

Clinical Trial Protocol

Iranian Registry of Clinical Trials

11 Sep 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

Shiraz

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****Name of organization / entity**

Shiraz University of Medical Sciences

Full name of responsible person

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Assistant Professor / PhD

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Person responsible for updating data

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Web page address

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