Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 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 3of 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

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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
Shahid Beheshti University of Medical Sciences

Street address
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
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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
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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
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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