

Clinical Trial Protocol

Iranian Registry of Clinical Trials

10 Jun 2026

The effect of resistive capacitive electric transfer method and flexibility exercises on pain, range of motion, disability and quality of life in patients with chronic nonspecific low back pain

Protocol summary

Study aim

Comparative effect of comparative heat transfer by capacitive-resistance method and flexibility exercises on pain, disability and range of patients with chronic nonspecific back pain. Capacitive-resistive heat transfer is one of the treatment methods using heat. Heat increases blood flow to the muscle and increases the expansion of soft tissue and helps to improve symptoms.

Design

Both groups first use a stationary bike for 5 minutes to prepare and warm up. Then both groups do stability exercises. Capacitive-resistance heat transfer (CRET therapy) is one of the treatment methods using heat. The CRET group is first treated with a capacitive method for 5 minutes, then with a resistance method for 10 minutes, and again with a capacitive electrode for 5 minutes. Give. The first group is treated with placebo and flexibility exercises. The second group is treated with flexibility training and placebo therapy with no energy therapy.

Settings and conduct

Clinical trial with control group, with parallel group, one-way blind, randomized, on about 50 patients. Random Number software was used for randomization.

Participants/Inclusion and exclusion criteria

Patient with non-specific chronic low back pain between the ages of 18 and 50 who have had pain for at least the past 3 months are included in the study. People who are not in this age group, have pain for less than 3 months, and have conditions such as deformity of the lower limbs and spine or pacemaker are not included in the study.

Intervention groups

- Patient aged 18 to 50 years
- Pain in the lower back for at least 3 months if the exact cause is not known
- Patient with moderate pain intensity (VAS between 3 and 6)
- The person has the ability to do exercises

Main outcome variables

Evaluation of pain and disability in people with non-specific chronic low back pain. Range of motion and quality of life are also measured as a secondary variable.

General information

Reason for update

Acronym

TECAR(of resistive capacitive electric transfer method)

IRCT registration information

IRCT registration number: **IRCT20220227054142N1**

Registration date: **2022-04-18, 1401/01/29**

Registration timing: **registered_while_recruiting**

Last update: **2022-04-18, 1401/01/29**

Update count: **0**

Registration date

2022-04-18, 1401/01/29

Registrant information

Name

Mehdi Jarghouei

Name of organization / entity

Country

Iran (Islamic Republic of)

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2022-04-09, 1401/01/20

Expected recruitment end date

2022-09-23, 1401/07/01

Actual recruitment start date

empty
Actual recruitment end date
empty
Trial completion date
empty

Scientific title
The effect of resistive capacitive electric transfer method and flexibility exercises on pain, range of motion, disability and quality of life in patients with chronic nonspecific low back pain

Public title
Evaluation of the effect of TECAR and exercise therapy in patients with chronic nonspecific back pain

Purpose
Supportive

Inclusion/Exclusion criteria

Inclusion criteria:

Pain in the lower back for at least 3 months if the exact cause is not known • The person has the ability to do exercises • The person is willing to do exercises and therapy sessions

Exclusion criteria:

No acute back pain (at least 3 months after pain)
Infection in the lumbar region Fracture or tumor History of lumbar surgery Pace Maker or any electrical device in the body Severe deformity in the lower limbs or spine such as scoliosis Specific diseases of the spine such as severe osteoporosis or ankylosing spondylitis
Neurological problems such as stroke or other problems that deprive a person of the ability to perform exercises and tests Lack of understanding and inability of the questionnaire

Age
From **18 years** old to **50 years** old

Gender
Both

Phase
N/A

Groups that have been masked

- Participant
- Care provider
- Data analyser
- Data and Safety Monitoring Board

Sample size
Target sample size: **50**

Randomization (investigator's opinion)
Randomized

Randomization description
Participants are initially divided into two groups 1 and 2 with the help of Random Number program The number one in the application indicates the addiction therapy group and the exercise therapy placebo, and the number 2 in the software indicates the addiction therapy and exercise therapy group.

