Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 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

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Iran (Islamic Republic of)

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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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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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Other areas of specialty/work
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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
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