

Clinical Trial Protocol

Iranian Registry of Clinical Trials

10 Jun 2026

Comparing the effect of Taichi and close kinetic chain exercise on the knee osteoarthritis

Protocol summary

Summary

Objectives: Comparing the effect of Tai chi and close kinetic chain exercise on the knee osteoarthritis. Design: double-blind study. The patients will be treated in three groups: close kinetic chain exercises, Tai chi and control group. Patients will be assessed before treatment, after the sixth, twelfth and one month after treatment.

Methods: subjects are men and women with grades 2 and 3 of knee osteoarthritis, age 45-65 years, referring to the Municipality clinic in region 13 of Tehran. Sample size: 16 people in each group. Interventions: Applying ultrasound (1MHZ, 80 % pulse, intensity 1W/Cm², 5 min), infrared (15 minutes) in three groups. Tai chi group: 5 minute warm up, 5 minute cool down exercises at the beginning and the end of sessions, 10 minutes of the 6th. Form of Yang style of tai chi exercise. Close kinetic chain exercise group: 5 minute static stretching as warm up at the beginning and 5 minutes static stretching as cool down at the end of sessions, 10 minutes exercise including standing terminal knee extension, mini squat in 15 degree of knee flex, step up from the front and side and lunge exercises. Main outcome measures: measuring of pain by visual Analog scale, flexion and extension knee range of motion by goniometry, joint swelling above and 5 cm upper and lower of the patella by tape, performance by the KOOS questionnaire and 6 -minute walk test, balance by Berg balance scale.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2014010215936N1**

Registration date: **2014-01-26, 1392/11/06**

Registration timing: **registered_while_recruiting**

Last update:

Update count: **0**

Registration date

2014-01-26, 1392/11/06

Registrant information

Name

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Name of organization / entity

Shahid Beheshti University of Medical Sciences

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Recruitment status

Recruitment complete

Funding source

Shahid Beheshti University of Medical Sciences (International Branch)

Expected recruitment start date

2013-12-16, 1392/09/25

Expected recruitment end date

2014-05-04, 1393/02/14

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparing the effect of Taichi and close kinetic chain exercise on the knee osteoarthritis

Public title

Comparing the effect of Taichi and close kinetic chain exercise on the knee osteoarthritis

Purpose

Treatment

Inclusion/Exclusion criteria

inclusion criteria : anterior knee pain(at least 3 in VAS) , grade 2 and 3 of knee OA, aged 45 to 65 years old; absence of : malignancy and infection in the knee, metabolic, endocrine, cardiovascular, neurological and other musculo- skeletal diseases that affect a person's standing, bursitis around the patella corticosteroid injection within recent thirty days, using of non-steroidal anti-inflammatory drugs during the prior week, fracture and open knee wound, knee surgery in the past six months, low back and hip surgery, knee pain duration less than one year, knee hyper mobility and instability, cruciate ligament injuries, severe swelling around the knee, psychological problems physical therapy in the prior six months, using of exercise therapy for improving the performance of the lower extremities in prior six months. Exclusion criteria: unwilling to continuing the treatment program; incomplete treatment; using of non-steroidal anti-inflammatory drugs or steroid injection in the knee joint during the study; if during the 6 minute walk test subjects have symptoms such as chest pain, dyspnea, leg cramp, staggering, excessive sweating, Enabling of completing the test, two consecutive absences in the treatment sessions.

Age

From **45 years** old to **65 years** old

Gender

Both

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **48**

Randomization (investigator's opinion)

Randomized

Randomization description**Blinding (investigator's opinion)**

Double blinded

Blinding description**Placebo**

Not used

Assignment

Parallel

Other design features**Secondary Ids**

empty

Ethics committees**1****Ethics committee****Name of ethics committee**

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Shahid Beheshti University of Medical Sciences,Next to Taleghani Hospital,Evin,Shahid Chamran free way,Tehran,1985717443,Iran

City

Tehran

Postal code

1985717443

Approval date

2013-10-07, 1392/07/15

Ethics committee reference number

116/2877

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

Arthrosis of Knee

ICD-10 code

17.1

ICD-10 code description

Other primary gonarthrosis

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

Pain

Timepoint

Before treatment, after the sixth, twelfth and one month after treatment

Method of measurement

visual Analogue scale

2**Description**

Flexion and extension knee Range Of Motion

Timepoint

Before treatment, after the sixth, twelfth and one month after treatment

Method of measurement

Goniometry

3**Description**

Joint swelling above and 5 cm upper and lower of the patella

Timepoint

Before treatment, after the sixth, twelfth and one month after treatment

Method of measurement

Tape

4**Description**

Performance

Timepoint

Before treatment, after the sixth, twelfth and one month after treatment

Method of measurement

KOOS(Knee injury and Osteoarthritis Outcome Score) questionnaire and 6 -minute walk test

5

Description

Balance

Timepoint

before treatment, after the sixth, twelfth and one month after treatment

Method of measurement

Berg Balance Scale

Secondary outcomes

empty

Intervention groups

1

Description

Tai chi group: Applying ultrasound (1MHZ, 80 % pulse, intensity 1W/Cm2, 5 min), infrared (15 minutes),5 minute warm up exercises at the beginning of sessions, 10 minutes of the 6th. form of Yang style of tai chi exercise, 5 minute cool down exercises at the end of sessions.2.Close kinetic chain exercise group: Applying ultrasound (1MHZ, 80 % pulse, intensity 1W/Cm2, 5 min), infrared (15 minutes),5 minute static stretching of rectus femoris and hamstring muscles as warm up at the beginning of sessions, 10 minutes exercise including standing terminal knee extension(10 second hold,10 times), mini squat in 15 degree of knee flex(10 second hold,10 times), step up from the front (10 times),step up from the side(10 times) and lunge (10 second hold,10 times),Two minutes of rest between exercises, and 5 minutes static stretching of rectus femoris and hamstring muscles as cool down at the end of sessions.

Category

Rehabilitation

2

Description

Control group: applying ultrasound (1MHZ, 80 % pulse, intensity 1W/Cm2, 5 min), infrared (15 minutes).

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

Municipality clinic.number 13 , Tehran

Full name of responsible person

Mona Nahayatbin

Street address

Municipality clinic .number 13 , Shahid Hatami st,Damavand Ave,Tehran,1741683536,Iran

City

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Shahid Beheshti University of Medical Sciences (International Branch)

Full name of responsible person

Kiandokht Ghanati

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International Branch of Shahid Beheshti University of Medical Sciences,Tavanir street,across Hemat free way,Tehran,1424875451,Iran

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Tehran

Grant name

Grant code / Reference number

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

Yes

Title of funding source

Shahid Beheshti University of Medical Sciences (International Branch)

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

Faculty of Rehabilitation Sciences, Shahid Beheshti University of Medical Sciences

Full name of responsible person

Dr Mehri Ghasemi

Position

PhD in physiotherapy

Other areas of specialty/work

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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