Blinding (investigator's opinion)
Single blinded

Blinding description
The patient does not know how to group and study The data analyzer does not know how to group and study

Placebo
Used
Assignment
Crossover
Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics committee of iran University of Medical Sciences

Street address

No. 1, daneshgah Ave., shahed3 alley., khansarTown

City

khansar

Province

Isfahan

Postal code

8791816764

Approval date

2021-08-24, 1400/06/02

Ethics committee reference number

IR.IUMS.REC.1400.419

Health conditions studied

1

Description of health condition studied

chronic nonspecific low back pain

ICD-10 code

ICD-10 code description

2

Description of health condition studied

Chronic nonspecific back pain

ICD-10 code

ICD-10 code description

M54.5

Primary outcomes

1

Description

Pain: The effect of resistive capacitive electric transfer method and flexibility exercises in patients with chronic nonspecific low back pain

Timepoint

Before the start of the study - at the end of 10 treatment sessions - one month (30 days) days after the end of treatment - three months after the end of treatment (90 days)

Method of measurement

Visual-analog scale

2

Description

Disability: Any limitation or inability to perform an activity in the normal range that is possible for a normal and healthy person to perform

Timepoint

Before the start of the study - at the end of 10 treatment sessions - one month (30 days) days after the end of treatment - three months after the end of treatment (90 days)

Method of measurement

Oswestry Disability Index (ODI)

Secondary outcomes

1

Description

Quality of life :: Quality of life is the perception of each person of their health status and the degree of satisfaction with this situation.

Timepoint

Before the start of the study - at the end of 10 treatment sessions - one month (30 days) days after the end of treatment - three months after the end of treatment (90 days)

Method of measurement

Persian version of the 12-item SF-12 questionnaire

2

Description

Range of motion: The amount of movement in a joint that depends on the bone structure and physiological characteristics of the connective tissue around the joint.

Timepoint

Before the start of the study - at the end of 10 treatment sessions - one month (30 days) days after the end of treatment - three months after the end of treatment (90 days)

Method of measurement

در بررسی خم شدن طرفی فرد به دیوار تکیه داده و بدون این که شانه هایش از دیوار فاصله بگیرد به طرف خم می شود و فاصله ی نوک انگشتان تا زمین اندازه گرفته می شود.

3

Description

Range of motion Bending forward: The amount of movement in a joint that depends on the bone structure and physiological characteristics of the connective tissue around the joint.

Timepoint

Before the start of the study - at the end of 10 treatment sessions - one month (30 days) days after the end of treatment - three months after the end of treatment (90 days)

Method of measurement

Modified Schober Index

Intervention groups

1

Description

Intervention group:

Category

Rehabilitation

2

Description

Control group:

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

دانشکده توانبخشی دانشگاه علوم پزشکی ایران

Full name of responsible person

مهدی جرقوئی

Street address

Mirdamad, Shah Nazari St., Maddakaran Alley

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Iran University of Medical Sciences

Full name of responsible person

دکتر حسین کیوانی

Street address

بزرگراه همت جنب برج میلاد، دانشگاه علوم پزشکی ایران

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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

Iran 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**

Iran University of Medical Sciences

Full name of responsible person

Mehdi Jarghouei

Position

Msc Student

Latest degree

Bachelor

Other areas of specialty/work

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Person responsible for updating data**Contact****Name of organization / entity**

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Sharing plan**Deidentified Individual Participant Data Set (IPD)**

Yes - There is a plan to make this available

Study Protocol

Yes - There is a plan to make this available

Statistical Analysis Plan

Yes - There is a plan to make this available

Informed Consent Form

Yes - There is a plan to make this available

Clinical Study Report

Yes - There is a plan to make this available

Analytic Code

Yes - There is a plan to make this available

Data Dictionary

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

Title and more details about the data/document

All primary and secondary variable data will be published

When the data will become available and for how long

About 6 months after printing the results.

To whom data/document is available

This information will be available to people working in academic institutions as well as graduate physiotherapists.

Under which criteria data/document could be used

The use of results and data for academic institutions and for the purpose of conducting research is available only by mentioning the source.

From where data/document is obtainable

Via email and contact Mehdi Jarghouei at
ptmehdi.j1995@gmail.com

**What processes are involved for a request to access
data/document**

After submitting the response request, finally up to 2
weeks later

Comments