Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 2026

Effectiveness of Clove Oil Massage with and without Mulligan Traction and mobilization techniques in Cervical Radiculopathy

Protocol summary

Study aim

This study evaluates the comparative effects of camphor and clove oil massage with and without Mulligan Traction in cervical radiculopathy, focusing on pain relief, mobility improvement, and the therapeutic benefits of the oils in reducing inflammation, pain, and supporting nerve health.

Design

A comparative study with sample size 370, Randomly allocate the subjects into two groups. Intervention &control group

Settings and conduct

Muhammad physical therapy clinic and rehabilitation center, Both outcome assessors and data analyser will be blinded to group assignments to minimize bias in treatment delivery and outcome measurement.

Participants/Inclusion and exclusion criteria

Inclusion criteria: Age 18–70y Uni-lateral upper-extremity pain, paresthesia, or numbness Loss of reflexes in the affected nerve root distribution Motor or sensory dysfunction (optional) Pain radiating to the arm cervical rotation range of motion less than 60 degrees Positive distraction test Positive Spurling's Exclusion criteria: Fractures Open wounds Patients with spinal cord compression Traumatic injuries Cancer

Intervention groups

Patients will receive Mulligan traction and mobilization with clove oil, menthol, via massage. Manual traction will last 10 minutes, with 10-second pulls and 5-second rests. Treatment will occur 3 times a week for 4 weeks, totaling 12 sessions. Mulligan SMWAM will be performed with 10-30 repetitions, and SNAG mobilizations will be applied. Clove oil, and menthol will be topically applied daily for 4 weeks, with each session lasting 5-6 minutes.

Main outcome variables

Immediate pain relief, mobility, and long-term nerve regeneration, inflammation and promoting muscle and sensory recovery.

General information

Reason for update

data was missing

Acronym

IRCT registration information

IRCT registration number: **IRCT20241220064105N3**
Registration date: **2025-02-19, 1403/12/01**
Registration timing: **registered_while_recruiting**

Last update: **2025-04-28, 1404/02/08**
Update count: **2**

Registration date

2025-02-19, 1403/12/01

Registrant information

Name

Komal Ammar Bukhari

Name of organization / entity

Muhammad Institute of Medical Sciences, Multan

Country

Pakistan

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+92 314 6361728

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komalbukhari608@gmail.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2025-01-28, 1403/11/09

Expected recruitment end date

2025-04-28, 1404/02/08

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title
Effectiveness of Clove Oil Massage with and without Mulligan Traction and mobilization techniques in Cervical Radiculopathy

Public title
Effectiveness of Clove Oil Massage
Purpose
Treatment
Inclusion/Exclusion criteria
Inclusion criteria:
Age 18–70y paresthesia, Uni-lateral upper-extremity pain or numbness Loss of reflexes in the affected nerve root distribution Motor or sensory dysfunction (optional) Pain radiating to the arm cervical rotation range of motion less than 60 degrees Positive distraction test Positive Spurling's
Exclusion criteria:
Fractures Open wounds Patients with spinal cord compression Traumatic injuries Cancer
Age
From **18 years** old to **70 years** old
Gender
Both

Phase
1-2
Groups that have been masked

- Outcome assessor
- Data analyser

Sample size
Target sample size: **370**
Randomization (investigator's opinion)
Randomized
Randomization description
This randomization will be done by Lottery method to ensure fairness. Medications will be given in numbered white boxes, each with a unique medication number. The treatment codes will be kept by the principal investigator.
Blinding (investigator's opinion)
Double blinded
Blinding description
"The statistical analyst and outcome assessor will be blinded to treatment allocation by using securely stored randomization codes, accessible only to an independent party. Data will be analyzed using anonymous identifiers, and group allocation will be revealed only after data collection and analysis are complete. This ensures minimization of bias.
Placebo
Not used
Assignment
Parallel
Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
The Institutional Ethical Committee of Muhammad Institute of Medical and Allied Sciences
Street address
Bosan Road
City
Multan
Postal code
66000
Approval date
2025-01-22, 1403/11/03
Ethics committee reference number
MIMAS/01/8/Komal

Health conditions studied

1

Description of health condition studied
Cervical Radiculopathy
ICD-10 code
M50.1
ICD-10 code description
Cervical disc disorder with radiculopathy

Primary outcomes

1

Description
pain
Timepoint
4weeks
Method of measurement
NPRS

2

Description
Cervical Radiculopathy disorder
Timepoint
4weeks
Method of measurement
NDI

Secondary outcomes

empty

Intervention groups

1

Description
Intervention group: Patients will receive Mulligan traction and mobilization with clove oil and menthol via massage. Manual traction will last 10 minutes, with 10-second pulls

and 5-second rests. Treatment will occur 3 times a week for 4 weeks, totaling 12 sessions. Mulligan SMWAM will be performed with 10-30 repetitions, and SNAG mobilizations will be applied. Clove oil and menthol will be topically applied daily for 4 weeks, with each session lasting 5-6 minutes.

Category

Rehabilitation

2

Description

Control group: Patients will receive 12 treatment sessions over 4 weeks, with 3 sessions per week (10-20 minutes each). Mulligan manual traction will be applied for 10 minutes, with 10-second pulls and 5-second rests. Mulligan SMWAM will start with 10 repetitions in the first session, increasing to 30 repetitions in subsequent sessions. Mulligan SNAG mobilizations will also be provided.

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

The Institutional Ethical Committee of Muhammad Institute of Medical and Allied Sciences

Full name of responsible person

Maliha Khalid Khan

Street address

Bosan Road

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Muhammad Instituite of Rehabilitation Sciences, Multan

Full name of responsible person

Qurat ul Ain

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qain0635@gmail.com

Grant name

Student

Grant code / Reference number

MIMAS/6/3/Ayesha

Is the source of funding the same sponsor organization/entity?

No

Title of funding source

Muhammad Instituite of Rehabilitation Sciences, Multan

Proportion provided by this source

70

Public or private sector

Private

Domestic or foreign origin

Domestic

Category of foreign source of funding

empty

Country of origin

Type of organization providing the funding

Academic

Person responsible for general inquiries

Contact

Name of organization / entity

Muhammad Instituite of Rehabilitation Sciences, Multan

Full name of responsible person

Maliha Khalid Khan

Position

Lecturer

Latest degree

Medical doctor

Other areas of specialty/work

Physiotherapy

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Person responsible for scientific inquiries

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Name of organization / entity

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Bachelor

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Sharing plan

Deidentified Individual Participant Data Set (IPD)
Undecided - It is not yet known if there will be a plan to make this available

Study Protocol
Undecided - It is not yet known if there will be a plan to make this available

Statistical Analysis Plan
Undecided - It is not yet known if there will be a plan to make this available

Informed Consent Form
Undecided - It is not yet known if there will be a plan to make this available

Clinical Study Report
Undecided - It is not yet known if there will be a plan to make this available

Analytic Code
Undecided - It is not yet known if there will be a plan to make this available

Data Dictionary
Undecided - It is not yet known if there will be a plan to make this available