Clinical Trial Protocol
Iranian Registry of Clinical Trials

18 Sep 2026

The effect of growth hormone on increasing pregnancy success rate in women with unexplained recurrent implantation failure: A multicenter clinical randomized study.

Protocol summary

Study aim

To evaluate the effect of the growth hormone on the pregnancy outcomes of the patients with unexplained recurrent implantation failure Qualitative evaluation of the uterus after the intervention by help of vaginal sonography, two- dimensional and three-dimensional Doppler vaginal ultrasound

Design

non-blind randomized two-arm clinical trial study in two groups of growth hormone-receiving and non-growth-hormone patients in patients with recurrent implantation failure

Settings and conduct

In this clinical trial, the patients were divided into an intervention group (receiving daily subcutaneous 8 units of the growth hormone from the beginning of the daily of estradiol valerate to the beginning of progesterone injection) and a control group. The researchers responsible for data collection and those who assess outcomes will not have access to patients' medical records and clinical report forms. They will simply collect patients' outcomes based on the initial list for participation in the research.

Participants/Inclusion and exclusion criteria

Inclusion criteria: Women between the ages of 22 and 39, unexplained recurrent Implantation Failure ≥3 in Fet cycle Exclusion criteria: known cause of implantation failure such as Underlying disease such as: diabetes, Hypertension, Congenital uterine anomalies Endometrial adhesions , submucosal myomas

Intervention groups

The intervention group includes the patients with RIF who will receive the intervention of the growth hormone in FET cycle . The control group includes the patients with RIF who will not receive the intervention of the growth hormone in FET cycle.

Main outcome variables

Clinical pregnancy: the observation of pregnancy sac on transvaginal ultrasound in the 5th week ; Ongoing pregnancy:12 week gestation Live birth rate

General information

Reason for update

Sponsor change Increase of sample size Some centers was added to the study Since the intervention, inclusion and exclusion criteria and assessed outcomes were not changed and also the sample sized is increased only due to change the study to a multi-center one , there is no ethical consideration related to the trial. Then a new ethical code was not requested.

Acronym

IRCT registration information

IRCT registration number: **IRCT20201003048912N1**
Registration date: **2020-12-21, 1399/10/01**
Registration timing: **registered_while_recruiting**

Last update: **2021-08-23, 1400/06/01**
Update count: **1**

Registration date

2020-12-21, 1399/10/01

Registrant information

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Mina Ataei
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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date
2020-06-21, 1399/04/01
Expected recruitment end date
2022-12-22, 1401/10/01
Actual recruitment start date
empty
Actual recruitment end date
empty
Trial completion date
empty

Scientific title
The effect of growth hormone on increasing pregnancy success rate in women with unexplained recurrent implantation failure: A multicenter clinical randomized study.

Public title
The effect of growth hormone on increasing pregnancy success rate in women with unexplained recurrent implantation failure: A multicenter clinical randomized study.
Purpose
Treatment
Inclusion/Exclusion criteria
Inclusion criteria:
have a history of more than two previous unexplained IVF failures (3≤)(despite transfer of minimum one good grade A blastocyst embryo) , no previous hormone growth cycle, no other interventions in this cycle(hystroscopy and Imunomodolator drugs), no donation cycle, no hormone contraindications, not having hydrosalpinx, , having at least one good grade A blastocyst freezed embryo for transfer , FSH≤10, AMH≥1.8
Exclusion criteria:
Age≥ 40 years, BMI≥30, endometriosis, severe oligospermia, (Sperm count <5 ×106 /mL ,Normal morphology <2% in the sperm analysis test) DFI ≤30% , patients with hydrosalpinx, kidney and liver diseases, diabetes,hypertention and thyroid(anti-Tpo>500) and autoimmune diseases and local allergic reactions and benign increase in intracranial pressure, submucosal myoma, metabolic syndrome, sex selection , karyotype disorder, uterian anomalis, Synechsia, Hx of thin enodmetrium(endometrial line<7mm) , no patient consent
Age
From **22 years** old to **39 years** old
Gender
Female

Phase
3
Groups that have been masked
No information
Sample size
Target sample size: **356**
Randomization (investigator's opinion)
Randomized
Randomization description
Block randomization with blocks with size 4 in www.sealedenvelope.com web site
Blinding (investigator's opinion)
Not blinded
Blinding description
Placebo
Not used
Assignment
Other
Other design features
The effect of growth hormone on increasing pregnancy success rate in women with unexplained recurrent implantation failure (undergoing frozen embryo transfer): A multicenter clinical randomized study.

