

Clinical Trial Protocol

Iranian Registry of Clinical Trials

09 Jun 2026

The impact of saffron total glycoside tablets on Doxorubicin-induced cardiotoxicity in patients with breast cancer: Randomized clinical trial

Protocol summary

doxorubicin in the placebo and intervention groups

Study aim

The impact of saffron total extract tablets on Doxorubicin-induced cardiotoxicity in patients with breast cancer

Design

A single-center, blinded, randomized clinical trial with a placebo group on 188 patients with breast cancer receiving a Doxorubicin-based regimen. The sealed envelope website will be used for randomization.

Settings and conduct

This study will be conducted as a triple-blind clinical trial at the Imam Hossein medical and educational center affiliated with Shahid Beheshti University of Medical Sciences on patients with breast cancer receiving a Doxorubicin-based regimen.

Participants/Inclusion and exclusion criteria

Female patients aged 18 to 70 years with primary breast cancer and receiving Doxorubicin-based chemotherapy, without previous chest radiotherapy and Karnofsky score more than 60 and life expectancy of more than 6 months will be included in the study. Subjects with cardiomyopathy, systolic blood pressure below 90 mmHg or above 180 mmHg, chronic kidney disease, serum potassium above 5.5 mmol/L, severe liver failure, patients who receive vitamin K antagonists, pregnant or lactating patients, and patients participating in other clinical trials will be excluded from the study.

Intervention groups

Subjects in the intervention group will receive saffron tablets containing 177 mg of saffron extract twice a day for a maximum of three months along with the Doxorubicin-based chemotherapy regimen, and the patients in the control group will receive identical placebo along with the Doxorubicin-based chemotherapy regimen.

Main outcome variables

Comparing the incidence of cardiac dysfunction (based on echocardiographic parameters, cardiac biomarkers, and ECG findings) in breast cancer patients receiving

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20120703010178N26**

Registration date: **2023-06-25, 1402/04/04**

Registration timing: **prospective**

Last update: **2023-06-25, 1402/04/04**

Update count: **0**

Registration date

2023-06-25, 1402/04/04

Registrant information

Name

Mohammad Sistanizad

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 21 8820 0087

Email address

sistanizadm@sbmu.ac.ir

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2023-07-22, 1402/04/31

Expected recruitment end date

2024-08-21, 1403/05/31

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The impact of saffron total glycoside tablets on Doxorubicin-induced cardiotoxicity in patients with breast cancer: Randomized clinical trial

Public title

Impact of saffron tablets on Doxorubicin-induced cardiotoxicity

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria:

Female patients aged 18 to 70 years Patients with histologically or cytologically proven primary breast cancer Receiving chemotherapy with doxorubicin, without prior bilateral/unilateral thoracic radiotherapy Karnofsky score more than 60 Life expectancy more than 6 months

Exclusion criteria:

Patients diagnosed with cardiomyopathy Patients receiving vitamin K antagonists or DOACs Patients with chronic kidney disease with eGFR < 30 ml/min/1.73 m² Patients with serum potassium above 5.5 mmol/L Patients with severe liver failure (Child-Pough C) Patients who have previously received anthracycline Patients who are currently pregnant or breastfeeding Patients participating in other clinical trials

Age

From **18 years** old to **70 years** old

Gender

Female

Phase

3

Groups that have been masked

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

Sample size

Target sample size: **188**

More than 1 sample in each individual

Number of samples in each individual: **2**

Blood samples from study subjects will be collected for the determination of cardiac biomarkers and PAB, before recruitment, and after the completion of the chemotherapy, or three months after the beginning of the chemotherapy (whichever is earlier)

Randomization (investigator's opinion)

Randomized

Randomization description

All eligible subjects will be randomly assigned to intervention or placebo groups with a ratio of 1:1. The randomization will be done by permuted block randomization method using sealedenvelope website, located at the address <https://www.sealedenvelope.com>, with a block size of 4. Depending on the selected sample size, patients will be randomly assigned to the intervention or placebo arm of the study.

Blinding (investigator's opinion)

Triple blinded

Blinding description

This investigation is a triple-blind trial. The manufacturing company will make the tablets containing the total saffron extract and a placebo pill that is identical to the tablets. The study participants, caregivers, outcome assessors, and data analysts will all remain unaware of the study groups.

