

Clinical Trial Protocol

Iranian Registry of Clinical Trials

26 May 2026

The effect of eight weeks aerobic training with garlic supplements on inflammatory and cardiovascular factors in postmenopausal women with high blood pressure and obesity

Protocol summary

Study aim

The aim of this study was to examine the The effect of eight weeks aerobic training with garlic supplements on inflammatory and cardiovascular factors in postmenopausal women with high blood pressure and obesity.

Design

36 women with high blood pressure and obesity selected and randomly divided into four groups (Control, Water; Control, Garlic; Control, Training; Garlic, Training). Training group's perform Aerobic Training for for eight weeks, three sessions a week (55% to 65% of the reserved heart rate and for 30 to 55 min). Garlic and Garlic plus Training will feed 1000 mg of Garlic for eight weeks (Twice a day before breakfast and dinner).

Settings and conduct

The location of the research is Tabib Sports Complex in Sari, which has already been coordinated. In this research, people who work with subjects are blinded.

Participants/Inclusion and exclusion criteria

Inclusion criteria: Confirmation of blood pressure by the doctor, Lack of other underlying illnesses, Not attending a regular exercise program in the past six months, Permission to participate in the exercise program with the opinion of a specialist physician, Satisfaction to participate in the study, Have at least 50 years of age
Exclusion criteria: Use supplement and practice, Diagnosis of other underlying illnesses during protocol implementation, Change in drug intake, Risk of exercise or supplementation

Intervention groups

Aerobic exercise and Garlic supplementation

Main outcome variables

Effect of aerobic training with Garlic supplements on inflammatory and cardiovascular factors such as: Lipocalin-1, IL-1 β , MMP-3, MMP-9, TIMP-1

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20140415017288N6**

Registration date: **2019-07-22, 1398/04/31**

Registration timing: **prospective**

Last update: **2019-07-22, 1398/04/31**

Update count: **0**

Registration date

2019-07-22, 1398/04/31

Registrant information

Name

Ahmad Abdi

Name of organization / entity

Ayatollah Amoli Branch, Islamic Azad University

Country

Iran (Islamic Republic of)

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2019-08-06, 1398/05/15

Expected recruitment end date

2019-10-07, 1398/07/15

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The effect of eight weeks aerobic training with garlic supplements on inflammatory and cardiovascular factors in postmenopausal women with high blood pressure and obesity

Public title

Effect of training and Garlic on Blood Pressure

Purpose

Health service research

Inclusion/Exclusion criteria

Inclusion criteria:

Confirmation of blood pressure by the doctor
Lack of other underlying illnesses
Not attending a regular exercise program in the past six months
Permission to participate in the exercise program with the opinion of a specialist physician
Satisfaction to participate in the study
Have at least 50 years of age

Exclusion criteria:

Use supplement and practice
Diagnosis of other underlying illnesses during protocol implementation
Change in drug intake
Risk of exercise or supplementation

Age

From **50 years** old to **65 years** old

Gender

Female

Phase

N/A

Groups that have been masked

- Participant

Sample size

Target sample size: **36**

More than 1 sample in each individual

Number of samples in each individual: **9**

in postmenopausal women with high blood pressure and obesity

Randomization (investigator's opinion)

Randomized

Randomization description

In this research, subjects are selected Simple randomization by random allocation rule. After determining the sample size, they will be equally divided into four groups (Control, Water; Control, Garlic; Control, Training; Garlic, Training).

Blinding (investigator's opinion)

Single blinded

Blinding description

The Control- Garlic and Garlic +Training patients receive Momordica charantia, two capsules orally of 500 mg twice daily before breakfast and dinner for 8 weeks. Control-Water and Control-Training groups receive placebo in the same pharmacological presentation. Starch is used as placebo.

Placebo

Used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Sport Sciences Research Institute of Iran

Street address

Tehran: Motahari Ave., Miramad St., No. 5th Lane

City

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Province

Tehran

Postal code

1587958711

Approval date

2019-03-11, 1397/12/20

Ethics committee reference number

IR.SSRC.REC.1398.039

Health conditions studied

1

Description of health condition studied

Hypertensive diseases

ICD-10 code

I10

ICD-10 code description

Essential (primary) hypertension

Primary outcomes

1

Description

Effect of aerobic training and Garlic on Lipocalin-2

Timepoint

Before and after the protocol

Method of measurement

Biochemical and laboratory methods

2

Description

Effect of aerobic training and Garlic on IL-1 β

Timepoint

Before and after the protocol

Method of measurement

Biochemical and laboratory methods

3

Description

Effect of aerobic training and Garlic on MMP-3

Timepoint

Before and after the protocol

Method of measurement

4**Description**

Effect of aerobic training and Garlic on MMP-9

Timepoint

Before and after the protocol

Method of measurement

Biochemical and laboratory methods

5**Description**

Effect of aerobic training and Garlic on TIMP-1

Timepoint

Before and after the protocol

Method of measurement

Biochemical and laboratory methods

Secondary outcomes

empty

Intervention groups**1****Description**

Control group: : in this group we have not any intervention during 6 weeks, and will consider this group as placebo.

Category

Placebo

2**Description**

Intervention group: Training group (in this group for 8 week, three session/weeks, the training start with 10 min warming and then 30 min 55% reserved heart rate, increase to the training time up 55 min until the end of intervention with 65% of the reserved heart rate).

Category

Treatment - Other

3**Description**

Intervention group: Garlic group (in this group eat 1000 mg of Garlic for eight weeks Twice a day before breakfast and dinner).

Category

Treatment - Other

4**Description**

Intervention group: Garlic - Training group (In this group the Simultaneous intervention, Garlic and training, will treat with the same protocol that describe at the previous part)

Category**Recruitment centers****1****Recruitment center****Name of recruitment center**

Health center of Sari city

Full name of responsible person

Ahmad Abdi

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Sponsors / Funding sources**1****Sponsor****Name of organization / entity**

Islamic Azad University

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

No

Title of funding source

Islamic Azad University

Proportion provided by this source

100

Public or private sector

Private

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

Islamic Azad University

Full name of responsible person

Ahmad Abdi

Position

Associate professor

Latest degree

Ph.D.

Other areas of specialty/work

Sport Medicine

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Sharing plan

Deidentified Individual Participant Data Set (IPD)

Yes - There is 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

Not applicable

Informed Consent Form

No - There is not a plan to make this available

Clinical Study Report

Yes - There is a plan to make this available

Analytic Code

Not applicable

Data Dictionary

Not applicable

Title and more details about the data/document

The report is submitted to the research department of the university. Also published as a paper.

When the data will become available and for how long

Since 2020

To whom data/document is available

All researchers

Under which criteria data/document could be used

Citing references

From where data/document is obtainable

Scientific bases and Ayatollah Amoli Branch, Islamic Azad University, Amol, Iran

What processes are involved for a request to access data/document

Maximum one week

Comments