Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 2026

Effect of Consuming vitamin C during High -Intensity Aerobic Training on Catalase and Nitric Oxide activity in Hypertension Men

Protocol summary

Study aim
To determine The effect of high intensity aerobic training and vitamin C intake on asymmetric myeloperoxidase, asymmetric dimethyl arginine, nitric oxide and catalase in hypertensive men

Design
A randomized clinical trial study with a control group (pre-test-post-test) included three intervention , and A control group

Settings and conduct
Forty hypertensive men 30-45 from Urmia Medical Centers in a double-blind study (researchers and experimenters are unaware of vitamin C intake) were randomly assigned to three intervention groups and one control group. The aim of this study was to evaluate the effect of moderate to high intensity aerobic exercise on vitamin C in improving blood pressure. Exercises will be 10 weeks; three nonconsecutive days per week with a 75% HRmax, with 20 min.

Participants/Inclusion and exclusion criteria
- no experience in exercise training - 30-45 yr ranges - no smoking - Hypertension syndrome - Exclusion criteria - Kidney, respiratory, diabetes and gastrointestinal problems - Use of antioxidant vitamins during research - No regular attendance during trainin

Intervention groups
Exercise training Vitamin C 500 mg/d Groups: training+vitamin C Training+placebo Vitamin C Control (without intervention)

Main outcome variables
Catalase and Nitric oxide.

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20191225045892N1**
Registration date: **2020-02-01, 1398/11/12**
Registration timing: **registered_while_recruiting**

Last update: **2020-02-01, 1398/11/12**
Update count: **0**

Registration date
2020-02-01, 1398/11/12

Registrant information

Name
Ailin Alishahi

Name of organization / entity

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Iran (Islamic Republic of)

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Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2020-01-30, 1398/11/10

Expected recruitment end date
2020-02-09, 1398/11/20

Actual recruitment start date
empty

Actual recruitment end date
empty

Trial completion date
empty

Scientific title
Effect of Consuming vitamin C during High -Intensity Aerobic Training on Catalase and Nitric Oxide activity in Hypertension Men

Public title
Aerobic Training and vitamin C on Hypertension

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria:

Hypertention age 30 - 40 years not smoker not exercise

Exclusion criteria:

kidney disease pulmonary disease

Age

From **30 years** old to **45 years** old

Gender

Male

Phase

3

Groups that have been masked

- Participant
- Investigator
- Data analyser

Sample size

Target sample size: **40**

Randomization (investigator's opinion)

Randomized

Randomization description

The present study is semi quasi-experimental study, performed as double-blind randomized clinical trial and controlled with placebo, at pretest and posttest design with control group.

Blinding (investigator's opinion)

Double blinded

Blinding description

The present study is semi quasi-experimental study, performed as double-blind randomized clinical trial and controlled with placebo, at pretest and posttest design with control group.

Placebo

Used

Assignment

Factorial

Other design features

The present study is semi quasi-experimental study, performed as double-blind randomized clinical trial and controlled with placebo, at pretest and posttest design with control group. The statistical population of this research consisted of middle-aged men within the age range of 30-45 yrs. with hypertension who had referred to the healthcare centers in Urmia city in 2017.

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

IR.MUK.REC.1397.5018

Street address

adab street

City

sanandej

Province

Kurdistan

Postal code

6618634683

Approval date

2018-04-14, 1397/01/25

Ethics committee reference number

IR.MUK.REC.1397.5018

Health conditions studied

1

Description of health condition studied

Hypertension

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

Independent variables: aerobic exercise - vitamin C supplementation The dependent variables: Catalase, NO, myeloperoxidase, and asymmetric dimethyl arginine Systolic and diastolic blood pressure

Timepoint

The dependent variable: Once before exercise and supplementation intervention (pretest) The second time after 10 weeks of aerobic exercise and vitamin C supplementation (posttest)

Method of measurement

Systolic and diastolic blood pressure Catalase, NO, myeloperoxidase, and asymmetric dimethyl arginine in the serum

Secondary outcomes

empty

Intervention groups

1

Description

1- Exercise training- Vitamin C 2- Exercise training- placebo 3- Vitamin C and 4- Placebo (no intervention)

Category

Treatment - Other

Recruitment centers

1

Recruitment center

Name of recruitment center

Medical centers of Urmia

Full name of responsible person

Kamal Azizbeigi

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Sponsors / Funding sources

1

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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
Ailin Alishahi
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
Persons

Person responsible for general inquiries

Contact
Name of organization / entity
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Full name of responsible person
Kamal Azizbeigi
Position
2. Ph.D in Exercise Physiology
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Person responsible for updating data

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Sharing plan

Deidentified Individual Participant Data Set (IPD)
Yes - There is a plan to make this available
Study Protocol
Yes - There is a plan to make this available
Statistical Analysis Plan
Yes - There is a plan to make this available
Informed Consent Form
Yes - There is a plan to make this available
Clinical Study Report
Yes - There is a plan to make this available
Analytic Code
Yes - There is a plan to make this available
Data Dictionary
Yes - There is a plan to make this available
Title and more details about the data/document
All information related to the present study is available in movie, photo, and data as an Excel file.
When the data will become available and for how long
2021
To whom data/document is available
Everyone
Under which criteria data/document could be used
Research
From where data/document is obtainable
Islamic Azad University, Sanandaj, Iran.
What processes are involved for a request to access data/document
Islamic Azad University, Sanandaj, Iran.
Comments