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
Ethic committe of Avicenna research institue
Street address
Yakhchal junction, Shariati st.
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Postal code
1936773493
Approval date
2020-09-09, 1399/06/19
Ethics committee reference number
IR.ACECR.AVICENNA.REC.1399.005

Health conditions studied

1

Description of health condition studied
Patients with recurrent implantation failure
ICD-10 code
N98.2
ICD-10 code description
Complications of attempted introduction of fertilized ovum following in vitro fertilization

2

Description of health condition studied
Patients with recurrent implantation failure
ICD-10 code
N97.2
ICD-10 code description
Female infertility of uterine origin

Primary outcomes

1

Description
Pregnancy rate
Timepoint
5-6 weeks after taking the drug
Method of measurement
The number of patients with positive gestational sac divided by the number of patients who had embryo transfer

Secondary outcomes

1

Description
Endometrial receptivity
Timepoint
2 weeks after taking the drug
Method of measurement
measurement of sub endometrial flow by power Doppler sono and endometrial volume and thickness by 3D and 2D ultrasonograghy

2

Description
chemical pregnancy rate : the rate of positive pregnancy test 2 weeks after embryo transfer
Timepoint
2 weeks after embryo transfer
Method of measurement
evaluation of positive pregnancy test after transfer of blastocyst (s) embryo(s)

3

Description
implantation rate
Timepoint
measurement of number gestational sac divided by number of blastocyst embryo transfer
Method of measurement
evaluation of positive and number of intrauterine gestational sac after transfer of blastocyst (s) embryo(s) by ultrasonograghy

4

Description
live birth rate : number of delivery of viable fetuses(more than 28 weeks) divided by number of embryo transferred.
Timepoint
Gestational age more than 28 weeks of pregnancy
Method of measurement
Delivery of viable fetuses after 28 after pregnancy

Intervention groups

1

Description
Intervention group: this study attempts to explore and assess 178 infertile further three recurrent implantation failures. This group will receive the growth hormone produced by CinnaGen Company for the frozen embryo transfer (FET). From the third day of menstruation, after suppression of endogenous ovarian secretion by prescribing GnRH agonist in the 21day of the previous cycle ,oral estradiol valerate (6 mg/day) and subcutaneous injection of 8 units of the growth hormone will be prescribed. (in patients with a regular menstruation no GnRH agonist suppression is done). The injection of the growth hormone will be continued until the day on which progesterone is injected.(having a good trilaminar ,at least 7-8 mm endometrial thickness). Five days prior to blastocyst embryo transfer, intramuscular injection of progesterone and the oral estradiol valerate (6 mg/day) will be prescribed. In the morning of the day of embryo transfer, the subendometrial flow , endometrial thickness and volume , endometrium pulsatility index, resistance index of left and right uterine arteris are measured by 2 D and 3D ultrasonography and power Doppler sonography and the embryo is transferred then.For luteal phase support , oral estradiol valerate pulse vaginal progesterone, Cyclogest ,(400 mg BD) or combination of vaginal progesterone, Cyclogest ,(400 mg BD) with intramuscular progestrone(50 mg, every 3 day) is prescribed. 2 weeks after embryo transfer, the blood BHCG test is requested.
Category
Treatment - Drugs

2

Description
Control group: this study attempts to explore and assess 178 infertile further three recurrent implantation failures. From the third day of menstruation, after suppression of endogenous ovarian secretion by prescribing GnRH agonist in the 21day of the previous cycle ,oral estradiol valerate (6 mg/day) will be prescribed. (in patients with a regular menstruation no GnRH agonist suppression is done). Using estradiol valerate will be continued until the day on which progesterone is injected. .(having a good trilaminar , at least 7-8 mm endometrial thickness). Five days prior to blastocyst embryo transfer, intramuscular injection of progesterone and the oral estradiol valerate (6 mg/day) will be prescribed. In the morning of the day of embryo transfer, the subendometrial flow , endometrial thickness and volume , endometrium pulsatility index, resistance index of left and right uterine arteris are measured by 2 D and 3D ultrasonography and power Doppler sonography and the embryo is transferred then. For luteal phase support , oral estradiol valerate pulse vaginal progesterone, Cyclogest ,(400 mg BD) or combination of vaginal progesterone, Cyclogest ,(400 mg BD) with intramuscular progestrone(50 mg, every 3 day) is prescribed. 2 weeks after embryo transfer, the blood BHCG test is requested.are measured and the embryo is transferred then.
Category
Treatment - Other

Recruitment centers

1

Recruitment center

Name of recruitment center
Avicenna Fertility Center

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3

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Recruitment center

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7

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Sponsors / Funding sources

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Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
No
Title of funding source
ACECR
Proportion provided by this source
50
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

2

Sponsor
Name of organization / entity
CinnaGen company
Full name of responsible person
Dr.Haleh Hamedifar
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No.72,CinnaGen research and production company.Simindasht industrial park,Karaj, Alborz, Iran.
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Email
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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
CinnaGen company
Proportion provided by this source
50
Public or private sector
Private
Domestic or foreign origin
Domestic
Category of foreign source of funding
empty
Country of origin
Type of organization providing the funding
Industry

Person responsible for general inquiries

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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
Yes - There is 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
Title and more details about the data/document
Undefined plan
When the data will become available and for how long
Undefined plan
To whom data/document is available
Undefined plan
Under which criteria data/document could be used
Undefined plan
From where data/document is obtainable
Dr. Mina Ataei
What processes are involved for a request to access data/document
Email to corresponding Dr Mina Ataei
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Comments