Clinical Trial Protocol
Iranian Registry of Clinical Trials

10 Jun 2026

The comparative effect of Kinesio Taping method and Dry needling technique on pain, performance and plantar fascia thickness in patients with plantar fasciitis

Protocol summary

Study aim
Comparing the effects of kinesio tape and dry needling on pain, performance and thickness of the plantar fascia in people with plantar fasciitis.

Design
Randomised, single blinded trial with 3 parallel groups including 45 males and females with plantar fasciitis. Randomisation was based on the block method with Excel software

Settings and conduct
Participants are invited to the Neuromuscular Research Center of the Faculty of Rehabilitation of Semnan University of Medical Sciences. Participants are randomly divided into three groups. all three groups receive routine physiotherapy including hot packs, ultrasounds, and TENS. In addition, in one group dry needling technique and in another group, kinesiotape will be used. Evaluation performs pre, post, and follow-up.

Participants/Inclusion and exclusion criteria
Inclusion criteria : People with plantar fasciitis, most tenderness in the med tubercle, Exclusion criteria: Allergic to kinesio tape and needles, pregnancy

Intervention groups
Intervention group 1: They receive dry needling along with routine physical therapy including hot pack, ultrasound, and TENS. This technique is applied twice a week for two weeks. The dry needling technique is a method with the help of acupuncture needles, and its application in certain places, without injecting a substance. Intervention group 2: They receive Kinesio-tape technique along with routine physical therapy.This technique is applied twice a week for two weeks. Kinesio-tape is a type of hypoallergenic and special adhesive that is used in a special way for each area with a specific therapeutic purpose. Control group: In this group, people only receive routine physiotherapy including hot pack, ultrasound, and TENS for 5 days of each week, which is done for two weeks.

Main outcome variables
Plantar fascia thickness, performance, Pain

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20221106056422N1**
Registration date: **2023-01-29, 1401/11/09**
Registration timing: **prospective**

Last update: **2023-01-29, 1401/11/09**
Update count: **0**

Registration date
2023-01-29, 1401/11/09

Registrant information

Name
Maryam Mokhtari

Name of organization / entity

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Iran (Islamic Republic of)

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Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2023-02-20, 1401/12/01

Expected recruitment end date
2023-07-21, 1402/04/30

Actual recruitment start date
empty

Actual recruitment end date
empty
Trial completion date
empty

Scientific title
The comparative effect of Kinesio Taping method and Dry needling technique on pain, performance and plantar fascia thickness in patients with plantar fasciitis

Public title
The comparative effect of Kinesio Taping method and Dry needling technique in plantar fasciitis
Purpose
Treatment
Inclusion/Exclusion criteria
Inclusion criteria:
Plantar fasciitis Heel pain with the most tenderness in the medial tubercle of foot Pain more than 3 months in the medial tubercle Pain level at least 3 in visual analog scale Pain with first step in the morning or after a long period of rest Experience of pain despite other conservative methods (eg, silicone insoles, nonsteroidal anti-inflammatory drugs, and exercise) Without cognitive disorder and consciousness disorder The thickness of the fascia is more than 4 mm Sign the consent form Age between 18-60 years
Exclusion criteria:
Positive sign of sciatica in sciatica nerve test Allergic to kinesiotape Medical diagnosis of gout, diabetic neuropathy, rheumatoid arthritis, lupus, cancer and infection Allergic or fear of dry needles (DN) Presence of peripheral arterial vascular disease Pregnancy Plantar heel pain treatment with DN or acupuncture in last 4 weeks History of heart diseases History of corticosteroid injection in the heel in the last 3 months History of chemotherapy in the last six months Heel spur Plantar hyper hydrosis Hyper activity Skin disease
Age
From **18 years** old to **60 years** old
Gender
Both

Phase
N/A
Groups that have been masked

- Outcome assessor
- Data analyser

Sample size
Target sample size: **45**
Randomization (investigator's opinion)
Randomized
Randomization description
Simple non-probability sampling will be used in this study. The allocation of individuals to the three groups will be performed through random allocation and for such purpose the Block randomization will be used. This clinical trial study including 45 samples that will be randomly allocated in three groups (one group is control and two other groups are intervention1 and 2). The therapist divides subjects into subgroups called blocks with size of 3. Individuals in each block are randomly divided into three groups: control (C), treatment1(T1) and treatmet2 (T2). Hence we have a combination of control and treatment blocks as (T2T1C, T1T2C, T1CT2, CT2T1, و CT1T2, T2CT1). finally we randomly select 15 blocks using excel computer software. therefore we have had 45 subjects that in each groups will be 15 subjects. The number of blocks and how they are executed are done by hiding them inside the envelope. In this method, the blocks are numbered based on a random sequence and are placed inside the envelopes, and the researcher assigns them to the intervention and treatment groups based on the order of arrival of the patients.
Blinding (investigator's opinion)
Single blinded
Blinding description
This study is Single-blind. Outcome assessor and analyzer will be blind and will not be aware from grouping. Groups will be available to analyzer and outcome assessor as A, B and C .
Placebo
Not used
Assignment
Parallel
Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
Ethics committee of semnan University of Medical Sciences
Street address
Headquarter of Semnan University of Medical Sciences and Health Services, Basij Blvd, Semnan, Iran.
City
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Semnan
Postal code
35147-99442
Approval date
2022-10-24, 1401/08/02
Ethics committee reference number
IR.SEMUMS.REC.1401.187

Health conditions studied

1

Description of health condition studied
Plantar fasciitis
ICD-10 code
M72.8
ICD-10 code description
Other fibroblastic disorders

Primary outcomes

1

Description

Plantar fascia thickness in patient with Plantar fasciitis

Timepoint

The measurement of the thickness of the plantar fascia is done at the beginning of the study (before the start of the intervention) and 2 and 4 weeks after the start of the interventions

