Clinical Trial Protocol
Iranian Registry of Clinical Trials

10 Jun 2026

Investigation of immunomodulatory effects of hydroxychloroquine on pregnancy outcomes in patients with repeated implantation failure (RIF)

Protocol summary

Study aim
Investigation of immunomodulatory effects of hydroxychloroquine on pregnancy outcomes in patients with RIF

Design
Clinical trial with control group (sample size of 70), parallel groups, triple blind, randomized

Settings and conduct
This is a triple blind study (patient, researcher and data analyst are blinded) and includes patients referring to Milad Infertility Clinic in Mashhad who are randomly assigned to two groups through simple randomization.

Participants/Inclusion and exclusion criteria
Inclusion criteria: pregnant woman with lower than 35 years old and 3 unsuccessful IVF in embryo transfer, pregnant woman with greater than 35 years old and 2 unsuccessful IVF in embryo transfer, women with uterine cavity and normal thrombophilia tests and with good-quality embryos Exclusion criteria: drug sensitivity, patient dissatisfaction

Intervention groups
Control group: Patients receive 4 mg of Estradiol valerate in the first 7 days of cycle for preparation of endometrium and 6 mg of it in the next 7 days until the endometrium is prepared. Following endometrial preparation based on a good quality fetal age (3 or 5 days), 800-mg Progesterone is given to patients . Intervention group: In addition to the routine treatment of the control group, each person is given 2 tablets of 200-mg hydroxychlorine per day from the third day of the menstrual cycle up to 14 days after embryo transfer (time of pregnancy test).

Main outcome variables
Chemical pregnancy (conducting the BHCG test 14 days after embryo transfer); implantation rate; clinical pregnancy (viewing live fetus using ultrasound scan)

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20191231045960N1**
Registration date: **2020-01-19, 1398/10/29**
Registration timing: **registered_while_recruiting**

Last update: **2020-01-19, 1398/10/29**
Update count: **0**

Registration date
2020-01-19, 1398/10/29

Registrant information

Name
Elahe Akhgari

Name of organization / entity

Country
Iran (Islamic Republic of)

Phone
+98 51 3801 2477

Email address
akhgarie971@mums.ac.ir

Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2019-09-23, 1398/07/01

Expected recruitment end date
2020-08-22, 1399/06/01

Actual recruitment start date
empty

Actual recruitment end date
empty

Trial completion date
empty

Scientific title

Investigation of immunomodulatory effects of hydroxychloroquine on pregnancy outcomes in patients with repeated implantation failure (RIF)

Public title

Investigation of immunomodulatory effects of hydroxychloroquine on pregnancy outcomes in patients with repeated implantation failure

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria:

pregnant woman with lower than 35 years old and 3 unsuccessful IVF in embryo transfer pregnant woman with greater than 35 years old and 2 unsuccessful IVF in embryo transfer women with uterine cavity and normal thrombophilia tests and with good-quality embryos

Exclusion criteria:

Drug sensitivity patient dissatisfaction

Age

From **20 years** old to **42 years** old

Gender

Female

Phase

2-3

Groups that have been masked

- Participant
- Investigator
- Data analyser

Sample size

Target sample size: **70**

Randomization (investigator's opinion)

Randomized

Randomization description

Simple randomization with table of random numbers available at ''www.randomization.com'' website will be used. Numbers will be placed in sealed envelopes and each envelope is assigned to one patient and places her in one of the two groups.

Blinding (investigator's opinion)

Triple blinded

Blinding description

In this study, participants are not aware of the type of treatment and the intervention. The researcher is also unaware of the type of drug being administered, and the analyst does not know which codes belong to which groups. Only a non-beneficiary outside the project is aware of the codes that will be decrypted after the completion the statistical analyses.

