Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 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
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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 Osteoarthritis1-3 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 Faisalabd
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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Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
The University of Fiasalabad
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 Faisalabd
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Dr. Sidra Majeed
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Person responsible for updating data

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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