# Clinical Trial Protocol
# Iranian Registry of Clinical Trials

29 Jun 2026

## To assess the effect of oral melatonin administration on clinical outcomes in women undergoing in-vitro fertilisation (IVF)

## Protocol summary

**Study aim**

Mean number of the total retrieved oocytes, metaphase II, and degenerate oocytes count, and fertilization rate, embryo quality, biochemical pregnancy rate in women undergoing IVF.

**Design**

A non-randomized controlled clinical trial, single blind, and Parallel. All infertile patients have received a standard ovarian stimulation protocol (gonadotropin releasing hormone agonist (GnRH-a) long protocol. By physicians' decision, patients who were assigned to the intervention group received melatonin as a supplementation to the standard regimen. Infertile patients who were assigned to the control group only received a standardized ovarian stimulation protocol (n=45).

**Settings and conduct**

Ninety infertile couples undergo IVF/ (ICSI) at the Infertility Center of Tehran Yas Hospital of Tehran University of Medical Sciences, Iran. A single-blind non-RCT, and Parallel carries out.

**Participants/Inclusion and exclusion criteria**

Women who undergo IVF treatment because of male factor, tubal factor, or unexplained infertility, not smoking, do not have ovulatory dysfunction, age ≤40 years, and have a normal baseline follicle stimulating hormone (FSH) and luteinizing hormone (LH) (<10 mIU/mL). Patients with serious endometriosis, myoma, congenital uterine anomalies, and chronic use of any medication including nonsteroidal anti-inflammatory agents or anticonvulsants were excluded from the study.

**Intervention groups**

Ninety women undergoing IVF are eligible for inclusion in this trial. Women are divided into two groups. The study group (group A, n=45) is underwent the IVF with melatonin administration and the control group (group B, n=45) without melatonin.

**Main outcome variables**

Total number of the retrieved oocytes and MII oocyte counts; the degenerate oocyte counts; the fertilization rate; the embryo quality; the biochemical pregnancy rate.

## General information

**Reason for update**

**Acronym**

**IRCT registration information**

IRCT registration number: **IRCT2015042912307N4**
Registration date: **2015-06-15, 1394/03/25**
Registration timing: **registered_while_recruiting**

Last update: **2018-08-20, 1397/05/29**
Update count: **1**

**Registration date**

2015-06-15, 1394/03/25

**Registrant information**

**Name**

Fatemeh Sadat Hoseini

**Name of organization / entity**

Tehran University of Medical Sciences

**Country**

Iran (Islamic Republic of)

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+98 21 8890 7062

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**Recruitment status**

**Recruitment complete**

**Funding source**

Vice chancellor for research, Tehran University of Medical Sciences

**Expected recruitment start date**

2015-03-20, 1393/12/29

**Expected recruitment end date**

2016-03-19, 1394/12/29

**Actual recruitment start date**
empty
**Actual recruitment end date**
empty
**Trial completion date**
empty

**Scientific title**
To assess the effect of oral melatonin administration on clinical outcomes in women undergoing in-vitro fertilisation (IVF)

**Public title**
To assess the effect of oral melatonin administration on clinical outcomes in women undergoing in-vitro fertilisation (IVF)
**Purpose**
Treatment
**Inclusion/Exclusion criteria**
**Inclusion criteria:**
Age 18-40 yrs.; normal level of serum steroidal hormones; agonist long protocol of controlled ovarian stimulation; male factor; tubal factor; and unexplained infertility.
**Exclusion criteria:**
Myoma; a congenital uterine anomaly; use of estrogens; progesterone; androgens; or chronic use of any medication; including nonsteroidal anti-inflammatory agents or anticonvulsants, smoking; severe endometriosis.
**Age**
From **18 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**
Actual sample size reached: **77**
**Randomization (investigator's opinion)**
Not randomized
**Randomization description**
**Blinding (investigator's opinion)**
Single blinded
**Blinding description**
The patients, embryologist and outcome assessor were blinded to assignment. The physicians was not blind.
**Placebo**
Not used
**Assignment**
Parallel
**Other design features**
Design: a single blind non-randomized controlled clinical trial study, and Parallel

## Secondary Ids

empty

## Ethics committees

### 1

**Ethics committee**
**Name of ethics committee**
Ethics committee of Tehran University of Medical Sciences
**Street address**
Poorsina St., Keshavarz Blvd. Tehran
**City**
Tehran
**Province**
Tehran
**Postal code**
3439123900
**Approval date**
2014-01-12, 1392/10/22
**Ethics committee reference number**
103788

## Health conditions studied

### 1

**Description of health condition studied**
infertility
**ICD-10 code**
N97
**ICD-10 code description**
female infertility

## Primary outcomes

### 1

**Description**
the mean number of the oocytes
**Timepoint**
oocyte pick up day
**Method of measurement**
Microscopic assay

### 2

**Description**
the mean metaphase II (MII) oocyte counts
**Timepoint**
oocyte pick up day
**Method of measurement**
Microscopic assay

