Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 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)

Phone

+98 54 1322 8445

Email address

akbaria@zdmu.ac.ir

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 Commitee 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 0f 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
Street address
Dept. of Physiotherapy, School of Rehabilitation Sciences, Razmejo-Moghadam Laboratory, Ayatoallah Kafami St., Zahedan.
City
Zahedan
Postal code
64855-98136
Phone
+98 54 1325 8445
Fax
+98 54 1325 8445
Email
akbari_as@yahoo.com; akbaria@zaums.ac.ir
Web page address
www.zaums.ac.ir

Person responsible for scientific inquiries

Contact
Name of organization / entity
Zahedan University of Medical Sciences
Full name of responsible person
Dr. Asghar Akbari
Position
Head of Dept. of Physiotherapy, Ph.D in Physiotherapy
Other areas of specialty/work
Street address
Dept. of Physiotherapy, School of Rehabilitation Sciences, Razmejo-Moghadam Laboratory, Ayatoallah Kafami St., Zahedan.
City

Zahedan
Postal code
64855-98136
Phone
+98 54 1322 8445
Fax
+98 54 1322 8445
Email
akbari_as@yahoo.com; akbaria@zaums.ac.ir
Web page address
www.zaums.ac.ir

Person responsible for updating data

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
Street address
Dept. of Physiotherapy, School of Rehabilitation Sciences, Razmejo-Moghadam Laboratory, Ayatoallah Kafami St., Zahedan.
City
Zahedan
Postal code
64855-98136
Phone
+98 54 1321 5957
Fax
+98 54 1321 5957
Email
akbari_as@yahoo.com; akbaria@zaums.ac.ir
Web page address
www.zaums.ac.ir

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