Clinical Trial Protocol
Iranian Registry of Clinical Trials

08 Nov 2026

Adherence to and cost-effectiveness of polypill versus usual care for secondary prevention of cardiovascular diseases in patients with a history of acute coronary syndrome, a randomized clinical trial

Protocol summary

Study aim

Comparison of incidence of major cardiovascular adverse events (MACE) in two groups of patients with a history of acute myocardial infarction (AMI), receiving either polypill or usual care.

Design

Open labelled randomized controlled clinical trial with two parallel arms, phase 3, with 1200 patients. Randomization will be done by permuted blocks.

Settings and conduct

This study will be conducted in three referral Hospitals in Isfahan: Chamran, Khorshid, and Alzahra hospitals. Patients hospitalized because of an AMI will be assessed for eligibility criteria and recruited to the study at the time of discharge by the responsible physicians. patients will attend the care center every 3 month to receive polypill and to be assessed for outcomes by responsible nurses.

Participants/Inclusion and exclusion criteria

Inclusion criteria: age over 40 years, patients hospitalized because of an acute myocardial infarction and alive after discharge for at least 1 month and clear indication of receiving all components of the polypill. Exclusion criteria: contraindication or history of adverse reaction to any component of the polypill

Intervention groups

Intervention group receive a fixed dose combinations of aspirin (81mg), atorvastatin (40mg), metoprolol (50 mg), and Valsartan (40 mg) (Polypill-s, prepared by Alborz Daroo Co.), prescribed once daily by moth for 34 months. Control group receive regular drug order including aspirin, atorvastatin, a beta blocker, and an angiotensin-converting enzyme inhibitor or angiotensin II receptor blocker at the time of discharge from the hospital.

Main outcome variables

A composite clinical outcome of MACE including cardiac death, fatal/nonfatal MI or stroke, hospitalization due to acute coronary syndrome/acute cerebrovascular accident, revascularization procedures, development or worsening of heart failure, and development of persistent new atrial fibrilation.

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20180507039571N2**
Registration date: **2020-12-19, 1399/09/29**
Registration timing: **registered_while_recruiting**

Last update: **2020-12-19, 1399/09/29**
Update count: **0**

Registration date

2020-12-19, 1399/09/29

Registrant information

Name

Shervin Ghaffari hoseini

Name of organization / entity

Country

Iran (Islamic Republic of)

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2019-05-20, 1398/02/30

Expected recruitment end date

2024-08-20, 1403/05/30

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Adherence to and cost-effectiveness of polypill versus usual care for secondary prevention of cardiovascular diseases in patients with a history of acute coronary syndrome, a randomized clinical trial

Public title

Efficacy of polypill in secondary prevention of cardiovascular disease in patients with a history of acute coronary syndrome

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria:

Age over 40 years Patients hospitalized because of an acute myocardial infarction (STEMI/NSTEMI) and alive after discharge for at least 1 month Signing informed consent Clear indication of receiving all components of Polypill (aspirin, statin, ACE inhibitor/ARB, and beta blocker) Living in Isfahan city or nearby areas so that they can attend follow-ups No mental illness limiting their self-care ability or Severe illness with an estimated lifespan of less than 3 years No history of adverse reaction or contraindication to any component of the Polypill Not having Secondary hyperlipidemia, serum creatinine ≥ 2, severe heart failure No plan for a procedure (CABG, PCI, or another surgical procedures) within following 6 months

Exclusion criteria:

Contraindication to any component of the polypill History of adverse reaction to any component of the polypill Mental illness limiting self-care ability Severe illness with an estimated lifespan of less than 3 years Systolic blood pressure < 90 mm Hg or diastolic blood pressure < 60 mm Hg Familial hyperlipidemias Bradycardia (less than 50 beat/min) Sick sinus syndrome (unless patient has a permanent pacemaker) AV heart block (except for first degree) Serum creatinine ≥ 2 or glomerular filtration rate < 30 mL/min Chronic liver failure Severe heart failure (NYHA class III, IV) Planning for a procedure (CABG, PCI, or another surgical procedures) within following 6 months Pregnant or lactating women Participation in another trial Patient’s unwilling to complete the trial Need to change or discontinue any of the four principal drugs of the Polypill to achieve better control of the disease or risk factors or because of adverse drug reactions (based on physician's idea).

Age

From **40 years** old

Gender

Both

Phase

3

Groups that have been masked

No information

Sample size

Target sample size: **1200**

Randomization (investigator's opinion)

Randomized

Randomization description

Randomization with permuted blocks of 2, 4, 6, or 8 will be used and random sequence will be generated by "Random allocation software" to equally distribute Participants in two arms. An investigator will be responsible for central Randomization and recording the list of patients. Responsible physicians in The hospitals will assess patients for eligibility criteria and after getting Informed consent, they will contact the investigator for the type of intervention Allocation. Blinding of investigators and patients is not possible in this study, However, statistician will be blind to the group assignment.

