Clinical Trial Protocol
Iranian Registry of Clinical Trials

07 Nov 2026

Effect of a single resistance training session and acute different dosages of caffeine intake on some DOMS indices in male volleyball players

Protocol summary

Summary

Present study will perform in order to determine the effect of single-session resistance training and acute caffeine intake with different doses on delayed muscle soreness markers in male volleyball players. Therefore, thirty elite male volleyball players (age range 25-20 years) will participate in a quasi-experimental, repeated measured and double-blind design. The subjects will allocate in three randomized homogeneous groups: placebo (Dextrose intake: 6 mg/kg/body weight), supplement group1 (caffeine intake: 6 mg/kg/body weight) and supplement group2 (caffeine intake: 9 mg/kg/body weight). All subjects will participate in a single-session resistance weight- training (Seven stations with 80% of one repetition maximum, 3 sets per station). Blood samples will taken at three stages (before and 45 min after supplementation, and 24 hours after the exercise). Biochemical markers (Creatine kinase, lactate dehydrogenase, alanine amino transferase and amino transferase) and inflammatory (Tumor necrosis factor-alpha and C-reactive protein), along with some physical indicators related to delayed muscle will determine. The serum biochemical and peripheral blood leukocytes counts will determine by spectrophotometer and automatic analyzer, respectively. The serum inflammatory will measure by ELISA and Immunoturbidometric methods, respectively.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT201112244663N7**
Registration date: **2011-12-30, 1390/10/09**
Registration timing: **retrospective**

Last update:
Update count: **0**

Registration date

2011-12-30, 1390/10/09

Registrant information

Name
Afshar Jafari
Name of organization / entity
University of Tabriz
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Iran (Islamic Republic of)
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ajafari@tabrizu.ac.ir

Recruitment status

Recruitment complete

Funding source

University of Tabriz

Expected recruitment start date

2011-05-22, 1390/03/01

Expected recruitment end date

2011-06-22, 1390/04/01

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Effect of a single resistance training session and acute different dosages of caffeine intake on some DOMS indices in male volleyball players

Public title

Different doses effect of caffeine on muscle soreness

Purpose

Basic scienece

Inclusion/Exclusion criteria

Inclusion criteria : Healthy elite male volleyball players,

age 20-25 years, at least 5 years sport history, without any inflammatory, medical drugs, dietary xanthines and supplementor anabolic steroids ingestion during 6 months prior to the study. Exclusion criteria :Chronic disease, injuries, caffeine consumers(>100 mg.d-1), High jump laste than 45 cm, fat percent higher than 15 %.

Age
From **20 years** old to **25 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
2011-11-16, 1390/08/25

Ethics committee reference number
9046

Health conditions studied

1

Description of health condition studied
Exercise-induced damages

ICD-10 code
Y57.9

ICD-10 code description
Drug or medicament, unspecified

Primary outcomes

1

Description
Total Serum Cereatine kinase (CK)

Timepoint
Before(45 min) and after supplementation and 24 h after resistance exercise

Method of measurement
photometric methods with commercial kits (Pars-Azmoon)

2

Description
Serum total lactate dehydrogenase (LDH)

Timepoint
Before(45 min) and after supplementation and 24 h after resistance exercise

Method of measurement
photometric methods with commercial kits (Pars-Azmoon)

3

Description
Serum Alanine Transaminase (ALT)

Timepoint
Before(45 min) and after supplementation and 24 h after resistance exercise

Method of measurement
photometric methods with commercial kits (Pars-Azmoon)

4

Description
Serum Aspartate Transaminase (AST)

Timepoint
Before(45 min) and after supplementation and 24 h after resistance exercise

Method of measurement
photometric methods with commercial kits (Pars-Azmoon)

5

Description
Serum C-reactive protein (hs-CRP)

Timepoint
Before(45 min) and after supplementation and 24 h after resistance exercise

Method of measurement
immunoturbidometric assay with commercial kits (Pars-Azmoon)

6

Description
Serum Tumor necrosis factor α (TNF-α)

Timepoint
Before(45 min) and after supplementation and 24 h after

resistance exercise

Method of measurement

ELISA methods with commercial kits (eBioscience:BMS2034)

Secondary outcomes

1

Description

The peak power of lower limb

Timepoint

Before, immediately and 24 h after resistance exercise

Method of measurement

Sargent Vertical Jump Test

2

Description

Perception of muscle soreness

Timepoint

Before, immediately and 24 h after resistance exercise

Method of measurement

Verbal-descriptive Talag questionnaire

3

Description

Flexibility of back and lower limb

Timepoint

Before, immediately and 24 h after resistance exercise

Method of measurement

The sit and reach test (Velez test)

4

Description

The maximum isometric strenght of back and lower limb

Timepoint

Before, immediately and 24 h after resistance exercise

Method of measurement

Dynamometer

Intervention groups

1

Description

Placebo group: Dextrose Intake (6mg/kg/day), along with a single session of resistance tarining (7 Stations, 80% 1RM, 3 sets)

Category

Placebo

2

Description

Supplement group1: caffeine intake (6 mg/kg/day), along with a single session of resistance tarining (7 Stations, 80% 1RM, 3 sets)

Category

Other

3

Description

Supplement group2: caffeine intake (9 mg/kg/day), along with a single session of resistance tarining (7 Stations, 80% 1RM, 3 sets)

Category

Other

Recruitment centers

1

Recruitment center

Name of recruitment center

The Volleyball 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

University of Tabriz

Full name of responsible person

Dr Hamidreza Ghassemzadeh

Street address

University of Tabriz, 29 Bahman Ave, Tabriz, Iran.

City

Tabriz

Grant name

بودجه‌ی مربوط به پایان نامه های تحصیلات تکمیلی دانشگاه تبریز

Grant code / Reference number

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

Yes

Title of funding source

University of Tabriz

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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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