

# 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  $\leq 40$  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)

##### Phone

+98 21 8890 7062

##### Email address

fshoseini@sina.tums.ac.ir

##### 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

§erum 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

#### Street address

Tehran Yas Hospital, Shomali Negatollahi St., Karim Khan Blvd., Tehran

#### City

Tehran

#### Province

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3439123900

#### Phone

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#### Email

azraazmodeh@yahoo.com

## Sponsors / Funding sources

## 1

### Sponsor

#### Name of organization / entity

Tehran University of Medical Sciences

#### Full name of responsible person

Masud Yunesian

**Street address**

Floor 6th, Deputy of Research of Tehran University of Medical Sciences, Ghods St., Keshavarz Blvd., Tehran

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**Phone**

+98 21 8895 4914

**Email**

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

**Street address**

Tehran Women General Hospital, Shomali Negatollahi St., Karim Khan Blvd., Tehran

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**Province**

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**Postal code**

3439123900

**Phone**

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**Fax****Email**

fshoseini@sina.tums.ac.ir

**Web page address****Person responsible for scientific inquiries****Contact****Name of organization / entity**

Tehran University of Medical Sciences

**Full name of responsible person**

Azra Azmoodeh

**Position**

Faculty Member, Assistant Professor

**Latest degree**

Specialist

**Other areas of specialty/work**

Gynecology and Obstetrics

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Azraazmoodeh@yahoo.com

**Web page address****Person responsible for updating data****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

**Street address**

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**Province**

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fshoseini@sina.tums.ac.ir

**Web page address****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 month 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**