

Clinical Trial Protocol

Iranian Registry of Clinical Trials

11 Sep 2026

Comparative effectiveness of muscle energy technique and Graston tool along with joint mobilization in patients with knee osteoarthritis: A randomized clinical trial

Protocol summary

Study aim

Pain and functional outcome in knee Osteoarthritis

Design

Randomization will be through lottery method, single blinded study will be conducted in which only patient would be blinded

Settings and conduct

District headquarter Hospital Jhang

Participants/Inclusion and exclusion criteria

Inclusion: Grade 1-3 on X-Ray according to Kellgren-Lawrence classification of Osteoarthritis, crepitus with knee movement, 90-90 test positive, moderate pain on Numeric pain rating scale for both knees, functional disability between 32-64 on Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) questionnaire. Exclusion: Neurological condition, Peripheral Vascular disease, recent sutures or fracture of lower limb, hypersensitive skin, patient receiving treatment at time of baseline assessment

Intervention groups

Two groups, Group A muscle energy technique and group B Graston technique

Main outcome variables

Numeric pain rating scale, Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) scale

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20220516054877N1**

Registration date: **2022-05-25, 1401/03/04**

Registration timing: **retrospective**

Last update: **2022-05-25, 1401/03/04**

Update count: **0**

Registration date

2022-05-25, 1401/03/04

Registrant information

Name

Nadrish Khan

Name of organization / entity

The University of Faisalabad

Country

Pakistan

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+92 336 7105789

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dpt-fa14-099@tuf.edu.pk

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2022-03-20, 1400/12/29

Expected recruitment end date

2022-03-28, 1401/01/08

Actual recruitment start date

2022-03-20, 1400/12/29

Actual recruitment end date

2022-03-29, 1401/01/09

Trial completion date

empty

Scientific title

Comparative effectiveness of muscle energy technique and Graston tool along with joint mobilization in patients with knee osteoarthritis: A randomized clinical trial

Public title

Comparative effectiveness of muscle energy technique and Graston tool along with joint mobilization in patients with knee osteoarthritis: A randomized clinical trial

Purpose

Health service research

Inclusion/Exclusion criteria

Inclusion criteria:

Osteoarthritis knee patients with X-Ray findings show grade 1-3 according to Kellgren-Lawrence Classification of Osteoarthritis 1-3 Crepitus with knee movement 90-90 test positive Moderate pain on Numeric Pain rating scale for both knees Functional disability between 32-64 on the Western Ontario and McMaster Universities Arthritis Index (WOMAC) questionnaire

Exclusion criteria:

Neurological condition Peripheral vascular disease Recent sutures or Fracture of lower limb Hypersensitive skin Patient receiving treatment at time of baseline assessment

Age

No age limit

Gender

Both

Phase

N/A

Groups that have been masked

- Participant

Sample size

Target sample size: **32**

Actual sample size reached: **32**

Randomization (investigator's opinion)

Randomized

Randomization description

Randomization is done by lottery method, sealed envelop will be made upon which allocation of participants in both groups can be possible without biasness

Blinding (investigator's opinion)

Single blinded

Blinding description

The sealed envelope method is used to blind the participant. Grouping of two envelop shown to the patient, once he selected one of them, he will be the part of that.

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics committee of The University of Faisalabad

Street address

Al-Faisal street mohalla Iqbal Nagar, Gojra road Jhang

City

Jhang

Postal code

52250

Approval date

2022-03-13, 1400/12/22

Ethics committee reference number

1021

Health conditions studied

1

Description of health condition studied

Knee osteoarthritis

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

Pain is the primary outcome.

Timepoint

pre-measurement at baseline assessment and post-measurement after 4 weeks is done to assess pain

Method of measurement

The numeric pain rating scale is used to assess pain.

Secondary outcomes

1

Description

Quality of life is secondary outcome.

Timepoint

Pre-measurement done at baseline assessment and post-measurement done after 4 weeks

Method of measurement

Quality of life in knee osteoarthritis is done using Western Ontario and McMaster Universities Index (WOMAC) questionnaire

Intervention groups

1

Description

Intervention group: Group A receive muscle energy technique on alternate days for 4 weeks. 3 sessions per week, applied 3 times in each session

Category

Rehabilitation

2

Description

Intervention group: Group B receives Graston technique on alternate days for 4 weeks. 3 sessions per week. Graston applied for 1 minute per session

Category
Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center
District Headquarter Hospital Jhang
Full name of responsible person
Dr. Zunaira
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Sponsors / Funding sources

1

Sponsor

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The University of Faisalabad
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Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
The University of Faisalabad
Proportion provided by this source
100
Public or private sector
Private
Domestic or foreign origin
Foreign
Category of foreign source of funding
Sponsor: country of origin
Country of origin
PK
Type of organization providing the funding
Academic

Person responsible for general inquiries

Contact

Name of organization / entity
The University of Faisalabad
Full name of responsible person
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Position
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Person responsible for updating data

Contact

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Full name of responsible person
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Clinical Physiotherapist

Latest degree

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Other areas of specialty/work

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Sharing plan**Deidentified Individual Participant Data Set (IPD)**

Yes - There is a plan to make this available

Study Protocol

Yes - There is a plan to make this available

Statistical Analysis Plan

Yes - There is a plan to make this available

Informed Consent Form

Yes - There is a plan to make this available

Clinical Study Report

Yes - There is a plan to make this available

Analytic Code

No - There is not a plan to make this available

Data Dictionary

No - There is not a plan to make this available

Title and more details about the data/document

IPD collected for primary and secondary outcome measures

When the data will become available and for how long

Jan 2023

To whom data/document is available

People working in any domain can be authorized to get this data

Under which criteria data/document could be used

Any wrong information and additional errors

From where data/document is obtainable

This data is only available on-demand via email mention to the person responsible

What processes are involved for a request to access data/document

Documents can also be processed via university emails

Comments

Data is private legacy, respect it