

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

31 May 2026

### Evaluation of the Protective Effect of Metformin against the Tamoxifen Induced Changes on Endometrium and Ovaries in Women with Breast Cancer

#### Protocol summary

##### Study aim

Determine the Protective Effect of Metformin against the Tamoxifen on endometrium and ovary in women with breast cancer

##### Design

A randomized clinical trial with the parallel groups, with control group, double-blind, phase 3 with 100 patients. The block randomization method will be designed by using "www.sealedenvelope.com"

##### Settings and conduct

This study will be conducted at Arash Women's hospital on patients taking tamoxifen due to breast cancer. Participants will be randomly assigned into two groups; group 1 (metformin) and group 2 (placebo). Once before and then once six months after the start of the intervention, the endometrial thickness and number of the ovarian cysts will be assessed by ultrasound.

##### Participants/Inclusion and exclusion criteria

Inclusion criteria: Adjuvant treatment of breast cancer with tamoxifen; Normal pelvic exam, Performance state 0-2. Exclusion criteria: Systemic diseases; use of systemic hormone therapy 6 months ago; alcohol consumption; diabetes; advanced breast cancer; having any cancer or malignancy except for breast cancer during the last three years; atypical hypoplasia or endometrial cancer; abnormal ovarian cysts with the possibility of malignancy on ultrasound; contraindications to the use of metformin (eg: allergy to biguanides, acidosis, heart disease; gastroparesis, liver disease, hyperthyroidism or hypothyroidism, severe iron deficiency anemia, renal impairment)

##### Intervention groups

Intervention groups: Metformin 500 mg, oral tablets, three times a day for 6 months Control group: participants in the control group will take three placebo tablets daily for 6 months

##### Main outcome variables

Ovarian cyst

#### General information

##### Reason for update

##### Acronym

##### IRCT registration information

IRCT registration number: **IRCT20140820018866N9**

Registration date: **2021-03-18, 1399/12/28**

Registration timing: **prospective**

Last update: **2021-03-18, 1399/12/28**

Update count: **0**

##### Registration date

2021-03-18, 1399/12/28

##### Registrant information

##### Name

Afsaneh Tehranian

##### Name of organization / entity

Tehran University of Medical Sciences

##### Country

Iran (Islamic Republic of)

##### Phone

+98 21 7788 3283

##### Email address

afsanehtehranian@yahoo.com

##### Recruitment status

**Recruitment complete**

##### Funding source

##### Expected recruitment start date

2021-04-04, 1400/01/15

##### Expected recruitment end date

2022-09-06, 1401/06/15

##### Actual recruitment start date

empty

##### Actual recruitment end date

empty

**Trial completion date**  
empty

**Scientific title**  
Evaluation of the Protective Effect of Metformin against the Tamoxifen Induced Changes on Endometrium and Ovaries in Women with Breast Cancer

**Public title**  
Evaluation of the Protective Effect of Metformin against the Tamoxifen Induced Changes on Endometrium and Ovaries

**Purpose**  
Prevention

**Inclusion/Exclusion criteria**  
**Inclusion criteria:**  
Adjuvant treatment of breast cancer with tamoxifen  
Normal pelvic exam Performance state 0-2  
**Exclusion criteria:**  
Serious diseases, heart or endocrine or other systemic diseases Use of systemic hormone therapy during past 6 months Alcohol consumption Diabetes Advanced breast cancer Having any cancer or malignancy other than breast cancer during the last three years Atypical hypoplasia or endometrial cancer abnormal ovarian cysts with the possibility of malignancy on ultrasound  
Contraindications for using metformin (eg: allergy to biguanides, acidosis, heart disease, alcohol consumption, gastroparesis, liver disease, hyperthyroidism or hypothyroidism, severe iron deficiency anemia, renal impairment) Unbearable and dangerous side effects of metformin (such as: abdominal pain, chest pain, chills, cholestasis, severe diarrhea, dizziness, increased liver enzymes, severe headache, hepatitis, hypoglycemia, megaloblastic anemia, myalgia, palpitations, Skin rash and rash, vomiting)

**Age**  
No age limit

**Gender**  
Female

**Phase**  
3

**Groups that have been masked**

- Participant
- Care provider
- Investigator
- Outcome assessor
- Data analyser

**Sample size**  
Target sample size: **100**

**Randomization (investigator's opinion)**  
Randomized

**Randomization description**  
The considered sample size is 100, with 50 participants in each group. The block randomization method will be designed by using "www.sealedenvelope.com". The size of blocks considered is 4. The random allocation list for patients will be solely available to the epidemiologist. To hide the random allocation process, 100 card sequences of treatments will be written accordingly, and then the

cards will be placed inside sealed envelopes. A 10-digit random code will be written on each packet as the patient's identification number. When the physician announces the eligibility of a patient, the methodologist will provide the envelope.

