Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 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 committe
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

Postal code

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

Person responsible for general inquiries

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
Street address
House#924 street# 12 Umar Farooq Block Mohalla Islam Colony Pakpattan
City
Lahore
Province
punjab
Postal code
57400
Phone
+92 305 9710474
Email
amnabashir41@gmail.com

Person responsible for scientific inquiries

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
Street address
House#924 street# 12 Umar Farooq Block Mohalla Islam Colony Pakpattan
City
lahore
Province
punjab
Postal code
57400
Phone
+92 307 8325405
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
Street address
House#924 street# 12 Umar Farooq Block Mohalla Islam Colony Pakpattan
City
lahore
Province
punjab
Postal code
57400
Phone
+92 307 8325405
Email
amnabashir41@gmail.com

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/document
comparison 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/document
request will be entertained through email after which people working in academic institutions will be granted

request	Comments