

Clinical Trial Protocol

Iranian Registry of Clinical Trials

04 Jul 2026

Evaluation of the effects of supplementation extract prepared from Capparis spinosa on clinical manifestations, para-clinical and immunological factors in patients with refractory rheumatoid arthritis.

Protocol summary

Study aim

Evaluation of the effects of supplementation extract prepared from Capparis spinosa on clinical manifestations, para-clinical and immunological factors in patients with refractory rheumatoid arthritis.

Design

Thirty patients with refractory rheumatoid arthritis will be randomly divided into three groups based on a table of random numbers in this phase 2-3 clinical trial. Randomization will be performed by block randomization, using online random number generator. Patients in group 1 will be treated by extract prepared from Capparis spinosa. Patients in group will be treated by placebo and group 3 will be treated by conventional therapy. Patients, outcome assessor and data analyser will be blinded in this study.

Settings and conduct

Thirty patients with rheumatoid arthritis patients who are refractory to standard therapies will be enrolled in this study. All patients will be recruited at rheumatology ward in the Imam Reza Hospital, Mashhad University of Medical Sciences, Mashhad, Iran. Patients will be randomly divided into three groups. Patients in group 1 will be treated by extract prepared from Capparis spinosa. Patients in group will be treated by placebo and group 3 will be treated by conventional therapy. Patients, outcome assessor and data analyser will be blinded in this study.

Participants/Inclusion and exclusion criteria

Inclusion criteria: Resistant rheumatoid arthritis (RA) patients to non-biological disease-modifying anti-rheumatic drugs (DMARDs) Exclusion criteria: Non-resistant RA patients to DMARDs

Intervention groups

Group 1: Refractory rheumatoid arthritis (RA) patients will be treated by extract prepared from Capparis spinosa. Group 2: Refractory RA patients will be treated

by placebo. Group 3: Refractory RA patients will be treated by conventional therapy.

Main outcome variables

Clinical manifestations; para-clinical and immunological factors

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20151028024760N5**

Registration date: **2022-11-09, 1401/08/18**

Registration timing: **prospective**

Last update: **2022-11-09, 1401/08/18**

Update count: **0**

Registration date

2022-11-09, 1401/08/18

Registrant information

Name

Mojgan Mohammadi

Name of organization / entity

Mashhad University of Medical Sciences

Country

Iran (Islamic Republic of)

Phone

+98 51 3841 2081

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mohammadimzh@mums.ac.ir

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2023-06-22, 1402/04/01

Expected recruitment end date

2024-09-22, 1403/07/01

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Evaluation of the effects of supplementation extract prepared from Capparis spinosa on clinical manifestations, para-clinical and immunological factors in patients with refractory rheumatoid arthritis.

Public title

Evaluation of the effects of supplementation extract prepared from Capparis spinosa on clinical manifestations in patients with refractory rheumatoid arthritis.

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria:

Resistant rheumatoid arthritis (RA) patients to non-biological disease-modifying anti-rheumatic drugs (DMARDs) Treated RA patients by non-biological drugs Treated RA patients by Prednisolone, Hydroxychloroquine, Sulfasalazine and Methotrexate Refractory RA patients with no other Rheumatic disorders and inflammatory diseases

Exclusion criteria:

Non-resistant RA patients to non-biological disease-modifying anti-rheumatic drugs (DMARDs)

Age

From **35 years** old to **60 years** old

Gender

Both

Phase

2-3

Groups that have been masked

- Participant
- Outcome assessor
- Data analyser

Sample size

Target sample size: **30**

More than 1 sample in each individual

Number of samples in each individual: **2**

10 ml of venous blood

Randomization (investigator's opinion)

Randomized

Randomization description

Thirty patients with rheumatoid arthritis who are refractory to standard therapies will be enrolled in this study. The patients will be randomized into three groups (10 patients in each group), group A (Capparis spinosa), group B (Placebo) and group C (Conventional therapy) based on a table of random numbers. Randomization will be performed by block randomization, using online random number generator (Sealed Envelope) <https://www.sealedenvelope.com/simple-randomiser/v1/lits>. An independent researcher will perform

randomization in blocks using an online random number generator. The pharmacist will fill pill containers with each medication (Capparis spinosa or placebo) and will place them into sequentially numbered sealed envelopes in the order determined by randomization. The tools and materials needed to make the placebo will be exactly the same as the medicine except that only the active ingredient is removed from the placebo.

Blinding (investigator's opinion)

Double blinded

Blinding description

In this study the patients will be unaware of the group which they have been allocated in. Drugs have no label thus patients will not be aware of the type of treatment they receive. In addition, the outcome assessor and data analyser will not be aware of the type of intervention.

Placebo

Used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics committee of Mashhad University of Medical Sciences

Street address

Qoreishi Bulding, Daneshgah St

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Mashhad

Province

Razavi Khorasan

Postal code

91357345

Approval date

2022-04-26, 1401/02/06

Ethics committee reference number

IR.MUMS.MEDICAL.REC.1401.217

Health conditions studied

1

Description of health condition studied

Rheumatoid arthritis

ICD-10 code

M05

ICD-10 code description

Rheumatoid arthritis with rheumatoid factor

Primary outcomes

1

Description

Disease activity score 28-joint count-erythrocyte sedimentation rate (DAS28-ESR)

Timepoint

Before intervention and after 3 months follow up

Method of measurement

Clinical and laboratory findings

2

Description

Visual analog scale (VAS) to assess the level of joint pain

Timepoint

Before intervention and after 3 months follow up

Method of measurement

The amount of pain that a patient feels

Secondary outcomes

1

Description

Rheumatoid factor (RF)

