Clinical Trial Protocol
Iranian Registry of Clinical Trials

19 Sep 2026

Comparing the effect of exercise therapy with Mckenzie versus Common methods in treatment of patients with Anterior Knee Pain (AKP): A randomized controlled trial.

Protocol summary

Study aim

The aim of this study is to compare the effect of McKenzie method with common physiotherapy protocol in subjects with anterior knee pain.

Design

This study is a randomized clinical trial. Twenty-two patients with anterior knee pain and all of inclusion criteria and without exclusion criteria that they refer to Daron hospital in Shiraz are selected and will be randomly assigned in experiment and control groups. Each participant is assigned a code.

Settings and conduct

The treatment program included modality and exercise therapy. Modalities, superficial heat and electrical stimuli will be fixed in both groups from the first to the tenth session. From the third session, each group will be received their exercise therapy program. The location of the study is the physiotherapy center of the Doran hospital in Shiraz.

Participants/Inclusion and exclusion criteria

Inclusion criteria: The age between 16 to 40 years old; having at least two months pain in front of knee; The pain rate at least 3 cm by virtue of linear Visual Analog Scale ; Positive response to at least 2 items of the Kujala questionnaire. Exclusion criteria: Dissatisfaction of patient in each step of the study; Having a history of real locking of the knee; Having a history of patellar dislocation; Joint inflammation; Active infection; The presence of any abnormalities in knee joint radiography; Ligament injuries; Malignancy; The actual length difference of the limbs; The previous history of physiotherapy for knee; Taking of any tranquilizer medication during the 48 hours before the evaluation; The presence of any abnormalities in the chest, upper and lower extremities;

Intervention groups

The treatment program is included 10 sessions of the Hot pack and the TENS modalities that are fixed in both groups. From the third session, in the experiment group, McKenzie exercises will be given according to the directional preference that is different for each subject and is determined by Mackenzie method.These exercises will be repeated 10 times every 2 hours. Attain and maintain exercises for postural correction and recommends of avoiding contrary directional preference movements, also are in the test group program. In control group strengthening exercise of hip and knee muscles will be done with 50% of the one maximum number of repetitions (ORM) and 20 percent increasing on a daily basis (against gravity and without weights)), as well as strengthening exercises of trunk with Swiss ball. These exercises will be repeated 2 times a day and 10 repetition in each time. Before and after the warm-up and the cool-down exercises are considered.

Main outcome variables

Main outcome measure variables are including: score of pain, functional status, strength of quadriceps and hamstring, length of quadriceps and hamstring, knee flexion and extension range of motion and Fear-Avoidance Beliefs score.

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20150314021459N5**
Registration date: **2018-02-13, 1396/11/24**
Registration timing: **retrospective**

Last update: **2018-02-13, 1396/11/24**
Update count: **0**

Registration date

2018-02-13, 1396/11/24

Registrant information

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Recruitment status
Recruitment complete
Funding source
Vise research and technology, Iran university of medical science,

Expected recruitment start date
2017-07-03, 1396/04/12
Expected recruitment end date
2017-09-03, 1396/06/12
Actual recruitment start date
2017-07-03, 1396/04/12
Actual recruitment end date
2017-10-04, 1396/07/12
Trial completion date
empty

Scientific title
Comparing the effect of exercise therapy with Mckenzie versus Common methods in treatment of patients with Anterior Knee Pain (AKP): A randomized controlled trial.

Public title
The Effect of McKenzie exercises in treatment of anterior knee pain
Purpose
Treatment
Inclusion/Exclusion criteria
Inclusion criteria:
Their age is between 16 and 40 years old. Have at least two months pain in front of knee. The pain rate is at least 3 cm by virtue of linear Visual Analog Scale. At least 2 of the questionnaire Kujala give a positive response.
Exclusion criteria:
Dissatisfaction of patient in each step of the study Having a history of real locking of the knee Having a history of dislocation of the patella. Having the joint inflammation. Having active infections The presence of any abnormalities in knee joint radiography Having the ligament injuries. Having the malignancy. Having the actual length difference of the lower extremities. Taking of any tranquilizer medication during the 48 hours before the evaluation. The presence of any abnormalities in the chest, upper and lower extremities. The previous history of physiotherapy for knee.
Age
From **16 years** old to **40 years** old
Gender
Both

