Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 2026

The effect of combination of extracorporeal shock wave therapy (ESWT) and muscle energy technique (MET) on active trigger point in upper trapezius muscle

Protocol summary

Study aim

the effectiveness of combination of extracorporeal shock wave therapy and muscle energy technique on active trigger points in upper trapezious muscle.

Design

54 participants will be divided in three groups, randomly. Randomization will performed using sealed, filled envelopes describing the treatment groups. We prepare three envelopes, in each of which one of the three methods is written. Each participant will choose one of the envelop and will divide in each treatment group.

Settings and conduct

The patients with active upper trapezious trigger points in the physiotherapy clinic of school of Rehabilitation will evaluate and will be divide in three groups. Group A will receive only MET while group B will receive only ESWT and group C will receive combination of MET and ESWT. In the end of treatment sessions, evaluations will be down, again.

Participants/Inclusion and exclusion criteria

Inclusion criteria: - Age between 18-40 years. - Presence of a palpable taut band in upper trapezius muscle. - Presence of a nodule in upper trapezius muscle. - Presence of 1 to 3 trigger point in one side. - Iron or calcium deficiency Exclusion criteria: - Diagnosed fibromyalgia - Cervical radiculopathy - Facial neuralgia - Coagulation alteration - Cancer - History of cervical or shoulder surgery - History of deep vein thrombosis - History of myopathy - Aspirin intake during the last 3 days

Intervention groups

1. Group A- treatment with only MET . 2. Group B - treatment with only ESWT . 3. Group C - treatment with combination of MET and ESWT .

Main outcome variables

• Visual analog scale VAS. . pain pressure threshould • neck range of motion • Neck disability index (NDI)

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20130121012210N8**
Registration date: **2021-03-09, 1399/12/19**
Registration timing: **prospective**

Last update: **2021-03-09, 1399/12/19**
Update count: **0**

Registration date

2021-03-09, 1399/12/19

Registrant information

Name

Azadeh Shadmehr

Name of organization / entity

Teharn University of Medical Sciences

Country

Iran (Islamic Republic of)

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+98 21 7752 8468

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shadmehr@tums.ac.ir

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2021-04-21, 1400/02/01

Expected recruitment end date

2021-07-23, 1400/05/01

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title
The effect of combination of extracorporeal shock wave therapy (ESWT) and muscle energy technique (MET) on active trigger point in upper trapezius muscle

Public title
The effect of combination of shock wave therapy and muscle energy technique on neck pain

Purpose
Treatment

Inclusion/Exclusion criteria

Inclusion criteria:
Age between 18-40 years. Presence of a palpable taut band in upper trapezius muscle. Presence of a nodule in upper trapezius muscle. Presence of 1 to 3 trigger point in one side.

Exclusion criteria:
Diagnosed fibromyalgia Cervical radiculopathy Facial neuralgia History of cervical or shoulder surgery History of deep vein thrombosis History of myopathy

Age
From **18 years** old to **40 years** old

Gender
Both

Phase
N/A

Groups that have been masked
No information

Sample size
Target sample size: **54**

Randomization (investigator's opinion)
Randomized

Randomization description
The patients will randomly assign into 3 groups of only MET , only ESWT and combination of MET and ESWT . Randomization will performed using sealed, randomly filled envelopes describing the treatment groups. We prepare three envelopes, in each of which one of the three methods is written.

Blinding (investigator's opinion)
Not blinded

Blinding description

Placebo
Not 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
school of Rehabilitation, Piche Shemiran, Enghelab street

City
Tehran

Province
Tehran

Postal code
1148965111

Approval date
2020-12-19, 1399/09/29

Ethics committee reference number
IR.TUMS.MEDICINE.REC.1399.917

Health conditions studied

1

Description of health condition studied
Activetrigger points in upper trapezuis muscle

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description
•Pain

Timepoint
before and after 1 week of intervention

Method of measurement
• visual analog scale

2

Description
Pain pressure threshold

Timepoint
before and after 1 week of intervention

Method of measurement
Algometer

3

Description
• Active neck range of motion

Timepoint
before and after 1 week of intervention

Method of measurement
Digital goniometer

4

Description
neck function

Timepoint
before and after 1 week of intervention

Method of measurement
neck disability index questionnaire (NDI)

Secondary outcomes

empty

Intervention groups

1

Description
Intervention group A- only Muscle energy techniques- in this group muscle energy technique will apply on the upper trapezious. First upper trapezious will put in stretch position and then its antagonist muscle is down 10 seconds isometric contraction.after 20 seconds relaxation,upper trapezious will be stretched again. This technique will do 3 times in 3 sessions.

Category
Rehabilitation

2

Description
Intervention group B: only shock wave- shock wave prob will put on active trigger points of the upper trapezious and mechanical stimulation with 2000 Bar pressure will apply for one minutes. his technique will do 3 times in 3 sessions.

Category
Rehabilitation

3

Description
Intervention group C: Combination of Muscle energy techniques and shock wave- Muscle energy technique will apply on the upper trapezious. First upper trapezious will put in stretch position and then its antagonist muscle is down 10 seconds isometric contraction.after 20 seconds relaxation,upper trapezious will be stretched again. Then shock wave prob will put on active trigger points of the upper trapezious and mechanical stimulation with 2000 Bar pressure will apply for one minutes.This technique will do 3 times in 3 sessions.

Category
Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center
School of Rehabilitation, Tehran University of Medical Sciences

Full name of responsible person
Azadeh Shadmehr

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity
Tehran University of Medical Sciences

Full name of responsible person
Ahmad Esmaielzadeh

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International Campous, Qods Stree, Engelab street

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ic-research@tums.ac.ir

Grant name

Grant code / Reference number

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

Title of funding source
Tehran 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
Sponsor: country of origin

Country of origin
IR

Type of organization providing the funding
Academic

Person responsible for general inquiries

Contact

Name of organization / entity
Tehran University of Medical Sciences

Full name of responsible person
Azadeh Shadmehr

Position
Professor

Latest degree
Ph.D.

Other areas of specialty/work
Physiotherapy

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Person responsible for scientific inquiries

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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
There is no more Data.

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