

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

04 Jul 2026

### Effect of cardiac rehabilitation on myocardial performance index in patients undergoing coronary artery bypass surgery: A before and after clinical trial

#### Protocol summary

##### Summary

Objectives: To assess the effect of cardiac rehabilitation on myocardial performance index in patients undergoing coronary artery bypass surgery. Design: a before and after clinical trial. Setting and conduct: Eligible patients who are candidate for coronary artery bypass surgery and will refer to the Ekbatan Hospital during the study period will be enrolled in to the trial. Inclusion criteria: candidate for coronary artery bypass surgery. Exclusion criteria: (a) congenital musculoskeletal deformity; (b) acquired musculoskeletal deformity; (c) severe left ventricular dysfunction. Intervention: physiotherapy for 45 min for 30 sessions including 30 min walking on treadmill at a low speed, 10 min stationary cycling at a low speed, and 5 min stretching exercises. Control: comparison with the patients' condition before surgery. Primary outcome: Assessing the myocardial performance index before surgery and after cardiac rehabilitation using echocardiography. Secondary outcome: Assessing the ejection fraction before surgery and after cardiac rehabilitation using echocardiography.

#### General information

##### Acronym

##### IRCT registration information

IRCT registration number: **IRCT201409289014N40**  
Registration date: **2014-10-07, 1393/07/15**  
Registration timing: **retrospective**

Last update:

Update count: **0**

##### Registration date

2014-10-07, 1393/07/15

##### Registrant information

Name

Jalal Poorolajal

##### Name of organization / entity

Department of Epidemiology & Biostatistics Hamadan  
University of Medical Sciences

##### Country

Iran (Islamic Republic of)

##### Phone

+98 81 1838 0090

##### Email address

poorolajal@umsha.ac.ir

##### Recruitment status

**Recruitment complete**

##### Funding source

Vice-chancellor for Research the Technology, Hamadan  
University of Medical Sciences

##### Expected recruitment start date

2013-05-20, 1392/02/30

##### Expected recruitment end date

2014-03-20, 1392/12/29

##### Actual recruitment start date

empty

##### Actual recruitment end date

empty

##### Trial completion date

empty

##### Scientific title

Effect of cardiac rehabilitation on myocardial performance index in patients undergoing coronary artery bypass surgery: A before and after clinical trial

##### Public title

Effect of cardiac rehabilitation on myocardial performance index in patients undergoing coronary artery bypass surgery

##### Purpose

Treatment

##### Inclusion/Exclusion criteria

Inclusion criteria: candidate for coronary artery bypass surgery. Exclusion criteria: (a) congenital musculoskeletal deformity; (b) acquired musculoskeletal deformity; (c) severe left ventricular dysfunction.

#### Age

No age limit

#### Gender

Both

#### Phase

2

#### Groups that have been masked

No information

#### Sample size

Target sample size: 65

#### Randomization (investigator's opinion)

Not randomized

#### Randomization description

#### Blinding (investigator's opinion)

Not blinded

#### Blinding description

#### Placebo

Not used

#### Assignment

Single

#### Other design features

### Secondary Ids

empty

### Ethics committees

#### 1

##### Ethics committee

###### Name of ethics committee

Research Ethic Committee of Hamadan University of Medical Sciences

###### Street address

Vice-chancellor of Research the Technology,  
Hamadan University of Medical Sciences, Shahid Fahmideh Ave

###### City

Hamadan

###### Postal code

6517838695

##### Approval date

2013-05-19, 1392/02/29

##### Ethics committee reference number

D/P/16/35/9/711

### Health conditions studied

#### 1

##### Description of health condition studied

coronary artery bypass surgery

##### ICD-10 code

T82.2

##### ICD-10 code description

Mechanical complication of coronary artery bypass and

valve grafts

### Primary outcomes

#### 1

##### Description

Assessing the myocardial performance index

##### Timepoint

before surgery and after cardiac rehabilitation

##### Method of measurement

using echocardiography

### Secondary outcomes

#### 1

##### Description

Assessing the ejection fraction

##### Timepoint

before surgery and after cardiac rehabilitation

##### Method of measurement

using echocardiography

### Intervention groups

#### 1

##### Description

physiotherapy for 45 min for 30 sessions including 30 min walking on treadmill at a low speed, 10 min stationary cycling at a low speed, and 5 min stretching exercises.

##### Category

Treatment - Other

#### 2

##### Description

comparison with the patients' condition before surgery.

##### Category

N/A

### Recruitment centers

#### 1

##### Recruitment center

###### Name of recruitment center

Ekbatan Hospital

###### Full name of responsible person

Dr Hamid Reza Majidian

###### Street address

Ekbatan Hospital, Jahad Square

###### City

Hamadan

### Sponsors / Funding sources

## 1

### Sponsor

**Name of organization / entity**

Vice-chancellor for Research the Technology,  
Hamadan University of Medical Sciences

**Full name of responsible person**

Dr Saeid Bashirian

**Street address**

Hamadan University of Medical Sciences, Shahid  
Fahmideh Ave

**City**

Hamadan

**Grant name****Grant code / Reference number****Is the source of funding the same sponsor organization/entity?**

Yes

**Title of funding source**

Vice-chancellor for Research the Technology, Hamadan  
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**

Ekbatan Hospital

**Full name of responsible person**

Dr Hamid Reza Majidian

**Position**

Resident of Cardiology

**Other areas of specialty/work****Street address**

Ekbatan Hospital, Jahad Square, Hamadan

**City**

Hamadan

**Postal code****Phone**

+98 81 3825 1244

**Fax****Email**

mxm1356@gmail.com

**Web page address**

### Person responsible for scientific inquiries

**Contact****Name of organization / entity**

Ekbatan Hospital

**Full name of responsible person**

Dr Amir Hossein Yazdi

**Position**

Cardiologist

**Other areas of specialty/work****Street address**

Ekbatan Hospital, Jahad Square, Hamadan

**City**

Hamadan

**Postal code****Phone**

+98 81 3825 1244

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A.yazdi@umsha.ac.ir

**Web page address**

### Person responsible for updating data

**Contact**

### 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*