Phase
2-3
Groups that have been masked
No information
Sample size
Target sample size: **22**
Actual sample size reached: **22**
Randomization (investigator's opinion)
Randomized
Randomization description
This randomized study into intervention and control groups was conducted by using Random allocation rule. A total of 22 individuals were assigned to individual randomization units with numbers 1 and 2, including 11 number 1 for the intervention group, and 11 number 2 for the control group. They were placed in a draw box.Allocation concealment was done by Sequentially numbered, sealed, opaque envelopes. Subsequently, the envelopes were removed without replacement.
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
Ethics Committee of Iran University of Medical Sciences,
Street address
Vice chancellor for Research and Technology, Central headquarters of Iran university of Medical Sciences, between Hemmat and Sheykh fazl ollah High ways,
City
Tehran
Province
Tehran
Postal code
1545913187
Approval date
2017-05-22, 1396/03/01
Ethics committee reference number
IR.IUMS.REC 1396.041130009

Health conditions studied

1

Description of health condition studied
Anterior Knee Pain
ICD-10 code
M95, M96,

ICD-10 code description
Other disorders of the musculoskeletal system and connective tissue

2

Description of health condition studied
anterior knee pain
ICD-10 code
ICD-10 code description

Primary outcomes

1

Description
pain
Timepoint
At the beginning of the study, 10 days and one month after the start of the study.
Method of measurement
Linear scale VAS

2

Description
function
Timepoint
At the beginning of the study, 10 days and one month after the start of the study.
Method of measurement
Kujala questionnaire

3

Description
range of motion of knee
Timepoint
At the beginning of the study, 10 days and one month after the start of the study.
Method of measurement
Goniometer

Secondary outcomes

1

Description
lenght of the hamstring muscles
Timepoint
At the beginning of the study, 10 days and one month after the start of the study
Method of measurement
Clinometer

2

Description
lenght of the quadriceps muscle
Timepoint
At the beginning of the study, 10 days and one month after the start of the study
Method of measurement
Clinometer

3

Description
Hamstring muscle strenght
Timepoint
At the beginning of the study, 10 days and one month after the start of the study
Method of measurement
Hand Dynamometer

4

Description
Quadriceps muscle strenght
Timepoint
At the beginning of the study, 10 days and one month after the start of the study
Method of measurement
Hand Dynamometer

5

Description
The fear avoidance beliefs
Timepoint
At the beginning of the study, 10 days and one month after the start of the study
Method of measurement
FABQ questionnaire

Intervention groups

1

Description
Intervention2: First the subjects have physiotherapy including hot pack with defined TENS. The place for electrodes are according to acupuncture points. Therapeutic exercise includes strengthening of extensor, abductor, external rotator muscles of hip and flexor and extensors of knee.Exercises starts with warm up (5 min walking) and ended with cool down (hamstring, quadriceps and gastrocnemious stretch, 5 sec hold, 3 times repeat) 1RM is determined without counterweight and untigravity,to the border between fatigue and pain Start with 50% 1RM, daily to ten days. training progreses with 20% 1RM. trunk strengthening exercises performes with swiss ball in three methods (supine with straight knees and feet on ball, supine with bent knees and feet on ball and sitting on ball and raise feet from the floor),holding the position 10 seconds to 2 minutes depending on the individual's tolerance . 2 times a day.
Category
Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center
Shahid Doran Hospital

Full name of responsible person
Jaleh Farahmand Farzaneh

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity
Vice chancellor for Research and Technology, Iran University of Medical Sciences,

Full name of responsible person
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Grant name

Grant code / Reference number

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

Title of funding source
Vice chancellor for Research and Technology, Iran University of Medical Sciences,

Proportion provided by this source
100

Public or private sector
Public

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
Vice research, School of Rehabilitation Sciences, Iran University of Medical Sciences

Full name of responsible person
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Position
Vice research

Latest degree
Ph.D.

Other areas of specialty/work
Physiotherapy

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Latest degree
Master

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Sharing plan

Deidentified Individual Participant Data Set (IPD)
No - There is not a plan to make this available

Justification/reason for indecision/not sharing IPD
Excessive conflict

Study Protocol
No - There is not a plan to make this available

Statistical Analysis Plan
No - There is not a plan to make this available

Informed Consent Form
No - There is not a plan to make this available

Clinical Study Report
No - There is not a plan to make this available

Analytic Code
No - There is not a plan to make this available

Data Dictionary
No - There is not a plan to make this available