

Clinical Trial Protocol

Iranian Registry of Clinical Trials

17 Sep 2026

Effect of L-Carnitine (LC) and conjugated linoleic acid (CLA) supplements on hemoglobin levels in CKD patients with different haptoglobin genotype

Protocol summary

Summary

Objectives: Anemia is one of the complications in chronic renal failure. Patients treated with recombinant erythropoietin show resistance to erythropoietin treatment with increased risk of death. Haptoglobin is the main serum protein involved in hemoglobin metabolism with the anti-inflammatory property. Due to inhibitory effects of L-carnitine (LC) and conjugated linoleic acid (CLA) on inflammatory markers, lipid peroxidation and apoptosis, they can be used to treat anemia. The aim of current study is to investigate the effect of LC and CLA supplements on hemoglobin levels and inflammatory markers in male patients with chronic anemic kidney disease. Design: After obtaining written informed consent, patients will be selected by a physician, and then demographic and anthropometric factors will be gathered for 40 patients. Setting and Conduct: At the beginning of study, 7 ml of blood sample will be taken to measure the haptoglobin levels, IL-6, hs-CRP, iron, ferritin, TIBC, hemoglobin and hematocrit. Intervention: 1000 mg LC and 2400 mg CLA supplements will be given daily for a month. Blood samples will be taken at the end of study to measure above mentioned factors. Participants including major eligibility criteria: Anemic male patients with chronic kidney disease and ages above 20 years. Women and patients with diabetes; cardiovascular and lung disease will be excluded.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT201503055144N7**
Registration date: **2017-05-18, 1396/02/28**
Registration timing: **retrospective**

Last update:

Update count: **0**

Registration date

2017-05-18, 1396/02/28

Registrant information

Name

Ali Nemati

Name of organization / entity

Ardabil University of Medical Sciences

Country

Iran (Islamic Republic of)

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+98 45 3351 0052

Email address

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Recruitment status

Recruitment complete

Funding source

Ardabil University of Medical Sciences

Expected recruitment start date

2015-08-23, 1394/06/01

Expected recruitment end date

2017-02-19, 1395/12/01

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Effect of L-Carnitine (LC) and conjugated linoleic acid (CLA) supplements on hemoglobin levels in CKD patients with different haptoglobin genotype

Public title

Effect of L-Carnitine (LC) and conjugated linoleic acid (CLA) supplements on hemoglobin levels in CKD patients

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria: Male patients with anemic chronic kidney disease over 20 years old
Exclusion criteria: Women; Male patients with other disease such as cardiovascular; lung disease; diabetes

Age

From **20 years** old to **80 years** old

Gender

Male

Phase

3

Groups that have been masked

No information

Sample size

Target sample size: **40**

Randomization (investigator's opinion)

N/A

Randomization description

Blinding (investigator's opinion)

Not blinded

Blinding description

Placebo

Not used

Assignment

Single

Other design features

Secondary Ids

1

Registry name

کمیته اخلاق دانشگاه علوم پزشکی اردبیل

Secondary trial Id

Arums.REC.93.95

Registration date

2015-08-20, 1394/05/29

Ethics committees

1

Ethics committee

Name of ethics committee

Ethic Committee of Ardabil University of Medical Sciences

Street address

Ethic Committee of Ardabil University of Medical Sciences, Vice Chancellor for Research, Ardabil University of Medical Sciences, Daneshgah Avenue, Ardabil, Iran

City

Ardabil

Postal code

5318985991

Approval date

2015-08-20, 1394/05/29

Ethics committee reference number

Arums.REC.93.95

Health conditions studied

1

Description of health condition studied

Renal failure

ICD-10 code

N17- N19

ICD-10 code description

N18.2-N18.4

Primary outcomes

1

Description

Anemia

Timepoint

At the end of study

Method of measurement

Measurement of hemoglobin and hematocrit

Secondary outcomes

1

Description

Height

Timepoint

At the beginning of intervention

Method of measurement

Stadiometers

2

Description

L-Carnitine

Timepoint

One month

Method of measurement

Milligram

3

Description

Conjugated linoleic acid

Timepoint

One month

Method of measurement

Milligram

4

Description

Weight

Timepoint

At the beginning and end of intervention

Method of measurement

Digital scales

5

Description

Hemoglobin

Timepoint

At the beginning and end of intervention

Method of measurement

Cell counter

6

Description

Hematocrit

Timepoint

At the beginning and end of intervention

Method of measurement

Cell counter

7

Description

Serum iron

Timepoint

At the beginning and end of intervention

Method of measurement

Photometric method

8

Description

Serum Ferritin

Timepoint

At the beginning and end of intervention

Method of measurement

Chemiluminescence immunoassay

9

Description

hsCRP

Timepoint

At the beginning and end of intervention

Method of measurement

Immunometric method

10

Description

Serum TIBC

Timepoint

At the beginning and end of intervention

Method of measurement

Photometric method

11

Description

Serum interleukin-6

Timepoint

At the beginning and the end of intervention

Method of measurement

ELISA

12

Description

DNA extraction

Timepoint

At the end of intervention

Method of measurement

Cinnagen kit

13

Description

Haptoglobin genotype

Timepoint

At the end of intervention

Method of measurement

PCR method

Intervention groups

1

Description

Given 1000 milligram L-carnitine and 2400 milligram CLA per day for 30 days

Category

Treatment - Drugs

Recruitment centers

1

Recruitment center

Name of recruitment center

Ardabil University Of Medical Science

Full name of responsible person

Ali Nemati

Street address

Biochemistry Dept., Faculty of Medicine, Ardabil University of Medical Sciences, Ardabil, Iran

City

Ardabil

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Vice Chancellor for Research Ardabil University of Medical Sciences

Full name of responsible person

Mohsen Sagha

Street address

Vice Chancellor for Research Ardabil University of Medical Sciences, Ardabil University of Medical Sciences, Daneshgah Avenue, Ardabil, Iran

City

Ardabil

Grant name

Grant code / Reference number

Is the source of funding the same sponsor

organization/entity?

Yes

Title of funding source

Vice Chancellor for Research Ardabil 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*

University of Medical Sciences, Daneshgah Avenue, Ardabil, Iran.

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Full name of responsible person

Ali Nemati

Position

PhD of Nutrition

Other areas of specialty/work**Street address**

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Web page address<http://www.arums.ac.ir>**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***Person responsible for scientific inquiries****Contact****Name of organization / entity**

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Position

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