Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 2026

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

Protocol summary

Study aim
Comparison of the Effect of Capacitive Tecar Therapy and combined Tecar Thearapy 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 Electica 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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z.mousavi.pt@gmail.com

Sponsors / Funding sources

1

Sponsor

Name of organization / entity
Tabriz University of Medical Sciences

Full name of responsible person
Parviz Shahabi

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

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research-vice@tbzmed.ac.ir

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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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