

Clinical Trial Protocol

Iranian Registry of Clinical Trials

10 Jun 2026

Effect of Dry Needling Versus Shock Wave Therapy on Pain and Dysfunction Following Active Trigger Points in Upper Trapezius Muscle

Protocol summary

Study aim

The aim of this study was to compare the efficacy of two methods of Dry Needling and Shock Wave therapy on pain and dysfunction of active trigger points in the upper trapezius muscle

Design

Three arm parallel groups randomized clinical trial, single blinded, two-session treatment

Settings and conduct

48 patients with myofascial pain syndrome are admitted to the physiotherapy department of Nikan hospital after inclusion criteria. Using simple randomization, patients are divided into Shock wave, Shock wave Placebo and dry needling groups. All three groups receive two sessions of treatment per week.

Participants/Inclusion and exclusion criteria

Inclusion criteria: ages 18-35 years old; having trigger points active with a specified bundle in the upper trapezius muscle; pain above 3 and less than 7 on the VAS scale; pain one to three months; referral pain. Exclusion criteria: performing injections or other treatments for trigger points during the research period; having a previous history of infectious diseases such as fibromyalgia and myopathy; malignancy or patients susceptible to infection; presence of central and peripheral neurological disorders; use of anticoagulants; having vascular diseases; fear of needling; skin ulcers in the treatment area.

Intervention groups

Shock wave Group: Upper Trapezius Muscle Shock Therapy is performed with 1000 impulses, 700 pulses on the Taut band of the Trapezius muscle and 300 pulses around the Taut band. Shock wave Group Placebo: In this group, the shock wave setting is as same as Shock wave Group without any impulse to the muscle. Dry needling Group: After inserting the needle into the muscle and observing the first twitch of the needle, leave it in the muscle for 5 minutes.

Main outcome variables

Pain; pain pressure threshold; disability based on NDI scale; lateral neck flexion range of motion

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20190514043588N1**

Registration date: **2019-12-29, 1398/10/08**

Registration timing: **retrospective**

Last update: **2019-12-29, 1398/10/08**

Update count: **0**

Registration date

2019-12-29, 1398/10/08

Registrant information

Name

Mehran Toghtamesh

Name of organization / entity

Medical University Tehran

Country

Iran (Islamic Republic of)

Phone

+98 21 7757 0616

Email address

mehrantoghtamesh@yahoo.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2019-09-23, 1398/07/01

Expected recruitment end date

2019-11-22, 1398/09/01

Actual recruitment start date

empty

Actual recruitment end date

empty
Trial completion date
empty

Scientific title
Effect of Dry Needling Versus Shock Wave Therapy on Pain and Dysfunction Following Active Trigger Points in Upper Trapezius Muscle

Public title
Comparison of the Effects of Needling and Shock Wave Therapy on Active Trigger Points

Purpose
Treatment

Inclusion/Exclusion criteria
Inclusion criteria:
Age 18-35 Having active trigger points with a distinct bundle in the upper trapezius muscle Touch the Taut Band on the upper trapezius muscle fibers Pain above 3 and less than 7 on the VAS scale Pain for one to three months Having referral pain

Exclusion criteria:
Performing injections or other treatments for trigger points during the research period Having a previous history of infectious diseases such as fibromyalgia and myopathy Malignancy or patients susceptible to infection Presence of central and peripheral neurological disorders Use of anticoagulants Having vascular diseases Fear Of Needle Skin ulcers in the treatment area

Age
From **18 years** old to **35 years** old

Gender
Male

Phase
N/A

Groups that have been masked

- Participant

Sample size
Target sample size: **48**

Randomization (investigator's opinion)
Randomized

Randomization description
Patients were randomly divided into one of three groups under study using encoded pocket.

Blinding (investigator's opinion)
Single blinded

Blinding description
The participants are blind to the treatment.

Placebo
Used

Assignment
Parallel

Other design features

Secondary Ids
empty

Ethics committees

1
Ethics committee
Name of ethics committee
Ethics committee of Tehran University of Medical Sciences
Street address
Faculty of Rehabilitation, Tehran University of Medical Sciences, Enghelab Ave, Tehran, Iran
City
Tehran
Province
Tehran
Postal code
1148965111
Approval date
2019-08-07, 1398/05/16
Ethics committee reference number
IR.TUMS.FNM.REC.1398.092

Health conditions studied

1
Description of health condition studied
Myofascial pain syndrome
ICD-10 code
M79.1
ICD-10 code description
Myalgia

Primary outcomes

1
Description
Pain
Timepoint
At baseline and immediately after the first session and after the second session
Method of measurement
Visual Analog Scale

2
Description
Pressure Pain Threshold
Timepoint
At baseline and immediately after the first session and after the second session
Method of measurement
Algometer

3
Description
Lateral bending Of Neck
Timepoint
At baseline and immediately after the first session and after the second session
Method of measurement
Goniometer

4

Description

Disability

Timepoint

Beginning and end of treatment

Method of measurement

Neck Disability Index Questionnaire

Secondary outcomes

empty

Intervention groups

1

Description

Dry Needling : In this group, needle enters the upper trapezius muscle trigger point and stays in the muscle for 5 minutes. Two treatment sessions with a 48 hour interval during a week.

Category

Treatment - Other

2

Description

Shock Wave Therapy: In this group, shockwave with a power of 38 mj / mm² and frequency of 10 Hz is applied to the upper trapezius muscle with 1000 impulses and two sessions of therapy with 48 h intervals during the week.

Category

Treatment - Other

3

Description

Placebo Shock Wave Therapy: In this group, a shockwave with a power of 38 mj / mm² and a frequency of 10 Hz is applied to the upper trapezius muscle without any impulse and two treatment sessions with 48 h intervals during the week.

Category

Placebo

Recruitment centers

1

Recruitment center

Name of recruitment center

Nikan Hospital

Full name of responsible person

Mehran Toghtamesh

Street address

Department of Physiotherapy, Nikan Hospital, 22 Bahman Ave., Army Boulevard

City

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1694636517

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Nikan hospital

Full name of responsible person

Dr. Mehdi Shiravi

Street address

Department of Physiotherapy, Nikan Hospital, 22 Bahman Ave., Army Boulevard

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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

Nikan hospital

Proportion provided by this source

100

Public or private sector

Private

Domestic or foreign origin

Domestic

Category of foreign source of funding

empty

Country of origin

Type of organization providing the funding

Persons

Person responsible for general inquiries

Contact

Name of organization / entity

Tehran University of Medical Sciences

Full name of responsible person

Mehran Toghtamesh

Position

Masters student

Latest degree

Bachelor

Other areas of specialty/work

Physiotherapy

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Person responsible for scientific inquiries

Contact

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Sharing plan

Deidentified Individual Participant Data Set (IPD)

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

Study Protocol

Undecided - It is not yet known if there will be 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

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

Analytic Code

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

Data Dictionary

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