Clinical Trial Protocol
Iranian Registry of Clinical Trials

06 Jul 2026

Effectiveness evaluation of intra-ovarian injection of autologous menstrual blood stem cells in fertility potential of patients with poor ovarian response: a controlled clinical trial study

Protocol summary

Study aim

Effectiveness evaluation of intra-ovarian injection of autologous menstrual blood stem cells in fertility potential of patients with poor ovarian response

Design

Clinical trial including a control group, two-arm parallel-group, randomized trial

Settings and conduct

The entire population is selected according to the inclusion and exclusion criteria and all patients must sign the informed consent. The subjects are randomly divided into intervention and control groups. Menstrual blood is collected from the patients of the intervention group on day 2 of their menstruation cycle using menstrual cups. Stem cells are isolated from menstrual blood and cultured in vitro. Cultured cells are evaluated for phenotyping and non-contamination. Autologous cells are administered to the ovary of patients in Avicenna Infertility Treatment Center.

Participants/Inclusion and exclusion criteria

married woman Picked up less than 3 oocytes in last ovarian stimulation Anti mullerian hormone; less than 1.1 ng/ml 25-45 years old Spermogram: more than 5 million/ml, normal morphology more than 1, sperm motility (A+B) more than 25% Anteral follicles: less than 5-7 Thyroid dysfunction Immune disorders History of cancer, chemotherapy and radiotherapy Infected by hepatitis B,C or HIV Severe endometriosis History of ovarian surgery Diabetes Dysfunction of electrolyte or liver tests

Intervention groups

patients with reduced ovarian function are treated by stem cell infusion Control group: patients with reduced ovarian function under IVF treatment to compare their status with the intervention group

Main outcome variables

Number of antral follicles, Anti Mullerian hormone levels, Number and quality of oocytes in the treatment cycle, Number and quality of the embryos, Spontaneous pregnancy, Clinical pregnancy, Implantation rate, Live birth rate

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20180619040147N4**
Registration date: **2020-08-01, 1399/05/11**
Registration timing: **registered_while_recruiting**

Last update: **2020-08-01, 1399/05/11**
Update count: **0**

Registration date

2020-08-01, 1399/05/11

Registrant information

Name

Maryam Darzi

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 21 2243 2020

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m.darzi@ari.ir

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2020-06-21, 1399/04/01

Expected recruitment end date

2021-11-22, 1400/09/01

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Effectiveness evaluation of intra-ovarian injection of autologous menstrual blood stem cells in fertility potential of patients with poor ovarian response: a controlled clinical trial study

Public title

Effectiveness evaluation of intra-ovarian injection of autologous menstrual blood stem cells in fertility potential of patients with poor ovarian response: a controlled clinical trial study

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria:

married women ages between 25-45 years old Picked up equal or less than 3 oocytes in last ovarian stimulation Anti mullerian hormone; less than 1.1 nanogram per milliliter Anteral follicles: less than 5-7 Spermogram: more than 5 million per millilieter normal morphology more than 1%

Exclusion criteria:

un treated Thyroid dysfunction Immune disorders History of cancer, chemotherapy and radiotherapy Infected by hepatitis B,C or HIV Severe endometriosis History of ovarian surgery Diabetes Dysfunction of electrolyte or liver tests Psychological problem like depression, high stress an anxiety renal failure disease history of blood trasfusion, anemia or sickle cell anemia

Age

From **25 years** old to **45 years** old

Gender

Female

Phase

3

Groups that have been masked

No information

Sample size

Target sample size: **180**

Randomization (investigator's opinion)

Randomized

Randomization description

Block randomization: For this study, a specific population of unfertilized diminished ovarian reserve patients was chosen, admission and exclusion criteria from the study were chosen very detailed and accurate. all the population was all the same in the range of age and weight, non-fertility period, normal sperm analysis of their spouses, therefore block randomized of 180 patients were divided into main group (A), control group (B). hence 18 blocks of 10 were created using Computer logarithm from the study randomized app (https://app.studyrandomizer.com). All the blocks were the same and both groups contained the same amount of samples (1:1), the state of each block was different from the next block. randomizing the samples was conducted as follows: First, based on a computer logarithm 180 sample (patient) was randomized. and for each sample, block identifier, block size, sequence within the block was designed. For example, the code 2,6,1 shows that the second patient in block no. 1 of 10 is located in the second seat. for each patient, a specific code (study ID) was defined based on standard coding, and therefore the master randomized list was created for the patients.

Blinding (investigator's opinion)

Not blinded

Blinding description

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Academic Center for Education, Culture and Research (ACECR)- Biomedical Research Ethics Committee

Street address

1270, Secretariat of the Ethics Committee of ACECR,Deputy Director of Research and Technology, Headquarters of ACECR, Opposite the main door of Tehran University, Enghelab Street, Tehran

City

Tehran

Province

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Postal code

1936773493

Approval date

2020-05-31, 1399/03/11

Ethics committee reference number

IR.ACECR.REC.1399.002

Health conditions studied

1

Description of health condition studied

Poor ovarian response

ICD-10 code

E89.40

ICD-10 code description

Asymptomatic postprocedural ovarian failure

Primary outcomes

1

Description

Number of antral follicles in ovary

Timepoint

Before intervention, 3 months and 6 months after cell administration

Method of measurement

Vaginal sonography

2

Description

Anti Mullerian hormone level in blood serum

Timepoint

Before intervention, 3 months, 6 months and one year after cell administration

Method of measurement

biochemical assay

3

Description

number and quality of oocytes in intra-cytoplasmic sperm injection cycle

Timepoint

first intra-cytoplasmic sperm injection cycle after intervention

Method of measurement

embryologic evaluation

4

Description

spontaneous pregnancy

Timepoint

up to 3 months after intervention

Method of measurement

beta-HCG assay

Secondary outcomes

1

Description

Implantation rate

Timepoint

in new intra-cytoplasmic sperm injection cycle after intervention

Method of measurement

Vaginal sonography

2

Description

Clinical pregnancy

Timepoint

6-8 weeks after last menstrual period

Method of measurement

Vaginal sonography

3

Description

live birth

Timepoint

9 months after pregnancy

Method of measurement

delivery report based on gynecologist comment

4

Description

embryo quality and number

Timepoint

in new intra-cytoplasmic sperm injection cycle after intervention

Method of measurement

embryology report

Intervention groups

1

Description

Intervention group: includes 90 patients with poor ovarian response that will be treated by once injection of autologous menstrual blood stem cells. After cells isolation, culture and qualification in GMP grade- clean room of STERCO (Tehran, Iran), they will be intravaginally injected by vaginal ultrasonography into both ovaries of patients after receiving general anesthesia.

Category

Treatment - Other

2

Description

Control group: Iincludes 90 patients with poor ovarian response, being treated with IVF treatment cycles.

Category

Treatment - Other

Recruitment centers

1

Recruitment center

Name of recruitment center

Avicenna Infertility Clinic

Full name of responsible person

Somaieh Kazemnejad

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No 97, Beginning of Yakhchal Street, Shariati Ave.

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Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Iranian academic center for education culture and research
Full name of responsible person
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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
Iranian academic center for education culture and research
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
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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

No - There is not 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

Not applicable

Data Dictionary

Not applicable