

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

10 Jun 2026

### Evaluation of Therapeutic Potential of Curcumin With and Without Strengthening Exercises in improving Rheumatoid Arthritis

#### Protocol summary

##### Study aim

The objective of this study was to assess the synergistic effects of curcumin with and without strengthening exercises in rheumatoid arthritis patients.

##### Design

Pragmatic, community based, parallel group, Double blinded, Randomised control trial. There were 100 patients were enrolled. Study was done from June-december 2021. Out of 100 patients 90 were selected.

##### Settings and conduct

Study was conducted at Muhammad Institute of Medical and Allied Sciences Multan after approval from institutional ethical committee.

##### Participants/Inclusion and exclusion criteria

Inclusion criteria: Patients of all ages, diagnosed RA, of both gender, and patients with swelling in joints and pain. Exclusion criteria: Patients with vascular neoplasia, fibromyalgia, radiculopathy, neuropathy, tumor, joint fractures, and vestibular problems were excluded.

##### Intervention groups

Treatment group A was treated with Curcumin and strengthening exercises, and control group B was treated with Curcumin only. Dosage of 180 mg/day of Curcumin. The strengthening exercises given to group A were upper extremity resistive exercises, resistive hand training with the medicine ball, elbow, and shoulder resistive training by dumbbells. Lower extremity resistive exercises i.e resistive knee training by pressing soft rollers and ankle weights—upper extremity theraband strengthening exercises and lower extremity theraband strengthening exercises.

##### Main outcome variables

By using WOMAC and NPRS, pain, stiffness and physical activities were measured. And at the end patient dependency and range of motion were also assessed. By using WOMAC and NPRS scale, pain stiffness and ADLs were the variables to be assessed. Moreover, Xray finding were also done for the assessment.

#### General information

##### Reason for update

##### Acronym

##### IRCT registration information

IRCT registration number: **IRCT20220401054388N1**

Registration date: **2022-04-11, 1401/01/22**

Registration timing: **retrospective**

Last update: **2022-04-11, 1401/01/22**

Update count: **0**

##### Registration date

2022-04-11, 1401/01/22

##### Registrant information

##### Name

Maliha Khalid Khan

##### Name of organization / entity

Ali -Ul- Murtaza Department of Rehabilitation Science, Muhammad Institute

##### Country

Pakistan

##### Phone

+92 333 6120602

##### Email address

drmalihatareen@mimas.edu.pk

##### Recruitment status

**Recruitment complete**

##### Funding source

##### Expected recruitment start date

2021-06-18, 1400/03/28

##### Expected recruitment end date

2022-12-18, 1401/09/27

##### Actual recruitment start date

2021-06-01, 1400/03/11

##### Actual recruitment end date

2021-12-01, 1400/09/10

##### Trial completion date

2021-12-29, 1400/10/08

**Scientific title**

Evaluation of Therapeutic Potential of Curcumin With and Without Strengthening Exercises in improving Rheumatoid Arthritis

**Public title**

Curcumin With and Without Strengthening Exercises in Rheumatoid Arthritis

**Purpose**

Treatment

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

Patients of all ages Diagnosed RA Both gender Patients with swelling in joints and pain

**Exclusion criteria:**

Vascular neoplasia Fibromyalgia Radiculopathy Neuropathy, Tumor, joint fractures, and vestibular problems

**Age**

No age limit

**Gender**

Both

**Phase**

3

**Groups that have been masked**

- Investigator
- Data analyser

**Sample size**

Target sample size: **100**

Actual sample size reached: **84**

**Randomization (investigator's opinion)**

Randomized

**Randomization description**

Double blinded study i-e randomization of participants in groups by lottery method and statistical analysis without biasness

