Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 2026

Comparison of pulsed Vacuum and Friction massage therapeutic effects on the treatment of trapezius muscle trigger points in men with non-specific chronic mechanical Neck Pain

Protocol summary

Summary

The goal of this study is a comparison of pulsed vacuum and friction massage therapeutic effects on treatment of trapezius muscle trigger points in men with non- specific chronic mechanical neck pain. This study is a not-blinded clinical trial. Forty patients suffering from chronic neck pains will be divided in two equal groups by the block randomization method and then they will be treated by two different methods of pulsed vacuum and friction massage. Inclusion criteria: 20 to 50 year old men suffering mechanical neck pain more than 2 months and they have not had injections for the treatment of trigger points during the last 6 months. They did not treat myofascial pain during the last month; having passive and active trigger points in the upper trapezius muscle at one or both sides of the body; having a palpable tight band in the skeletal muscle; having a sensitive painful spot in the palpable tight band; reproduction of myofascial trigger points obvious shooting pain in response to pressure; the presence of spontaneous obvious shooting pain; no histories of trauma, myelopathy, nerve root entrapment, cancer, infection, neck fracture, autoimmune diseases, diabetes, cervical vertebrae osteoarthritis, sensory disorders and skin injuries in the trigger point site, cardiovascular disorders, deep veins thrombosis, nerve roots involvement based on foraminal compression and distraction tests Exclusion criteria: Neck pain enhancement After the inclusion of patients in the study, trigger points will be identified and the pain pressure threshold, pain numeric rating scale and grip power will be evaluated. Patients in group 1 will receive a pulsed vacuum on the key trigger point for 10 minutes. Patients in group 2 will receive a friction massage on the key trigger point for 5 minutes. Both groups will receive a one treatment session. All the patients again will be evaluated 2 minutes after the completion of the treatment session and 48 hours later. Pain pressure threshold and neck pain are primary outcomes.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT201506089440N9**
Registration date: **2015-10-21, 1394/07/29**
Registration timing: **retrospective**

Last update:
Update count: **0**

Registration date

2015-10-21, 1394/07/29

Registrant information

Name

Soraya Pirouzi

Name of organization / entity

School of Rehabilitation Sciences, Shiraz University of Medical Sciences

Country

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Recruitment status

Recruitment complete

Funding source

Shiraz University of Medical Sciences and Health Services

Expected recruitment start date

2015-07-25, 1394/05/03

Expected recruitment end date

2015-09-06, 1394/06/15

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparison of pulsed Vacuum and Friction massage therapeutic effects on the treatment of trapezius muscle trigger points in men with non- specific chronic mechanical Neck Pain

Public title

Pulsed Vacuum and Friction massage effects in the treatment of neck pain

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria: 20 to 50 year old men suffering mechanical neck pain more than 2 months and they have not had injections for the treatment of trigger points during the last 6 months; they did not treat myofascial pain during the last month; having passive and active trigger points in the upper trapezius muscle at one or both sides of the body; having a palpable tight band in the skeletal muscle; having a sensitive painful spot in the palpable tight band; reproduction of myofascial trigger points obvious shooting pain in response to pressure; the presence of spontaneous obvious shooting pain; no histories of trauma, myelopathy, nerve root entrapment, cancer, infection, neck fracture, autoimmune diseases, diabetes, cervical vertebrae osteoarthritis, sensory disorders and skin injuries in the trigger point site, cardiovascular disorders, deep veins thrombosis and nerve roots involvement based on foraminal compression and distraction tests
Exclusion criteria: Neck pain enhancement

Age

From **20 years** old to **45 years** old

Gender

Male

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **40**

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

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics committee of Shiraz University of Medical Sciences

Street address

Zand Blvd., Central Building of Shiraz University of Medical Sciences

City

Shiraz

Postal code

Approval date

2015-08-19, 1394/05/28

Ethics committee reference number

IR.SUMS.REC.1394.98

Health conditions studied

1

Description of health condition studied

Neck pain

ICD-10 code

M54.2

ICD-10 code description

Cervicalgia

Primary outcomes

1

Description

Pain pressure threshold

Timepoint

Before the intervention, 2 minutes after the intervention, 48 hours after the intervention

Method of measurement

Algometer

2

Description

Neck pain

Timepoint

Before the intervention, 2 minutes after the intervention, 48 hours after the intervention

Method of measurement

Pain Numeric Rating Scale

Secondary outcomes

1

Description

Power grip

Timepoint

Before the intervention, 2 minutes after the intervention, 48 hours after the intervention

Method of measurement
Dynamometer

Intervention groups

1

Description
Control group will receive a friction massage on the key trigger point for 5 minutes in a session.
Category
Rehabilitation

2

Description
Intervention group will receive a pulsed vacuum on the key trigger point for 10 minutes in a session.
Category
Rehabilitation

Recruitment centers

1

Recruitment center
Name of recruitment center
Physiotherapy Clinic of Shiraz Rehabilitation Sciences School
Full name of responsible person
Majid Beyat
Street address
Rehabilitation Sciences School, Abiverdi 1st Ave., Chamran Blvd., Shiraz
City
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Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Shiraz University of Medical Sciences, vice chancellor of research
Full name of responsible person
Dr. Seyyed Basir Hashemi
Street address
Vice chancellor of research, Seventh floor, Central Building of Shiraz University of Medical Sciences, Zand Blvd., Shiraz
City
Shiraz
Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Shiraz University of Medical Sciences, vice chancellor of research
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
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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