

Clinical Trial Protocol

Iranian Registry of Clinical Trials

16 Jun 2026

Effect of short-term garlic supplementation in two different dose on total antioxidant capacity and some markers of serum oxidative stress in rest and induced-exercise exhaustive in soccer players

Protocol summary

Summary

Introduction: Vigorous exercise-induced generation of free radicals lead to oxidative damage in biological macromolecules such as proteins, DNA and lipids. One way to confront the adverse effects of oxidative stress caused by intense exercises is to consume dietary antioxidant supplementation such as garlic. Considering anti-oxidative effects of garlic and its combinations on oxidative stress caused by doing intense exercises, only a few studies have been carried out in this regard. Therefore, this study an attempt to determine the effects of Shuttle run exercise test and short-term garlic supplementation (14 days) on serum Total Antioxidant Capacity (TAC), oxidative stress marker (malondialdehyde, MDA) and cellular damage (Creatine Kinase, CK) in soccer men. Methods: This study will carry out in double-blind quasi-experimental designs on Thirty soccer men (aged 18-23 years, 55-65 ml/kg/min and BMI 20-22 kg/m²) who will divid into three random and equal groups: supplement groups (1200 and 2400 mg/day garlic) and placebo group (dextrose). Before and after supplementation period (14-days), all subjects participat in the Shuttle run exhaustive physical activity. Blood samples will taken in four phases: before and immediately after first exercise test (Before 14-day supplementation); and before and immediately after first exercise test (after 14-day supplementation). The serum total antioxidant capacity (TAC) and Malondialdehyde (MDA) will be determined by FRAP and spectrophotometer, respectively. Creatine kinase changes will be measured by automatic analyzer. The normal data will analyzed by repeated measure ANOVA, Bonferroni and independent t test at $\alpha \leq 0.05$.

General information

Acronym

GarSoc2012

IRCT registration information

IRCT registration number: **IRCT201206204663N11**

Registration date: **2012-07-26, 1391/05/05**

Registration timing: **retrospective**

Last update:

Update count: **0**

Registration date

2012-07-26, 1391/05/05

Registrant information

Name

Afshar Jafari

Name of organization / entity

University of Tabriz

Country

Iran (Islamic Republic of)

Phone

+98 41 1339 3251

Email address

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Recruitment status

Recruitment complete

Funding source

Private funding source for thesis

Expected recruitment start date

2012-05-21, 1391/03/01

Expected recruitment end date

2012-05-30, 1391/03/10

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Effect of short-term garlic supplementation in two different dose on total antioxidant capacity and some markers of serum oxidative stress in rest and induced-exercise exhaustive in soccer players

Public title

Garlic effect on soccer-induced oxidative stress

Purpose

Basic science

Inclusion/Exclusion criteria

Inclusion criteria: Male Soccer players (aged 18-23 years, 55-65 ml/kg/min and BMI 20-22 kg/m²). Exclusion criteria: chronic diseases, injuries, uncontrolled intake of oxidative supplements or anti-inflammatory drugs and stimulants (such as caffeine ...).

Age

From **18 years** old to **23 years** old

Gender

Male

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **30**

Randomization (investigator's opinion)

Randomized

Randomization description

Blinding (investigator's opinion)

Double blinded

Blinding description

Placebo

Used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Tabriz University of Medical Sciences

Street address

Golgasht St. Daneshgah St. Tabriz

City

Tabriz

Postal code

Approval date

2010-12-26, 1389/10/05

Ethics committee reference number

9062

Health conditions studied

1

Description of health condition studied

Exercise-induced Oxidative damages

ICD-10 code

Y57.9

ICD-10 code description

Drug or medicament, unspecified

Primary outcomes

1

Description

Total Serum Creatine kinase (CK)

Timepoint

Before and after two shuttle run tests

Method of measurement

photometric methods with commercial kits (Pars-Azmoon)

2

Description

Total antioxidant capacity

Timepoint

Before and after two shuttle run tests

Method of measurement

FRAP

3

Description

Malondialdehyde

Timepoint

Before and after two shuttle run tests

Method of measurement

photometric methods

Secondary outcomes

1

Description

Peripheral blood leukocytes counts

Timepoint

Before and after two shuttle run tests

Method of measurement

It will determine by automatic analyzer

Intervention groups

1

Description

Before and after 14-days supplementation, each subjects (The placebo and two experiment groups) will participate in shuttle run test.

Category

Other

2

Description

Placebo group will intake 1200 mg/day for 14 days.

Category

Placebo

3

Description

Garlice intake (1200 mg/day for 14 days) in Experiment group 1.

Category

Treatment - Drugs

4

Description

Garlice intake (2400 mg/day for 14 days) in Experiment group 2.

Category

Treatment - Drugs

Recruitment centers

1

Recruitment center

Name of recruitment center

The Soccer Board of East Azerbaijan

Full name of responsible person

Dr Afshar Jafari

Street address

Faculty of physical education & sports sciences,
University of Tabriz, Tabriz, Iran

City

Tabriz

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Hakim Sabzevari University

Full name of responsible person

Dr Afshar Jafari

Street address

Iran , khorasan Razavi , Sabzevar , Hakim Sabzevari
University

City

Sabzevar

Grant name

Grant code / Reference number

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

Yes

Title of funding source

Hakim Sabzevari University

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

Person responsible for scientific inquiries

Contact

Name of organization / entity

University of Tabriz

Full name of responsible person

Dr Afshar Jafari

Position

PhD in Molecular Exercise Physiology

Other areas of specialty/work

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University of Tabriz, Tabriz, Iran.

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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