Clinical Trial Protocol
Iranian Registry of Clinical Trials

27 Oct 2026

Evaluation the non-inferiority of filgrastim (zistdaru danesh) to neupogen (amgen) in the prevention of neutropenic complications in breast cancer patients: A phase III , randomized, triple-blinded (patient, outcome assessor and statistical analysis team), two armed clinical study.

Protocol summary

Study aim

Determining clinical efficacy of ZistDaru Danesh Company Filgrastim in preventing neutropenia versus Neopogen.

Design

A Phase 3,non Inferiority, two-arm, triple -blinded clinical trial study (patient, outcome assessor and statistical analysis team), parallel, active control. The randomization method is permuted block that consist of 4 blocks for total 208 patients.

Settings and conduct

Two groups of 104 patients will be randomly allocated to receive Filgrastim (ZDD company) and Neupogen 300 micrograms daily since 24 to 48 hours after the start of each chemotherapy cycle (each chemotherapy cycle is 14days) for 5 days (up to a maximum of 10 days). Investigators, patients and evaluators will not aware of the type of medicines.

Participants/Inclusion and exclusion criteria

Inclusion criteria: 1.Female gender age between 18 and 70 years with 40-100 kg. 2.Recognized with breast cancer treated with dose-dense AC regimen 3.ECOG score one and zero Exclusion criteria: 1.Existence of any serious systemic disorders associated with GCSF incompatibility administration 2.Uncontrolled blood pressure history or other systemic disease .3.Heart failure regarding AC chemotherapy caution 4.Known severe coagulation disorder (hemophilia A or B) 5.Received any stem cell transplants 6.Any chemotherapy in the last five years 7.Receive doxorubicin or epirubicin 8.History of hypersensitivity to natural GCSF or recombinant human albumin 9.Systemic or local infection or receive any antibiotic up to 10 days prior to study recruitment

Intervention groups

Granlocyte-colony stimulating factor (GCSF) made by zistdaru danesh company versus Neupogen as standard treatment.

Main outcome variables

The number of days that severe neutropenia occurs during the first chemotherapy cycle (Absolute Neutrophil Count<500/microliter)

General information

Reason for update

Inclusion criteria changes according to proper dosage form and exclusion criteria based on caution to chemotherapy regimen

Acronym

IRCT registration information

IRCT registration number: **IRCT20211218053442N1**
Registration date: **2022-02-15, 1400/11/26**
Registration timing: **prospective**

Last update: **2023-09-18, 1402/06/27**
Update count: **2**

Registration date

2022-02-15, 1400/11/26

Registrant information

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Name of organization / entity

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date
2022-02-20, 1400/12/01
Expected recruitment end date
2024-02-20, 1402/12/01
Actual recruitment start date
empty
Actual recruitment end date
empty
Trial completion date
empty

Scientific title
Evaluation the non-inferiority of filgrastim (zistdaru danesh) to neupogen (amgen) in the prevention of neutropenic complications in breast cancer patients: A phase III , randomized, triple-blinded (patient, outcome assessor and statistical analysis team), two armed clinical study.

Public title
Evaluation the non-inferiority of zistdaru danesh filgrastim to neupogen (amgen) in the prevention of neutropenic complications in breast cancer patients
Purpose
Treatment
Inclusion/Exclusion criteria
Inclusion criteria:
Female gender age between 18 and 70 years with weight range of 40-100 kg . Agree to participate in the study and sign an informed consent form. Recognized with breast cancer treated with doxorubicin hydrochloride (Adriamycin) and cyclophosphamide (AC) regimen Eastern Cooperative Oncology Group (ECOG) one and zero Candidate for preventive use for neutropenia (according to American society of clinical oncology (ASCO) guideline recommendation for prophylaxis of filgrastim in patients receiving chemotherapy regimens with more than 20% chance of developing neutropenia fever) Use at least one method of contraception from 4 weeks before the study until the end of the study Life expectancy more than 3 months Having the ability to receive treatment and follow-up Karnofsky performance status ≥ 70% for patients ≤ 70 years of age and ≥ 90% for patients > 70 years of age; adequate hematologic function (absolute neutrophil count [ANC] ≥3000 cells/µL, platelet count >100,000/µL, hemoglobin [Hb] ≥ 8 g/dL); adequate hepatic function (bilirubin ≤ 1.5 × upper limit of normal [ULN], aspartate aminotransferase and alanine aminotransferase ≤ 2.5 × ULN, alkaline phosphatase ≤ 5 × ULN); creatinine ≤ 2.0 × ULN; and normal cardiac function as determined by MUGA (multiple-gated acquisition) scan or echocardiography.
Exclusion criteria:
Existence of any serious systemic disorders associated with granulocyte-colony stimulating factor (GCSF) incompatibility administration Uncontrolled blood pressure history or other systemic disease Heart failure regarding AC chemotherapy intolerability Known severe coagulation disorder (hemophilia A or B) Participate in another clinical trial up to 30 days prior to drug administration Any chemotherapy in the last five years Receive doxorubicin> 600 mg/m2 or Epirubicin > 240 mg/m2 History of hypersensitivity to natural GCSF or recombinant human albumin Systemic or local infection or receive any antibiotic up to 10 days prior to study recruitment Receive concomitant radiotherapy or 4 weeks before enrollment Pregnancy
Age
From **18 years** old to **70 years** old
Gender
Female

Phase
3
Groups that have been masked

- Participant
- Investigator
- Outcome assessor
- Data analyser
- Data and Safety Monitoring Board

