

Clinical Trial Protocol

Iranian Registry of Clinical Trials

17 Sep 2026

The effect of magnesium sulfate infusion on blood levels of ProBNP in patients undergoing coronary artery bypass grafting

Protocol summary

Summary

This study will evaluate the effect of MgSO₄ (as a vasodilator, improving agent for diastolic dysfunction and arrhythmia attenuator) on serum ProBNP (as the indicator of prognosis) in 60 patients who are undergoing coronary artery bypass grafting for the first time. These patients have at least 2 stenotic coronary arteries more than 70% and Ejection Fraction (EF) less than 45%. Patients who present renal failure, history of arrhythmia or need to undergo emergency operation will be excluded. Patients will be allocated to intervention and control group randomly. Intervention group will receive MgSO₄ infusion 20mg/kg/hour and control group infusion of Normal Saline as placebo. Serum level of ProBNP and mechanical ventilation time will be the outcome of this study which will be compared between groups.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT201205069650N1**

Registration date: **2012-06-28, 1391/04/08**

Registration timing: **prospective**

Last update:

Update count: **0**

Registration date

2012-06-28, 1391/04/08

Registrant information

Name

Ehsan Bastanifar

Name of organization / entity

Shahid Beheshti University of Medical Sciences

Country

Iran (Islamic Republic of)

Phone

+98 21 2261 5486

Email address

e.bastanifar@gmail.com

Recruitment status

Recruitment complete

Funding source

Anesthesia research center, Shahid Beheshti University of Medical Sciences

Expected recruitment start date

2012-06-30, 1391/04/10

Expected recruitment end date

2012-09-15, 1391/06/25

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The effect of magnesium sulfate infusion on blood levels of ProBNP in patients undergoing coronary artery bypass grafting

Public title

The effect of Mg on the cardiac biomarker proBNP

Purpose

Supportive

Inclusion/Exclusion criteria

Inclusion criteria: significant coronary artery stenosis (2VD or 3VD) and EF<45%. Exclusion criteria: 1.Conduction abnormality (branch block); 2.AF rhythm; 3.Diabetes mellitus. 4.cr>1.8; 5.Emergent surgery; 6.Unstable angina; 7.Redo surgery; 8.Combination surgery (carotid endarterectomy, vulvoplasty); 9.long QT syndrome, neuromuscular junction disorders.

Age

No age limit

Gender

Both

Phase

2-3

Groups that have been masked

No information

Sample size

Target sample size: 60

Randomization (investigator's opinion)

Randomized

Randomization description

Blinding (investigator's opinion)

Double blinded

Blinding description

Placebo

Used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Shahid Beheshti University of medical sciences

Street address

Velenjak

City

Tehran

Postal code

Approval date

2010-05-23, 1389/03/02

Ethics committee reference number

88011486646

Health conditions studied

1

Description of health condition studied

Atherosclerotic heart disease

ICD-10 code

I25.1

ICD-10 code description

Atherosclerotic heart disease

Primary outcomes

1

Description

ProBNP

Timepoint

before intervention, 24 hours after intervention

Method of measurement

ELISA based lab kit

Secondary outcomes

1

Description

mechanical ventilation time

Timepoint

days on mechanical ventilation

Method of measurement

questionnaire

Intervention groups

1

Description

Control: infusion of Normal Saline

Category

Placebo

2

Description

Intervention: MgSO4 infusion 20mg/kg/hour

Category

Treatment - Drugs

Recruitment centers

1

Recruitment center

Name of recruitment center

Modarres hospital

Full name of responsible person

Dr. Mahnoosh Foroughi

Street address

Cardiac research center, Modarres hospital, Saadat
abad

City

Tehran

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Anesthesiology Research Center, Shahid Beheshti
University of medical sciences

Full name of responsible person

Dr. Hedayat Allah Eliahi

Street address

Anesthesiology research center, Shahid Beheshti
University of Medical Sciences, Taleghani hospital

City

Tehran

Grant name

Grant code / Reference number

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

Yes

Title of funding source

Anesthesiology Research Center, Shahid Beheshti
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**

Shahid Beheshti University of Medical Sciences

Full name of responsible person

Dr. Mahnoosh Foroughi

Position

Assistant Professor

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Web page address**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