Clinical Trial Protocol
Iranian Registry of Clinical Trials

09 Jun 2026

The effect of furosemide in the prevention of contrast-induced nephropathy in STEMI (ST) Elevation Myocardial Infarction patients undergoing Percutaneous Coronary Intervention (PCI) referred to Golestan Hospital between 2023-2024

Protocol summary

Study aim

The effect of furosemide in the prevention of contrast-induced nephropathy in STEMI patients undergoing Percutaneous Coronary Intervention (PCI)

Design

Clinical trial with control group, with parallel groups, double-blind, randomized, phase 3 on 234 patients (intervention group 117 patients and control group 117 patients), by Software Allocation R software was used for randomization.

Settings and conduct

This is a clinical trial study that was conducted between 2023-2024 Golestan Hospital, Ahvaz. The study was conducted in a double-blind manner and the patient and the nurse are not aware of the type of medicine. The patients whose disease has been confirmed as STEMI and who are candidates for angiography and angioplasty are divided into two groups. One group receives Furosemide and serum and the other group receives serum. After 24 and 72 hours, their creatinine, blood urea and GFR are measured.

Participants/Inclusion and exclusion criteria

Inclusion criteria: Patients whose disease has been confirmed as STEMI and who are candidates for angiography and angioplasty and who consent to participate in the study and also have complete clinical information, are included in the study. Exclusion criteria: patients whose clinical information is not complete, patients with heart failure And dialysis patients who do not have urinary excretion are excluded from the study.

Intervention groups

Intervention group: single dose of furosemide at the rate of 0.5 mg/kg plus standard hydration with normal saline at the rate of 1 mg/kg/h. Control group: standard hydration with normal saline at the rate of 1 mg/kg/h

Main outcome variables

contrast-induced nephropathy hypertension, diabetes, creatinine, bun GFR

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20230312057694N1**
Registration date: **2023-05-22, 1402/03/01**
Registration timing: **registered_while_recruiting**

Last update: **2023-05-22, 1402/03/01**
Update count: **0**

Registration date

2023-05-22, 1402/03/01

Registrant information

Name

Parvin Ghorbani

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 61 3337 4261

Email address

ghorbani_pary66@yahoo.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2023-03-20, 1401/12/29

Expected recruitment end date

2024-03-17, 1402/12/27

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The effect of furosemide in the prevention of contrast-induced nephropathy in STEMI (ST) Elevation Myocardial Infarction patients undergoing Percutaneous Coronary Intervention (PCI) referred to Golestan Hospital between 2023-2024

Public title

The effect of furosemide in the prevention of contrast-induced nephropathy in STEMI patients undergoing Percutaneous Coronary Intervention (PCI)

Purpose

Prevention

Inclusion/Exclusion criteria

Inclusion criteria:

Those who are willing to participate in the study Patients whose clinical information is complete Patients whose disease has been confirmed as STEMI and are candidates for angiography and angioplasty

Exclusion criteria:

Patients who do not agree to participate in the study Patients whose clinical information is not complete Patients with heart failure Dialysis patients who do not pass urine

Age

From **18 years** old

Gender

Both

Phase

3

Groups that have been masked

- Participant
- Care provider
- Investigator
- Outcome assessor

Sample size

Target sample size: **234**

Randomization (investigator's opinion)

Randomized

Randomization description

Randomization method and explanations of each method: Based on the method of random permutations, people are divided into two groups completely randomly. Randomization Unit: Individual Randomization tool: Random Allocation Software for randomization, sealed envelope random sequence was built: allocating even numbers to group A and odd numbers to group B allocation concealment: Sealed envelopes that are assigned to each participant upon entering, based on which they will be placed in one of the two groups.

Blinding (investigator's opinion)

Double blinded

Blinding description

Patients are divided into two groups receiving furosemide and receiving normal saline (placebo) at the rate of 0.5 mg/kg with a ratio of 1:1. This study is conducted in a double-blind manner, so that the patient, the researcher and the outcome assessors will not have any information about which group the people are in and which medicine they will receive. In this way, the drug and placebo will be completely similar in terms of shape, color, smell, etc. The drugs are in sealed packages that are blinded to the researcher, the patient, and the outcome assessors, and it is not clear which patient receives which drug.

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Research Ethics Committee of Golestan Hospital, Ahvaz University of Medical Sciences

Street address

Farvardin Blvd

City

Ahvaz

Province

Khouzestan

Postal code

6135733118

Approval date

2022-09-19, 1401/06/28

Ethics committee reference number

IR.AJUMS.HGOLESTAN.REC.1401.090

Health conditions studied

1

Description of health condition studied

Myocardial infarction

ICD-10 code

I21.9

ICD-10 code description

Acute myocardial infarction,unspecified

2

Description of health condition studied

Contrast-induced nephropathy

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description
Renal function and occurrence of renal disorders after the use of contrast
Timepoint
After a period of 24 and 72 hours after the injection of furosemide and serum
Method of measurement
Test: Blood Urea Nitrogen(Bun),Creatinine(Cr), Glomerular Filtration Rate (GFR)

Secondary outcomes

empty

Intervention groups

1

Description
Intervention group: Recipients of 0.5 mg/kg formeside within one hour after Percutaneous Coronary Intervention (PCI) as a single dose and 1 mg/kg/h of normal saline serum within 24 hours after Percutaneous Coronary Intervention (PCI)
Category
Prevention

2

Description
Control group: recipient of normal saline at the rate of 1 mg/kg/h during 24 hours after Percutaneous Coronary Intervention (PCI)
Category
Prevention

Recruitment centers

1

Recruitment center
Name of recruitment center
Golestan Medical educational center,Ahvaz
Full name of responsible person
Dr. Mustafa Ariafar
Street address
Golestan, Farvardin Boulevard, Golestan Medical educational center,Ahvaz
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1635733118
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Email
golestanhospital@ajums.ac.ir
Web page address

Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Ahvaz University of Medical Sciences
Full name of responsible person
Mehrnoosh Zakirkish
Street address
Golestan Blvd., Jundishapur University of Medical Sciences, Ahvaz
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6135715794
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Email
info@ajums.ac.ir
Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
No
Title of funding source
Jundishapur University of Medical Sciences, Ahvaz
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
Ahvaz University of Medical Sciences
Full name of responsible person
Dr. Mustafa Ariafar
Position
Assistant Professor
Latest degree
Subspecialist
Other areas of specialty/work
Cardiology
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Person responsible for scientific inquiries

Contact

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Ahvaz University of Medical Sciences

Full name of responsible person

Parvin Ghorbani

Position

Resident

Latest degree

Medical doctor

Other areas of specialty/work

Cardiology

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Person responsible for updating data

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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

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

Yes - There is a plan to make this available

Title and more details about the data/document

Only the results related to the outcome and output of the intervention can be published. It is provided to the researchers to conduct further research.

When the data will become available and for how long

The data will be available after the publication of the article.

To whom data/document is available

Researchers working in academic and scientific institutions

Under which criteria data/document could be used

In meta-analysis studies and conducting similar studies

From where data/document is obtainable

Refer to the Research and Technology Vice-Chancellor of Jundishapur University of Medical Sciences, Ahvaz. While submitting the proposal and obtaining the code of ethics from the ethics committee of this university, access to this data should be provided for the researchers.

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

Researchers can access the data through correspondence with the research and technology unit of the university and since obtaining the code of ethics from the research ethics committee of Jundishapur University of Medical Sciences, Ahvaz.

Comments