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

Email address

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/lists. 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

City

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
City
Mashhad
Province
Razavi Khorasan
Postal code
9137913316
Phone
+98 51 3854 3031
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

Street address
Qoreishi Bulding, Daneshgah St
City
Mashhad
Province
Razavi Khorasan
Postal code
9138813944
Phone
+98 51 3841 1538
Email
Vcresraech@mums.ac.ir

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
City
Mashhad
Province
Razavi Khorasan
Postal code
9196773117
Phone
+98 51 3711 2611
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
BuAli Research Institute, BuAli Square, Ferdowsi Sq
City
Mashhad
Province
Razavi Khorasan
Postal code
9196773117
Phone
+98 51 3711 2611
Email
Mohammadimzh@mums.ac.ir

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
Immunology
Street address
BuAli Research Institute, BuAli Square, Ferdowsi Sq
City
Mashhad
Province
Razavi Khorasan
Postal code
9196773117
Phone
+98 51 3711 2611
Email
Mohammadimzh@mums.ac.ir

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