Clinical Trial Protocol
Iranian Registry of Clinical Trials

10 Jun 2026

Evaluation of the effect of oral consumption of N-acetyl Cysteine in reducing the injuries caused by a single bout of exhaustive exercise in untrained young subjects

Protocol summary

Summary

The aim of the current study was to evaluate the effect of N-acetyl cysteine (NAC) supplementation on markers of oxidative stress and inflammatory response during a single bout of exhaustive exercise.Inclusion criteria were, participants aged between 21 and 25, either sex and exclusion criteria were, subjects who were consuming energetic drugs, smokers and those having any type of regular sport activity. In a randomized placebo-controlled double-blind clinical trial, thirty healthy, untrained young university students from both sex (males and females) with the age between 21 and 25 were selected and divided into 2 groups,including case (600 mg of effervescent tablets of N-acetyl Cysteine) and the control group(placebo Neutral cellulose) .Starting 24 hours before the supplementation ,blood samples were taken from all the subjects. The next blood samples were collected just before the exercise started, immediately after the exhaustive exercise (on flat treadmill running) and after one hour at rest. Malondialdehyde (MDA), total antioxidative capacity (TAC), CRP, BMI and Vo2 max were determined.We hypothesize that consumption of oral N-acetyl Cysteine before an exhaustive exercise reduces the parameters of oxidation stress and inflammation.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT201208238129N2**
Registration date: **2013-05-10, 1392/02/20**
Registration timing: **prospective**

Last update:
Update count: **0**

Registration date

2013-05-10, 1392/02/20

Registrant information

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Recruitment status

Recruitment complete

Funding source

provided by the main researcher, with the help of deputy of research, Bushehr University of Medical Sciences

Expected recruitment start date

2013-05-22, 1392/03/01

Expected recruitment end date

2013-05-31, 1392/03/10

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Evaluation of the effect of oral consumption of N-acetyl Cysteine in reducing the injuries caused by a single bout of exhaustive exercise in untrained young subjects

Public title

Effect of N-acetyl cysteine in reducing the injuries caused by exhaustive exercise

Purpose

Prevention

Inclusion/Exclusion criteria
Inclusion criteria: participants aged between 21 and 25; either sex; having Vo2 max between 35 to 40 ml/kg/min ; and living in the same dormitory ; all having the same type of food. Exclusion criteria: subjects who were consuming energetic drugs; smokers; those having any type of regular sport activity.
Age
From **21 years** old to **25 years** old
Gender
Both

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
Research Deputy Adviser,Bushehr University of Medical Sciences
Street address
Bushehr University of Medical Sciences,Reshehr street, Next to Salmon farsi Hospital, Bahmani,Bushehr,Iran.
City
Bushehr
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987518759577
Approval date
2013-04-23, 1392/02/03
Ethics committee reference number
B-15-92-2

Health conditions studied

1

Description of health condition studied
oxidative stress injuries
ICD-10 code
-
ICD-10 code description
-

Primary outcomes

1

Description
Total antioxidant capacity
Timepoint
Before the consumption of drug; one hour before start of the exercise;Immidiately after exercise;after one at rest hour
Method of measurement
By ELISA method and commercial kits

2

Description
C-reactive protein (CRP)
Timepoint
Before the consumption of drug; one hour before start of the exercise;Immidiately after exercise;after one at rest hour
Method of measurement
By ELISA method and commercial kits

3

Description
Malondealdehyde
Timepoint
Before the consumption of drug; one hour before start of the exercise;Immidiately after exercise;after one at rest hour
Method of measurement
By spectraphothometry

Secondary outcomes

1

Description
BMI
Timepoint
Before the trial
Method of measurement
weight in kilograms divided by the square of height in meters

2

Description
Vo2 max
Timepoint
Before and after the trial
Method of measurement
Cooper Standard Aerobic Test was used

Intervention groups

1

Description
Intervention group:effervescent tablets of N-acetyl cysteine as 4 times starting 24 hours before the trial
Category
Prevention

2

Description
placebo group: dextrose %3 as dissolved in water
Category
Placebo

Recruitment centers

1

Recruitment center
Name of recruitment center
The Persien Gulf Biomedical Research Institute
Full name of responsible person
Ali Movahed
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Sponsors / Funding sources

1

Sponsor
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Deputy of Research,Bushehr University of Medical Sciences
Full name of responsible person
Afshin Ostowar
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Bushehr University of Medical Sciences,Reshehr Street, Next to Salmon Farsi Hospital, Bahmani.
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Bushehr
Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Deputy of Research,Bushehr 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

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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