

Clinical Trial Protocol

Iranian Registry of Clinical Trials

10 Jun 2026

Comparison of the Effect of Capacitive Tecar Therapy and Capacitive Resistive Tecar Therapy on Hamstring Muscle Flexibility in People with Hamstring Shortness.

Protocol summary

Study aim

Comparison of the Effect of Capacitive Tecar Therapy and combined Tecar Therapy in People with Hamstring Shortness.

Design

A controlled, parallel-group, double-blind, randomized clinical trial on 33 subjects with hamstring shortening. Sampling software was used for randomization.

Settings and conduct

People with hamstring shortness will be selected in a non-random way after being selected and referred to the clinic of the rehabilitation faculty, then they will be randomly categorized into three groups. Someone outside the team puts the order of entry of people in the group into the box. After selecting the participants based on the entry and exit criteria, the general purpose of the research will be explained to them first, and if they wish to continue the work, they will sign the written informed consent form. All three groups will complete the general questionnaire form.

Participants/Inclusion and exclusion criteria

The inclusion criteria include range of motion less than 160 degrees in the PKE test and a range less than 70 degrees in the SLR test. Exclusion criteria including the presence of pain, numbness in the last year. Whiplash injury document. Proof of fracture or lower limb surgery. History of disc herniation. History of muscle-tendon or neuro-motor injury in the hamstring in the past year. Reducing the feeling of pain or heat in the application area. The history of sports activity includes stretching exercises of the lower limbs in the last 6 months.

Intervention groups

People are divided into three groups, capacitive therapy, combined therapy, off mode. First, hamstring flexibility is measured through SLR and PKE tests through goniometer tool. Then, after performing the interventions again through these tests, the amount of flexibility will

be measured and the numbers will be compared.

Main outcome variables

Possibility of burns

General information

Reason for update

Acronym

Tranferencia Electrica CAPacitiva Resistiva(TECAR)

IRCT registration information

IRCT registration number: **IRCT20210316050727N3**

Registration date: **2023-07-04, 1402/04/13**

Registration timing: **registered_while_recruiting**

Last update: **2023-07-04, 1402/04/13**

Update count: **0**

Registration date

2023-07-04, 1402/04/13

Registrant information

Name

Abas Soltani someh

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 41 3337 5359

Email address

ab.soltani@yahoo.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2022-09-23, 1401/07/01

Expected recruitment end date

2023-10-23, 1402/08/01

Actual recruitment start date

empty
Actual recruitment end date
empty
Trial completion date
empty

Scientific title
Comparison of the Effect of Capacitive Tecar Therapy and Capacite_ Resistive Tecar Thearapy on Hamstring Muscle Flexibility in People with Hamstring Shortness.

Public title
Effect of Tecar in muscle shortness

Purpose
Treatment

Inclusion/Exclusion criteria

Inclusion criteria:
SLR(Straight Leg Rising) Less than 70 Degrees
PKE(Passive Knee Extention) Less than 160 Degrees

Exclusion criteria:
Any Report of pain, paraesthesia, numbness and... in spin and lower limb within last 1 year
History of whiplash
History of fracture or surgery in lower limbs
Disk prolapse
History of hamstring injury
Loss of heat or pain sensation
History of excessive exercise or stretching
exercise of hamstring within last 6 month

Age
From **18 years** old to **35 years** old

Gender
Both

Phase
N/A

Groups that have been masked

- Outcome assessor

Sample size
Target sample size: **33**

Randomization (investigator's opinion)
Randomized

Randomization description
Simple randomization, Random software allocation For the allocation concealment, the type of intervention received is written on a piece of paper and placed inside the opaque envelopes and the back of the envelope will be numbered. The envelopes will be opened according to the entry of the participants and the type of group for each patient will be specified accordingly

Blinding (investigator's opinion)
Single blinded

Blinding description
Participants: The therapist will explain to the people participating in the study, the feeling caused by applying the modality and will make them aware of the group they have been placed in. Data Analyzer: The collected information is provided to the analyzer without mentioning the groupings and patient information.

Placebo
Used

Assignment
Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics committee of Tabriz University of Medical Sciences

Street address

Tabriz University Main Street 3rd Floor, Central Building

City

Tabriz

Province

East Azarbaijan

Postal code

5166616471

Approval date

2023-03-06, 1401/12/15

Ethics committee reference number

IR.TBZMED.REC.1402.015

Health conditions studied

1

Description of health condition studied

hamstring shortness

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

SLR(straight leg rising) less than 70 degree

Timepoint

Before intervention, after first session of intervention, after 3rd session, after 5th session and after one month.

Method of measurement

Goniometer

2

Description

PKE(passive knee extension) less than 160

Timepoint

before intervention, after first session of intervention, after 3rd session, after 5th session and after one month

Method of measurement

Goniometer

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group: TECAR WINBACK 1SE made in Korea was used continuously for 20 minutes by capacitive method. With the patient lying on prone, the large applicator was fixed under the quadriceps muscle and the active applicator was applied to the hamstring. The active electrode is moved in circle direction on the skin of the back of the thigh, the conductive cream provided by the factory is used to fill the space between the skin and the electrode. The intensity of the therapy is based on the factory's recommendation, which is the most effective method recommended and without discomfort and pain

Category

Treatment - Devices

2

Description

Intervention group: In the second group 11 person, Tecar capacitive applicator was used for 10 minutes and then Resistive applicator (RES) was used immediately for 10 minutes. With the patient lying prone, the large applicator was fixed under the quadriceps muscle and the active applicator was applied to the hamstring. The active electrode is moved in circle direction on the skin of the back of the thigh, the conductive cream provided by the factory is used to fill the space between the skin and the electrode. The intensity of the therapy is based on the factory's recommendation, which is the most effective method recommended and without discomfort and pain

Category

Treatment - Devices

3

Description

Control group: 11 person with off mode of TECAR

Category

Treatment - Devices

Recruitment centers

1

Recruitment center

Name of recruitment center

All Clinics of Rehabilitation Faculty of Tabriz University of Medical Sciences

Full name of responsible person

Zahra Mousavi

Street address

No. 2, Enghelab ave., Bilankouh gharbi street., Abresan ,, Hafte Tir street., Tabriz city

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Tabriz University of Medical Sciences

Full name of responsible person

Parviz Shahabi

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Tabriz - Golgasht St. - Tabriz University of Medical Sciences - Central Building No. 2, 3rd Floor - Research and Technology Vice-Chancellor

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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

Tabriz 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

Tabriz University of Medical Sciences

Full name of responsible person

Abas Soltani someh

Position

Associate professor

Latest degree

Ph.D.

Other areas of specialty/work

Physiotherapy

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Full name of responsible person

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Position

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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

No - There is not a plan to make this available

Statistical Analysis Plan

No - There is not a plan to make this available

Informed Consent Form

No - There is not a plan to make this available

Clinical Study Report

No - There is not a plan to make this available

Analytic Code

No - There is not a plan to make this available

Data Dictionary

No - There is not a plan to make this available