Clinical Trial Protocol
Iranian Registry of Clinical Trials

25 Jun 2026

Effect of coenzyme Q10 on total antioxidant capacity, malondialdehyde, superoxide dismutase and glutathione peroxidase in multiple sclerosis patients

Protocol summary

Summary

The aim of this study is to investigate the effect of coenzyme Q10 supplementation on serum level of antioxidant factors in multiple sclerosis patients. In this parallel randomized controlled trial, 50 men and women with multiple sclerosis will be recruited from center of multiple sclerosis of Sina hospital of Tehran university of medical science. Inclusion criteria are adults 18-51 years old, able to provide informed consent and diagnosed with relapsing remitting MS. Exclusion criteria are: MS exacerbation during of study, systemically administered corticosteroids during the study, pregnant or breast-feeding, other significant health problem (e.g. active coronary heart disease, liver disease, pulmonary disease, diabetes mellitus and other autoimmune disease) that might increase the risk of subject experiencing adverse events; consumption of vitamin, mineral and antioxidant supplement 30 days before study entry, any condition which would make the subject, in the opinion of the investigator, unsuitable for the study and compliance less than 70%. Prior to the study, the subjects will be required to complete 3-days 24-hour dietary recall. Diets will be analyzed for calorie and macronutrients and copper, iron, zinc and manganese content. Intervention group receives 500 mg of coenzyme Q10 as 2 capsules and other group receives 2 placebo capsules. Blood samples will be obtained after an overnight fast before and after the study.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT201102052602N5**
Registration date: **2011-02-08, 1389/11/19**
Registration timing: **prospective**
Last update:
Update count: **0**

Registration date

2011-02-08, 1389/11/19

Registrant information

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Recruitment status

Recruitment complete

Funding source

Vice Chancellor for Research of Tehran university of Medical Sciences

Expected recruitment start date

2011-04-05, 1390/01/16

Expected recruitment end date

2012-03-04, 1390/12/14

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Effect of coenzyme Q10 on total antioxidant capacity, malondialdehyde, superoxide dismutase and glutathione peroxidase in multiple sclerosis patients

Public title

Effects of coenzyme Q10 on antioxidant factors in multiple sclerosis

Purpose
Supportive

Inclusion/Exclusion criteria
Inclusion criteria: age 18-51 years, able to provide informed consent and diagnosed with relapsing remitting MS. Exclusion criteria: MS exacerbation during the study, systemically administered corticosteroids during the study , pregnant or breast-feeding , other significant health problem (e.g. active coronary heart disease, liver disease, pulmonary disease, diabetes mellitus and other autoimmune disease) that might increase the risk of subject experiencing adverse events. Consumption of vitamin, mineral and antioxidant supplement 30 days before study entry, Any condition which would make the subject, in the opinion of the investigator, unsuitable for the study and compliance less than 70%.

Age
From **18 years** old to **51 years** old

Gender
Both

Phase
3

Groups that have been masked
No information

Sample size
Target sample size: **50**

Randomization (investigator's opinion)
Randomized

Randomization description

Blinding (investigator's opinion)
Single blinded

Blinding description

Placebo
Used

Assignment
Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee
School of Health, Iran University of Medical Sciences

Street address
Alvand Ave, Arjanteen Square

City
Tehran

Postal code

Approval date
2010-08-20, 1389/05/29

Ethics committee reference number
2402

Health conditions studied

1

Description of health condition studied
multiple sclerosis

ICD-10 code
G35

ICD-10 code description
Multiple sclerosis

Primary outcomes

1

Description
decrease of serum MDA (malondialdehyde) concentration

Timepoint
12 week

Method of measurement
Spectrophotometry

2

Description
increase of glutathione peroxidase

Timepoint
12 week

Method of measurement
Spectrophotometry

3

Description
increase of SOD (superoxide dismutase)

Timepoint
12 week

Method of measurement
Spectrophotometry

4

Description
TAC (total antioxidant capacity)

Timepoint
12 week

Method of measurement
colorimetry

Secondary outcomes

empty

Intervention groups

1

Description
control group: 1 capsule/day including placebo

Category
Placebo

2

Description
Q10 supplement (500mg/day) for 90 days
Category
Treatment - Drugs

Recruitment centers

1

Recruitment center
Name of recruitment center
MS research center of Sina hospital
Full name of responsible person
Street address
City
Tehran

Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Tehran University of Medical Sciences
Full name of responsible person
Dr. Mohsen Asadi Lari
Street address
Hemmat highway
City
Tehran
Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Tehran 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

Person responsible for general inquiries

Contact
Name of organization / entity
School of Health, Iran University of Medical Sciences
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Dr Shahriar Eghtesadi
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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