Clinical Trial Protocol
Iranian Registry of Clinical Trials

24 Jun 2026

The sequential embryo transfer in the third and fifth day compared to single embryo transfer in the fifth day in IVF cycle

Protocol summary

Study aim
evaluation of the twice embryo transfer on day 3 or day 5 (blastocyst) compared with the embryo transfer on the fifth day in women with a history of at least three failed IVF

Design
The third phase of this randomized clinical trial, two groups of 120 subjects were assigned to two parallel groups of intervention (embryo transfer on days 3 and 5) and control (embryo transfer on the fifth day (blastocyst).

Settings and conduct
Published data on sequential transfer is limited. Also, the effectiveness of this procedure is still a matter of debate. So, this study was aimed to evaluate the sequential embryo transfer on day 3 or day 5-blastocyst compared to single transfer on day 5 (blastocyst) in women with a history of at least three IVF failures referred to Imam Khomeini Infertility clinic. After the ovarian stimulation, oocyte retrieval, inoculation of sperm into the oocyte and embryo formation, The included patients were randomly divided into two groups. In the intervention group, 1 number of the embryo was transferred on the third day and two embryos on the fifth day (blastocyst) and in the control group, two blastocysts were transferred to the uterus.

Participants/Inclusion and exclusion criteria
Inclusion Criteria: Women with less than 40 years of age with more than three times IVF failure, normal karyotype, immunological status and thrombophilia, lack of anomalies in the endometrium. Exclusion criteria: patients with poor or ovarian hyperstimulation syndrome, underlying medical conditions.

Intervention groups
Intervention group: In the number of 60 eligible patients after ovulation stimulation and embryo formation, the embryos were transferred to the third and fifth days on two occasions Control group: Two embryos were transferred to fifth days on one occasion.

Main outcome variables
Chemical pregnancy ؛ Clinical Pregnancy

General information

Reason for update
Acronym
IRCT registration information
IRCT registration number: **IRCT20141217020351N10**
Registration date: **2018-05-13, 1397/02/23**
Registration timing: **retrospective**

Last update: **2018-05-13, 1397/02/23**
Update count: **0**

Registration date
2018-05-13, 1397/02/23

Registrant information
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Recruitment status
Recruitment complete
Funding source

Expected recruitment start date
2015-04-09, 1394/01/20
Expected recruitment end date
2016-04-08, 1395/01/20
Actual recruitment start date
2015-04-09, 1394/01/20
Actual recruitment end date

2016-04-08, 1395/01/20

Trial completion date

empty

Scientific title

The sequential embryo transfer in the third and fifth day compared to single embryo transfer in the fifth day in IVF cycle

Public title

The sequential embryo transfer compared to single embryo transfer in one cycle

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria:

age ≤ 40 years normal karyotype normal screening of immunological and thrombolytic condition the absence of endometrial abnormalities by hysteroscopy availability of ≥5 embryos

Exclusion criteria:

potential poor responders Ovarian hyper stimulation response presence of medical diseases

Age

From **18 years** old to **40 years** old

Gender

Female

Phase

3

Groups that have been masked

No information

Sample size

Target sample size: **130**

Actual sample size reached: **120**

Randomization (investigator's opinion)

Randomized

Randomization description

they were allocated to one of two groups via simple random sampling, using a random Pocket (intervention or Control)by the same coordinator.Patients were allocated to either sequential transfer (day 3 and day 5) or conventional transfer (day 5) protocols.

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

Ethics committee of Tehran University of Medical Sciences

Street address

No.6,Ghods Ave,Keshavarz Blvd,Deputy of Research of Tehran University of Medical Sciences

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Tehran

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14194

Approval date

2017-07-11, 1396/04/20

Ethics committee reference number

IR.TUMS.IKHC.REC.1396.3849

Health conditions studied

1

Description of health condition studied

Infertility,Repeated implantation failure,Embryo transfer,Blastocyst

ICD-10 code

N97

ICD-10 code description

Female infertility

Primary outcomes

1

Description

Chemical pregnancy

Timepoint

Two weeks after the stopping the menstruation

Method of measurement

Blood sample for B-HCG

2

Description

Clinical Pregnancy

Timepoint

Six weeks after seeing the embryo sac in ultrasound

Method of measurement

Ultrasonography

Secondary outcomes

1

Description

Abortion

Timepoint

After positive pregnancy test

Method of measurement

Blood sample of B-HCG

2

Description

Ectopic pregnancy

Timepoint
After the positive of pregnancy test
Method of measurement
Sonography

Intervention groups

1

Description
Intervention group: patients were randomized to one of the 2 groups of Intervention and control .After ovulation induction, ẘhen 3leading follicles reached more than 17 mm diameter means, oocyte retrieval was performed 36 hours later under the unconscious sedation. The retrieved oocytes were incubated in a mini-incubator with the triple gas mixture for 3h in a fertilization medium and then ICSI was done. Injected oocytes were transferred to a culture dish with cleavage medium (Sydney IVF cleavage medium, cook). Fertilization was assessed 16-18 h after ICSI and then observed for cleavage on day 3. Once post-fertilization check confirmed availability of ≥5 embryos, . In the third day after injection, embryo quality was evaluated, and 1 good-quality embryos were transferred (Cleavage in fresh cycles). Also, embryos were transferred to Blastocyst medium (Sydney IVF blastocyst medium) for 48 h. Then, on the fifth day, two embryos (Blastocyst) were transferred to the uterus.
Category
Treatment - Surgery

2

Description
Control group: After ovulation induction, ẘhen 3leading follicles reached more than 17 mm diameter means, oocyte retrieval was performed 36 hours later under the unconscious sedation. The retrieved oocytes were incubated in a mini-incubator with the triple gas mixture for 3h in a fertilization medium and then ICSI was done. Injected oocytes were transferred to a culture dish with cleavage medium (Sydney IVF cleavage medium, cook). Fertilization was assessed 16-18 h after ICSI and then observed for cleavage on day 3. Once post-fertilization check confirmed availability of ≥5 embryos, In the control group, on the fifth day, two embryos (Blastocyst) were transferred to the uterus.
Category
Treatment - Other

Recruitment centers

1

Recruitment center
Name of recruitment center
Vali asr Infertility Clinic
Full name of responsible person
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Sponsors / Funding sources

1

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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
Tehran 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
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Position
Associate professor
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Sharing plan

Deidentified Individual Participant Data Set (IPD)
No - There is not a plan to make this available
Justification/reason for indecision/not sharing IPD
Maintaining privacy in patient data
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