Clinical Trial Protocol
Iranian Registry of Clinical Trials

09 Nov 2026

Comparison of the effect of platelet-rich plasma and knee mobilization techniques and dry needling in knee osteoarthritis patients

Protocol summary

Study aim
Comparison of the effect of platelet-rich plasma and knee mobilization techniques and dry needling in knee osteoarthritis patients

Design
A clinical trial with a control group, with parallel groups, double-blind, randomized, is performed on 76 patients. Block randomization is used for randomization.

Settings and conduct
Knee osteoarthritis patients are evaluated for the presence of TRPs in lumbar and knee muscles in the Kerman University of Medical Sciences. Then, they are randomly divided into 4 treatment groups of control, PRP, knee mobilization and dry needling, and combination of both interventions according to block randomization. The two-blind study will be conducted in such a way that patients are evaluated by people who are unaware. Treatment is provided by a specialist physiotherapist and evaluated by a collaborator.

Participants/Inclusion and exclusion criteria
Patients with the age range of 45 to 70 years had symptoms of moderate osteoarthritis and at least one trigger point in the hip and knee muscles. Patients with severe inflammation of the knee, any previous fracture of lower limb, were excluded from the study.

Intervention groups
PRP: 5 mL of PRP is slowly injected into the knee via an infero-medial or infero-lateral route with a 21-gauge needle. This technique is performed once for both knees in patients. Dry needling (DN): It is used on the trigger point in the TFL, adductor, hamstring, quadriceps, gastrocnemius, and popliteus muscles. The needle is applied for three sessions. Knee mobilization: It is used to increase the range of motion of flexion and extension in the knee joint. Control group: the therapist applies soft and superficial massage on the involved muscles. The fingertips of each therapist's hand are placed in contact with the related muscles and a surface massage is performed.

Main outcome variables
Pain intensity, Disability Index, Range of motions

General information

Reason for update
The information of the start and end of sampling was not recorded correctly and it was corrected.

Acronym
PRP(platelet-rich plasma)

IRCT registration information
IRCT registration number: **IRCT20240211060958N1**
Registration date: **2024-05-15, 1403/02/26**
Registration timing: **prospective**

Last update: **2024-08-01, 1403/05/11**
Update count: **1**

Registration date
2024-05-15, 1403/02/26

Registrant information

Name
tahereh rezaeian

Name of organization / entity

Country
Iran (Islamic Republic of)

Phone
+98 34 3132 5367

Email address
tahere.rezaiyan@gmail.com

Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2024-06-21, 1403/04/01

Expected recruitment end date
2024-12-20, 1403/09/30

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparison of the effect of platelet-rich plasma and knee mobilization techniques and dry needling in knee osteoarthritis patients

Public title

Effect of platelet-rich plasma and knee mobilization techniques and dry needling in knee osteoarthritis patients

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria:

The patients were between the ages of 45 and 70 years old The presence of moderate osteoarthritis symptoms (grade 2-3 of the Kellgren-Lawrence classification system) The presence of trigger point (latent or active) in the muscles around the hip and knee joints.

Exclusion criteria:

Patients with severe inflammation/swelling of the knee Any history of injection/aspiration of the knee joint during the last year Any previous fracture of the spine or lower limbs Associated neurological pathology Vestibular disorders Systemic disease (rheumatoid arthritis or diabetes) Patients with blood disorders (such as hemophilia or thalassemia), cancer, or if they are taking taking anticoagulants drugs

Age

From **45 years** old to **70 years** old

Gender

Both

Phase

3

Groups that have been masked

- Participant
- Care provider
- Investigator
- Outcome assessor
- Data analyser

Sample size

Target sample size: **76**

More than 1 sample in each individual

Number of samples in each individual: **19**

19 subjects per group

Randomization (investigator's opinion)

Randomized

Randomization description

Block Randomization: It works by randomizing participants within blocks such that an equal number are assigned to each treatment. For example, given a block size of 10, there are 8 possible ways to equally assign participants to a block.

Blinding (investigator's opinion)

Double blinded

Blinding description

Double-blind study will be done, in this way, the allocation of people to the groups and the assessment of patients are done by people who are unaware of the status of the grouping of patients. Treatment is provided by a specialist physiotherapist and evaluated by a collaborator.