Blinding (investigator's opinion)

Not blinded

Blinding description

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

1

Registry name

مرکز ثبت کارآزمائي هاي باليني ايالات متحده آمريکا

Secondary trial Id

NCT03541109

Registration date

2018-05-30, 1397/03/09

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics committee of national institute for medical research development (nimad)

Street address

No 21, Besat Ave, West Fatemi Ave, Tehran

City

Tehran

Province

Tehran

Postal code

۱۴۱۹۶۹۳۱۱۱

Approval date

2017-12-15, 1396/09/24

Ethics committee reference number

IR.NIMAD.REC.1396.249

Health conditions studied

1

Description of health condition studied
Acute myocardial infarction
ICD-10 code
I21
ICD-10 code description
ST elevation (STEMI) and non-ST elevation (NSTEMI) myocardial infarction

Primary outcomes

1

Description
Score of composite clinical outcome (major adverse cardiovascular events (MACE)) including cardiac death, fatal/nonfatal MI or stroke, hospitalization due to acute coronary syndrome/acute cerebrovascular accident, revascularization procedures, development or worsening of HF, and development of persistent new AF.
Timepoint
From time of randomization up to 34 months after beginning of the intervention
Method of measurement
Incidence of clinical adverse events will be asked from the patient or relatives and will be confirmed by patient's medical records. HF will be assessed by echocardiography which will be done at the beginning and at the last follow-up and during the study if indicated by patient symptoms or physical examination. Persistent new AF will be documented by electrocardiograms recorded at the first and last follow-up and as needed if related new signs or symptoms develop during the study.

Secondary outcomes

1

Description
Cost-effectiveness of Polypill treatment compared with usual care
Timepoint
From time of randomization up to 34 months after beginning of the intervention
Method of measurement
Medical costs including healthcare visits, laboratory tests, imaging procedures, drugs, hospital admissions and procedures will be collected at each follow-up and polypill costs will be added

2

Description
Drug related adverse events resulting from polypill or routine cardiac drugs, including hypotension, gastric irritation, dyspepsia, bleeding, myalgia, elevated liver enzymes, renal dysfunction, and drug allergies.
Timepoint
1, 4, 10, 22, and 34 months after beginning of the intervention
Method of measurement
A questionnaire filled by the responsible physician (by history and physical examination).

3

Description
Scores of health related quality of life (HRQL)
Timepoint
Before intervention and 1, 4, 10, 22, and 34 months after beginning of the intervention
Method of measurement
Persian version of the 12-Item Short Form Health Survey (SF-12)

4

Description
Scores of self-reported patient adherence to the medication(s)
Timepoint
1, 4, 10, 22, and 34 months after beginning of the intervention
Method of measurement
Persian version of 8-Item Morisky Medication Adherence Scale (MMAS-8)

5

Description
Mean of systolic and diastolic blood pressure
Timepoint
Before intervention and 1, 4, 10, 22, and 34 months after beginning of the intervention
Method of measurement
Average readings of systolic blood pressure measured two times (at least 3 min apart) at sitting position by digital sphygmomanometer

6

Description
Serum level of total cholestrole
Timepoint
Before intervention and 1, 4, 10, 22, and 34 months after beginning of the intervention
Method of measurement
With cholesterol oxidase method by autoanalyzer

Intervention groups

1

Description
Intervention group: receive polypill-s tablet which is fixed dose combination of aspirin (81mg), atorvastatin (40mg), metoprolol (50 mg), and Valsartan (40 mg) and is prepared by Alborz Daroo Co., prescribed once daily by moth for 34 mounths.
Category
Treatment - Drugs

2

Description
Control group: receive regular drug order at the time of discharge from the hospital including aspirin, atorvastatin, a beta blocker, and an angiotensin-converting enzyme inhibitor or angiotensin II receptor blocker

Category
Treatment - Drugs

Recruitment centers

1

Recruitment center

Name of recruitment center
Chamran cardiology hospital

Full name of responsible person
Masoumeh Sadeghi

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2

Recruitment center

Name of recruitment center
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Full name of responsible person
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3

Recruitment center

Name of recruitment center
Alzahra Hospital

Full name of responsible person
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Sponsors / Funding sources

1

Sponsor

Name of organization / entity
National Institute for Medical Research Development (nimad)

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NIMAD@RESEARCH.AC.IR

Grant name

Grant code / Reference number

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

Title of funding source
National Institute for Medical Research Development (nimad)

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
Other

Person responsible for general inquiries

Contact

Name of organization / entity
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Full name of responsible person
Shervin Ghaffari Hoseini

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resident
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Person responsible for updating data

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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