Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 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

Mohammad Akbari

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 between16–32 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) questionare, 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 Physioterapy clinics in Tehran

Full name of responsible person

Omolbanin Abaspour

Street address

7 P, Madadkaran Al, Shahnazari St, Madar Sq, Mirdamad Blvd

City

Tehran

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

Omolbanin Abaspour

Position

PhD of PT student

Other areas of specialty/work

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Person responsible for scientific inquiries

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Professor PhD of PT

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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