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Kerman University of Medical Sciences

Street address

Kerman University of Medical Sciences, Haft Bagh Square, Kerman Town

City

Kerman

Province

Kerman

Postal code

7616913555

Approval date

2023-12-11, 1402/09/20

Ethics committee reference number

IR.KMU.REC.1402.344

Health conditions studied

1

Description of health condition studied

knee osteoarthritis

ICD-10 code

M17.0

ICD-10 code description

Bilateral primary osteoarthritis of knee

Primary outcomes

1

Description

1.Pain intensity

Timepoint

Before, After and 2month follow up

Method of measurement

Visual analog scale

Secondary outcomes

1

Description
Knee disability index
Timepoint
Before, After and 2month follow up
Method of measurement
WOMAC questionnaire and KOOS questionnaire

2

Description
Knee range of motion
Timepoint
Before, After and 2month follow up
Method of measurement
Goniometer

Intervention groups

1

Description
Intervention group: dry needling and knee mobilization
Category
Rehabilitation

2

Description
Intervention group: platelet-rich plasma
Category
Treatment - Other

3

Description
Control group: placebo
Category
Rehabilitation

Recruitment centers

1

Recruitment center
Name of recruitment center
Medical centers affiliated to Kerman University of Medical Sciences
Full name of responsible person
Tahereh Rezaeian
Street address
Kerman University of Medical Sciences, Haft Bagh Square, Kerman Town
City
Kerman
Province
Kerman
Postal code
7616913555
Phone
+98 34 3132 5700
Email
tahere.rezaiyan@gmail.com

Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Kerman University of Medical Sciences
Full name of responsible person
Abedin Iranpour
Street address
Kerman University of Medical Sciences, Haft Bagh Square, Kerman Town
City
Kerman
Province
Kerman
Postal code
7616913555
Phone
+98 34 3226 3855
Email
A.iranpour@kmu.ac.ir
Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Kerman 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
Kerman University of Medical Sciences
Full name of responsible person
Tahereh Rezaeian
Position
Assistant Professor of Kerman University of Medical Sciences
Latest degree
Ph.D.
Other areas of specialty/work
Physiotherapy
Street address
Kerman University of Medical Sciences, Haft Bagh Square, Kerman Town
City
Kerman

Province
Kerman
Postal code
7616913555
Phone
+98 34 3132 5700
Email
tahere.rezaiyan@gmail.com

Person responsible for scientific inquiries

Contact
Name of organization / entity
Kerman University of Medical Sciences
Full name of responsible person
Tahereh Rezaeian
Position
Assistant Professor of Kerman University of Medical Sciences
Latest degree
Ph.D.
Other areas of specialty/work
Physiotherapy
Street address
Kerman University of Medical Sciences, Haft Bagh Square, Kerman Town
City
Kerman
Province
Kerman
Postal code
7616913555
Phone
+98 34 3132 5700
Email
Tahere.rezaiyan@gmail.com

Person responsible for updating data

Contact
Name of organization / entity
Kerman University of Medical Sciences
Full name of responsible person
Tahereh Rezaeian
Position
Assistant Professor of Kerman University of Medical Sciences
Latest degree
Ph.D.
Other areas of specialty/work
Physiotherapy
Street address
Kerman University of Medical Sciences, Haft Bagh Square, Kerman Town
City
Kerman
Province
Kerman
Postal code
7616913555
Phone
+98 34 3132 5700
Email
Tahere.rezaiyan@gmail.com

Sharing plan

Deidentified Individual Participant Data Set (IPD)
Yes - There is a plan to make this available
Study Protocol
Yes - There is 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
Yes - There is a plan to make this available
Analytic Code
Yes - There is a plan to make this available
Data Dictionary
Yes - There is a plan to make this available
Title and more details about the data/document
Some of the data, such as information about the consequences, can be shared
When the data will become available and for how long
Starting the access period: 6 months after publiton the results
To whom data/document is available
Researchers working in academic institutions
Under which criteria data/document could be used
Only statistical analyzes can be used to find treatment for improvement of patients
From where data/document is obtainable
Applicants can be guided by email's responsible author. (tahere.rezaiyan@gmail.com)
What processes are involved for a request to access data/document
First, they will email the responsible author of the study and we Will be answered within a week.(Applicants can be guided by email's responsible author. tahere.rezaiyan@gmail.com)
Comments