### 3

**Description**
the degenerate oocyte counts
**Timepoint**
oocyte pick up day

**Method of measurement**
Microscopic assay

**4**

**Description**
the fertilization rate
**Timepoint**
24 hours after ICSI
**Method of measurement**
Microscopic assay

**5**

**Description**
the embryo quality
**Timepoint**
24 hours after ICSI
**Method of measurement**
Microscopic assay

## Secondary outcomes

**1**

**Description**
mRNA level of MT-ATP6 gene incumulus cells
**Timepoint**
after sampling
**Method of measurement**
q-PCR

**2**

**Description**
the biochemical pregnancy rate
**Timepoint**
2 weeks after embryo transfer
**Method of measurement**
Ṣerum B.hCG titter

## Intervention groups

**1**

**Description**
Intervention group: Oral melatonin tablet is administered to 45 women undergoing IVF as an intervention group. Daily melatonin dosage is 3 mg orally (nature made,USA) taken at 22:00 pm. The written informed consent is taken from all of the patients. Administration of melatonin begins from the 21th day of the previous menstrual cycle until the day of oocyte retrieval. Patients undergo in vitro fertilization with a standardized ovarian-stimulation protocol, GnRH agonist. The daily administration of Buserelin acetate (Suprefact, Germany) 500 µg is started preceding the IVF cycle from day 21. Ovarian stimulation is started on the 3rd day of the current menstrual cycle by injection of rFSH Follitropin alfa (Gonal F, Italy) at a daily dose of 150 to 225 IU in each group. Administration of Buserelin is continued until hCG is injected. When at least 3 follicles with a mean diameter of 17 mm are developed (evaluated by transvaginal sonography), hCG (Choriomon, Switzerland) 5000 IU/2/IM is injected. About 34–36 after hCG injection, oocyte retrieval is performed.
**Category**
Treatment - Drugs

**2**

**Description**
control group: Oral melatonin tablet is not administered to 45 women undergoing IVF as a control group. We do not use a placebo in the control group due to logistic restraints. The same of intervention group, Patients undergo in vitro fertilization with a standardized ovarian-stimulation protocol, GnRH agonist. The daily administration of Buserelin acetate 500 (Suprefact, Germany) µg is started preceding the IVF cycle from day 21. Ovarian stimulation is started on the 3rd day of the current menstrual cycle by injection of rFSH Follitropin alfa (Gonal F, Italy) at a daily dose of 150 to 225 IU in each group. Administration of Buserelin is continued until hCG is injected. When at least 3 follicles with a mean diameter of 17 mm are developed (evaluated by transvaginal sonography), hCG (Choriomon, Switzerland) 5000 IU/2/IM is injected. About 34–36 after hCG injection, oocyte retrieval is performed
**Category**
Treatment - Drugs

## Recruitment centers

**1**

**Recruitment center**
**Name of recruitment center**
Tehran Yas Hospital
**Full name of responsible person**
Azra Azmoodeh
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Tehran Yas Hospital, Shomali Negatollahi St., Karim Khan Blvd., Tehran
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## Sponsors / Funding sources

**1**

**Sponsor**
**Name of organization / entity**
Tehran University of Medical Sciences
**Full name of responsible person**
Masud Yunesian

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Floor 6th, Deputy of Research of Tehran University of Medical Sciences, Ghods St., Keshavarz Blvd.,Tehran
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yunesian@sina.tums.ac.ir

**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**

**Name of organization / entity**
Tehran University of Medical Sciences
**Full name of responsible person**
Fatemeh Sadat Hoseini
**Position**
Faculty Member, Assistant Professor
**Latest degree**
Ph.D.
**Other areas of specialty/work**
Gynecology and Obstetrics
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## Person responsible for scientific inquiries

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Tehran University of Medical Sciences
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Azra Azmoodeh
**Position**
Faculty Member, Assistant Professor
**Latest degree**
Specialist
**Other areas of specialty/work**
Gynecology and Obstetrics
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## Person responsible for updating data

**Contact**

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Tehran University of Medical Sciences
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Fatemeh Sadat Hoseini
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**Street address**
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## Sharing plan

**Deidentified Individual Participant Data Set (IPD)**

Yes - There is a plan to make this available

**Study Protocol**

Yes - There is a plan to make this available

**Statistical Analysis Plan**

Yes - There is a plan to make this available

**Informed Consent Form**

Yes - There is a plan to make this available

**Clinical Study Report**

Yes - There is a plan to make this available

**Analytic Code**

Yes - There is a plan to make this available

**Data Dictionary**

No - There is not a plan to make this available

**Title and more details about the data/document**

Age/ the cause of infertility/ the count and stage of oocytes

**When the data will become available and for how long**

from 06/2019 to 6 mouth later

**To whom data/document is available**

scientific person in university

**Under which criteria data/document could be used**

I don't have any idea

**From where data/document is obtainable**

Fshoseini@sina.tums.ac.ir

**What processes are involved for a request to access data/document**

after e-mailing

**Comments**