**Blinding (investigator's opinion)**

Double blinded

**Blinding description**

Investigator and data analyser

**Placebo**

Not used

**Assignment**

Other

**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,

**Street address**

HBL Street near Sabsazar Metro Station

**City**

Multan

**Postal code**

66000

**Approval date**

2021-02-02, 1399/11/14

**Ethics committee reference number**

MIMAS/28/IBR/Maliha

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

Rheumatoid Arthritis

**ICD-10 code**

M05

**ICD-10 code description**

Rheumatoid arthritis with rheumatoid factor

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

Pain, stiffness, Physical activities and joint deformity

**Timepoint**

6 weeks

**Method of measurement**

WOMAC and NPRS scale+ Radiographica; findings

**Secondary outcomes****1****Description**

Increase independency+ decrease in inflammatory biomarkers+ Immunity booster

**Timepoint**

6 weeks

**Method of measurement**

WOMAC and NPRS scale+lab investigations

**Intervention groups****1****Description**

Intervention group: Treatment group A was treated with Curcumin and strengthening exercises, and control group B was treated with Curcumin only. Curcumin was purchased from Khalid Nutraceuticals (Pvt.) LTD, Multan, Pakistan. Dosage of 180 mg/day of Curcumin followed by EFSA recommendations was given to patients. The strengthening exercises given to group A were upper extremity resistive exercises, resistive hand training with the medicine ball, elbow, and shoulder resistive training by dumbbells. Lower extremity resistive exercises i-e resistive knee training by pressing soft rollers and ankle weights—upper extremity theraband strengthening exercises and lower extremity theraband strengthening exercises. The treatment regimen for group A was

distributed as 3 sessions per week; each session lasted for 45 minutes. There were total 18 sessions. And treatment duration was 6 weeks. And 180 mg/day orally Curcumin was given

**Category**

Other

**2**

**Description**

Control group: control group B was treated with Curcumin only. Curcumin was purchased from Khalid Nutraceuticals (Pvt.) LTD, Multan, Pakistan. Dosage of 180 mg/day of Curcumin followed by EFSA recommendations was given to patients. Treatment regimen was 6 weeks.

**Category**

Other

**Recruitment centers**

**1**

**Recruitment center**

**Name of recruitment center**

Ali -UI- Murtaza Department of Rehabilitation Science, Muhammad Institute

**Full name of responsible person**

Imran Ahmad Khan

**Street address**

HBL street Sabsazar Metro Station

**City**

Multan

**Postal code**

66000

**Phone**

+92 313 6827130

**Email**

imranahmadkhandurrani@gmail.com

**Sponsors / Funding sources**

**1**

**Sponsor**

**Name of organization / entity**

Ali -UI- Murtaza Department of Rehabilitation Science, MIMAS

**Full name of responsible person**

Imran Ahmad Khan

**Street address**

Hbl street sabsazar metro station

**City**

Multan

**Postal code**

66000

**Phone**

+92 312 6827130

**Email**

DrMalihatareen@mimas.edu.pk

**Grant name**

Student fund

**Grant code / Reference number**

26082022

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

No

**Title of funding source**

Institutional Funding policy

**Proportion provided by this source**

50

**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**

Ali -UI- Murtaza Department of Rehabilitation Science, MIMAS

**Full name of responsible person**

Imran Ahmad Khan

**Position**

Assistant Professor

**Latest degree**

Ph.D.

**Other areas of specialty/work**

Cardiovascular Pharmacology

**Street address**

Multan

**City**

Multan

**Province**

Punjab

**Postal code**

66000

**Phone**

+92 312 6827130

**Email**

imranahmadkhandurrani@gmail.com

**Person responsible for scientific inquiries**

**Contact**

**Name of organization / entity**

Ali -UI- Murtaza Department of Rehabilitation Science, MIMAS

**Full name of responsible person**

Imran Ahmad Khan

**Position**

Assistant Professor

**Latest degree**

Ph.D.

**Other areas of specialty/work**

Cardiovascular Pharmacology

**Street address**

Multan  
**City**  
Multan  
**Province**  
Punjab  
**Postal code**  
66000  
**Phone**  
+92 312 6827130  
**Email**  
imranahmadkhandurrani@gmail.com

## Person responsible for updating data

### Contact

**Name of organization / entity**  
Ali -Ul- Murtaza Department of Rehabilitation Science,  
Muhammad Institute  
**Full name of responsible person**  
Maliha Khalid Khan  
**Position**  
Professor  
**Latest degree**  
Medical doctor  
**Other areas of specialty/work**  
Physiotherapy  
**Street address**  
142  
**City**  
Multan  
**Province**  
Punjab  
**Postal code**  
66000  
**Phone**  
+92 333 6120602  
**Fax**  
**Email**

DrMalihatareen@mimas.edu.pk

## 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

Yes - There is a plan to make this available

### Informed Consent Form

Yes - There is 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

### Title and more details about the data/document

There is no further information

### When the data will become available and for how long

There is no further information

### To whom data/document is available

There is no further information

### Under which criteria data/document could be used

There is no further information

### From where data/document is obtainable

There is no further information

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

There is no further information

### Comments

There is no further information