

Clinical Trial Protocol

Iranian Registry of Clinical Trials

26 Jun 2026

Comparison of the effect of conventional physiotherapy and conventional physiotherapy with lumbar multifidus dry needling on pain, disability and pressure pain threshold in patients with chronic non specific low back pain

Protocol summary

Study aim

Study the effect of conventional physiotherapy and the effect of multifidus muscle dry needling with conventional physiotherapy on pain, disability and pressure pain threshold in patients with chronic non-specific low back pain

Design

A randomized clinical trial with controlled, paralleled groups, double blind with a sample size of 40 people

Settings and conduct

After the call, people with chronic non-specific low back pain are randomly divided into intervention and control groups. Statistical analysts and patients are unaware of the grouping.

Participants/Inclusion and exclusion criteria

Inclusion : Back pain between the 12th rib and the buttock area , Age between 18 and 50 years, active trigger point in the lumbar multifidus muscle, At least three months of low back pain, BMI<40 kg/m2 exclusion : Rheumatic and systemic diseases,Contraindications of dry needling, fibromyalgia syndrome and neurological problems, Pregnancy, mental disorders, previous lumbar surgery, Uncontrolled endocrine disorders

Intervention groups

Control group: 20 people will be placed in this group and will receive 8 conventional physiotherapy sessions including: TENS, US and Hot pack in addition to conventional exercises. Intervention group: 20 people, similar to the control group, will receive conventional physiotherapy plus three sessions of dry needling of the multifidus muscle.

Main outcome variables

Pain, Disability , pressure pain threshold

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20210221050441N1**

Registration date: **2022-08-30, 1401/06/08**

Registration timing: **registered_while_recruiting**

Last update: **2022-08-30, 1401/06/08**

Update count: **0**

Registration date

2022-08-30, 1401/06/08

Registrant information

Name

Mehdi Marani

Name of organization / entity

Country

Iran (Islamic Republic of)

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2022-08-23, 1401/06/01

Expected recruitment end date

2023-03-19, 1401/12/28

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparison of the effect of conventional physiotherapy and conventional physiotherapy with lumbar multifidus dry needling on pain, disability and pressure pain threshold in patients with chronic non specific low back pain

Public title

Comparison of the effect of conventional physiotherapy and conventional physiotherapy with lumbar multifidus dry needling on pain, disability and pressure pain threshold in patients with chronic non specific low back pain

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria:

Back pain between the 12th rib and the buttock area Age between 18 and 50 years active trigger point in the lumbar multifidus muscle At least three months of low back pain BMI<40 kg/m²

Exclusion criteria:

Rheumatic and systemic diseases Contraindications of dry needling such as: trauma, taking anticoagulants, infections, immune and heart diseases fibromyalgia syndrome and neurological problems Pregnancy, mental disorders, previous lumbar surgery Uncontrolled endocrine disorders

Age

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

Gender

Both

Phase

N/A

Groups that have been masked

- Participant
- Data analyser

Sample size

Target sample size: **40**

Randomization (investigator's opinion)

Randomized

Randomization description

It is done by randomization secretary and permuted-block method with blocks of volume 4 . In this method, there are ten blocks of 4 in the form of a list, each block has 4 numbers that are randomly designed by the statistical analyzer. In each block, 2 smaller numbers are allocated to the conventional physiotherapy group and 2 larger numbers are assigned to the conventional physiotherapy group with dry needling. When referring to these groups, the samples are randomly placed from the first to the last list and two people in the intervention group and two people in the control group in each block.

Blinding (investigator's opinion)

Double blinded

Blinding description

To blind the statistician, he analyzes the results without knowing the groups. To blinding patients, patient placed in the prone position and shows the patient the real

needle, but when the needle is inserted, a false needle (through the tooth) is struck on the skin and after that the patient does not see the false needle.

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics committee of Isfahan university of medical science

Street address

Isfahan University of Medical Sciences , Hezar Jerib street

City

Isfahan

Province

Isfahan

Postal code

8174673461

Approval date

2022-08-06, 1401/05/15

Ethics committee reference number

IR.MUI.NUREMA.REC.1401.057

Health conditions studied

1

Description of health condition studied

chronic non specific low back pain

ICD-10 code

M54.5

ICD-10 code description

Low back pain

Primary outcomes

1

Description

Pain

Timepoint

Before, after and one month after treatment

Method of measurement

Visual Analogue Scale

2

Description

Pressure pain Threshold

Timepoint

Before, after and one month after treatment
Method of measurement
Algometer

3

Description
Disability

Timepoint
Before, after and one month after treatment

Method of measurement
oswestry disability index

Secondary outcomes

empty

Intervention groups

1

Description
Control group: 20 people are included in this group and 8 conventional physiotherapy sessions include: 20 minutes TENS, 4 minutes US and 15 minutes Hot pack, in addition conventional exercises including knee to chest , raising the trunk in prone position,heel slide in supine position , bridging and bicycle training. Each exercise will be repeated 10 times and each repetition will be done for 10 seconds.

Category
Rehabilitation

2

Description
Intervention group: 20 people are included in this group and 8 conventional physiotherapy sessions in addition dry needling of the multifidus muscle includes: 20 minutes of TENS, 4 minutes of US and 15 minutes of Hot pack, in addition conventional exercises including knee to chest , raising the trunk in prone position,heel slide in supine position , bridging and bicycle training, as well as three sessions of dry needling in the second, fourth, sixth session and inserting and removing the needle into the muscle for 10 seconds. Each exercise will be repeated 10 times and each repetition will be done for 10 seconds.

Category
Rehabilitation

Recruitment centers

1

Recruitment center
Name of recruitment center
Sedigheh tahereh Rehabilitation center
Full name of responsible person
Hosseinali ahmadi
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Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Esfahan University of Medical Sciences
Full name of responsible person
Gholamreza Asgari
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Deputy of research and technology ,Isfahan
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8174673461
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Email
research@mui.ac.ir
Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Esfahan 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
Esfahan University of Medical Sciences
Full name of responsible person
Mojtaba Heshmatipour
Position
Associate professor
Latest degree
Master

Other areas of specialty/work

Physiotherapy

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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

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

Yes - There is a plan to make this available

Analytic Code

Not applicable

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

The personal information of the persons and the results of the treatment and their relationship cannot be shared with each other, only the analyzed information without mentioning the names of the persons is accessible to other researchers.

When the data will become available and for how long

Since the publication of the results

To whom data/document is available

Researchers and other physiotherapists

Under which criteria data/document could be used

In order to access for the design of other studies by researchers and to increase the quality of treatment by colleagues and other physiotherapists

From where data/document is obtainable

Author

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

If the request is registered in the email, it will be answered as soon as possible

Comments