Timepoint

Before intervention and after 3 months follow up

Method of measurement

Latex agglutination test

2

Description

C-reactive protein (CRP)

Timepoint

Before intervention and after 3 months follow up

Method of measurement

Latex agglutination test

3

Description

Anti-cyclic citrullinated peptide (anti-CCP)

Timepoint

Before intervention and after 3 months follow up

Method of measurement

Enzyme-linked immunosorbent assay (ELISA) test

4

Description

Erythrocyte sedimentation rate (ESR)

Timepoint

Before intervention and after 3 months follow up

Method of measurement

Erythrocyte sedimentation rate in millimeters

5

Description

Regulatory T cells

Timepoint

Before intervention and after 3 months follow up

Method of measurement

Frequency of desired cells using flow cytometry technique

6

Description

Th17 cells

Timepoint

Before intervention and after 3 months follow up

Method of measurement

Frequency of desired cells using flow cytometry technique

7

Description

CD4+ T cells

Timepoint

Before intervention and after 3 months follow up

Method of measurement

Frequency of desired cells using flow cytometry technique

8

Description

CD8+ T cells

Timepoint

Before intervention and after 3 months follow up

Method of measurement

Frequency of desired cells using flow cytometry technique

9

Description

FOXP3 transcription factor

Timepoint

Before intervention and after 3 months follow up

Method of measurement

The copy number of desired gene using reverse transcription polymerase chain reaction (RT-PCR)

10

Description

T-bet transcription factor

Timepoint

Before intervention and after 3 months follow up

Method of measurement

The copy number of desired gene using reverse transcription polymerase chain reaction (RT-PCR)

11

Description

ROR-gamma T transcription factor

Timepoint

Before intervention and after 3 months follow up

Method of measurement

The copy number of desired gene using reverse transcription polymerase chain reaction (RT-PCR)

12

Description

GATA3 transcription factor

Timepoint

Before intervention and after 3 months follow up

Method of measurement

The copy number of desired gene using reverse transcription polymerase chain reaction (RT-PCR)

13

Description

Interferon gamma

Timepoint

Before intervention and after 3 months follow up

Method of measurement

pg/ml using enzyme-linked immunosorbent assay (ELISA)

14

Description

Transforming Growth Factor- β

Timepoint

Before intervention and after 3 months follow up

Method of measurement

pg/ml using enzyme-linked immunosorbent assay (ELISA)

15

Description

Tumor necrosis factor- α

Timepoint

Before intervention and after 3 months follow up

Method of measurement

pg/ml using enzyme-linked immunosorbent assay (ELISA)

16

Description

Interleukin-4

Timepoint

Before intervention and after 3 months follow up

Method of measurement

pg/ml using enzyme-linked immunosorbent assay (ELISA)

17

Description

Interleukin-10

Timepoint

Before intervention and after 3 months follow up

Method of measurement

pg/ml using enzyme-linked immunosorbent assay (ELISA)

18

Description

Interleukin-17A

Timepoint

Before intervention and after 3 months follow up

Method of measurement

pg/ml using enzyme-linked immunosorbent assay (ELISA)

Intervention groups

1

Description

Intervention group: Refractory rheumatoid arthritis (RA) patients will be treated by extract prepared from Capparis spinosa (600 mg daily for three months) that will be produced at Pharmacological research center of medicinal plants, school of Medicine, Mashhad university of medical sciences, mashhad, Iran.

Category

Treatment - Drugs

2

Description

Control group: Refractory RA patients will be treated by placebo.

Category

Placebo

3

Description

Control group: Refractory RA patients will be treated by conventional therapy.

Category

N/A

Recruitment centers

1

Recruitment center

Name of recruitment center

Imam reza hospital

Full name of responsible person

Dr. Zhale shariati sarabi

Street address

Ebne Sina Ave, Emam Reza Sq

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Postal code

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Email

Shariatij@mums.ac.ir

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Mashhad University of Medical Sciences

Full name of responsible person

Research Chancellor, Mashhad University of Medical Sciences, Dr. Majid Ghayour-Mobarhan

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Qoreishi Bulding, Daneshgah St

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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

Mashhad 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**

Mashhad University of Medical Sciences

Full name of responsible person

DR. Mojgan Mohammadi

Position

Professor

Latest degree

Ph.D.

Other areas of specialty/work

Immunology

Street address

BuAli Research Institute, BuAli Square, Ferdowsi Sq

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Email

Mohammadimzh@mums.ac.ir

Person responsible for scientific inquiries**Contact****Name of organization / entity**

Mashhad University of Medical Sciences

Full name of responsible person

Dr. Mojgan Mohammadi

Position

Professor

Latest degree

Ph.D.

Other areas of specialty/work

Immunology

Street address

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

Mashhad University of Medical Sciences

Full name of responsible person

Dr. Mojgan Mohammadi

Position

Professor

Latest degree

Ph.D.

Other areas of specialty/work

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Sharing plan**Deidentified Individual Participant Data Set (IPD)**

Undecided - It is not yet known if there will be a plan to make this available

Study Protocol

Undecided - It is not yet known if there will be a plan to make this available

Statistical Analysis Plan

Undecided - It is not yet known if there will be a plan to make this available

Informed Consent Form

Undecided - It is not yet known if there will be a plan to make this available

Clinical Study Report

Undecided - It is not yet known if there will be a plan to make this available

Analytic Code

Undecided - It is not yet known if there will be a plan to

make this available

Data Dictionary

Undecided - It is not yet known if there will be a plan to make this available