

Clinical Trial Protocol

Iranian Registry of Clinical Trials

11 Sep 2026

The effect of muscle energy technique on thickness and echogenicity of capital rotator muscles and components of cervicogenic headache in cervicogenic headache subjects compared with control group: A Randomized Clinical Trial

Protocol summary

Summary

Cervicogenic headache is related to musculoskeletal structure disorders in cervical region. The aim of this study is to determine the effect of muscle energy techniques on capital rotator muscles thickness and echogenicity (measured by B mode Sonography) and other symptoms of cervicogenic headache (intensity, duration, frequency and disability of headache, which will be measured by questionnaires). This study is a randomized single blinded clinical trial that patients are not aware of grouping. Thirty Subjects with cervicogenic headache will be selected according to the criteria of International Headache Society (headache related with cervical musculoskeletal disorders, upper cervical rotation range of motion restriction and pain and hypomobility in upper cervical region movement and palpation). Selected patients will be divided into two groups with 15 subjects by simple randomization assignment (Flip the coin). In the experiment group treatment intervention will be done by infrared radiation in prone position and muscle energy techniques for extensor and capital rotator muscles in supine position. In the control group only infrared radiation will be used in prone position. Both groups will have six treatment sessions. Before and after of all treatment sessions in two groups thickness and echogenicity of capital rotator muscles in anterior and posterior sides of the upper cervical region will be measured by sonography and upper cervical rotation range of motion by Goniometer. Headache index and headache disability questionnaires will be completed in first and 6th sessions for all subjects.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2015031421459N1**

Registration date: **2016-08-22, 1395/06/01**

Registration timing: **registered_while_recruiting**

Last update:

Update count: **0**

Registration date

2016-08-22, 1395/06/01

Registrant information

Name

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Name of organization / entity

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Recruitment status

Recruitment complete

Funding source

Vice chancellor for research and Technology of Iran University of Medical Sciences

Expected recruitment start date

2016-07-22, 1395/05/01

Expected recruitment end date

2017-07-21, 1396/04/30

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The effect of muscle energy technique on thickness and echogenicity of capital rotator muscles and components of cervicogenic headache in cervicogenic headache subjects compared with control group: A Randomized Clinical Trial

Public title

The effect of muscle energy technique on Cervicogenic Headache

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria: subjects with cervicogenic headache due to at least 3 months, age between 18-55 years and BMI between 16-32 kg/m². Exclusion criteria: Patients with other types of headache, uncorrected visual or auditory impairments, history of exercise therapy, physical therapy or manual therapy for neck and shoulder regions in previous 3 months, pregnancy, problems such as diabetes, cardiopulmonary diseases, myopathy, history of cancer, surgery within the last 3 months, Psychological disorders, Any condition necessitating bed rest for more than two weeks during past 12 months, alcohol consumption, consuming pain reducer medicine within 24 hours before testing.

Age

From **18 years** old to **55 years** old

Gender

Both

Phase

2-3

Groups that have been masked

No information

Sample size

Target sample size: **30**

Randomization (investigator's opinion)

Randomized

Randomization description

Blinding (investigator's opinion)

Single blinded

Blinding description

Placebo

Used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics Committee of Iran University of Medical Sciences

Street address

Hemmat Highway, between sheykh fazlollah and Chamran Highways, Iran University of Medical Sciences

City

Tehran

Postal code

Approval date

2016-06-21, 1395/04/01

Ethics committee reference number

IR.IUMS.REC 1395.9211342209

Health conditions studied

1

Description of health condition studied

Cervicogenic Headache

ICD-10 code

M62.9

ICD-10 code description

Disorder of muscle, unspecified

Primary outcomes

1

Description

Muscle thickness and echogenicity

Timepoint

After and before intervention session

Method of measurement

Anterior posterior muscle dimension (thickness) and tissue echogenicity that both will be measured by ultrasound machine SAMSUNG MEDISON - SONOACE R7 2014, made in Korea with a frequency of 7.5 and a linear probe in millimeters.

Secondary outcomes

1

Description

Upper Cervical Range of Motion

Timepoint

After and before intervention session

Method of measurement

The rotational range of motion of the neck in the supine position will be measured with a Qoniometer (degree).

2

Description

Headache Index

Timepoint

First and 6th session

Method of measurement

Questionare (Niere,1997)

3

Description

Headache Disability
Timepoint
First and 6th session
Method of measurement
Iranian version of Headache Disability Inventory (HDI) questionnaire, Jacobson-1994)

Intervention groups

1

Description
Control group: Infrared Radiation in prone position for 15 minutes
Category
Rehabilitation

2

Description
Intervention group: infrared radiation in a prone position for 15 minutes and muscle energy techniques for head extensor and rotator muscles in the supine position, 3 times, each time 5-7 seconds with 30% of maximum contraction
Category
Rehabilitation

Recruitment centers

1

Recruitment center
Name of recruitment center
Neurology and Physiotherapy clinics in Tehran
Full name of responsible person
Omolbanin Abaspour
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Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Vice chancellor for research and Technology of Iran University of Medical Sciences
Full name of responsible person
Dr Morteza Naserbakht
Street address
Hemmat highway, between Chamran and Sheikh Fadlallah highways, Iran University of Medical Sciences, headquarters, 5th floor
City
Tehran
Grant name
Grant code / Reference number
Is the source of funding the same sponsor

organization/entity?
Yes
Title of funding source
Vice chancellor for research and Technology of Iran 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
School of Rehabilitation, Iran University of Medical Sciences.
Full name of responsible person
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Person responsible for scientific inquiries

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Other areas of specialty/work**Street address**

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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