Clinical Trial Protocol
Iranian Registry of Clinical Trials

10 Jun 2026

Comparison effect of Mulligan tape and Kinesiotape on the neuromuscular control in response to unpredictable perturbation in patients with chronic ankle instability

Protocol summary

Study aim
Comparison of the effect of Mulligan type and Kinesio tape on neuromuscular control of ankle muscles in response to sudden disturbance in patients with chronic ankle instability

Design
A clinical trial with a control group, cross-over, randomized study. 23 patients are enrolled in the study. Each subject receives three treatments (control, Malignant type, and Kinesiotape), in a random order.

Settings and conduct
First, the evaluation is done and then the participants receive the treatment (control, malignant type, or Kinesio tape) for 24 hours. The assessment is then performed again, after which the participants receive other crossover treatments. Our study will be single-blind so that the data analysis will be done by another person. The study site will be in the school of Rehabilitation, Tehran University of Medical Sciences.

Participants/Inclusion and exclusion criteria
Inclusion criteria: 18 to 35 years old The initial sprain must have occurred at least 12 months before enrollment in the study At least 1 ankle sprain was associated with inflammatory symptoms Exclusion criteria: A history of previous surgery to the musculoskeletal structures in either lower extremity

Intervention groups
1. Kinesio tape group 2. Mulligan tape group 3. Control

Main outcome variables
Time of short and medium latency response The amplitude of short and medium latency response

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20210224050481N1**
Registration date: **2021-07-03, 1400/04/12**
Registration timing: **registered_while_recruiting**

Last update: **2021-07-03, 1400/04/12**
Update count: **0**

Registration date
2021-07-03, 1400/04/12

Registrant information

Name
Roghaye Shadegani

Name of organization / entity

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Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2021-06-22, 1400/04/01

Expected recruitment end date
2021-10-22, 1400/07/30

Actual recruitment start date
empty

Actual recruitment end date
empty

Trial completion date
empty

Scientific title
Comparison effect of Mulligan tape and Kinesiotape on the neuromuscular control in response to unpredictable perturbation in patients with chronic ankle instability

Public title
Comparison effect of Mulligan tape and Kinesiotape in patients with chronic ankle instability
Purpose
Treatment
Inclusion/Exclusion criteria
Inclusion criteria:
18 to 35 years old The initial sprain must have occurred at least 12months prior to the study enrollment At least 1 ankle sprain was associated with inflammatory symptoms Having ‘‘giving way’’ or ‘‘feeling of instability. At least 1 ankle sprain resulted in at least 1 interrupted day of desired physical activity The most recent injury must have occurred more than 3 months before enrollment in the study. Having unilateral ankle sprain
Exclusion criteria:
A history of previous surgery to the musculoskeletal structures in either lower extremity A history of fracture in either lower extremity requiring realignment Acute injury to the musculoskeletal structures of other joints of the lower extremity in the previous 3 months that affected joint integrity and function and resulted in at least 1 day of interrupted desired physical activity
Age
From **18 years** old to **35 years** old
Gender
Both

Phase
N/A
Groups that have been masked

- Data analyser

Sample size
Target sample size: **23**
Randomization (investigator's opinion)
Randomized
Randomization description
Each subject receives all treatments (control, Malignant type, and Kinesiotape), in a random order. Simple randomization is done by sealed envelopes containing the treatment allocation.
Blinding (investigator's opinion)
Single blinded
Blinding description
Data collection will be done by the lead researcher and data analysis will be done by another person in order to be a single blind study.
Placebo
Not used
Assignment
Parallel
Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
Ethics committee of Tehran University of Medical Sciences
Street address
District 12, Enghelab St, Pich-e-Shemiran، Tehran Town
City
Tehran
Province
Tehran
Postal code
1148956111
Approval date
2021-02-20, 1399/12/02
Ethics committee reference number
IR.TUMS.FNM.REC.1399.223

Health conditions studied

1

Description of health condition studied
Chronic Ankle Instability
ICD-10 code
ICD-10 code description

Primary outcomes

1

Description
Time of short and medium latency response
Timepoint
Before and 24 hours after treatment
Method of measurement
The time of medium and short latency response will be calculated based on a Baseline-Based Method. Thus, the time of short latency response is considered as a moment that Electromyography (EMG) activity will higher than the mean value plus 3 standard deviations (SD) and must be above the threshold at least 10 ms. The time of medium latency response is considered as a moment that Electromyography (EMG) activity will higher than the mean value plus 3 standard deviations (SD) and Stay above the threshold at least 20 ms. The mean value was assessed in the first 20 ms after the beginning of the short latency response.

2

Description
Amplitude of short and medium latency response
Timepoint
Before and 24 hours after treatment
Method of measurement
The amplitude of medium and short latency response will be calculated based on a Root Mean Square. Two 20 millisecond (ms) windows were defined. The first window started at the onset of the short latency response and

the second window started 30 ms later after the onset of the short latency response. The 10 ms division between the two windows.

Secondary outcomes

1

Description
Antagonist co-activation during short and medium latency response
Timepoint
Before and 24 hours after treatment
Method of measurement
The Antagonist Co-activation for Peroneus and Tibialis Anterior Muscles The Antagonist Co-activation for Tibialis Anterior and soleus Muscles we will measure with formula

Intervention groups

1

Description
First intervention group (Kinesio Tape group)- The kinesio type is placed on the Proneus Langus and Brevis and the anterior tibialis muscles for 24 hours with a tension of 35% ٪-25% from the origin to insertion of the muscle.
Category
Rehabilitation

2

Description
Second intervention group (Mulligan tape)-A painless posterior, lateral and superior glide is applied to the fibula in the inferior tibiofibular joint and then the tip is closed around the ankle.
Category
Rehabilitation

3

Description
Control group (Without Tape)- In this group, the patient does not receive treatment.
Category
Rehabilitation

Recruitment centers

1

Recruitment center
Name of recruitment center
School of Rehabilitation
Full name of responsible person
Roghaye Shadegani
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School of Rehabilitation, Pich-e-Shemiran, Enghelab St, Tehran,
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Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Tehran University of Medical Sciences
Full name of responsible person
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Email
rehabilitation@tums.ac.ir
Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Tehran 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
Tehran University of Medical Sciences
Full name of responsible person
Roghaye Shadegani
Position
Master student
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