

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

09 Jun 2026

### Comparative Analysis of Piroxicam and Post-isometric Exercises in Improving Knee Osteoarthritis

#### Protocol summary

##### Study aim

The basic purpose of this research is to compare the effects of Post isometric exercises and piroxicam on knee osteoarthritis.

##### Design

A pragmatic, community-based study. The randomized clinical trial and double-blinded study. study used to investigate the effect of piroxicam and post isometric exercises in knee osteoarthritis. The study will be conducted under the strict supervision of pharmacist, physiotherapist, radiologist and medical doctor and sample size is 68

##### Settings and conduct

Conducted at Muhammad physical therapy clinic and rehabilitation centre, Multan, Pakistan after approval from ethical committee study will be conducted.

##### Participants/Inclusion and exclusion criteria

Inclusion criteria: age 40-75 years, bilateral knee OA(grade 1,2 and 3), both genders (male and female), cartilage degeneration, local biomechanical factors (e.g., joint deformity, muscle weakness), nutritional factors, postmenopausal women, and exclusion criteria: grade 4, neurological disorders (e.g. Alzheimer's disease, Parkinson's disease), knee replacement, rheumatoid arthritis, steroidal injection in the past 2 months, neuropathy, tumor, knee fractures, knee ligament or meniscus injury, a congenital disorder of knee, diabetes mellitus > 10 years, metal implants in the knee.

##### Intervention groups

After assessment, 68 patients will be selected who meet the inclusion criteria will be randomized into two groups' i-e treatment group-A and treatment group-B. Patients will be recruited into two groups by lottery method. Treatment group-A will be treated with post isometric exercises and group-B will be treated with piroxicam. Dosage of 280 mg/day of piroxicam is given to patients of group-B. Treatment regimen will be distributed in 12-week period twice per week post isometric exercise sessions lasted for 45 minutes in group-A.

#### Main outcome variables

Pain, Range of motion and Functional ability

#### General information

##### Reason for update

##### Acronym

##### IRCT registration information

IRCT registration number: **IRCT20230202057310N4**

Registration date: **2023-09-12, 1402/06/21**

Registration timing: **registered\_while\_recruiting**

Last update: **2023-09-12, 1402/06/21**

Update count: **0**

##### Registration date

2023-09-12, 1402/06/21

##### Registrant information

##### Name

Imran Ahmad Khan

##### Name of organization / entity

Muhammad Nawaz Shareef University of Agriculture, Multan

##### Country

Pakistan

##### Phone

+92 333 6120602

##### Email address

imran.ahmad@mnsuam.edu.pk

##### Recruitment status

**Recruitment complete**

##### Funding source

##### Expected recruitment start date

2023-09-12, 1402/06/21

##### Expected recruitment end date

2023-12-12, 1402/09/21

##### Actual recruitment start date

empty

**Actual recruitment end date**

empty

**Trial completion date**

empty

**Scientific title**

Comparative Analysis of Piroxicam and Post-isometric Exercises in Improving Knee Osteoarthritis

**Public title**

Piroxicam and Post-isometric Exercises in Improving Knee Osteoarthritis

**Purpose**

Treatment

**Inclusion/Exclusion criteria****Inclusion criteria:**

Bilateral knee osteoarthritis (OA) with grade 1,2 and 3  
Age 40-75 years Both genders (male and female)  
Cartilage degeneration Local biomechanical factors (e.g., obesity, joint deformity, muscle weakness) Nutritional factors Postmenopausal women

**Exclusion criteria:**

Neurological disorders (e.g., Alzheimer's disease, Parkinson's disease) Rheumatoid arthritis Knee replacement patients Steroidal injection in the past 2 months Neuropathy Tumor Knee fractures Knee osteoarthritis (OA) with grade 4

**Age**

From **40 years** old to **75 years** old

**Gender**

Both

**Phase**

1-2

**Groups that have been masked**

- Investigator
- Data analyser

**Sample size**

Target sample size: **68**

**Randomization (investigator's opinion)**

Randomized

**Randomization description**

Patients will be randomized by using simple randomization. Lottery method carried out through sealed envelopes. Each participant will randomly choose the sealed envelope and open this sealed envelope.

