Clinical Trial Protocol
Iranian Registry of Clinical Trials

09 Nov 2026

Comparison of Effectiveness of Dry needling and Electroacupuncture of upper trapezius muscle on pain, Ultrasonography changes and Functional disability of Upper limb in patients with Myofascial pain syndrome

Protocol summary

Study aim
The effect of Dry needling and Electroacupuncture on pain and functional disability and ultrasonography changes in patients with myofacial pain syndrome

Design
The study is a double-blind randomized clinical trial. 42 patients with myofascial pain syndrome are randomly divided into two groups. Stratified Permuted Block Randomization method is used for randomization.

Settings and conduct
This study is performed at the Semnan neuromuscular Rehabilitation Research Center. Patients are invited to participate in the study. In the first intervention group, dry needling of the upper trapezius muscle and in the second intervention group, electroacupuncture of the upper trapezius muscle will be performed. Measurement of muscle thickness and assessment of pain and functional disability will be done once before the intervention and once after the intervention. The researcher will be blind to the intervention by employing the research assistant. The outcome assessor will be different from the researcher and is not aware of the interlopers. In each group, they are not aware of the intervention of the other group

Participants/Inclusion and exclusion criteria
Inclusion criteria: The presence of a tight band and sensitive points to pain; Having a referral pain pattern; People with a body mass index between 20 and 29;At least 3 months have passed since the pain started Exclusion criteria: diabetes; pregnancy; Fibromyalgia disease; Needle phobia; Hypersensitivity to needle; History of neck and shoulder surgery; Rheumatoid arthritis and degenerative diseases; myopathy; neuropathy; myelopathy; torticollis; radiculopathy

Intervention groups
In the first intervention group, dry needling of the upper trapezius muscle will be performed. In the second intervention group, electroacupuncture of the upper trapezius muscle will be performed.

Main outcome variables
Muscle thickness; pain; functional disability

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20221008056115N1**
Registration date: **2022-10-26, 1401/08/04**
Registration timing: **prospective**

Last update: **2022-10-26, 1401/08/04**
Update count: **0**

Registration date
2022-10-26, 1401/08/04

Registrant information

Name
Seyed Zia Safavi

Name of organization / entity

Country
Iran (Islamic Republic of)

Phone
+98 23 3344 1022

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Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2022-11-22, 1401/09/01

Expected recruitment end date
2023-03-20, 1401/12/29

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparison of Effectiveness of Dry needling and Electroacupuncture of upper trapezius muscle on pain, Ultrasonography changes and Functional disability of Upper limb in patients with Myofascial pain syndrome

Public title

The Effectiveness of Dry needling and Electroacupuncture on Myofascial pain syndrome

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria:

The presence of a tight band and sensitive points to pain Having a referral pain pattern People with a body mass index between 20 and 29 At least 3 months have passed since the pain started and no specific reason has been mentioned about the cause of the pain

Exclusion criteria:

diabetes pregnancy Fibromyalgia disease Needle phobia Hypersensitivity to needle History of neck and shoulder surgery Rheumatoid arthritis and degenerative diseases, myopathy, neuropathy, myelopathy, torticollis, radiculopathy

Age

From **20 years** old to **50 years** old

Gender

Both

Phase

N/A

Groups that have been masked

- Participant
- Care provider
- Investigator
- Outcome assessor

Sample size

Target sample size: **42**

Randomization (investigator's opinion)

Randomized

Randomization description

The samples are assigned (to two groups) randomly and using the method of random permutation blocks with 6 blocks of 6, assigned to the two groups. In this method, A will represent the first intervention group and B will represent the second intervention group. In this way, the order of A and B interventions in the form of blocks from 1 to 6 is determined by the methodological consultant of the project, and is provided to the executive supervisor of the project, and the researcher obtains an assignment from the executive supervisor to assign each qualified person. The supervisor first selects the block using a random number generator (or dice roll) and then the eligible individuals are assigned to one of the two groups A or B. And the sequence of each item will be crossed out. It should be noted that if a block is selected based on random numbers that have already filled all 6 sequences, another random number will be selected again for that person.

Blinding (investigator's opinion)

Double blinded

Blinding description

The researcher will be blind to the intervention by employing the research assistant and not being in the intervention room. The outcome assessor will be different from the researcher and will only receive the study data with a code from the researcher and is not aware of the interlopers. In each group, they are not aware of the intervention of the other group

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics committee of Semnan University of Medical Sciences

Street address

Semnan University of Medical Sciences, Basij Blvd

City

Semnan

Province

Semnan

Postal code

3514799442

Approval date

2022-10-10, 1401/07/18

Ethics committee reference number

IR.SEMUMS.REC.1401.162

Health conditions studied

1

Description of health condition studied

Myofacial pain syndrome

ICD-10 code

M79.1

ICD-10 code description

Myalgia

Primary outcomes

1

Description

The thickness of the upper trapezius muscle

Timepoint

Before the intervention and after the intervention

Method of measurement

Ultrasonography device

2

Description

Functional disability

Timepoint

Before the intervention and after the intervention

Method of measurement

Disability of the Arm, Shoulder and Hand questionnaire

Secondary outcomes

empty

Intervention groups

1

Description

First Intervention group: Dry needling of upper trapezius muscle will be performed 2 sessions per week for 2 consecutive weeks. To perform the intervention, the patient is placed in pron position, and the therapist is placed above the patient's head and cleans the skin with alcohol. The needles are inserted into the muscle at the midpoint of the line extending from the seventh cervical vertebra to the acromion process, on the trigger points, and will remain in the muscle for 15 minutes.

Category

Treatment - Other

2

Description

Second Intervention group: Electroacupuncture of upper trapezius muscle will be performed 2 sessions per week for 2 consecutive weeks. To perform the intervention, the patient is placed in pron position, and the therapist is placed above the patient's head and cleans the skin with alcohol. The needles are inserted into the muscle at the middle point of the line that extends from the seventh cervical vertebra to the acarion process, on the trigger points, and electroacupuncture with a frequency of 100 Hz is continuously applied for 15 minutes.

Category

Treatment - Other

Recruitment centers

1

Recruitment center

Name of recruitment center

Neuromuscular Rehabilitation Research Center

Full name of responsible person

Mohama Reza Jajarmi

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

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Full name of responsible person

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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

Semnan 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

Semnan University of Medical Sciences

Full name of responsible person

Seyed Zia Safavi

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)
No - There is not a plan to make this available
Justification/reason for indecision/not sharing IPD
No more information
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