

Clinical Trial Protocol

Iranian Registry of Clinical Trials

11 Sep 2026

The Effect of Action Potential Simulation and Vibration in Reducing Neck and Shoulder Pain and Disability in Subjects with Trapezius and Levator Scapula Muscles Trigger Points

Protocol summary

Summary

This study aimed to compare the effects of action potential simulation with vibration in reducing neck and shoulder pain and disability in subjects with trapezius and levator scapula muscles trigger points. This 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 recruited through simple non probability sampling. Patients were selected based on following inclusion criteria: Participants aged between 18 till 25 years old, patients diagnosed with trigger point in trapezius and levator scapula muscles, patients who have been muscle pain without neurological sign as chief complaint, no history of respiratory diseases, surgery, and neck & thoracic spine structural disorders. Patients were excluded if they had insufficient treatment, using other therapeutic modalities during the study, trauma, and doing surgery during the study. Patients were randomly assigned to either a vibration group (N=15) or an action potential simulation group (N=15). Before and after treatment, we assessed neck disability with Neck Disability Index, neck pain with Visual Analogue Scale, shoulder pain and disability with Shoulder Pain and Disability Index and cervical range of motion with specific neck goniometer. In vibration group, we used vibrator with moderate pressure and low frequency, 2500 cycle per minute and for 30 minutes per session. In action potential simulation group, action potential simulation was applied with intensity of 1mA, 150 Hz frequency, for 16 minutes per session.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT201109221675N8**

Registration date: **2011-11-22, 1390/09/01**

Registration timing: **retrospective**

Last update:

Update count: **0**

Registration date

2011-11-22, 1390/09/01

Registrant information

Name

Asghar Akbari

Name of organization / entity

Zahedan University of Medical Sciences

Country

Iran (Islamic Republic of)

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+98 54 1322 8445

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Recruitment status

Recruitment complete

Funding source

Vice Chancellor for Research of Zahedan University of Medical Sciences

Expected recruitment start date

2009-05-31, 1388/03/10

Expected recruitment end date

2009-12-31, 1388/10/10

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The Effect of Action Potential Simulation and Vibration in

Reducing Neck and Shoulder Pain and Disability in
Subjects with Trapezius and Levator Scapula Muscles
Trigger Points

Public title
The Effect of Action Potential Simulation and Vibration in
Reducing Neck and Shoulder Pain and Disability in
Subjects with Trapezius and Levator Scapula Muscles
Trigger Points

Purpose
Treatment

Inclusion/Exclusion criteria
Inclusion criteria: Age between 18 and 25 years old;
Patients diagnosed with trigger point in trapezius and
levator scapula muscles; Patients who have been muscle
pain without neurological sign as chief complaint; No
history of respiratory diseases; Surgery, and neck &
thoracic spine structural disorders. Exclusion criteria:
Insufficient treatment; Using other therapeutic modalities
during the study; Trauma; and doing surgery during the
study.

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

Gender
Both

Phase
2

Groups that have been masked
No information

Sample size
Target sample size: **30**

Randomization (investigator's opinion)
Randomized

Randomization description

Blinding (investigator's opinion)
Not blinded

Blinding description

Placebo
Not 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
Ethics Committee of University of Sistan and

Baluchestan
Street address
Daneshgah Blvd., University of Sistan and
Baluchestan
City
Zahedan
Postal code
987-98155
Approval date
2011-10-22, 1390/07/30
Ethics committee reference number
902.2.232

Health conditions studied

1

Description of health condition studied
Subjects with Trigger Points in Upper Trapezius and
Levator Scapula Muscles
ICD-10 code
M62
ICD-10 code description
Other soft tissue disorders

Primary outcomes

1

Description
Neck pain
Timepoint
Before intervention, 4 weeks after intervention
Method of measurement
Visuale Analogue Scale

2

Description
Neck disability
Timepoint
Before intervention, 4 weeks after intervention
Method of measurement
Neck Disability Index

3

Description
Shoulder pain and disability
Timepoint
Before intervention, 4 weeks after intervention
Method of measurement
Shoulder Pain and Disability Index

4

Description
Cervical range of motion
Timepoint
Before intervention, 4 weeks after intervention
Method of measurement
Specific neck goniometer

Secondary outcomes

empty

Intervention groups

1

Description

Vibration Group: We used vibrator with moderate pressure and low frequency, 2500 cycle per minute and for 30 minutes per session. A 16 session's treatment program which lasted 4 weeks and 4 sessions per week was performed.

Category

Rehabilitation

2

Description

Action Potential Simulation Group: We applied action potential simulation with intensity of 1mA, 150 Hz frequency, for 16 minutes per session. A 16 session's treatment program which lasted 4 weeks and 4 sessions per week was performed.

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

Razmejo-Moghadam Physiotherapy Clinic

Full name of responsible person

Dr. Asghar Akbari

Street address

Dept. of Physiotherapy, School of Rehabilitation Sciences, Razmejo-Moghadam Laboratory, Ayatoallah Kafami St.

City

Zahedan

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Vice Chancellor for Research of Zahedan University of Medical Sciences

Full name of responsible person

Dr. Hamidreza Mahmoudzadeh Sagheb

Street address

Deputy Of Research, Zahedan University of Medical Sciences, Jannat Blvd., Dr. Hesabi Sq., Zahedan.

City

Zahedan

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 of 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

Zahedan University of Medical Sciences

Full name of responsible person

Dr.Asghar Akbari

Position

Ph.D in Physiotherapy, Head of Dept. of Physiotherapy.

Other areas of specialty/work

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Other areas of specialty/work

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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