Sample size
Target sample size: **208**
Randomization (investigator's opinion)
Randomized
Randomization description
Build numerical sequences: Patient randomization program is done by an online system (http://www.sealedenvelope.com). The randomization method in this system is permuted block randomization. The length of each block includes 4 patients, which will be made for a total of 208 patients. When randomization is performed, each patient receives a code that will be recognized by the study. The code will consist of two numbers (according to the randomization number) and four letters (according to the first two letters of the name. The first two letters of the surname). Randomization numbers are determined sequentially. In each center, after examining the inclusion and non-inclusion criteria of patients, with a pre-determined telephone (clinical study partner in Tehran, whose specific task in the whole study is only to coordinate with researchers).) Will be called and given a randomization code (written on the drug label in the stock of each site). Determining the group of patients (concealment process) A random chain is created and anonymous codes corresponding to each patient (generated by the online software) are pasted on the drug labels and prepared in advance at the patient's sites. After the patient enters the study, only the desired code will be announced on the site and the corresponding drug will be prescribed to the patient.
Blinding (investigator's opinion)
Triple blinded
Blinding description
Blinding process: This study is performed in a triple-blind manner. All staff involved in the study, patients and statistical analysis team are unaware that the person receiving the zistdaru danesh filgrastim under study or the neupogen. Filgrastim and AMGEN Neupogen are sent to centers in their original packaging. In each center, 1 unblinded person is responsible for the preparation (change of drug labels) based on the random code assigned to the patient, and each drug will be given to

the person responsible for injection (blinded nurse) after preparation in the same package. For this reason, the group involved in the patient's treatment process and evaluating the results of the study will be completely different from the personnel involved in the preparation of the drug. The randomized table will remain strictly confidential with the randomization center and will not be provided except in legal cases.

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Tehran University of Medical Sciences

Street address

Vice-Chancellor in Research Affairs-Tehran University of Medical Science, 6th floor, near Qods st, keshavarz blvd.

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Province

Tehran

Postal code

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Approval date

2021-10-18, 1400/07/26

Ethics committee reference number

IR.TUMS.TIPS.REC.1400.155

Health conditions studied

1

Description of health condition studied

Neutropenia

ICD-10 code

D70

ICD-10 code description

Neutropenia

Primary outcomes

1

Description

The number of Days that severe neutropenia occurs during the first chemotherapy cycle according to absolute neutrophil count < 500 per microliter of blood

Timepoint

The first chemotherapy cycle

Method of measurement

Absolute number of blood neutrophils in terms of number per microliter of blood

Secondary outcomes

1

Description

Occurance of febrile neutropenia

Timepoint

The start of medication in both groups until the last visit

Method of measurement

Fever over 38.5 centigrade degree for at least 1 hour and neutropenia less than 500 per microlitr blood coincidence.

2

Description

Incidence of neutropenia defined as absolute neutrophil count < 0.5 x 10e9/L not associated with fever

Timepoint

The start of medication in both groups until the last visit

Method of measurement

Absolute neutrophil count per microliter of blood and fever measurement with thermometer (temperature more than 38 degree of centigrade) .

3

Description

Determine the exact count of neutrophils

Timepoint

The start of medication administration in both groups until the last visit

Method of measurement

Absolute neutrophil count per each microliter of blood

4

Description

Incidence of infections

Timepoint

The start of medication in both groups until the last visit

Method of measurement

According to blood, respiratory secretion or urine culture

5

Description

Incidence of need for IV anti-infectives

Timepoint

The start of medication in both groups until the last visit

Method of measurement

According to the results of the culture or clinical symptoms

6

Description

As a result of neutropenia Incidence of hospitalization

Timepoint

The start of medication in both groups until the last visit

Method of measurement
Patient history taking

7

Description
As a result of neutropenia ,Duration of hospitalization
Timepoint
The start of medication in both groups until the last visit
Method of measurement
Patient visit

8

Description
Ability to maintain planned chemotherapy dose on time for cycles 2 to 6
Timepoint
every chemotherapy cycle
Method of measurement
Patient visit

9

Description
Cumulative r-G-CSF dose
Timepoint
The start of medication in both groups until the last visit
Method of measurement
The number of filgrastim during the study period

Intervention groups

1

Description
Invention group : Administration of Filgrastim ZistDaru at a dose of 300 mcg, 24-48 hours after the first cycle of chemotherapy until ANC more than 5*10 9 and maximum for 10 days (each one occurred earlier)
Category
Treatment - Drugs

2

Description
Control group: group Administration of Neupogen (Filgrastim AMGEN company) at a dose of 300 mcg, 24-48 hours after the first cycle of chemotherapy until ANC more than 5*10 9 and maximum for 10 days (each one occurred earlier)
Category
Treatment - Drugs

Recruitment centers

1

Recruitment center
Name of recruitment center
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Full name of responsible person
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Recruitment center
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Recruitment center
Name of recruitment center
Seyed-o Shohada hospital
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4

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Alireza Naseri
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5

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Recruitment center
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Sponsors / Funding sources

1

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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
Zistdaru Danesh Co. ®
Proportion provided by this source
100
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

Contact
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Sharing plan

Deidentified Individual Participant Data Set (IPD)
No - There is not a plan to make this available
Justification/reason for indecision/not sharing IPD
No more information.
Study Protocol
No - There is not a plan to make this available
Statistical Analysis Plan
No - There is not a plan to make this available
Informed Consent Form
No - There is not a plan to make this available
Clinical Study Report
No - There is not a plan to make this available
Analytic Code
No - There is not a plan to make this available
Data Dictionary
No - There is not a plan to make this available