Clinical Trial Protocol
Iranian Registry of Clinical Trials

18 Sep 2026

Efficacy of magnesium prophylaxis on cardiac arrythmia after CABG

Protocol summary

Summary

Postoperative rhythm disorders are a serious complication of open-heart surgery. The incidence of postoperative supraventricular arrhythmias has been reported to be 11–54%, and the incidence of ventricular arrhythmia to be 1.8–13%.because of high prevalence of cardiac arrhythmia after CABG, this study aimed to investigate the use of prophylactic magnesium sulphate on treating arrhythmias that may occur following coronary bypass grafting operations. In this double blind randomized trial study, 174 CABG candidates recruited. Renal or heart failure patients excluded from the study. As well as who had the history of taking antiarrythmic drug .All participants divided in two groups. 87 patients were given 3 g of magnesium sulphate diluted in 100 cc of isotonic 0.9% solution intravenously for 2 hours at the following times: 12 hours prior to the operation, immediately following the operation, and on postoperative days 1, 2, and 3 (Group 1). The other group of 87 patients was given 100 cc. isotonic 0.9% as placebo, during the same time periods. Patients were monitored during the preoperative period and for at least 24 hours postoperatively. The rhythm follow-up of cases was confirmed by ECG at 0, 6, and 12 hours postoperatively, as well as on postoperative days 1, 2, and 3. Magnesium blood ion analysis: plasma Mg+2 levels were determined by spectrophotometric analysis of venous blood samples taken immediately after the operation and on postoperative days 1, 2, and 3. Total Mg+2 levels were recorded. At the same time, levels of Na+, K+, and Ca+2 were also determined, and their insufficiencies replaced in the patients. During the study PVC / min , VT,NSVT ,VF and AF were monitored and recorded in patients.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT201104106159N1**

Registration date: **2011-05-11, 1390/02/21**

Registration timing: **retrospective**

Last update:

Update count: **0**

Registration date

2011-05-11, 1390/02/21

Registrant information

Name

Mohammad Ruzbahani

Name of organization / entity

Kermanshah University of Medical Sciences

Country

Iran (Islamic Republic of)

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Recruitment status

Recruitment complete

Funding source

kermanshah University of Medicine Sciences

Expected recruitment start date

2010-12-22, 1389/10/01

Expected recruitment end date

2011-05-05, 1390/02/15

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Efficacy of magnesium prophylaxis on cardiac arrythmia after CABG

Public title

Efficacy of magnesium prophylaxis on cardiac arrhythmia after by-pass coronary artery operations

Purpose
Prevention
Inclusion/Exclusion criteria
Inclusion criteria:l pateint candidate for coronary artery by-pass graft Exclusion criteria:renal and heart failure and history of arrythmia,used of anti arrythmic drug ,implantable cardiovertor deffibllirator
Age
No age limit
Gender
Both

Phase
N/A
Groups that have been masked
No information
Sample size
Target sample size: **178**
Randomization (investigator's opinion)
Randomized
Randomization description
Blinding (investigator's opinion)
Double blinded
Blinding description
Placebo
Used
Assignment
Other
Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
Ethical committee
Street address
Kermanshah University Of Medical Sciences
City
Kermanshah
Postal code
Approval date
2010-12-13, 1389/09/22
Ethics committee reference number
7/420/713/پ

Health conditions studied

1

Description of health condition studied
cardic arrhythmia
ICD-10 code
I47.2
ICD-10 code description
Ventricular tachycardia

2

Description of health condition studied
cardic arrhythmia
ICD-10 code
I48
ICD-10 code description
فیبریلاسیون و فلاتر دهلیزی

3

Description of health condition studied
cardic arrhythmia
ICD-10 code
I49.0
ICD-10 code description
فیبریلاسیون و فلاتر بطنی

4

Description of health condition studied
cardic arrhythmia
ICD-10 code
I49.1
ICD-10 code description
ضربان زودرس دهلیزی

5

Description of health condition studied
cardic arrhythmia
ICD-10 code
I49.3
ICD-10 code description
ضربان زودرس بطنی

Primary outcomes

1

Description
atrial fibrillation,atrial flutter.ventricular fibrillation,ventricular tackycardia,prematur ventricular complex,non sustained ventricular tackycardia
Timepoint
24hour
Method of measurement
monitoring

Secondary outcomes

1

Description
cognitive status
Timepoint
daily
Method of measurement
Examination

2

Description

coagebility status
Timepoint
daily
Method of measurement
lab

3

Description
neurological status
Timepoint
daily
Method of measurement
examination

Intervention groups

1

Description
87 patients were given 3 g of magnesium sulphate (MgSO4) [20 ml = 24.32 mEq/L Mg+2] in 100 cc of isotonic 0.9% solution over 2 hours intravenously at the following times: 12 hours prior to the operation, immediately following the operation, and on postoperative days 1, 2, and 3(intervention group).
Category
Prevention

2

Description
87patients were given 100 cc of isotonic 0.9% solution over 2 hours intravenously at the following times: 12 hours prior to the operation, immediately following the operation, and on postoperative days 1, 2, and 3 (placebo group)
Category
Placebo

Recruitment centers

1

Recruitment center
Name of recruitment center
KERMANSHAH EMAM ALI HOSPITAL
Full name of responsible person
MOHAMMAD RUZBAHANI MD
Street address
KERMANSHAH EMAM ALI HOSPITAL
City
KERMANSHAH

Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Kermanshah University of Medical Sciences
Full name of responsible person
Mohammad Ruzbehani
Street address
EMAM ALI Hospital
City
Kermanshah
Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Kermanshah University of Medical Sciences
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
Kermanshah University of Medical Sciences
Full name of responsible person
Mostafa Bahreman
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Person responsible for scientific inquiries

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Person responsible for updating data

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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