Clinical Trial Protocol
Iranian Registry of Clinical Trials

16 Sep 2026

Evaluation of Effects of Exercise Training on Oxidative Stress Parameters in Hemodialysis Patients.

Protocol summary

Summary

This study is aimed to investigate the effect of exercise on oxidative stress in hemodialysis patients. Eighteen subjects will be selected from patients undergoing chronic hemodialysis three times a week in a treatment center. The patients must have no limit for and being interested in doing exercise. They will be enrolled in an exercise program that will be performed during each hemodialysis session for eight weeks. Meanwhile, 18 patients undergoing hemodialysis with the same condition will be selected as the control group. The exercise will be cycling with a minibike during the first hour of dialysis. The exercise will last 20-30 minutes, with a maximum time of 45 minutes, depending on patient's endurance. Before the begining of hemodialysis session and exercise, blood samples will be taken from the patients in each group and will be stored for later evaluation on inflammatory markers, including albumin, C-reactive protein (CRP), white blood cells, and serum ferritin. Other parameters such as nitrosative stress factors and the end products of lipid peroxidation such as malondialdehyde will be also examined. In addition, total plasma antioxidant capacity such as ferric ion reducing capacity, and thiol group including glutathione will be assessed. After eight weeks exercise, all the mentioned parameters will be measured again in both groups. Finally, the results of the tests before and after the eight weeks will be compared between groups.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2017040433205N1**
Registration date: **2017-06-19, 1396/03/29**
Registration timing: **registered_while_recruiting**

Last update:
Update count: **0**

Registration date

2017-06-19, 1396/03/29

Registrant information

Name
Azadeh Saber
Name of organization / entity
Kerman University of Medical Sciences
Country
Iran (Islamic Republic of)
Phone
+98 34 3211 5780
Email address
a.saber@kmu.ac.ir

Recruitment status

Recruitment complete

Funding source

Vice Chancellor for Research, Kerman University of Medical Sciences

Expected recruitment start date

2017-04-20, 1396/01/31

Expected recruitment end date

2017-09-21, 1396/06/30

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Evaluation of Effects of Exercise Training on Oxidative Stress Parameters in Hemodialysis Patients.

Public title

Effects of Exercise on Hemodialysis Patients.

Purpose

Supportive

Inclusion/Exclusion criteria

Inclusion criteria: Patients under hemodialysis three times a week who are interested to do exercise.
Exclusion criteria: Any infectious or inflammatory disease or active malignancy; Limited circumstances for exercise such as: atopy, asthma, known ischemic heart disease or history of heart attack during past three months; a history of stroke or transient ischemic attack during past three months; Any disorder in the musculoskeletal system such as osteoarthritis, osteoporosis, joint problems and any disability that prevents exercise; Hypoxia; Fever.

Age
No age limit

Gender
Both

Phase
2

Groups that have been masked
No information

Sample size
Target sample size: **36**

Randomization (investigator's opinion)
Not randomized

Randomization description

Blinding (investigator's opinion)
Not blinded

Blinding description

Placebo
Not used

Assignment
Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee
Ethics Committee of Kerman University of Medical Sciences

Street address
Central Organization of the University, Shafa crossroad, Jomhori Eslami Blvd, Kerman

City
Kerman

Postal code

Approval date
2007-02-25, 1385/12/06

Ethics committee reference number
95000141

Health conditions studied

1

Description of health condition studied
Chronic hemodialysis patients

ICD-10 code
Z49.1

ICD-10 code description
Extracorporeal dialysis

Primary outcomes

1

Description
Uric Acid

Timepoint
before and after exercise(8 weeks interval)

Method of measurement
biochemistery tests

2

Description
Albumin

Timepoint
before and after exercise(8 weeks interval)

Method of measurement
biochemistry test

3

Description
Ferritin

Timepoint
before and after exercise(8 weeks interval)

Method of measurement
biochemistry test

4

Description
White Blood Cell

Timepoint
before and after exercise(8 weeks interval)

Method of measurement
biochemistry test

5

Description
Chain Reactive Protein

Timepoint
before and after exercise(8 weeks interval)

Method of measurement
biochemistry test

6

Description
Carbonyl Group

Timepoint
before and after exercise(8 weeks interval)

Method of measurement
Spectrophotometry

7

Description
Malondialdeid
Timepoint
before and after exercise(8 weeks interval)
Method of measurement
Spectrophotometry

8

Description
Ferric Ion Reductive Ability
Timepoint
before and after exercise(8 weeks interval)
Method of measurement
Spectrophotometry

Secondary outcomes

empty

Intervention groups

1

Description
Intervention group: Exercise includes cycling with minicycle on the bed in the first hour of every dialysis session and exercise timing has been planned to be less than the tolerance level of the patients. Every session lasts 4 hours and the sessions will be held 3 times a week (every other day) for 8 weeks.
Category
Rehabilitation

2

Description
Control group: not any exercise during hemodialysis session
Category
N/A

Recruitment centers

1

Recruitment center
Name of recruitment center
Hemodialysis Center; Shafa Hospital; Kowsar Blvd; Kerman
Full name of responsible person
Dr.Azadeh Saber
Street address
Shafa Hospital, Kowsar Blvd, Kerman
City
Kerman

Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Vice Chancellor for Research, Kerman University of Medical Sciences; Haft Baghe Alavi Highway; Kerma
Full name of responsible person
Dr.Pardakhty
Street address
Research Center, University Paradise, Kerman University of Medical Sciences; Haft Baghe Alavi Highway; Kerman Province
City
kerman
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, Kerman University of Medical Sciences; Haft Baghe Alavi Highway; Kerma
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
University campus, Kerman University of Medical Sciences; Haft Baghe Alavi Highway; Kerman Province
Full name of responsible person
Azadeh Saber
Position
Nephrology Subspecialist
Other areas of specialty/work
Street address
Nephrology Ward; Shafa Hospital; Kowsar Blvd; Kerman
City
Kerman
Postal code
Phone
+98 34 3121 7243
Fax
Email
a.saber@kmu.ac.ir
Web page address

Person responsible for scientific inquiries

Contact

Name of organization / entity
University campus, Kerman University of Medical Sciences; Haft Baghe Alavi Highway; Kerman Province
Full name of responsible person
Azadeh Saber
Position
Nephrology Subspecialist
Other areas of specialty/work
Street address
Nephrology Ward; Shafa Hospital; Kowsar Blvd; Kerman
City
Kerman
Postal code
7618751151
Phone
+98 34 3121 7243
Fax
Email
a.saber@kmu.ac.ir
Web page address

Person responsible for updating data

Contact
Name of organization / entity
University campus, Kerman University of Medical Sciences; Haft Baghe Alavi Highway; Kerman Province
Full name of responsible person
Azadeh Saber
Position
Nephrology Subspecialist
Other areas of specialty/work
Street address
Nephrology Ward; Shafa Hospital; Kowsar Blvd; Kerman
City
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Postal code
7618751151
Phone
+98 34 3121 7243
Fax
Email
a.saber@kmu.ac.ir
Web page address

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