

Clinical Trial Protocol

Iranian Registry of Clinical Trials

10 Jun 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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Email address

m.darzi@ari.ir

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

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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

Mohammad-Reza Sadeghi

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Avicenna Research Institute, Shahid Beheshti University, Shahid Chamran Highway, Tehran, Iran

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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**

Iranian Academic Center for Education Culture and Research

Full name of responsible person

Somaieh Kazemnejad

Position

Associate Professor

Latest degree

Ph.D.

Other areas of specialty/work

Biochemistry

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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