Clinical Trial Protocol
Iranian Registry of Clinical Trials

17 Nov 2026

The effect of perioperative Dexmedetomidine on renal function in patients undergoing CABG surgery and cardiopulmonary bypass

Protocol summary

Study aim
The effect of perioperative Dexmedetomidine on renal function in patients undergoing CABG surgery and cardiopulmonary bypass

Design
Double blinded randomized clinical trial

Settings and conduct
Patients in the dexmedmotidine group received doses of dexmedmotidine infusion at a dose of 0.5 micrograms / kg / h after induction of anesthesia until transmitted to ICU.Patients in the control group received normal saline infusion of the same volume in the intervention group after induction of anesthesia until transmitted to ICU.

Participants/Inclusion and exclusion criteria
Inclusion criteria:Age less than 70 years Patients undergoing coronary artery bypass graft surgery Exclusion criteria:Emergency Surgery Redo Surgery Performing a coronary artery bypass graft surgery with other cardiac surgery Preoperative renal problems and serum creatinine levels higher than 1.4 Ejection fraction less than 40% Known liver problems or high levels of liver enzymes Using balloon pump inside aorta.

Intervention groups
Patients in the dexmedmotidine group received doses of dexmedmotidine infusion at a dose of 0.5 micrograms / kg / h after induction of anesthesia until transmitted to ICU.Patients in the control group received normal saline infusion of the same volume in the intervention group after induction of anesthesia until transmitted to ICU.

Main outcome variables
Serum creatinine level, Blood Urea Nitrogen, Glomerular filtration rate

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20141009019470N83**
Registration date: **2019-07-08, 1398/04/17**
Registration timing: **prospective**

Last update: **2019-07-08, 1398/04/17**
Update count: **0**

Registration date
2019-07-08, 1398/04/17

Registrant information

Name
Farzaneh Masihi

Name of organization / entity

Country
Iran (Islamic Republic of)

Phone
+98 71 3647 4270

Email address
masihif@sums.ac.ir

Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2019-07-11, 1398/04/20

Expected recruitment end date
2019-09-11, 1398/06/20

Actual recruitment start date
empty

Actual recruitment end date
empty

Trial completion date
empty

Scientific title
The effect of perioperative Dexmedetomidine on renal function in patients undergoing CABG surgery and cardiopulmonary bypass

Public title
The effect of perioperative Dexmedetomidine on renal

function in patients undergoing CABG surgery and cardiopulmonary bypass

Purpose

Prevention

Inclusion/Exclusion criteria

Inclusion criteria:

Age less than 70 years Patients undergoing coronary artery bypass graft surgery

Exclusion criteria:

Emergency Surgery Redo Surgery Performing a coronary artery bypass graft surgery with other cardiac surgery Preoperative renal problems and serum creatinine levels higher than 1.4 Ejection fraction less than 40% Known liver problems or high levels of liver enzymes Using balloon pump inside aorta.

Age

To **70 years** old

Gender

Both

Phase

2-3

Groups that have been masked

- Participant
- Care provider
- Outcome assessor

Sample size

Target sample size: **60**

Randomization (investigator's opinion)

Randomized

Randomization description

Patients are randomly assigned into two groups of intervention and control using the randomized table which is drives from randomozation.org.

Blinding (investigator's opinion)

Double blinded

Blinding description

Dexmedetomidine and placebo are being prepared by an anesthetist who is not involved in the next stages of the study.

Placebo

Used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics committee of Shiraz University of Medical Sciences

Street address

Vice Chancellor of research, Shiraz University of Medical Sciences, 7th floor, central building of Shiraz University of Medical Sciences, Zand street

City

Shiraz

Province

Fars

Postal code

7134844119

Approval date

2019-03-31, 1398/01/11

Ethics committee reference number

IR.SUMS.REC.1398.015

Health conditions studied

1

Description of health condition studied

Coronary Artery Bypass Grafting surgery and cardiopulmonary bypass

ICD-10 code

I25.1

ICD-10 code description

Atherosclerotic heart disease of native coronary artery

Primary outcomes

1

Description

Serum creatinine level

Timepoint

Before surgery, on the first, second and third days after surgery in ICU

Method of measurement

Blood sample

2

Description

Blood Urea Nitrogen

Timepoint

Before surgery, on the first, second and third days after surgery in ICU

Method of measurement

Blood sample

3

Description

Glomerular filtration rate

Timepoint

Before surgery, on the first, second and third days after surgery in ICU

Method of measurement

Cockcroft-Gault Equation Formula

Secondary outcomes

1

Description

Inotropic Consumption in ICU

Timepoint
Before surgery, on the first, second and third days after surgery in ICU
Method of measurement
Observation

Intervention groups

1

Description
Intervention group: Patients in the dexmedmotidine group received doses of dexmedmotidine infusion at a dose of 0.5 micrograms / kg / h after induction of anesthesia until transmitted to ICU.
Category
Prevention

2

Description
Control group: Control group: Patients in the control group received normal saline infusion of the same volume in the intervention group after induction of anesthesia until transmitted to ICU.
Category
Placebo

Recruitment centers

1

Recruitment center
Name of recruitment center
Namazi Hospital
Full name of responsible person
Rahim Hemati
Street address
Namazi Hospital, Namazi Square
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Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Shiraz University of Medical Sciences
Full name of responsible person
Dr. Younes Ghasemi
Street address
Vice chancellor of research,7th floor of central building of Shiraz University of Medical Sciences, Zand street
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7134844119
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sacrc@sums.ac.ir
Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Shiraz University of Medical Sciences
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
Shiraz University of Medical Sciences
Full name of responsible person
Hamid Reza Lotfi
Position
Nurse
Latest degree
Bachelor
Other areas of specialty/work
Anesthesiology
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Person responsible for scientific inquiries

Contact
Name of organization / entity

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Full name of responsible person
Mansoor Masjedi

Position
Cardiac Surgeon

Latest degree
Subspecialist

Other areas of specialty/work
Cardiology

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Person responsible for updating data

Contact

Name of organization / entity
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Full name of responsible person
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Position
BS in anesthesia/English Consultant

Latest degree
Master

Other areas of specialty/work
Anesthesiology

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Sharing plan

Deidentified Individual Participant Data Set (IPD)
Undecided - It is not yet known if there will be a plan to make this available

Study Protocol
Undecided - It is not yet known if there will be a plan to make this available

Statistical Analysis Plan
Undecided - It is not yet known if there will be a plan to make this available

Informed Consent Form
Undecided - It is not yet known if there will be a plan to make this available

Clinical Study Report
Undecided - It is not yet known if there will be a plan to make this available

Analytic Code
Undecided - It is not yet known if there will be a plan to make this available

Data Dictionary
Undecided - It is not yet known if there will be a plan to make this available