Clinical Trial Protocol
Iranian Registry of Clinical Trials

09 Jun 2026

Effect of Glucose-Insulin-Potassium on patients with Acute ST-Segment-Elevation Myocardial Infarction

Protocol summary

Summary

The effects of glucose–insulin–potassium (GIK) in the treatment of ST segment elevation myocardial infarction (STEMI) are controversial.Hence we assess this effect of GIK in STEMI patients treated with streptokinase. On admission, patients will randomly assign to GIK group or control group.In GIK group, GIK (25% glucose, 50 IU of soluble insulin per liter, and 80 mmol of potassium chloride per liter) will infuse at 1.5 ml/kg/hour in addition to 1.5 MU of streptokinase/30 to 60 minutes. In control group 1 L normal saline will infuse at 60 mL/h in addition to streptokinase. In each patient, total CK and CK-MB and troponin I level will measure on admission, 16 and24 hours thereafter.CRP will be checked in 0,6,24 and 48 hours there after. In all patients, plasma concentrations of glucose and potassium will determine before and at 6 hour after administering therapy. An ECG will obtain at baseline and after 1 hour and a physician notes arrhythmia.

General information

Acronym
GIK

IRCT registration information
IRCT registration number: **IRCT138804302210N1**
Registration date: **2010-06-06, 1389/03/16**
Registration timing: **retrospective**

Last update:
Update count: **0**

Registration date
2010-06-06, 1389/03/16

Registrant information

Name
Maryam Hashemian

Name of organization / entity
Sabzevar University of Medical Sciences

Country
Iran (Islamic Republic of)

Phone
+98 57 1444 6070

Email address
medical-school@medsab.ac.ir

Recruitment status
Recruitment complete

Funding source
Sabzevar university of medical science

Expected recruitment start date
2008-09-22, 1387/07/01

Expected recruitment end date
2009-07-23, 1388/05/01

Actual recruitment start date
empty

Actual recruitment end date
empty

Trial completion date
empty

Scientific title
Effect of Glucose-Insulin-Potassium on patients with Acute ST-Segment-Elevation Myocardial Infarction

Public title
Effect of Glucose-Insulin-Potassium on patients with Acute ST-Segment-Elevation Myocardial Infarction

Purpose
Treatment

Inclusion/Exclusion criteria
Inclusion:All consecutive patients who had 20 minutes chest pain or its equivalent, time from symptom onset <12 hours, and had ST elevation ≥1 mm in ≥2 contiguous electrocardiographic leads when admitted to the Coronary Care Unit of the vaseie general hospital (Sabzevar ,Iran) were recruited. Exclusion: Patient with systemic infection, glucocorticoid therapy, hypo tension, congestive heart failure, creatinine >2.0 mg/dL and

anemia (hemoglobin <11 g/dL), were excluded. Further exclusion criteria were unwillingness to participate.

Age
No age limit

Gender
Both

Phase
2

Groups that have been masked
No information

Sample size
Target sample size: **70**

Randomization (investigator's opinion)
Randomized

Randomization description

Blinding (investigator's opinion)
Triple blinded

Blinding description

Placebo
Used

Assignment
Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee
Sabzevar university of medical science

Street address
Sabzevar university of medical science-Tehran road

City
Sabzevar

Postal code
9613873136

Approval date
2008-03-11, 1386/12/21

Ethics committee reference number
386010118

Health conditions studied

1

Description of health condition studied
Patients with ST elevation myocardial infarction

ICD-10 code
I21

ICD-10 code description
Acute myocardial infarction

Primary outcomes

1

Description
Plasma CRP level in the control and GIK groups

Timepoint
0, 6, 24 and 48 hours after admission

Method of measurement
ELIZA kit

Secondary outcomes

1

Description
Plasma CK and CK-MB and cardiac troponin I concentrations

Timepoint
0, 16 and 24 hours after admission

Method of measurement
ELIZA kit

2

Description
ST-segment resolution

Timepoint
60 minutes after thrombolytic therapy

Method of measurement
ECG

3

Description
Pain

Timepoint
0,1 and 2 hours after thrombolytic therapy

Method of measurement
Interview

4

Description
Arrythmia

Timepoint
7 days after admission

Method of measurement
Cardiac monitoring by a physician

5

Description
Re infarction

Timepoint
7 days after admission

Method of measurement
Recurrent ST elevation of 0.1 mv or recurrent increase in creatinin kinase MB

6

Description
Mortality

Timepoint

7 days after admission

Method of measurement

Any death when cardiac death could not be excluded

7

Description

Ejection fraction

Timepoint

72 hours after admission

Method of measurement

Echocardiography

Intervention groups

1

Description

Insulin Potassium Glucose (25% glucose, 50 IU of soluble insulin per liter, and 80 mmol of potassium chloride per liter) infused at 1.5 ml/kg/hour to GIK group in addition to 1.5 MU of streptokinase in 30 to 60 minutes

Category

Treatment - Drugs

2

Description

1 L normal saline at 60 mL/h in addition to streptokinase(1.5 MU in 30-60 minuts) infused to control group

Category

Placebo

Recruitment centers

1

Recruitment center

Name of recruitment center

Vasseie educational hospital

Full name of responsible person

Maryam Hashemian

Street address

Tohidshahr road -Sabzevar

City

Sabzevar

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Sabzevar university of medical science

Full name of responsible person

Dr Peghan

Street address

Sabzevar university of medical science-Tehran road

City

Sabzevar

Grant name

Grant code / Reference number

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

Yes

Title of funding source

Sabzevar university of medical science

Proportion provided by this source

100

Public or private sector

empty

Domestic or foreign origin

empty

Category of foreign source of funding

empty

Country of origin

Type of organization providing the funding

empty

Person responsible for general inquiries

Contact

Name of organization / entity

Sabzevar university of medical science

Full name of responsible person

Maryam Hashemian

Position

MD

Other areas of specialty/work

Street address

Medical school-Tehran road

City

Sabzevar

Postal code

9613873136

Phone

+98 57 1444 6070

Fax

+98 57 1441 9573

Email

medical-school@medsab.ac.ir

Web page address

www.medsab.ac.ir

Person responsible for scientific inquiries

Contact

Name of organization / entity

Sabzevar university of medical science

Full name of responsible person

Maryam Hashemian

Position

MD

Other areas of specialty/work

Street address

Medical school-Tehran road

City

Sabzevar

Postal code

9613873136

Phone

+98 57 1444 6070

Fax
+98 57 1441 9573
Email
hashemian3@yahoo.com
Web page address
www.medsab.ac.ir

Person responsible for updating data

Contact
Name of organization / entity
Sabzevar university of medical science
Full name of responsible person
Maryam Hashemian
Position
M.D
Other areas of specialty/work
Street address
Medical school-Tehran road
City
Sabzevar
Postal code
9613873136
Phone
+98 57 1441 9574
Fax
+98 57 1441 9573
Email
hashemian3@yahoo.com
Web page address
www.medsab.ac.ir

Sharing plan

Deidentified Individual Participant Data Set (IPD)
empty
Study Protocol
empty
Statistical Analysis Plan
empty
Informed Consent Form
empty
Clinical Study Report
empty
Analytic Code
empty
Data Dictionary
empty