Clinical Trial Protocol
Iranian Registry of Clinical Trials

08 Nov 2026

Evaluation of the effect of Ischemic preconditioning on myocardial protection in patients undergoing coronary artery bypass graft surgery

Protocol summary

Study aim
Determine the effect of Ischemic preconditioning on myocardial protection in patients undergoing coronary artery bypass graft surgery
Design
In this study, 150 patients were assigned to three groups: control and perfusion and IPC.
Settings and conduct
In this clinical trial, all patients who undergo surgery in Ayatollah Rouhani Hospital Babol with Coronary atherosclerosis diagnosis include the study.
Participants/Inclusion and exclusion criteria
Inclusion criteria: Age 50-70; All patients with atherosclerosis underwent coronary artery bypass graft surgery; No redo cardiac operation. Excluction criteria: Concomitant operation; Emergency surgery; Reoperation
Intervention groups
Intervention: Patients are divided in 3 groups: in first group, coronary perfusion with controlled perfusion perssure is applied, in second group we use intermittent clamping and de-clamping (each for 1 minute in three times), and in third group, we use both methods together simultaneously.
Main outcome variables
Main outcome measures: cardiac enzymes, oxidative stress markers and ejection fraction will be measured after operation.

General information

Reason for update
Acronym
IRCT registration information
IRCT registration number: **IRCT20161021030410N3**
Registration date: **2020-06-06, 1399/03/17**
Registration timing: **registered_while_recruiting**

Last update: **2020-06-06, 1399/03/17**
Update count: **0**
Registration date
2020-06-06, 1399/03/17

Registrant information
Name
Ghasem Faghanzadeh Ganji
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Babol University of Medical Science
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Recruitment status
Recruitment complete
Funding source

Expected recruitment start date
2020-01-20, 1398/10/30
Expected recruitment end date
2021-03-20, 1399/12/30
Actual recruitment start date
empty
Actual recruitment end date
empty
Trial completion date
empty

Scientific title
Evaluation of the effect of Ischemic preconditioning on myocardial protection in patients undergoing coronary artery bypass graft surgery

Public title
The effect of ischemic preconditioning on myocardial protection
Purpose
Prevention
Inclusion/Exclusion criteria

Inclusion criteria:
Age 50-70 All patients with atherosclerosis underwent coronary artery bypass graft surgery No redo cardiac operation
Exclusion criteria:
Concomitant operation Emergency surgery Reoperation

Age
From **50 years** old to **70 years** old

Gender
Both

Phase
2

Groups that have been masked
No information

Sample size
Target sample size: **150**

Randomization (investigator's opinion)
Randomized

Randomization description
Samples will be divided into Three groups using Permuted Block Randomization. Number will be selected for allocation concealment by one of the colleagues and by another, that assignment chain is chosen.

Blinding (investigator's opinion)
Not blinded

Blinding description

Placebo
Not used

Assignment
Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee
Ethics committee of Babol University of Medical Sciences

Street address
Babol University of Medical Sciences, Ganjafrooz Street, Babol, Mazandaran, Iran

City
Babol

Province
Mazandaran

Postal code
4716681451

Approval date
2019-12-31, 1398/10/10

Ethics committee reference number
IR.MUBABOL.HRI.REC.1398.287

Health conditions studied

1

Description of health condition studied
Cardiovascular Disease

ICD-10 code
I51.6

ICD-10 code description
Cardiovascular Disease, Unspecified

Primary outcomes

1

Description
Cardiac Enzyme : Creatine Phosphokinase

Timepoint
Before operation, immediatelly after operation, 6 hours after operation, 12 hours after operation and 24 hours after operation

Method of measurement
Serology

2

Description
Oxidative Stress Enzymes

Timepoint
Before operation, immediatelly after operation, 6 hours after operation, 12 hours after operation and 24 hours after operation

Method of measurement
Blood Analyses

3

Description
Ejection Fraction of the Heart

Timepoint
Before and 7 days after operation

Method of measurement
Echocardiography

Secondary outcomes

empty

Intervention groups

1

Description
Control group: In the control group, routine after heparin and cannulation of the aorta and right atrium and start the pump, aortic clamping and injection cardioplegin the aortic root and inducing arrest of the heart, anastomosis distal to the vascular coronary and after turning clamp of perfect for the partial, proximal anastomosis will be performed.

Category
Prevention

2

Description
Intervention group: In second group three repetitive episodes of 1 min ischemia separated by 1 min of reperfusion (at systemic pressure) will be applied on coronary artery Then the clamp will be released completely.
Category
Prevention

3

Description
Intervention group: In third group, controlled perfusion pressure and post conditioning will be applied together during reperfusion of coronary artery.
Category
Prevention

Recruitment centers

1

Recruitment center
Name of recruitment center
Babol Ayatollah Rouhani Hospital
Full name of responsible person
Dr. Ghasem Faghanzadeh Ganji
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Babol University of Medical Sciences, Ganjafrooz Street, Babol, Mazandaran, Iran
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Sponsors / Funding sources

1

Sponsor
Name of organization / entity
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Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Babol 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
Babol University of Medical Sciences
Full name of responsible person
Dr. Saead Alborzi
Position
Resident
Latest degree
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Other areas of specialty/work
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Person responsible for scientific inquiries

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Position
Assistant Professor

Latest degree
Subspecialist

Other areas of specialty/work
Cardiology

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Person responsible for updating data

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Sharing plan

Deidentified Individual Participant Data Set (IPD)
No - There is not a plan to make this available

Justification/reason for indecision/not sharing IPD
.

Study Protocol
No - There is not a plan to make this available

Statistical Analysis Plan
No - There is not a plan to make this available

Informed Consent Form
No - There is not a plan to make this available

Clinical Study Report
No - There is not a plan to make this available

Analytic Code
No - There is not a plan to make this available

Data Dictionary
No - There is not a plan to make this available