

Clinical Trial Protocol

Iranian Registry of Clinical Trials

18 Sep 2026

Comparison of sildenafil and isorbid effects on embery transfer outcome in patients with recurrent implantation failure

Protocol summary

Study aim

1. Evaluation of implantation ,endometrial thickness and pregnancy in women with recurrent implant failure

Design

The trial has two intervention groups, double-blind, randomized, phase Y on 90 patients. Chi-square test will be used to compare clinical fertility and statistical analysis will be performed using SPSS.26 software.

Settings and conduct

IVF Clinic of Tabriz Al-Zahra Hospital Endometrial preparation begins with estradiol valerate tablets. In first group Simultaneously with estradiol.sildenafil 50 mg vaginally and in the second group isosorbide dinitrate 10 mg with estradiol is administered vaginally. After embryo transfer luteal phase support is provided with progesterone injections.The facilitator will be aware of the study groups, and the researcher, data collector, and data analyst will be blinded to the study groups.

Participants/Inclusion and exclusion criteria

Patients with a history of infertility and twice implantation failure will be included in the study with consent Exclusion criteria 1. Treatment with antihypertensive drugs 2. Myoma, adenomyosis, congenital malformation of the uterus, endometriosis 3. History of cardiovascular or kidney or liver disease or the use of nonsteroidal anti-inflammatory drugs and any chronic disease 3. Reluctance to participate in the study

Intervention groups

Endometrial preparation begins with estradiol valerate tablets at a dose of 4 mg and increases to 6 mg per day after 3 days. In the first group, in addition to standard treatment, isosorbide dinitrate 10 mg vaginal tablets (group 1) at the same time as estradiol It is started and continued for one day before embryo transfer. In the other group (group II), sildenafil 50 mg tablets daily are prescribed from the day of estradiol onset until one day before embryo transfer.

Main outcome variables

Endometrial thickness examination, BHCG titer

examination pregnancy

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20110301005942N8**

Registration date: **2021-11-15, 1400/08/24**

Registration timing: **registered_while_recruiting**

Last update: **2021-11-15, 1400/08/24**

Update count: **0**

Registration date

2021-11-15, 1400/08/24

Registrant information

Name

Aliye Ghasemzadeh

Name of organization / entity

Tabriz University of Medical Sciences

Country

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2021-08-29, 1400/06/07

Expected recruitment end date

2022-08-29, 1401/06/07

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparison of sildenafil and isorbid effects on embery transfer outcome in patients with recurrent implantation failure

Public title

Comparison of sildenafil and isorbid effects on embery transfer outcome in patients with recurrent implantation failure

Purpose

Treatment

Inclusion/Exclusion criteria**Inclusion criteria:**

15 to 40 years Patients with a history of double implantation failure who have at least 2 frozen embryos for transfer will be included in the study with consent.

Exclusion criteria:

1.Treatment with hypertension drugs 2.Myoma, adenomyosis, congenital malformations of the uterus, endometriosis 3.History of cardiovascular or renal or liver disease or use of nonsteroidal anti-inflammatory drugs and any chronic disease Reluctance to participate in the study

Age

From **15 years** old to **40 years** old

Gender

Female

Phase

2

Groups that have been masked

- Participant
- Investigator
- Outcome assessor
- Data analyser

Sample size

Target sample size: **90**

Randomization (investigator's opinion)

Randomized

Randomization description

In this study, there will be two intervention groups. Assignment of patients to study groups after their arrival will be done using closed letter envelopes with numbers 1 to the maximum sample size on the envelopes and AB groups in the envelopes and written in them and mixed randomly. . After the package is selected by the patient recipient, patients will be divided into desired groups.

Blinding (investigator's opinion)

Double blinded

Blinding description

The facilitator (supervisor) who is not involved in the collection and analysis of study data will be aware of the study groupings and the researcher, the data collector and the data analyzer will be blinded to the study groups. The subjects will not be aware of their behaviors during treatment. Patients will be assigned to study groups after their arrival using closed letter envelopes with numbers 1 to 90 on the envelopes and groups A and B written on the envelopes and mixed randomly. After

the package is selected by the patient recipient, patients will be divided into desired groups. Envelopes will be arranged by the facilitator (supervisor) and study groups will be selected. Envelopes will be selected by the female resident. Envelopes will be numbered from number 1 to the end. The first person will be given the first envelope and this will continue until the last desired number, where 45 people will be in group A and 45 people in group B.

Placebo

Not used

Assignment

Parallel

Other design features**Secondary Ids**

empty

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

Ethics Committee Of Tabriz University Of Medical Sciences.

Street address

Third Floor, Central Building of Number2, Golgasht Street

City

Tabriz

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East Azarbaijan

Postal code

33357313

Approval date

2021-08-29, 1400/06/07

Ethics committee reference number

IR.TBZMED.REC.1400.503

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

Infertility

ICD-10 code

N97.1

ICD-10 code description

Female infertility of tubal origin

Primary outcomes**1****Description**

evaluation of endometrial thickness

Timepoint

The initial evaluation of endometrial thickness is performed on day 1 to 3 and then 10 days later.

Method of measurement

2**Description**

BHCG titer examination

Timepoint

Chemical pregnancy 2 weeks after embryo transfer

Method of measurement

Chemical pregnancy with BHCG

Secondary outcomes**1****Description**

Clinical pregnancy

Timepoint

4 weeks after embryo transfer

Method of measurement

Trans vaginal sonography

Intervention groups**1****Description**

Intervention group 1: Intervention group 1. For patients on day 1-3 of the menstrual cycle, vaginal ultrasound is performed and in the absence of ovarian cysts and space-occupying lesions in the uterine cavity, the standard treatment required for endometrial preparation is started. Endometrial preparation with 4 mg estradiol valerate tablets The gram starts and increases to 6 mg per day after 3 days. In the first group, at the same time as estradiol sildenafil is started, 50 mg daily is administered vaginally and fetal transfer is continued until the day before.

Category

Treatment - Drugs

2**Description**

Intervention group 2: For patients on day 1-3 of the menstrual cycle, vaginal ultrasound is performed and in the absence of ovarian cysts and space-occupying lesions in the uterine cavity, the standard treatment required for endometrial preparation is started. Endometrial preparation begins with estradiol valerate tablets at a dose of 4 mg and increases to 6 mg per day after 3 days. In the second group, in addition to standard treatment, the administration of isosorbide dinitrate 10 mg vaginal tablets is started from the day of estradiol onset and continues until one day before embryo transfer. The initial ultrasound control for endometrial thickness is performed 10 days later.

Category

Treatment - Drugs

Recruitment centers**1****Recruitment center****Name of recruitment center**

Alzahra Hospital

Full name of responsible person

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Alzahra Hospital, South Artesh St.

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Sponsors / Funding sources**1****Sponsor****Name of organization / entity**

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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

Tabriz 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

Tabriz University of Medical Sciences

Full name of responsible person

Dr. Aliye Ghasemzadeh

Position

Fellowship of Infertility

Latest degree

Subspecialist

Other areas of specialty/work

Gynecology and Obstetrics

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Position

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Other areas of specialty/work

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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