Placebo

Not 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

Central Building of Mashhad University of Medical Sciences (Ghorshi),Daneshgah 16, Daneshgah Street

City

Mashhad

Province

Razavi Khorasan

Postal code

9138813944

Approval date

2019-08-27, 1398/06/05

Ethics committee reference number

IR.MUMS.MEDICAL.REC.1398.702

Health conditions studied

1

Description of health condition studied

women infertility

ICD-10 code

N98.3

ICD-10 code description

Complications of attempted introduction of embryo in embryo transfer

Primary outcomes

1

Description

chemical pregnancy

Timepoint

14 days after embryo transfer

Method of measurement

Conducting BHCG test

2

Description

implantation rate

Timepoint

2-4 weeks after BHCG test is positive

Method of measurement

viewing the number of gestational sacs using ultrasound scan

3

Description

clinical pregnancy

Timepoint

3-5 weeks after BHCG test is positive

Method of measurement

viewing the live fetus using ultrasound scan

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group: Patients receive 4 mg of Estradiol valerate in the first 7 days of cycle for preparation of endometrium and 6 mg of it in the next 7 days until the endometrium is prepared. Following endometrial preparation based on a good quality fetal age (3 or 5 days) 800-mg Progesterone is given to patients . In addition to routine treatment, each person is given 2 tablets of 200-mg hydroxychlorine per day from the third day of the menstrual cycle up to 14 days after embryo transfer (time of pregnancy test).

Category

Treatment - Drugs

2

Description

Control group: Intervention group: Patients receive 4 mg of Estradiol valerate in the first 7 days of cycle for preparation of endometrium and 6 mg of it in the next 7 days until the endometrium is prepared. Following endometrial preparation based on a good quality fetal age (3 or 5 days) 800-mg Progesterone is given to patients .

Category

N/A

Recruitment centers

1

Recruitment center

Name of recruitment center
Milad Fertility Clinic
Full name of responsible person
Malihe Afiat
Street address
Milad Fertility Clinic, beside Sina hospital, Akhond Khorasani 32 Ave
City
Mashhad
Province
Razavi Khorasan
Postal code
9135913556
Phone
+98 51 3853 4021
Email
afiatm@mums.ac.ir

Sponsors / Funding sources

1

Sponsor

Name of organization / entity
Mashhad University of Medical Sciences
Full name of responsible person
Dr Mohsen Tafaghodi
Street address
Central Building of Mashhad University of Medical Sciences (Ghorshi), Daneshgah 16, Daneshgah street
City
Mashhad
Province
Razavi Khorasan
Postal code
9138813944
Phone
+98 51 3841 2081
Email
ramresearch@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
Elahe Akhgari
Position
resident
Latest degree
Medical doctor
Other areas of specialty/work
Gynecology and Obstetrics
Street address
Imam Reza Hospital, Imam Reza square, Ebn_e_sina Avenue
City
Mashhad
Province
Razavi Khorasan
Postal code

9137913316

Phone
+98 51 3802 2608

Email
akhgarie971@mums.ac.ir

Person responsible for scientific inquiries

Contact

Name of organization / entity
Mashhad University of Medical Sciences

Full name of responsible person
Malihe Afiat

Position
Assisstant professor

Latest degree
Specialist

Other areas of specialty/work
Gynecology and Obstetrics

Street address
Imam Reza Hospital, Imam Reza square, Ebn_e_sina Avenue

City
Mashhad

Province
Razavi Khorasan

Postal code
9137913316

Phone
+98 51 3802 2608

Email
afiatm@mums.ac.ir

Person responsible for updating data

Contact

Name of organization / entity
Mashhad University of Medical Sciences

Full name of responsible person
Elahe Akhgari

Position
resident

Latest degree
Medical doctor

Other areas of specialty/work
Gynecology and Obstetrics

Street address
Imam Reza Hospital, Imam Reza square, Ebn_e_sina Avenue

City
Mashhad

Province
Razavi Khorasan

Postal code
9137913316

Phone
+98 51 3802 2608

Email
akhgarie971@mums.ac.ir

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
Not applicable

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

Clinical Study Report
Yes - There is a plan to make this available

Analytic Code
Not applicable

Data Dictionary
Not applicable

Title and more details about the data/document
All data can be shared after patients are made unidentifiable.

When the data will become available and for how long
Data can be accessible 6 months after results are published.

To whom data/document is available
Data will be available for researchers in universities and other scientific institutes.

Under which criteria data/document could be used
Carrying out analysis on data is permitted.

From where data/document is obtainable
Data can be accessible through sending an email to the corresponding author.

What processes are involved for a request to access data/document
After sending a request email to the corresponding author, data will be sent in 1 month.

Comments