

Clinical Trial Protocol

Iranian Registry of Clinical Trials

16 Jul 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. Exclusion criteria: Concomitant operation; Emergency surgery; Reoperation

Intervention groups

Intervention: Patients are divided in 3 groups: in first group, coronary perfusion with controlled perfusion pressure 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

Name of organization / entity

Babol University of Medical Science

Country

Iran (Islamic Republic of)

Phone

+98 11 3223 8308

Email address

gh.faghanzadeh@mubabol.ac.ir

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, immediately 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, immediately 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

Street address

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

City

Babol

Province

Mazandaran

Postal code

47176-47745

Phone

+98 11 3223 8301

Fax

+98 11 3223 8309

Email

ghf.ganji@gmail.com

Web page address

<http://www.mubabol.ac.ir/>

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Babol University of Medical Sciences

Full name of responsible person

Dr. Reza Ghadimi

Street address

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

City

Babol

Province

Mazandaran

Postal code

4716681451

Phone

+98 11 3219 7667

Email

rezaghadimi@yahoo.com

Web page address

<http://www.mubabol.ac.ir/>

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. Saeed Alborzi

Position

Resident

Latest degree

Medical doctor

Other areas of specialty/work

General Surgery

Street address

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

City

Babol

Province

Mazandaran

Postal code

47176-47745

Phone

+98 11 3223 8301

Email

saeed_alborzi@yahoo.com

Web page address

<http://www.mubabol.ac.ir/>

Person responsible for scientific inquiries

Contact

Name of organization / entity

Babol University of Medical Sciences

Full name of responsible person

Dr. Ghasem Faghanzadeh Ganji

Position

Assistant Professor

Latest degree

Subspecialist

Other areas of specialty/work

Cardiology

Street address

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

City

Babol

Province

Mazandaran

Postal code

47176-47745

Phone

+98 11 3223 8301

Email

ghf.ganji@gmail.com

Web page address

<http://www.mubabol.ac.ir/>

Person responsible for updating data

Contact

Name of organization / entity

Babol University of Medical Sciences

Full name of responsible person

Dr. Ghasem Faghanzadeh Ganji

Position

Assistant Professor

Latest degree

Subspecialist

Other areas of specialty/work

Cardiology

Street address

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

City

Babol

Province

Mazandaran

Postal code

47176-47745

Phone

+98 11 3223 8301

Email

ghf.ganji@gmail.com

Web page address

<http://www.mubabol.ac.ir/>

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