Clinical Trial Protocol
Iranian Registry of Clinical Trials

29 Oct 2026

Evaluation of the safety and feasibility of intra ovarian injection of menstrual blood derived stem cells (MenSCs) in women with poor ovarian response.

Protocol summary

Study aim
Improvement of ovarian function and fertility in patients with poor ovarian response using stem cells derived from menstrual blood

Design
Clinical trial including control group, two arm parallel group, randomised 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 at days 1 or 2 of their menstruation cycle using menstrual cups. Stem cells are isolated from collected 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
Inclusion criteria: married woman;having previous cycles of ovarian stimulation with oocyte number of up to 3;anti-muller hormone below 1.1 ng/ml; antral follicle below 5; up to 40 years Sperm analysis:more than 5 million per ml; normal morphology with the strict criterion of at least 1%;25% of sperm motility Exclusion criteria: Thyroid dysfunction; Immune system disease; History of cancer; Hepatitis B and C and HIV; Endometriosis; Ovarian surgery; Diabetes; Liver dysfunction

Intervention groups
Intervention group: patients with reduced ovarian function are treated by stem cell infusion Control group: patients with reduced ovarian function are considered with no intervention only 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
Methodology revision during project implementation

Acronym

IRCT registration information
IRCT registration number: **IRCT20180619040147N2**
Registration date: **2018-08-21, 1397/05/30**
Registration timing: **registered_while_recruiting**

Last update: **2020-03-25, 1399/01/06**
Update count: **4**

Registration date
2018-08-21, 1397/05/30

Registrant information

Name
Maryam Darzi

Name of organization / entity

Country
Iran (Islamic Republic of)

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Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2018-08-06, 1397/05/15

Expected recruitment end date

2019-10-07, 1398/07/15

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Evaluation of the safety and feasibility of intra ovarian injection of menstrual blood derived stem cells (MenSCs) in women with poor ovarian response.

Public title

Evaluation of the safety and feasibility of intra ovarian injection of menstrual blood derived stem cells (MenSCs) in women with poor ovarian response.

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria:

Got married woman Picked up less than 3 oocytes in last ovarian stimulation Anti mullerian hormone; less than 1.1 ng/ml Upper age limit: 40 Spermogram: more than 5 million/ml, normal morphology more than 1, sperm motility (A+B) more than 25% Anteral follicles: less than 5-7

Exclusion criteria:

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

Age

From **25 years** old to **40 years** old

Gender

Female

Phase

1-2

Groups that have been masked

No information

Sample size

Target sample size: **36**

Randomization (investigator's opinion)

Randomized

Randomization description

Block randomization: In order to randomly assign 36 subjects in treatment group or control group, 6 blocks including 6 subjects each will be defined using "https://app.studyrandomizer.com". Treatment group and control group will be identified by codes A and B, respectively. In each block, number of treatment group and control group is equal and situation of each block with other block is different.

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

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Tehran

Province

Tehran

Postal code

1936773493

Approval date

2018-05-06, 1397/02/16

Ethics committee reference number

IR.ACECR.REC.1397.001

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 18 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 left ovary of patients after receiving general anesthesia.
Category
Treatment - Other

2

Description
Control group: includes 18 patients with poor ovarian response that will not receive any intervention and their biochemical parameters, sonographic and embryologic data will be compared with intervention group.
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
Other

Person responsible for general inquiries

Contact
Name of organization / entity
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Full name of responsible person
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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