, or small cushion under the ankle, with the ankle in a neutral position

Dose rESWT: 3-4 treatments 1 week apart between 2000 and 2500 pulses, between 8-12 Hz, between 2-3 bar (or the patient's maximum pain level)

Dose fESWT: 3-4 treatments 1 week apart between 1500 0g 2500 pulses, 8-12 Hz, between 0.02 and 0.2 mJ/mm2 (or to the patient's maximum pain level).

In addition, TrP treatment of gastrocnemius and soleus (based on clinical experience) should be considered.

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