

Clinical Trial Protocol

Iranian Registry of Clinical Trials

10 Jun 2026

Comparison of effects of ankle position on isometric quadriceps strengthening in osteoarthritis of knee joint

Protocol summary

Study aim

The purpose of this study is find the comparison of effects of ankle position on isometric quadriceps strengthening in osteoarthritis of knee joint

Design

Randomized control trial

Settings and conduct

Shaikh Zayed Hospital lahore

Participants/Inclusion and exclusion criteria

Inclusion Criteria o X-ray findings of primary osteoarthritis patients with grade ≥ 2 according to Kellgren Lawrence scale o Male and female both were included o Age from 40-60 years old patients were included o Unilateral and bilateral involvement, in case of bilateral involvement more symptomatic knee was included; pain in and around the knee Exclusion Criteria Participants were excluded if they exhibited. o less ankle ROM o History with any injury either soft tissue or bony o Pain radiating into leg in patients with lowback pain o Any neurological signs o History with NSAID past three months o Any inflammatory disease such as Gout o History with RA, ankylosing spondylitis, o History with metal implants, noncooperative patient, patient with mental disorders, o Patients with BMI ≥ 40 kg/m² (morbid obesity)

Intervention groups

Group 1 will perform quadriceps exercise with ankle in planterflexion position + shortwave diathermy , Group 2 will perform quadriceps exercise with ankle in dorsiflexion position + shortwave diathermy and Group 3 will perform quadriceps exercise with ankle in neutral position + shortwave diathermy.

Main outcome variables

pain , strength and functional activity

General information

Reason for update

Acronym

COEOAPOIQSIOOKJ

IRCT registration information

IRCT registration number: **IRCT20190715044216N5**

Registration date: **2022-01-09, 1400/10/19**

Registration timing: **registered_while_recruiting**

Last update: **2022-01-09, 1400/10/19**

Update count: **0**

Registration date

2022-01-09, 1400/10/19

Registrant information

Name

Naveed Anwar

Name of organization / entity

Riphah International University

Country

Pakistan

Phone

+92 42 35126110

Email address

naveedanwar982@yahoo.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2022-01-01, 1400/10/11

Expected recruitment end date

2022-06-30, 1401/04/09

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparison of effects of ankle position on isometric quadriceps strengthening in osteoarthritis of knee joint

Public title

Comparison of effects of ankle position on isometric quadriceps strengthening in osteoarthritis of knee joint

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria:

X-ray findings of primary osteoarthritis patients with grade ≥ 2 according to Kellgren Lawrence scale Male and female both were included Age from 40-60 years old patients were included Unilateral and bilateral involvement, in case of bilateral involvement more symptomatic knee was included; pain in and around the knee

Exclusion criteria:

less ankle ROM History with any injury either soft tissue or bony Pain radiating into leg in patients with low back pain Any neurological signs History with NSAID past three months Any inflammatory disease such as Gout History with RA, ankylosing spondylitis History with metal implants, noncooperative patient, patient with mental disorders Patients with BMI ≥ 40 kg/m² (morbid obesity)

Age

From **40 years** old to **60 years** old

Gender

Both

Phase

0

Groups that have been masked

No information

Sample size

Target sample size: **36**

More than 1 sample in each individual

Number of samples in each individual: **12**

group 1=planterflex position, group 2=dorsiflex position, group=3 neutral position

Randomization (investigator's opinion)

Randomized

Randomization description

Taking into account the above mentioned inclusion and exclusion criteria, patients will be recruited in the study through convenient sampling technique and then will be randomly assigned to each group according to consort guideline 2010. Written informed consent will be taken. After enrollment into study, patient will be allocated either to Group 1, Group 2 and Group 3 by lottery method. No. of Chits will be equal to total sample size. Each patients will be requested to draw a chit from the box and after that patient will be recruited into either Group 1 or Group 2 and 3

Blinding (investigator's opinion)

Not blinded

Blinding description

Placebo

Not used

Assignment

Crossover

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Riphah international research and ethics committee

Street address

28M Quid e azam industrial estate kot lakhpat lahore

City

Lahore

Postal code

57400

Approval date

2021-06-07, 1400/03/17

Ethics committee reference number

REC/REC&AHS/21/0107

Health conditions studied

1

Description of health condition studied

knee Osteoarthritis

ICD-10 code

M17

ICD-10 code description

Osteoarthritis of knee

Primary outcomes

1

Description

pain, strength

Timepoint

4 weeks after intervention

Method of measurement

NPRS scale, MMT and WOMAC scale

Secondary outcomes

1

Description

pain, strength and functional activity level will be measure in planterflexion group

