

Clinical Trial Protocol

Iranian Registry of Clinical Trials

30 Jun 2026

The effect of dry needling on muscle activity pattern and scapulohumeral rhythm in patients with active myofascial trigger points in the upper trapezius muscle

Protocol summary

Study aim

The effect of dry needling on muscle activity pattern and scapulohumeral rhythm in patients with active myofascial trigger point in the upper trapezius muscle

Design

A clinical trial with one patient group sample size: 11 people

Settings and conduct

Project location: Tarbiat Modares University, medical school Identify the AMTrP: the presence of a taut band, the local twitch response, the presence of at least one hypersensitive tender point on the taut band, the spontaneous referral pain pattern. first session: evaluate muscle activity and scapulohumeral rhythm using EMG and Motion analysis. Dry needling will be performed 5 sessions for individuals. 2 days after the end of treatment sessions, the second evaluation session is performed. The second evaluation session, the same parameters of the first session will be repeated. A group of healthy individuals will be evaluated to assess normal scapulohumeral rhythm and pattern of normal muscle activity. since the markers of the motion analysis are attached to the skin at rest position, to examine the correlation between the accuracy of the motion analysis and manual measurement, on healthy people at 60, 90 and 120 degrees of arm scaption, We measure the upward rotation of scapula by hand and with the device, and finally the correlation between the two measurement methods will be calculated.

Participants/Inclusion and exclusion criteria

Individuals have a history of recurrent pain caused by active trigger points in the upper trapezius muscle on the dominant side for at least one year with VAS 1- 5; needle phobia, history of epilepsy, depression, migraine, and any mental health disorder, coagulation and vascular diseases

Intervention groups

Dry needling for people with myofascial trigger points in the upper trapezius muscle

Main outcome variables

Muscle activity pattern Scapulohumeral rhythm

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20220314054286N1**

Registration date: **2022-04-26, 1401/02/06**

Registration timing: **registered_while_recruiting**

Last update: **2022-04-26, 1401/02/06**

Update count: **0**

Registration date

2022-04-26, 1401/02/06

Registrant information

Name

Maliheh Rahmati

Name of organization / entity

The University of Tarbiat modares

Country

Iran (Islamic Republic of)

Phone

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Email address

maliheh.rahmati@modares.ac.ir

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2022-04-04, 1401/01/15

Expected recruitment end date

2022-07-21, 1401/04/30

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The effect of dry needling on muscle activity pattern and scapulohumeral rhythm in patients with active myofascial trigger points in the upper trapezius muscle

Public title

The effect of dry needling on muscle activity pattern and scapulohumeral rhythm in patients with active myofascial trigger points in the upper trapezius muscle

Purpose

Treatment

Inclusion/Exclusion criteria**Inclusion criteria:**

Individuals have a history of recurrent pain caused by active trigger points of upper trapezius muscle on the dominant side for at least one year. VAS between 1-5

Exclusion criteria:

History of cervical trauma in the last 6 months
Radiculopathy of cervical
History of surgery in the shoulder and the cervical area
History of Dry needling in cervical or treatment of MTrP in the last 6 months
Needle phobia
Severe postural disorder
History of epilepsy, depression, migraine, and any mental health disorders
Coagulation and vascular diseases based on diagnosis of medical doctor.
Any type of orthopedic and neurological disease that affects on position of shoulder, cervical and their function.

Age

From **20 years** old to **40 years** old

Gender

Both

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **22**

Randomization (investigator's opinion)

N/A

Randomization description**Blinding (investigator's opinion)**

Not blinded

Blinding description**Placebo**

Not used

Assignment

Single

Other design features**Secondary Ids**

empty

Ethics committees**1****Ethics committee****Name of ethics committee**

Research Ethics Committes of Tarbiat Modares University

Street address

No.7, Jalal AlAhmad street, Nasr, Tehran,Iran

City

Tehran

Province

Tehran

Postal code

1411713116

Approval date

2022-01-22, 1400/11/02

Ethics committee reference number

IR.MODARES.REC.1400.292

Health conditions studied**1****Description of health condition studied**

Patients with active myofascial trigger point in the upper trapezius muscle

ICD-10 code**ICD-10 code description****Primary outcomes****1****Description**

Muscles activity pattern

Timepoint

Before intervention, 2 days after the end of the intervention session

Method of measurement

Electromyography device

2**Description**

Scapulohumeral rhythm

Timepoint

Before intervention, 2 days after the end of the intervention session

Method of measurement

Motion analysis device

Secondary outcomes

empty

Intervention groups**1****Description**

Intervention group: Dry needle(50 ×0.25) ,The needle is inserted in trigger points perpendicularly. the needle is left in sit for 10 minutes.Dry needling is done totally 5 session, twice a week.

Category

Treatment - Devices

Recruitment centers

1

Recruitment center

Name of recruitment center

Physiotherapy clinic

Full name of responsible person

Farid Bahrpeyma

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

The university of Tarbiat modares

Full name of responsible person

Amir Abdollahzadeh

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No.7, Jalal AlAhmad street, Nasr, Tehran. Iran

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zadeh@modares.ac.ir

Grant name

Grant code / Reference number

Is the source of funding the same sponsor organization/entity?

Yes

Title of funding source

The university of Tarbiat modares

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

The University of Tarbiat modares

Full name of responsible person

Farid Bahrpeyma

Position

Associate professor

Latest degree

Ph.D.

Other areas of specialty/work

Physiotherapy

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Person responsible for scientific inquiries

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

The University of Tarbiat modares

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Web page address**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

Not applicable

Analytic Code

Not applicable

Data Dictionary

Not applicable

Title and more details about the data/document

Part of the data

When the data will become available and for how long

6 months after publication

To whom data/document is available

Researchers

Under which criteria data/document could be used

for treatment and research goals

From where data/document is obtainable

Farid Bahrpeyma

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

Confirmation of advisor professors

Comments