**Blinding (investigator's opinion)**

Double blinded

**Blinding description**

Investigator and both data analyser will be kept blind to avoid any biasness

**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, Multan

**Street address**

HBL street, Sbzazar metro station, Bosan road, Multan, Pakistan

**City**

Multan

**Postal code**

66000

**Approval date**

2023-08-13, 1402/05/22

**Ethics committee reference number**

MIMAS/08/26/Imran

**Health conditions studied****1****Description of health condition studied**

Knee Osteoarthritis with grade 1, 2 and 3

**ICD-10 code**

M17

**ICD-10 code description**

Osteoarthritis of knee

**Primary outcomes****1****Description**

Pain reduction

**Timepoint**

12 weeks

**Method of measurement**

Numeric Pain Rating Scale (NPRS), The Western Ontario and McMaster Universities Osteoarthritis Index(WOMAC scale) and pain catastrophizing scale

**2****Description**

Increase in functional ability

**Timepoint**

12 weeks

**Method of measurement**

WOMAC scale

**3****Description**

Swelling reduction

**Timepoint**

12 weeks

**Method of measurement**

Lab investigations

## Secondary outcomes

1

### Description

Range of motion

### Timepoint

12 weeks

### Method of measurement

Goniometry will be used

## Intervention groups

1

### Description

Intervention group: Group-A will be treated with post isometric exercises. Treatment regimen is distributed in 12-week period thrice per week post isometric exercise sessions lasted for 45 minutes This will be decreasing pain and stiffness. Post isometric exercises included resistive training with SLR, Bridging, calf stretching and pillow of the lower extremities.

### Category

Treatment - Other

2

### Description

Intervention group: Group-B will be given piroxicam orally. Dosage of 280 mg/day of piroxicam is given to patients of group B

### Category

Treatment - Drugs

## Recruitment centers

1

### Recruitment center

#### Name of recruitment center

Muhammad physical therapy clinic and rehabilitation center, Multan

#### Full name of responsible person

Maliha Khalid Khan

#### Street address

HBL street, near Sbzazar metro station, Bosan road, Multan, Pakistan

#### City

Multan

#### Postal code

66000

#### Phone

+92 312 6827130

#### Email

malihatareen1997@gmail.com

## Sponsors / Funding sources

1

### Sponsor

#### Name of organization / entity

Muhammad Institute of Medical and Allied Sciences, Multan

#### Full name of responsible person

Imran Ahmad Khan

#### Street address

HBL street, near Sbzazar metro station, Bosan road, Multan, Pakistan

#### City

Multan

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#### Phone

+92 333 6120602

#### Email

imranahmadkhandurrani@gmail.com

### Grant name

Student fund

### Grant code / Reference number

MIMAS/26/2023/Urwa

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

Yes

### Title of funding source

Muhammad Institute of Medical and Allied 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 Institute of Medical and Allied Sciences, Multan

#### Full name of responsible person

Maliha Khalid Khan

#### Position

Demonstrator

#### Latest degree

Medical doctor

#### Other areas of specialty/work

Physiotherapy

#### Street address

HBL street, Sbzazar metro station, Bosan road, Multan, Pakistan

#### City

Multan

#### Province

Punjab

#### Postal code

66000

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## Person responsible for scientific inquiries

**Contact**

**Name of organization / entity**

Department of Pharmacology and Physiology,  
Muhammad Nawaz Sharif University of  
Agriculture, Multan

**Full name of responsible person**

Imran Ahmad Khan

**Position**

Lecturer

**Latest degree**

Ph.D.

**Other areas of specialty/work**

Medical Pharmacy

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imran.ahmad@mnsuam.edu.pk

## Person responsible for updating data

**Contact**

**Name of organization / entity**

Muhammad Institute of Medical and Allied Sciences,  
Multan

**Full name of responsible person**

Urwa Batool

**Position**

Final year Student

**Latest degree**

Medical doctor

**Other areas of specialty/work**

Physiotherapy

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**Email**

urwabatool12@gmail.com

## 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