

Tsai C-T, Chang W-D, & Lee J-P. Effects of short-term treatment with Kinesiotaping for plantar fasciitis. J of Musculoskeletal Pain. 2010;18(1):71-80

Study design: Randomized controlled trial with 2 intervention groups

Study question: In patients with plantar fasciitis, do outcomes differ between Kinesiotaping, combined with “traditional physical therapy” (therapeutic ultrasound and low-frequency electrotherapy) and “traditional physical therapy” alone?

Population/sample size/setting:

- 52 patients (19 males, 33 females) with “confirmed diagnosis” of plantar fasciitis recruited from a rehabilitation clinic at a teaching hospital, presumably in Taiwan
- Inclusion criteria
 - “Confirmed diagnosis” of plantar fasciitis, but no description of how diagnosis was confirmed
 - Onset of symptoms within 10 mo of start of study
- Exclusion criteria
 - History of foot surgery
 - History of any significant foot disorder, e.g. arthritis, trauma, tumor

Interventions and comparisons:

- Patients randomized to:
 - Kinesiotaping of gastrocnemius and plantar fascia in addition to “traditional physical therapy” (therapeutic ultrasound and low-frequency electrotherapy) (n=26 patients with 29 foot samples)
 - Taping was done immediately after the first physical therapy session and was continuously in place over the 1 week study period.
 - Physical therapy was 6 sessions over 1 week
 - “Traditional physical therapy” alone (n=26 patient with 28 foot samples)
 - 6 sessions over 1 week
 - Physical therapy for both groups consisted of:
 - Ultrasound was done for 5 min at each session
 - Low-frequency TENS for 15 min at each session
 - Taping technique for gastrocnemius and plantar fascia is carefully described and performed by a single physical therapist

Outcomes:

- Randomization list was created by Microsoft Excel and distributed in sealed numbered envelopes
- All outcomes assessed at 1 week “after treatment”, but it is unclear whether this means 1 week after the start or after the end of treatment. Seems to be 1 week after treatment was started.

- No distinction between primary and secondary outcomes, though presumably primary outcomes are the pain outcomes and secondary are the sonographic outcomes.
- Pain outcomes - self-assessed by patients
 - McGill Medlnack pain questionnaire
 - Consists of 20 questions about the perception and influences of pain
 - Patient selects each applicable item and the total indicates intensity of pain
 - Unclear how this is scored: 0-20?
 - Pain subscale of the Foot Function Index (FFI)
 - 7 questions answered by 100 point VAS (0=no pain, 100=worst pain ever)
- Sonographic outcomes - assessor blinded to treatment group
 - Plantar fascia thickness at 2 sites
 - Hypoechoic phenomenon (present or absent)
- Baseline characteristics
 - “No statistically significant differences”, but this is hard to believe given 22 year difference in mean ages of taping and PT groups (Taping group was older.)
 - Duration of heel pain was about 4 mo in each group
- Pain outcome results
 - McGill Medlnack pain scores
 - Both groups improved (decreased scores) after treatment, but the taping group improved more.
 - Absolute change was -2.75 ($p < 0.05$) and percentage change was -17.86% for the PT (control) group
 - Absolute change was -5.14 ($p < 0.05$) and percentage change -54.25 for the taping group.
 - Between group p value < 0.05 for percentage changes.
 - Pain subscale of FFI
 - The taping group's improvement was statistically significant, but the PT (control) group's improvement was not.
 - Absolute change was -3.27 ($p > 0.05$) and percentage change was -4.29 for the PT (control) group.
 - Absolute change was -24.96 ($p < 0.05$) and percentage change was -43.05 for the taping group.
 - Between group p value < 0.05 for percentage changes.

Authors' conclusion: Kinesiotaping continuously for 1 week in conjunction with therapeutic ultrasound and low-frequency electrotherapy may reduce plantar fasciitis pain (in the very short-term) more than therapeutic ultrasound and low-frequency electrotherapy alone.

Comments

- No description of diagnostic criteria for establishing/confirming diagnosis of plantar fasciitis
- Patients not blinded. This may have been possible using sham taping. Lack of blinding would tend to bias in favor of taping.

- No description of allocation concealment methods (for assessors)
- No description or flowchart of loss to follow-up/dropout, though this was likely 0 because of very short follow-up time (1 week)
- No identification of a clinically important difference in outcome measures
- No sample size/power calculation
- Analysis did not adjust for baseline pain scores, which were statistically significantly different for the McGill Medlnack scores. However, the authors did try to account for differences in baseline scores by expressing outcomes as percentages of change.
 - Would have been better to express pain score changes as standardized mean differences than as percentages of change.
- 95% confidence intervals not given. P values given as < or > 0.05 instead of actual values.
- Very short follow-up time (1 week) limits the generalizability of the findings.

Overall critique impression: Inadequate evidence due to lack of blinding, lack of definition of clinically significant differences, very short follow-up time, and non-rigorous statistical methods and/or reporting.