

Clinical Trial Protocol

Iranian Registry of Clinical Trials

13 Jul 2026

Comparison of the effect of intra-articular injection of autologous and hyaluronic acid interleukin-1 (IL-1Ra) antagonist in controlling the pain of knee osteoarthritis in patients with knee osteoarthritis referring to pain clinics of Shohada Tajrish, Taleghani and Akhtar hospitals in 1397

Protocol summary

Study aim

Comparison of the effect of intra-articular injection of autologous and hyaluronic acid interleukin-1 (IL-1Ra) antagonist in controlling the pain of knee osteoarthritis

Design

Randomized clinical trial without control group, double blind, 60 patients, phase 2-3

Settings and conduct

Location: Akhtar Hospital, Taleghani Hospital, Shohada Tajrish Hospital

Participants/Inclusion and exclusion criteria

Inclusion Criteria: Signed written informed consent, 40 years of age and above, knee osteoarthritis for more than 3 months, Radiological findings confirming knee osteoarthritis based on the American College of Rheumatology (ACR). Exclusion Criteria: knee surgery, deformity and lower limb contractions, neuromuscular disease of the lower extremity, acute lumbosacral pathology, injection of steroid medications in the last two months, history of inflammatory rheumatoid arthritis, infection, Nursing mothers, BMI > 35, knee surgery, knee deviations (verrucous or valgus more than 5 degrees), anticoagulant therapy, post-traumatic arthritis, history of Intra-articular injection or ozone therapy for the past 12 months, allergy to any of the medications prescribed in this study, systemic or psychiatric disease, severe osteoarthritis of grade III, intra-articular injection of hyaluronic acid in the past 12 months, hepatitis, HIV, Cytomegalovirus, Syphilis, Osteomyelitis, Alcohol or substance abuse, diabetes, Pregnancy

Intervention groups

Orthokine treatment protocol (IL-1RA) consists of 6 injections, the first day and 3, 7, 10, 14 and 21 days after the first injection are done by physician A. Hyaluronic Acid group: two ml of hyaluronic acid solution (Synocrom 1% by Croma, Austria) is injected into the knee joint.

Total number of 5 injections are given at intervals of one week by the physician B.

Main outcome variables

Total KOOS Score. Total WOMAC Score

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20131124015515N6**

Registration date: **2019-04-13, 1398/01/24**

Registration timing: **retrospective**

Last update: **2019-04-13, 1398/01/24**

Update count: **0**

Registration date

2019-04-13, 1398/01/24

Registrant information

Name

Masoud Hashemi

Name of organization / entity

Shahid Beheshti University of Medical Sciences

Country

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2019-01-15, 1397/10/25

Expected recruitment end date

2019-01-15, 1397/10/25

Actual recruitment start date

2019-01-15, 1397/10/25

Actual recruitment end date

2019-02-24, 1397/12/05

Trial completion date

2019-02-24, 1397/12/05

Scientific title

Comparison of the effect of intra-articular injection of autologous and hyaluronic acid interleukin-1 (IL-1Ra) antagonist in controlling the pain of knee osteoarthritis in patients with knee osteoarthritis referring to pain clinics of Shohada Tajrish, Taleghani and Akhtar hospitals in 1397

Public title

Comparison of the effect of intra-articular injection of autologous and hyaluronic acid interleukin-1 (IL-1Ra) antagonist in controlling the pain of knee osteoarthritis in patients with knee osteoarthritis

Purpose

Supportive

Inclusion/Exclusion criteria**Inclusion criteria:**

Signed written informed consent to participate in the study Patients 40 years of age and above Patients suffering from knee osteoarthritis for more than 3 months Radiological findings confirming knee osteoarthritis based on the American College of Rheumatology (ACR)

Exclusion criteria:

Patients' refusal to participate in clinical research Patients with a history of knee surgery Patients with deformity and lower limb contraction, Patients with neuromuscular disease of the lower extremity, Patients with acute lumbosacral pathology Patients undergone injection of steroid medications in the last two months Patients with a history of inflammatory rheumatoid arthritis Patients with infection Nursing mothers BMI > 35 patients with knee surgery Patient with knee deviations (verrucous or valgus more than 5 degrees) confirmed by three joint views Patients with knee radicular pain Patients with anticoagulant therapy Patients with post-traumatic arthritis Patient with history of Intra-articular injection or ozone therapy for the past 12 months Patients with allergy to any of the medications will be prescribed in this study Patients with systemic or psychiatric disease Patients with severe osteoarthritis of grade III Patients with intra-articular injection of hyaluronic acid in the past 12 months Patients with hepatitis Patients with HIV Patients with Cytomegalovirus Patient with Syphilis Patient with Osteomyelitis Alcohol or substance abuse Patient with diabetes Pregnancy

Age

From 40 years old

Gender

Both

Phase

2-3

Groups that have been masked

- Care provider
- Investigator
- Outcome assessor
- Data analyser

Sample size

Target sample size: 60

Actual sample size reached: 60

Randomization (investigator's opinion)

Randomized

Randomization description

En: The sampling method was sequential; so that, all eligible people referred respectively, and were selected to complete the desired sample size. For randomization of patients into two groups, we used balanced block method and then informed consent has been obtained from the patients

Blinding (investigator's opinion)

Double blinded

Blinding description

Physicians who do the injections, data collectors, data analyzer and outcome assessors are unaware of the type of injected medication to each patient.

