Clinical Trial Protocol
Iranian Registry of Clinical Trials

19 Jun 2026

Effect of dry needling on neuromuscular junction response and sympathetic skin response in patients with upper trapeizus myofascial trigger points compared with healthty subjects

Protocol summary

Summary

Introduction: Dry needling (DN) is an effective method for the treatment of myofascial trigger points (MTrPs). The aim of the present study will be to assess the immediate neurophysiological efficacy of dry needling in patients with upper trapezius MTrPs. Methods and analysis: A prospective, controlled clinical trial is designed to include patients with upper trapezius MTrPs and volunteered healthy subjects to receive one session DN. The primary outcome measures are neuromuscular junction response (NMJR) and sympathetic skin response (SSR). The secondary outcomes are the pain intensity and the pressure pain threshold. Data will be collected at baseline and immediately after intervention.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2013031612828N1**
Registration date: **2013-04-04, 1392/01/15**
Registration timing: **registered_while_recruiting**

Last update:
Update count: **0**

Registration date

2013-04-04, 1392/01/15

Registrant information

Name

Maryam Abbaszadeh-Amirdehi

Name of organization / entity

Tehran University of Medical Sciences

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Recruitment status

Recruitment complete

Funding source

Tehran University of Medical Sciences

Expected recruitment start date

2013-04-04, 1392/01/15

Expected recruitment end date

2013-06-04, 1392/03/14

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Effect of dry needling on neuromuscular junction response and sympathetic skin response in patients with upper trapeizus myofascial trigger points compared with healthty subjects

Public title

The neurophysiological effects of dry needling in patients with upper trapeizus myofascial trigger points

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria: subjects with aged between 20 and 40 year old; upper trapezius active Myofascial trigger points (MTrPs). Exclusion criteria: subjects less than 20 years and more than 40 years; subjects with a history of other shoulder or spinal disorders; neck and upper extremity surgery; acute disease; muscle diseases; neurological or systemic disorder (such as lupus erythematus, scleroderma); epilepsy; pregnancy; using sedative drugs; needle phobia; bleeding disorder; anticoagulant

medication; previous experience with dry needling for myofascial pain; Skin lesion and infection or inflammatory oedema at MTrPs.

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: **30**

Randomization (investigator's opinion)
Not randomized

Randomization description

Blinding (investigator's opinion)
Not blinded

Blinding description

Placebo
Not used

Assignment
Single

Other design features
This study is a controlled clinical trial designed to investigate the effectiveness of dry needling on neuromuscular junction response and sympathetic outflow in patients with upper trapeizus MTrPs compared with healthy individual matched group.

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee
Tehran University of Medical Sciences

Street address
Tehran University of Medical Sciences, Enghelab Ave., Tehran, Iran

City
Tehran

Postal code
1417614411

Approval date
2012-09-17, 1391/06/27

Ethics committee reference number
2185

Health conditions studied

1

Description of health condition studied
myofascial trigger point

ICD-10 code
M00-M99

ICD-10 code description
Diseases of the musculoskeletal system and connective tissue

Primary outcomes

1

Description
Neuromuscular Junction Response (NMJR)

Timepoint
before intervention and immediately after intervention

Method of measurement
Electrodignostic technique of repeatitive nerve stimulation (RNS) in trapezius muscle

2

Description
Sympathetic Skin Response (SSR)

Timepoint
before intervention and immediately after intervention

Method of measurement
stimulus over the median nerve at the wrist and records on the palm of the hand

Secondary outcomes

1

Description
Pain Intensity

Timepoint
before intervention and immediately after intervention

Method of measurement
Pain intensity will be self rated by subjects on a 0-10 numerical rating scale with 0 representing no pain and 10 representing the worst imaginable pain

2

Description
Pressure Pain Threshold

Timepoint
before intervention and immediately after intervention

Method of measurement
; by use a pressure algometer According to Kilogram per square centimeter

Intervention groups

1

Description
The sterile acupuncture needles of 0.30 mm diameter and 50 mm long will be used for both groups. The needle will be inserted into the skin over the palpated trigger point and will be advanced until it reaches the trigger point. Each trigger point will be repeatedly needled for 1 – 2 minutes.

Category
Treatment - Other

2

Description
The sterile acupuncture needles of 0.30 mm diameter and 50 mm long will be used. The needle will be inserted into the skin over the Trigger Point equivalent of upper terapezius in healthy subjects. Each point will be repeatedly needled for 1 – 2 minutes.

Category
Treatment - Other

Recruitment centers

1

Recruitment center

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

Full name of responsible person
Maryam Abbaszadeh-Amirdehi

Street address
School of Rehabilitation of Tehran University of Medical Sciences, Mirdamad Blv, Shahnazari St, Nezam St, Tehran, Iran

City
Tehran

Sponsors / Funding sources

1

Sponsor

Name of organization / entity
Tehran University of Medical Sciences

Full name of responsible person
Dr. Mansouri

Street address
Tehran University of Medical Sciences, Enghelab Ave., Tehran, Iran

City
Tehran

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
empty

Domestic or foreign origin
empty

Category of foreign source of funding
empty

Country of origin

Type of organization providing the funding
empty

Person responsible for general inquiries

Contact

Name of organization / entity
Tehran University of Medical Sciences

Full name of responsible person
Maryam Abbaszadeh-Amirdehi

Position
PhD candidate of physiotherapy

Other areas of specialty/work

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Person responsible for scientific inquiries

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Sharing plan

Deidentified Individual Participant Data Set (IPD)
empty
Study Protocol
empty
Statistical Analysis Plan
empty
Informed Consent Form
empty
Clinical Study Report
empty
Analytic Code
empty
Data Dictionary
empty