

Clinical Trial Protocol

Iranian Registry of Clinical Trials

22 Jul 2026

The efficacy of strengthening and stretching exercises on knee pain and function of patients with arthrosis

Protocol summary

Summary

The objective of this randomized clinical trial is to evaluate the efficacy of exercise as a easy and non expensive protocol on knee pain and function and evaluation of compliance in Iranian patients. The patients aged more than 40 years who are suffering from knee pain more than 3 months, grade II or III of knee arthrosis, VAS more than 30 mm, BMI =18-30, and no contraindications of exercise therapy will be studied. The intervention group will receive 3 months strengthening and stretching exercises as well as routine medicine for knee pain and 10 sessions physical modality. The control group only will receive medicine and physical. Knee pain will be measured by using VAS and physical function will be measured by using KOOS and other physical function tests before and 1, 3, and 6 months after the intervention.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT138904274409N1**

Registration date: **2010-08-23, 1389/06/01**

Registration timing: **retrospective**

Last update:

Update count: **0**

Registration date

2010-08-23, 1389/06/01

Registrant information

Name

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Name of organization / entity

Iran University of Medical Sciences

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Recruitment status

Recruitment complete

Funding source

Iran university of medical sciences

Expected recruitment start date

2010-08-23, 1389/06/01

Expected recruitment end date

2011-03-20, 1389/12/29

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The efficacy of strengthening and stretching exercises on knee pain and function of patients with arthrosis

Public title

The effect of exercise on knee osteoarthritis

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria: age more than 40 years, knee pain for more than 3 months, grade II, III of arthrosis of kellegren-lawrence in radiography, VAS more than 30mm, BMI=18-30, patients who like to participate in exercise therapy Exclusion criteria: presence of any contraindication (uncontrolled HTN, uncontrolled CHF, uncontrolled arrhythmia, uncontrolled metabolic diseases, severe valvular diseases)

Age

From **40 years** old to **149 years** old

Gender

Both

Phase
N/A

Groups that have been masked
No information

Sample size
Target sample size: **50**

Randomization (investigator's opinion)
Randomized

Randomization description

Blinding (investigator's opinion)
Not blinded

Blinding description

Placebo
Not used

Assignment
Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Iran University of Medical Science

Street address

Between Sheikh fazlolah and Chamran Highway,
Hemmat Highway

City

Tehran

Postal code

Approval date

2010-07-25, 1389/05/03

Ethics committee reference number

891/8

Health conditions studied

1

Description of health condition studied

Knee osteoarthritis

ICD-10 code

M15, M16,

ICD-10 code description

Diseases of the musculoskeletal system and connective
tissue

Primary outcomes

1

Description

Pain

Timepoint

before intervention and 1 months and 3 months and 6
months after intervention

Method of measurement

Visual analog scale

2

Description

function

Timepoint

before intervention and 1 months and 3 months and 6
months after intervention

Method of measurement

KOOS questionnaire

Secondary outcomes

1

Description

physical function test

Timepoint

before intervention and 1 months and 3 months and 6
months after intervention

Method of measurement

5 times sit and stand of chair, 4 steps up and down
stairs, 6 minutes walk test

Intervention groups

1

Description

strengthening and stretching exercises for quadriceps
and hamstring and gastrocnemius muscles for 3 months
. strengthening exercises one other day but stretching
exercises everyday+ 10 sessions physical modality (U/S,Heat , TENS) + Acetaminophen or NSAID in painful
conditions for intervention group.

Category

Other

2

Description

10 sessions physical modality (U/S,heat , TENS) +
Acetaminophen or NSAID in painful conditions for control
group.

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

Rasoul Akram hospital

Full name of responsible person

Street address

City

Tehran

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Iran University of Medical Science

Full name of responsible person

Dr. Abbas Motavalian

Street address

Between Sheikh fazlolah and Chamran Highway,
Hemmat Highway

City

Tehran

Grant name**Grant code / Reference number****Is the source of funding the same sponsor organization/entity?**

Yes

Title of funding source

Iran University of Medical Science

Proportion provided by this source

100

Public or private sector

empty

Domestic or foreign origin

empty

Category of foreign source of funding

empty

Country of origin**Type of organization providing the funding**

empty

Person responsible for general inquiries

Contact**Name of organization / entity**

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Full name of responsible person

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Web page address

Sharing plan

Deidentified Individual Participant Data Set (IPD)

empty

Study Protocol

empty

Statistical Analysis Plan

empty

Informed Consent Form

empty

Clinical Study Report

empty

Analytic Code

empty

Data Dictionary

empty