Placebo

Not used

Assignment

Parallel

Other design features**Secondary Ids**

empty

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

Ethics Committee on Biomedical Research Vice-Chancellor for Research in Shahid Beheshti University o

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Shahid Beheshti University of Medical Sciences, Shahid Arabi Str, Velenjak

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Approval date

2019-01-06, 1397/10/16

Ethics committee reference number

IR.SBMU.RETECH.REC.1397.835

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

Knee Osteoarthritis

ICD-10 code

M17

ICD-10 code description

Osteoarthritis of knee

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

Pain level

Timepoint

Before treatment, one month, three months and six months after the last injection

Method of measurement

En visual analog scale (VAS) (0 None; 1-3 Mild; 4-7 Moderate; 8-10 Severe)

2**Description**

WOMAC Knee Score (Western Ontario & McMaster Universities Osteoarthritis Index)

Timepoint

Before treatment and three months after the last injection

Method of measurement

WOMAC Knee Score (Western Ontario & McMaster Universities Osteoarthritis Index) Questionnaire

3**Description**

Knee injury and Osteoarthritis Outcome Score (KOOS)

Timepoint

Before the intervention and 3 months after the last injection

Method of measurement

Knee injury and Osteoarthritis Outcome Score (KOOS) questionnaire

Secondary outcomes**1****Description**

Procedure side effects

Timepoint

1, 3, 6 months after the injection procedure

Method of measurement

Documentation of the name of complication based on the findings of Pain Fellowship observation

Intervention groups**1****Description**

Intervention group: Intra-articular injection of IL-1RA group: In order to prepare IL-1RA, 50 ml of venous blood is taken from the patient using the Orthokine syringe (manufacturer country: Germany, the manufacturer:

orthokine) containing glass beads coated with CrSO₄. Then, to ensure complete mixing and maximal contact of beads and blood, the syringe is rotated gently and stored immediately at 37 ° C and transferred to an Orthogen lab within 24 hours in a designated incubator. In the laboratory, a blood sample is tested for hepatitis A, B and HIV, and if any of the tests are positive, the test is repeated with a new blood sample. If the test is re-affirmed positive, the patient is excluded from the study. In the event of negative test results, the products of orthokine (IL-1RA) are prepared by the laboratory and returned to the hospital in 2-14 ml vials at -20 ° C within 14-21 days. The injection regime in Orthokine (IL-1RA) group consists of 6 injections, on days 0, 3, 7, 10, 14 and 21 days after the first injection, and is done by physician A.

Category

Treatment - Drugs

2**Description**

Intervention group: intra-articular injection of hyaluronic acid group: . Two milliliters of Hyaluronic acid solution (1% Synocrom, manufacturer CROMA, Austria) is injected into the knee joint. These patients receive five injections by physician B at intervals of one week.

Category

Treatment - Drugs

Recruitment centers**1****Recruitment center****Name of recruitment center**

Akhtar Hospital

Full name of responsible person

Seyed Masoud Hashemi MD

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Pain Clinic, Akhtar Hospital, Sharifi Manesh Str.

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Web page address<http://amc.sbmu.ac.ir/>**2****Recruitment center****Name of recruitment center**

Taleghani Hospital

Full name of responsible person

Seyed Masoud Hashemi MD

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3

Recruitment center

Name of recruitment center

Shohada Tajrish Hospital

Full name of responsible person

Seyed Masoud Hashemi MD

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

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Full name of responsible person

Afshin Zarghi MD

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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

Shahid Beheshti 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

Shahid Beheshti University of Medical Sciences

Full name of responsible person

Seyed Masoud Hashemi MD.

Position

Associate Professor

Latest degree

Subspecialist

Other areas of specialty/work

Anesthesiology

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Person responsible for scientific inquiries

Contact

Name of organization / entity

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Full name of responsible person

Seyed Masoud Hashemi MD.

Position

Associate professor

Latest degree

Subspecialist

Other areas of specialty/work

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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

The total potential data can be shared after unidentifiable people

When the data will become available and for how long

the access starts period 12 months after printing the results

To whom data/document is available

Researchers working in scientific and academic settings

Under which criteria data/document could be used

To perform further studies based on our study protocol

From where data/document is obtainable

Person responsible for scientific inquiries

What processes are involved for a request to access data/document

Sending Email

Comments**Person responsible for updating data****Contact****Name of organization / entity**

Shahid Beheshti University of Medical Sciences

Full name of responsible person

Shahid Beheshti University of Medical Sciences

Position

Associate professor

Latest degree

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Other areas of specialty/work

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