Placebo

Used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics committee of Shahid Beheshti University of Medical Sciences

Street address

Faculty of pharmacy, Niayesh and Vali-e-Asr junction

City

Tehran

Province

Tehran

Postal code

1991953381

Approval date

2023-03-06, 1401/12/15

Ethics committee reference number

IR.SBMU.PHARMACY.REC.1401.304

Health conditions studied

1

Description of health condition studied

Cardiomyopathy

ICD-10 code

I42.7

ICD-10 code description

Cardiomyopathy due to drug and external agent

Primary outcomes

1

Description

Incidence of heart failure in study subjects

Timepoint

At the beginning of the study and the end of chemotherapy or three months after the start of chemotherapy (whichever is earlier)

Method of measurement

Based on the findings of echocardiography, including ejection fraction and Global Longitudinal Strain (GLS) of the heart, cardiac biomarkers, and ECG according to the definition of the European Heart Association in 2022.

Secondary outcomes

1

Description

Prooxidant-Antioxidant Balance (PAB)

Timepoint

At the beginning of the study and the end of chemotherapy or three months after the start of chemotherapy (whichever is earlier)

Method of measurement

Laboratory kit

2

Description

Drug adherence

Timepoint

Monthly

Method of measurement

Pill count

Intervention groups

1

Description

Intervention group: The patient will be assigned to the intervention group based on the predetermined random plan once the researcher has confirmed that the candidate satisfies all inclusion and exclusion criteria for entry into the study. Eligible patients will take an oral tablet containing 177 mg of saffron extract twice daily, for a period of three months or until the completion of chemotherapy (whichever comes first).

Category

Treatment - Drugs

2

Description

Control group: Patients in this group will receive placebo at a dose of one tablet twice a day for 3 months or the end of chemotherapy (whichever is earlier).

Category

Placebo

Recruitment centers

1

Recruitment center

Name of recruitment center

Immam Hossein Hospital

Full name of responsible person

Yasamin Farzaneh

Street address

Madani Ave, Tehran, Iran

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1617763141

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yasamin.frzn@gmail.com

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Shahid Beheshti University of Medical Sciences

Full name of responsible person

Afshin Zarghi

Street address

Shahid Beheshti University of Medical Sciences,
Aarabi St., Daneshjoo Blvd., Valenjak, Tehran
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1985717443

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Email

Mpajouhesh@sbmu.ac.ir

Web page address

<https://research.sbmu.ac.ir/>

Grant name

Grant code / Reference number

Is the source of funding the same sponsor organization/entity?

No

Title of funding source

Prevention of Cardiovascular Disease Research Center

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

Shahid Beheshti University of Medical Sciences

Full name of responsible person

Mohammad Sistanizad

Position

Professor / Clinical Pharmacy Specialist

Latest degree

Specialist

Other areas of specialty/work

Medical Pharmacy

Street address

Department of Clinical Pharmacy, Shahid Beheshti
School of Pharmacy, after Niayesh intersection;
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Person responsible for scientific inquiries

Contact

Name of organization / entity

Shahid Beheshti University of Medical Sciences

Full name of responsible person

Mohammad Sistanizad

Position

Professor / Clinical Pharmacy Specialist

Latest degree

Specialist

Other areas of specialty/work

Medical Pharmacy

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Person responsible for updating data

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Shahid Beheshti University of Medical Sciences

Full name of responsible person

Yasamin Farzaneh

Position

Student

Latest degree

A Level or less

Other areas of specialty/work

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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

No - There is not 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

Not applicable

Title and more details about the data/document

Primary and secondary outcome data after making
unrecognizable will be released.

When the data will become available and for how long

6 months after publishing the results of primary
outcome.

To whom data/document is available

Any researchers will have access to the data after
allowance of corresponding author.

Under which criteria data/document could be used

Performing any analysis to any data resulted from this
study will be allowed only with the permission of
corresponding author

From where data/document is obtainable

Correspondance

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

After requesting for data, correspondence will check the
authorization and then they will be informed about it

Comments