Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 2026

A comparison between muscle energy technique with low-level laser in reducing neck and shoulder pain and disability in subjects with trapezius and levator scapula myofascial trigger points

Protocol summary

Summary

This study aimed to compare the effects of muscle energy technique with low-level laser on reducing neck and shoulder pain and disability in patients with myofascial trigger points in upper trapezius and levator scapula.This double- blind randomized controlled trial was performed in Zahedan University of Medical Sciences, in 2009. Thirty patients with trigger points in upper trapezius and levator scapula were participated through simple non probability sampling. Patients were randomly assigned to one of three groups, 10 in each group: including muscle energy technique, low-level laser, and placebo groups. In laser group, a low-level Ga-As laser was applied with 5 KHz frequency, a 100 mW point probe (average power), wavelength 905 nm, pulse duration 200 ns, 6 J/cm2 dosages per minute, for 3 minutes duration. In muscle energy group, we used stretching after post_ isometric relaxation. Placebo group treated using low-level laser without output. A 10 session treatment program, during two weeks, five sessions per week was performed for all groups. Before and after intervention, we assessed neck disability with Neck Disability Index, neck pain with Visual Analogue Scale and shoulder pain and disability with Shoulder Pain and Disability Index and cervical ranges of motion with specific neck goniometer.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT201011281675N3**
Registration date: **2011-01-20, 1389/10/30**
Registration timing: **retrospective**

Last update:
Update count: **0**

Registration date

2011-01-20, 1389/10/30

Registrant information

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Name of organization / entity

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Recruitment status

Recruitment complete

Funding source

Zahedan University of Medical Sciences

Expected recruitment start date

2009-04-06, 1388/01/17

Expected recruitment end date

2009-12-21, 1388/09/30

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

A comparison between muscle energy technique with low-level laser in reducing neck and shoulder pain and disability in subjects with trapezius and levator scapula myofascial trigger points

Public title

A comparison between muscle energy technique with low-level laser in reducing neck and shoulder pain and

disability in subjects with trapezius and levator scapula myofascial trigger points

Purpose
Treatment

Inclusion/Exclusion criteria
Inclusion criteria: Age between 18-25, having trigger point in trapezius and levator scapula muscles with main complaint: muscle pain without neurological sign, no history of respiratory diseases, surgery, and neck & thoracic spine structural disorders. Exclusion criteria: no completion of the treatment, using other therapeutic modalities during study, trauma and surgery during the study.

Age
From **18 years** old to **25 years** old

Gender
Both

Phase
N/A

Groups that have been masked
No information

Sample size
Target sample size: **30**

Randomization (investigator's opinion)
Randomized

Randomization description

Blinding (investigator's opinion)
Double blinded

Blinding description

Placebo
Used

Assignment
Parallel

Other design features

Secondary Ids

1

Registry name
no registration

Secondary trial Id
no trial id

Registration date
empty

Ethics committees

1

Ethics committee

Name of ethics committee
Tehran Payam-e- Noor University

Street address
No 233, Cross of Sepand, Shahid nejatolahi St.,

City
Tehran

Postal code

Approval date
2011-01-08, 1389/10/18

Ethics committee reference number
1411/3030

Health conditions studied

1

Description of health condition studied
subjects with trigger points in upper trapezius and levator scapula

ICD-10 code
M62

ICD-10 code description
Other soft tissue disorders

Primary outcomes

1

Description
Neck pain

Timepoint
Before intervention, 2 weeks after intervention

Method of measurement
Visual Analogue Scale

2

Description
Neck disability

Timepoint
Before intervention, 2 weeks after intervention

Method of measurement
Neck Disability Index

3

Description
Shoulder pain and disability

Timepoint
Before intervention, 2 weeks after intervention

Method of measurement
Shoulder Pain and Disability Index

4

Description
Cervical ranges of motion

Timepoint
Before intervention, 2 weeks after intervention

Method of measurement
Specific neck goniometer

Secondary outcomes

1

Description
No secondary outcome

Timepoint
No secondary outcome

Method of measurement
No secondary outcome

Intervention groups

1

Description
A low-level Ga-As laser was applied with 5 KHz frequency, a 100 mW point probe (average power), wavelength 905 nm, pulse duration 200 ns, 6 J/cm2 dosages per minute, for 3 minutes duration
Category
Rehabilitation

2

Description
Muscle energy technique: stretching after post_ isometric relaxation.
Category
Rehabilitation

3

Description
low-level laser without output
Category
Rehabilitation

Recruitment centers

1

Recruitment center
Name of recruitment center
Razmejo-Moghadam physiotherapy clinic, Zahedan
Full name of responsible person
Dr. Asghar Akbari
Street address
Razmejo-Moghadam Laboratory, School of Rehabilitation Sciences, Zahedan University of Medical Sciences, Ayatoallah Kafami St.
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Sponsors / Funding sources

1

Sponsor
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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
Zahedan 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
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Position
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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