

Clinical Trial Protocol

Iranian Registry of Clinical Trials

16 Sep 2026

Bioequivalence study of Warfarin 5 mg tablet compared with innovator product

Protocol summary

Study aim

In vivo fasted-state bioequivalence study of warfarin 5 mg tablet

Design

The clinical trial has control and test groups with crossover, randomized design, without blinding. Twenty-four healthy male volunteers will participate randomly in the study as two twelve-person study groups. Each volunteer will receive a single dose of drug in two periods. In one period the test formulation and in another period the reference formulation. Therefore, each volunteer will be his own "Control". To randomly assign participants in two groups, the lottery method will be used.

Settings and conduct

After oral administration of 5 mg tablet to volunteer, the blood samples will be collected in predetermined time intervals up to 72 hours. The samples will be stored in freezer -4 degrees centigrade until analysis and sample quantitation. The concentration of drug in blood samples will be measured by liquid chromatography equipped with mass spectroscopy detector. The study will be performed in Faculty of Pharmacy, Tabriz University of Medical Sciences.

Participants/Inclusion and exclusion criteria

Inclusion criteria: General Health (in terms of Liver, Heart and Kidney), Age (18-59 years old) Exclusion criteria: Smoking, History of cardiovascular, liver and kidney disease, Pregnancy, Alcohol and drug addiction, History of drug allergy.

Intervention groups

Intervention group will receive a single oral dose of test drug product (Warfarin 5 mg tablet manufactured by Ani Darman, Iran) and Control group will receive a single dose of reference drug product (Warfarin 5 mg tablet manufactured by Sanofi, Turkey). Blood samples will be taken for 72 hours at the mentioned time points after drug administration and the plasma will be stored in freezer until analysis. In both groups, breakfast and

lunch will be served two and six hours after drug administration, respectively.

Main outcome variables

Drug plasma concentration

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20210519051345N18**

Registration date: **2022-10-24, 1401/08/02**

Registration timing: **prospective**

Last update: **2022-10-24, 1401/08/02**

Update count: **0**

Registration date

2022-10-24, 1401/08/02

Registrant information

Name

Parvin Zakeri-Milani

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 41 3334 8801

Email address

pzakeri@tbzmed.ac.ir

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2022-11-21, 1401/08/30

Expected recruitment end date

2023-02-19, 1401/11/30

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Bioequivalence study of Warfarin 5 mg tablet compared with innovator product

Public title

Bioequivalence study of Warfarin 5 mg tablet

Purpose

Other

Inclusion/Exclusion criteria**Inclusion criteria:**

General Health (in terms of Liver, Heart and Kidney)

Exclusion criteria:

Smoking, History of cardiovascular disease, liver and kidney disease, Pregnancy, Alcohol and drug addiction, History of drug allergy

Age

From **18 years** old to **59 years** old

Gender

Both

Phase

Bioequivalence

Groups that have been masked

No information

Sample size

Target sample size: **24**

Randomization (investigator's opinion)

Randomized

Randomization description

To randomly assign participants in two groups, 24 cards with numbers 1 to 24 will be used in closed envelopes that are arranged irregularly. Each candidate will pick up an envelope. Numbers 1-12 will be in group A and numbers 13-24 will be in group B. Group A will receive intervention 1 and group B will receive intervention 2, and after the first period, the interventions of both groups will change for the second period.

Blinding (investigator's opinion)

Not blinded

Blinding description**Placebo**

Not used

Assignment

Crossover

Other design features**Secondary Ids**

empty

Ethics committees**1****Ethics committee****Name of ethics committee**

Biomedical Research Committee, Tabriz University of Medical Sciences

Street address

Faculty of Pharmacy, Golgasht st Attar Neishaboori st.
Tabriz University of Medical Sciences

City

Tabriz

Province

East Azarbaijan

Postal code

51664-14766

Approval date

2022-10-10, 1401/07/18

Ethics committee reference number

IR.TBZMED.REC.1401.614

Health conditions studied**1****Description of health condition studied**

In the present study, the products will be administered to healthy volunteers

ICD-10 code**ICD-10 code description****Primary outcomes****1****Description**

Plasma concentration of drug

Timepoint

0.5-72 hours in predetermined time intervals after drug administration

Method of measurement

HPLC (High performance liquid chromatography)

Secondary outcomes

empty

Intervention groups**1****Description**

Intervention group: Intervention group will receive a single oral dose of test product (Warfarin 5 mg tablet manufactured by Ani Darman, Iran) in fasted state. Blood samples will be collected for 72 hours at the mentioned times after drug administration and the concentration of drug in blood samples will be stored in freezer until analysis. Breakfast and lunch will be served two and six hours after drug administration, respectively.:

Category

Treatment - Drugs

2**Description**

Control group: Control group will receive a single oral dose of reference product (Warfarin 5 mg tablet manufactured by SANOFI, Turkey) in fasted state. Blood

samples will be collected for 72 hours at the mentioned times after drug administration and the concentration of drug in blood samples will be stored in freezer until analysis. Breakfast and lunch will be served two and six hours after drug administration, respectively.

Category

Treatment - Drugs

Recruitment centers**1****Recruitment center****Name of recruitment center**

Tabriz University of Medical Sciences

Full name of responsible person

Parvin Zakeri-Milani

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Faculty of Pharmacy, University of Medical Sciences, Golgasht st., Attar Neishaboori st.

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Sponsors / Funding sources**1****Sponsor****Name of organization / entity**

Tabriz University of Medical Sciences

Full name of responsible person

Parviz Shahabi

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No.2 Central Building 3rd Floor, University of Medical Sciences, Daneshgah st.

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shahabip@tbzmed.ac.ir

Grant name**Grant code / Reference number****Is the source of funding the same sponsor organization/entity?**

No

Title of funding source

Ani Darman 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****Name of organization / entity**

Tabriz University of Medical Sciences

Full name of responsible person

Parvin Zakeri-Milani

Position

Professor

Latest degree

Ph.D.

Other areas of specialty/work

Medical Pharmacy

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

Tabriz University of Medical Sciences

Full name of responsible person

Parvin Zakeri-Milani

Position

Professor

Latest degree

Ph.D.

Other areas of specialty/work

Medical Pharmacy

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Person responsible for updating data

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Name of organization / entity
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Full name of responsible person
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Position
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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

Not applicable

Data Dictionary

Not applicable