

Clinical Trial Protocol

Iranian Registry of Clinical Trials

16 Sep 2026

Intermittent furosemide therapy as a prophylaxis of acute renal failure in CABG patients: is it effective? A clinical trial

Protocol summary

Summary

(1) Objectives: Renal failure is a frequent event after coronary artery bypass grafting (CABG). Hemodynamic alterations that occur during surgery as well as the underlying disease are the predisposing factors. So we aimed to study intermittent furosemide therapy in the prevention of renal failure in patients undergoing CABG. (2) Design: In a double blind randomized controlled trial, 123 patients, aged 18 to 75, candidate for elective CABG will enter the study. (3) Setting and conduct: Renal function will be assessed by measuring the clearance of creatinine, urea and water. (4) Participants including major eligibility criteria: patients aged 18 to 75, candidate for elective CABG will enter the study. Inclusion criteria: age 40-75; elective CABG with CPB; constant surgeon; informed written consent; Exclusion criteria: old age above 75 years; emergency surgery; high risk surgery; ischemic heart disease; diabetes mellitus; diabetic ketoacidosis; non-ketonic hyperosmolar diabetic coma; acute renal failure; chronic kidney disease causing serum Cr > 2mg/dL; glomerulonephritis; hepatic failure causing liver function test failure (> 3 times than normal); off pump CABG; any unwanted complication in the operation period; re-starting CPB after weaning from bypass; pulmonary artery pressure > 30 before operation; ejection fraction < 30%; re-operation in the postoperative period; congestive heart failure; thyroid disorders; acute infections; stroke; pregnancy; hospital admission in the recent 3 months; (5) Intervention: The patients will be randomly assigned into 3 groups: group A (furosemide in the prime) 0.3-0.4 mg/Kg furosemide in the priming volume. Group B (intermittent furosemide) the patients receive 0.2 mg/kg furosemide during CABG if there will be a decrease in urinary excretion rate. Group C will be the control group in which the patients will not receive furosemide or any other drug as renal failure prophylaxis. (6) main outcome measures (variables): Glomerular filtration rate (GFR) will be measured using Cockcroft-Gault formula.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT201502122804N8**

Registration date: **2015-06-04, 1394/03/14**

Registration timing: **retrospective**

Last update:

Update count: **0**

Registration date

2015-06-04, 1394/03/14

Registrant information

Name

Ali Dabbagh

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 21 2243 2572

Email address

alidabbagh@sbmu.ac.ir

Recruitment status

Recruitment complete

Funding source

Investigator

Expected recruitment start date

2008-12-31, 1387/10/11

Expected recruitment end date

2009-12-31, 1388/10/10

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Intermittent furosemide therapy as a prophylaxis of acute renal failure in CABG patients: is it effective? A clinical trial

Public title

Intermittent furosemide therapy as a prophylaxis of acute renal failure in CABG patients

Purpose

Prevention

Inclusion/Exclusion criteria

Inclusion criteria: age 40-75; elective CABG with CPB; constant surgeon; informed written consent; Exclusion criteria: old age above 75 years; emergency surgery; high risk surgery; ischemic heart disease; diabetes mellitus; diabetic ketoacidosis; non-ketonic hyperosmolar diabetic coma; acute renal failure; chronic kidney disease causing serum Cr>2mg/dL; glomerulonephritis; hepatic failure causing liver function test failure (> 3 times than normal); off pump CABG; any unwanted complication in the operation period; re-starting CPB after weaning from bypass; pulmonary artery pressure >30 before operation; ejection fraction<30%; re-operation in the postoperative period; congestive heart failure; thyroid disorders; acute infections; stroke; pregnancy; hospital admission in the recent 3 months;

Age

From **18 years** old to **75 years** old

Gender

Both

Phase

3

Groups that have been masked

No information

Sample size

Target sample size: **123**

Randomization (investigator's opinion)

Randomized

Randomization description

Blinding (investigator's opinion)

Not blinded

Blinding description

Placebo

Not used

Assignment

Parallel

Other design features

a tertiary level, referral university hospital

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Rajaei Heart Center Research Ethics Committee

Street address

Research Deputy, Rajaei Heart Center, Vali Asr Ave

City

Tehran

Postal code

1996911151

Approval date

2010-04-20, 1389/01/31

Ethics committee reference number

89/2

Health conditions studied

1

Description of health condition studied

Coronary artery disease

ICD-10 code

I25.1

ICD-10 code description

Atherosclerotic heart disease

Primary outcomes

1

Description

postoperative serum markers of renal function including Glomerular Filtration Rate (GFR)

Timepoint

Preoperative levels and also early postoperative period (mainly 24 hours)

Method of measurement

level of serum markers; then using the Cockcroft-Gault formula

Secondary outcomes

1

Description

acid-base and electrolytes of the plasma

Timepoint

before the intervention and 24 hours after intervention

Method of measurement

serum levels of markers

Intervention groups

1

Description

2. group B: intermittent furosemide therapy; these patients received 0.2 mg/kg furosemide during CABG only in the case of decreased urinary excretion rate below the determined level in the study

Category

Treatment - Drugs

2

Description

1. group A: intra-prime furosemide therapy; these patients received 0.3-0.4 mg/kg furosemide in the prime

solution
Category
Treatment - Drugs

3

Description

3. group C: the control group

Category

Placebo

Recruitment centers

1

Recruitment center

Name of recruitment center

Shahid Rajaei Heart Center

Full name of responsible person

Ali Dabbagh

Street address

Rajaei Heart Center, Next to Mellat Park, Niayesh Exp
Way, Vali Asr Ave, Tehran, Iran

City

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Vice chancellor for research, Shahid Rajaei Heart
Center

Full name of responsible person

Dr Majid Maleki

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Rajaei Heart Center, Next to Mellat Park, Niayesh Exp
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Grant name

ندارد

Grant code / Reference number

None

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

Yes

Title of funding source

Vice chancellor for research, Shahid Rajaei Heart Center

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

Anesthesiology Research Center

Full name of responsible person

Ali Dabbagh

Position

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Other areas of specialty/work

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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