Timepoint

Pre-readings than post-readings after 4 weeks . 4 treatment sessions in a week will be given to the subjects

Method of measurement

WOMAC scale, NPRS, MMT

2

Description

pain, strength and functional activity level will be measure in Dorsiflexion group

Timepoint

Pre-readings than post-readings after 4 weeks . 4

treatment sessions in a week will be given to the subjects

Method of measurement

WOMAC, NPRS, MMT

3

Description

pain, strength and functional activity level will be measure in neutral ankle position group

Timepoint

Pre-readings than post-readings after 4 weeks . 4 treatment sessions in a week will be given to the subjects

Method of measurement

WOMAC, NPRS , MMT

Intervention groups

1

Description

Intervention group 1:will perform quadriceps exercise with ankle in planter flexion position in supine lying + shortwave diathermy for 20 minutes and A foam roller will be place under the knee and advice the patient to extend their knee by pushing the back of knee into plinth without using hip extension while keep your ankle in planter flexion during exercise.The hold time for isometric contraction will be 10 sec follow by a rest period of 5 sec in between the contractions. Each patient will be complete 2 sessions in a day , in each session consist of 1 set of 10 repetitions of quadriceps exercise perform once at the hospital and once at home for the 4 days/4-week time for testing.

Category

Rehabilitation

2

Description

Intervention group 2: will perform quadriceps exercise with ankle in dorsiflexion position in supine lying + shortwave diathermy for 20 minutes and A foam roller will be place under the knee and advice the patient to extend their knee by pushing the back of knee into plinth without using hip extension while keep your ankle in planter flexion during exercise.The hold time for isometric contraction will be 10 sec follow by a rest period of 5 sec in between the contractions. Each patient will be complete 2 sessions in a day , in each session consist of 1 set of 10 repetitions of quadriceps exercise perform once at the hospital and once at home for the 4 days/4-week time for testing.

Category

Rehabilitation

3

Description

Intervention group 3: will perform quadriceps exercise with ankle in neutral ankle position in supine lying + shortwave diathermy for 20 minutes and A foam roller

will be place under the knee and advice the patient to extend their knee by pushing the back of knee into plinth without using hip extension while keep your ankle in planter flexion during exercise.The hold time for isometric contraction will be 10 sec follow by a rest period of 5 sec in between the contractions. Each patient will be complete 2 sessions in a day , in each session consist of 1 set of 10 repetitions of quadriceps exercise perform once at the hospital and once at home for the 4 days/4-week time for testing

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

Shaikh Zayed Hospital Lahore

Full name of responsible person

Dr. Syed Wasif Ali Shah

Street address

university avenue ,block d ,muslim town lahore

City

Lahore

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40050

Phone

+92 307 8325405

Email

amnabashir41@gmail.com

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Riphah International University

Full name of responsible person

Amna bashir

Street address

House#924 street# 12 Umar Farooq Block Mohalla Islam Colony Pakpattan

City

pakpattan

Postal code

57400

Phone

+92 307 8325405

Email

amnabashir41@gmail.com

Grant name

Grant code / Reference number

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

No

Title of funding source

student

Proportion provided by this source

10

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

Email

amnabahir41@gmail.com

Person responsible for updating data**Contact****Name of organization / entity**

Riphah International University

Full name of responsible person

Amna Bashir

Position

student

Latest degree

Master

Other areas of specialty/work

Physiotherapy

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Person responsible for general inquiries**Contact****Name of organization / entity**

Riphah international university

Full name of responsible person

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Position

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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

Yes - There is a plan to make this available

Data Dictionary

Yes - There is a plan to make this available

Title and more details about the data/documentcomparison of effects of ankle position on isometric
quadriceps strengthening in osteoarthritis of knee joint**When the data will become available and for how long**

30-6-2022

To whom data/document is available

people working in academic situation

Under which criteria data/document could be used

Author will review the request

From where data/document is obtainable

amnabashir41@gmail.com

What processes are involved for a request to access data/documentrequest will be entertained through email after which
people working in academic institutions will be granted

request

Comments