

Clinical Trial Protocol

Iranian Registry of Clinical Trials

18 Sep 2026

The effect of oral L-arginine consumption on uterine artery resistance in women with recurrent implant failure

Protocol summary

Study aim

Determining the effect of oral L-arginine consumption on uterine artery resistance in women with recurrent implant failure

Design

The present study is a randomized clinical trial using a block randomization and double-blind method. Blocks of 4 random number tables are used to allocate individuals to two control and study groups. The sample size was calculated based on similar studies and statistical formulas and was 72 people in total and 36 people in each group.

Settings and conduct

Research environment : the infertility clinic of Fatemeh Hospital, Hamadan, the research period: 2022-2023. The research population : all infertile women who are candidates for IVF with a history of 2 implantation failures . The research sample: infertile woman who is a candidate for IVF with a history of 2 implantation failures with good quality embryo transfer and a suitable endometrium with the inclusion criteria for the study.

Participants/Inclusion and exclusion criteria

Inclusion criteria: Infertile women aged 18-41 years, candidates for IVF with a history of 2 failures, with a suitable endometrium and good quality embryos, and without chronic diseases, non-smokers, endometriosis, without hormonal disorders, immune disorders, thrombophilia, antiphospholipid antibodies, mutations in factor V, prothrombin, chromosomal disorders. Exclusion criteria: patients with side effects of L-arginine, cancellation of the treatment cycle for any reason, unwillingness to continue participating in the study.

Intervention groups

In the intervention group of women with recurrent implant failure and receiving drugs (including: folic acid, vitamin D3, B complex and probiotic) and standard protocol (LONG with suppression) take oral L-arginine supplement from the luteal phase at a rate of 3 g Receive daily for 20 days.

Main outcome variables

Uterine artery resistance in women IVF candidates with RIF, Successful embryo transfer

General information

Reason for update

The study needs to be updated due to the addition of a series of inclusion and exclusion criteria.

Acronym

RIF(Frequent implantation (failure

IRCT registration information

IRCT registration number: **IRCT20220317054318N1**

Registration date: **2022-05-01, 1401/02/11**

Registration timing: **prospective**

Last update: **2025-01-08, 1403/10/19**

Update count: **1**

Registration date

2022-05-01, 1401/02/11

Registrant information

Name

Shamim Pilevari

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 81 3827 7012

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2022-05-22, 1401/03/01

Expected recruitment end date

2023-02-20, 1401/12/01

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The effect of oral L-arginine consumption on uterine artery resistance in women with recurrent implant failure

Public title

The effect of oral L-arginine consumption on uterine artery resistance in women with recurrent implant failure

Purpose

Treatment

Inclusion/Exclusion criteria**Inclusion criteria:**

Infertile women aged 18-41 years Infertile IVF candidate women with a history of failure twice Women with endometrium suitable for embryo transfer Women with good quality embryos for transfer Women who have passed 2 months or more since the last ICSI test and transfer. Women who have the opportunity to attend the follow-up according to the plan and have informed consent Women with a normal size and shape of the uterus that has been confirmed by ultrasound or hysteroscopy

Exclusion criteria:

Patients who use nitrite or organic nitrate at the same time Women with chronic diseases such as: severe liver, kidney, or cardiovascular failure, patients with a history of stroke or myocardial infarction Women smokers Women with stage 3 and 4 endometriosis Women with a known etiology of implant failure such as anatomical disorders (diagnosed by hysterosalpingography), hormonal disorders, immunological disorders, trophoblasts, antiphospholipid antibodies, mutation in factor V, pro-thrombin, crew disorders Musomes are excluded from the study Patients with side effects of L-arginine Canceling the treatment cycle for any reason Unwillingness of the person to continue participating in the study

AgeFrom **18 years** old to **41 years** old**Gender**

Female

Phase

3

Groups that have been masked

- Participant
- Outcome assessor

Sample sizeTarget sample size: **72****Randomization (investigator's opinion)**

Randomized

Randomization description

For this purpose, a random block is used. 18 sheets of paper are prepared and the letter A is written on 9 sheets and the letter B is written on the other 9 sheets. The sheets are mixed together and placed in a box and

placed in a drawer. And with the reference of each person eligible to enter the study, one of the sheets is randomly taken out and based on whether it is group A or B, it is given to the intervention and control group and the sheets are taken out until every 18 sheets. If it is not pulled out, it will not be returned to the drawer, and after randomly pulling out all 18 sheets, all the sheets will be returned to the drawer and the above operation will be continued up to 4 times on the next 18 patients, ie completing the sample volume to 72.

Blinding (investigator's opinion)

Double blinded

Blinding description

L-arginine and placebo are exactly the same, and a technician who is not in the research plan prepares the drugs and gives them to the doctor, and the codes remain secret until the end of the research, so the patient and the doctor measure the outcome. And the statistical consultant will not know which group these results belong to until the end of the study and after the disclosure of the codes.

Placebo

Not used

Assignment

Parallel

Other design features**Secondary Ids**

empty

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

Ethics Committee of Hamadan University of Medical Sciences

Street address

Pasdaran Street

City

Hamedan

Province

Hamadan

Postal code

6517789971

Approval date

2022-04-09, 1401/01/20

Ethics committee reference number

IR.UMSHA.REC.1401.037

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

infertility

ICD-10 code

N97.9

ICD-10 code description

Female infertility, unspecified

Primary outcomes

1

Description

Uterine vascular resistance

Timepoint

At the beginning of the intervention and after taking L-arginine

Method of measurement

Color Doppler ultrasound

Secondary outcomes

1

Description

Pregnancy

Timepoint

After taking the drug and transferring the fetus

Method of measurement

B-HCG titration test

Intervention groups

1

Description

Intervention group: In the intervention group, women with recurrent implant failure, in addition to receiving drugs (including: folic acid, vitamin D3, B complex and probiotics) and standard protocol (LONG with suppression), take Karen brand oral L-arginine supplement from the luteal phase to They receive 3 grams daily for 20 days.

Category

Treatment - Drugs

2

Description

Control group: Women with recurrent implant failure who use standard drugs (including: folic acid, vitamin D3, B complex and probiotics)

Category

Treatment - Drugs

Recruitment centers

1

Recruitment center

Name of recruitment center

Hamadan Fatemieh Hospital

Full name of responsible person

Shamim Pilehvari

Street address

Pasdaran street

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Web page address

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Hamedan University of Medical Sciences

Full name of responsible person

Reza Shokohi

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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

Hamedan 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

Hamedan University of Medical Sciences

Full name of responsible person

Shamim Pilehvari

Position

Associate professor

Latest degree

Subspecialist

Other areas of specialty/work

Gynecology and Obstetrics

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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