Method of measurement

To measure the plantar fascia thickness, an ultrasound machine model HS2100 made in Japan with a frequency of 12 MHz and a linear probe of 4.5 cm is used. The transducer of the ultrasound device is placed in the sagittal plane on the inner band of the plantar fascia at the junction with the inner prominence of the heel, and the thickness of the plantar fascia is measured

2

Description

Pain score in patient with Plantar fasciitis

Timepoint

The measurement of pain score is done at the beginning of the study (before the start of the intervention) and 2 and 4 weeks after the start of the interventions

Method of measurement

The basis of pain is based on the visual analog scale that is used to measure and grade pain in patients. In general, this scale is drawn as a 100 mm or 10 cm line, and the amount of pain is rated between 0 and 10.The two ends of the scale include the number zero at the left which indicates no pain (zero = no pain) and the number 10 at the right end indicates the most pain. The number 1 to 3 indicates mild pain, the number 4 to 6 indicates moderate pain, and the number 7 to 10 indicates severe pain. The patient marks his pain score with a vertical line on the scale.

3

Description

Performance score in patient with Plantar fasciitis

Timepoint

The measurement of performance score is done at the beginning of the study (before the start of the intervention) and 2 and 4 weeks after the start of the interventions

Method of measurement

The Foot and Ankle Outcome Score (FAOS) questionnaire is used to evaluate performance in this research. This questionnaire is designed to evaluate symptoms and functional limitations related to the foot and ankle. This questionnaire asks for patient's ankle problem and helps to know how the patient feels about his ankle and to what extent he is able to perform his usual activities. It has five subscales: pain, symptoms (stiffness, swelling, crepitus, and movement limitation), performance in activities of daily living (ADL), performance in sports, and quality of life (QoL). Scores of 0 and 100 represent severe and asymptomatic symptoms, respectively.

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group 1: Dry needling of plantar fascia: Routine physiotherapy interventions including ultrasound with 3 MHz intensity (for 5 minutes for the painful point of plantar fascia), low frequency TENS with 120 Hz frequency and 40 milli seconds duration (for 15 minutes to the same painful spot) are applied for people with plantar fasciitis (15 people) before applying dry needling.This technique is performed twice a week for two consecutive weeks, while the patient is in prone position, the skin is cleaned and 15 stainless steel needles with a length and diameter of 0.25 x 40 millimeter are inserted into the plantar fascia, which is considered the most painful area in plantar fasciitis. The needles are guided 0.5 to 1.5 cm through the skin and fascia, and are applied with consecutive strokes and keeping the needle in place for 10 minutes and rotating 3-4 times.This rotation method is repeated twice in each step. After the needles are removed, the needle insertion sites are tightly compressed to prevent bleeding.

Category

Treatment - Other

2

Description

Intervention group 2: Plantar fascia kinesiotape: Routine physiotherapy interventions including ultrasound with 3 MHz intensity (for 5 minutes for the painful point of plantar fascia), low frequency TENS with 120 Hz frequency and 40 milliseconds duration (for 15 minutes for the same painful point) is applied for people with plantar fasciitis (15 people) before applying kinesiotape . To perform kinesiotape, Tex Tape with 25% tension is used for plantar fascia. Tapping is used for patients twice a week for two weeks. During tape application, the patient is placed in prone position, and the knee joints are placed in 90 degree flexion and the ankle joints are placed in a normal position. The strip is cut longitudinally into four slices of equal width. The strip is marked on the Achilles tendon or the dorsal border of the calcaneus. Four spots are identified on the first to fifth metatarsals joints, except the third metatarsal joint. Finally, it is applied by the space correction method, with 25% stretching of the forefoot. The initial length of the tape will be approximately half the length of the foot, measured from the end of the heel to the tip of the big toe.

Category

Treatment - Other

3

Description

Control group: routine physiotherapy: Routine

physiotherapy is performed 5 days a week for two weeks for people with plantar fasciitis (15 people). Routine physiotherapy interventions include ultrasound therapy and low frequency TENS for plantar fascia. Ultrasound with 3 MHz intensity and for 5 minutes is applied to the painful point of the plantar fascia. Low frequency TENS with 120 Hz frequency and 40 milliseconds duration is applied for 15 minutes to the same painful point.

Category
Treatment - Other

Recruitment centers

1

Recruitment center

Name of recruitment center
Neuromuscular Rehabilitation Research Center, Semnan University of Medical Sciences

Full name of responsible person
Fatemeh Ehsani

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity
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Full name of responsible person
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Grant name

Grant code / Reference number

Is the source of funding the same sponsor organization/entity?
Yes

Title of funding source
Semnan University of Medical Sciences

Proportion provided by this source
100

Public or private sector
Public

Domestic or foreign origin
Domestic

Category of foreign source of funding
empty

Country of origin

Type of organization providing the funding
Academic

Person responsible for general inquiries

Contact

Name of organization / entity
Semnan University of Medical Sciences

Full name of responsible person
Maryam Mokhtari

Position
Senior student of sports physiotherapy

Latest degree
Bachelor

Other areas of specialty/work
Physiotherapy

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Sharing plan

Deidentified Individual Participant Data Set (IPD)

Undecided - It is not yet known if there will be a plan to make this available

Study Protocol

Undecided - It is not yet known if there will be a plan to make this available

Statistical Analysis Plan

Undecided - It is not yet known if there will be a plan to make this available

Informed Consent Form

Undecided - It is not yet known if there will be a plan to make this available

Clinical Study Report

Undecided - It is not yet known if there will be a plan to make this available

Analytic Code

Undecided - It is not yet known if there will be a plan to make this available

Data Dictionary

Undecided - It is not yet known if there will be a plan to make this available