**Blinding (investigator's opinion)**

Triple blinded

**Blinding description**

The physician, patient, and outcome assessor are unaware of the type of intervention

**Placebo**

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 Science

**Street address**

Tehran University of Medical Science, Qods Street, Keshavarz Boulevard

**City**

Tehran

**Province**

Tehran

**Postal code**

1417653761

**Approval date**

2021-01-27, 1399/11/08

**Ethics committee reference number**

IR.TUMS.IKHC.REC.1399.427

**Health conditions studied**

1

**Description of health condition studied**

ovarian cysts

**ICD-10 code**

N83.2

**ICD-10 code description**

Other and unspecified ovarian cysts

**Primary outcomes**

1

**Description**

Endometrial thickness

**Timepoint**

Before and after treatment

**Method of measurement**

Vaginal ultrasoun

## 2

### **Description**

Number and characteristic of ovarian cyst

### **Timepoint**

Before and after treatment

### **Method of measurement**

Vaginal ultrasound

## **Secondary outcomes**

## 1

### **Description**

Changes in liver enzymes

### **Timepoint**

Before and after treatment

### **Method of measurement**

laboratory test

## 2

### **Description**

Chenges in weight

### **Timepoint**

Before and after treatment

### **Method of measurement**

Scales

## 3

### **Description**

changes in weight

### **Timepoint**

Before and after treatment

### **Method of measurement**

Laboratory test

## **Intervention groups**

## 1

### **Description**

Intervention group: Metformin 500 mg ,oral tablets, three times a day for 6 months.

### **Category**

Treatment - Drugs

## 2

### **Description**

Control group: participants in the control group will take three placebo tablets daily for 6 months.

### **Category**

Placebo

## **Recruitment centers**

## 1

### **Recruitment center**

#### **Name of recruitment center**

Arash women's hospital

#### **Full name of responsible person**

Dr Afsaneh Tehranian

#### **Street address**

No. 162 Alley (Abdul Majid), Shahid Baghdarnia Street (North Rashid), Shahid Bagheri Highway, Resalat Highway, Tehran, Iran

#### **City**

Tehran

#### **Province**

Tehran

#### **Postal code**

1653915981

#### **Phone**

+98 21 7788 3283

#### **Fax**

+98 21 7788 3196

#### **Email**

afsanehtehranian@yahoo.com

#### **Web page address**

<http://arash.tums.ac.ir/>

## **Sponsors / Funding sources**

## 1

### **Sponsor**

#### **Name of organization / entity**

Tehran University of Medical Sciences

#### **Full name of responsible person**

Dr. Sahraeiyan

#### **Street address**

Tehran University of Medical Sciences, Keshavarz blvd., Ghods st.

#### **City**

Tehran

#### **Province**

Tehran

#### **Postal code**

1417653761

#### **Phone**

+98 21 8838 8988

#### **Email**

resdeputy@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**  
Afsaneh Tehranian  
**Position**  
Associate professor  
**Latest degree**  
Medical doctor  
**Other areas of specialty/work**  
Gynecology and Obstetrics  
**Street address**  
Tehran University of Medical Sciences, Qhods st.,  
Keshavarz blvd.  
**City**  
Tehran  
**Province**  
Tehran  
**Postal code**  
1653915981  
**Phone**  
+98 21 7788 3283  
**Fax**  
+98 21 7788 3293  
**Email**  
afsanehtehranian@yahoo.com

## Person responsible for scientific inquiries

### Contact

**Name of organization / entity**  
Tehran University of Medical Sciences  
**Full name of responsible person**  
Afsaneh Tehranian  
**Position**  
Associate professor  
**Latest degree**  
Medical doctor  
**Other areas of specialty/work**  
Gynecology and Obstetrics  
**Street address**  
Tehran University of Medical Sciences, Qhods st.,  
Keshavarz blvd.  
**City**  
Tehran  
**Province**  
Tehran  
**Postal code**  
1653915981

**Phone**  
+98 21 7788 3283  
**Fax**  
+98 21 7788 3293  
**Email**  
afsanehtehranian@yahoo.com

## Person responsible for updating data

### Contact

**Name of organization / entity**  
Tehran University of Medical Sciences  
**Full name of responsible person**  
Afsaneh Tehranian  
**Position**  
Associate professor  
**Latest degree**  
Medical doctor  
**Other areas of specialty/work**  
**Street address**  
Tehran University of Medical Sciences, Qhods st.,  
Keshavarz blvd.  
**City**  
Tehran  
**Province**  
Tehran  
**Postal code**  
1653915981  
**Phone**  
+98 21 7788 3283  
**Fax**  
+98 21 7788 3293  
**Email**  
afsanehtehranian@yahoo.com

## 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