Clinical Trial Protocol
Iranian Registry of Clinical Trials

10 Jun 2026

The effect of probiotic capsule supplementation on clinical symptoms, lipid profiles, insulin sensitivity, inflammatory factors and biomarkers of oxidative stress in substance dependent patients under methadone maintenance treatment

Protocol summary

Study aim
The aim of this study is to determine the effects of Probiotic supplementation on mental health parameters and metabolic profiles in methadone maintenance treatment patients

Design
Study design: Parallel double-blind (both patients and researchers) randomized controlled clinical trial.

Settings and conduct
Population and sample size: among patients under methadone maintenance treatment referred to Sultan Mir Ahmad Clinic affiliated to Kashan University of Medical Sciences, 70 patients will be selected according to inclusion and exclusion criteria. Participants, investigators or the assessors of the outcomes are unaware of the study groups. Supplements and placebos are similar in shape and size. Fasting blood samples will be taken at baseline and 12 weeks after the intervention. Time of intervention: 12 weeks.

Participants/Inclusion and exclusion criteria
Inclusion criteria: patients on methadone maintenance treatment and aged 18 to 60 years old will be included in this study. Exclusion criterion: unwillingness to cooperate.

Intervention groups
Intervention group: probiotic oral capsule containing four strains of Lactobacillus acidophilus (2×109 CFU/g), Bifidobacterium lactis (2×109 CFU/g), Bifidobacterium bifidus (2×109 CFU/g) and bifidobacterium longum (2×109 CFU/g), daily, for 12 weeks. Control group: probiotic placebos capsule, daily for 12 weeks orally.

Main outcome variables
Depression; anxiety (primary outcome) and fasting plasma glucose; Insulin; triglycerides; total cholesterol; HDL; Hs-CRP; total antioxidant; glutathione; malondialdehyde (secondary outcome).

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20170420033551N9**
Registration date: **2020-03-22, 1399/01/03**
Registration timing: **prospective**

Last update: **2020-03-22, 1399/01/03**
Update count: **0**

Registration date
2020-03-22, 1399/01/03

Registrant information

Name
Amir Ghaderi

Name of organization / entity
Kashan University of Medical Sciences

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Iran (Islamic Republic of)

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Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2020-04-17, 1399/01/29

Expected recruitment end date
2020-05-18, 1399/02/29

Actual recruitment start date
empty

Actual recruitment end date
empty

Trial completion date
empty

Scientific title
The effect of probiotic capsule supplementation on clinical symptoms, lipid profiles, insulin sensitivity, inflammatory factors and biomarkers of oxidative stress in substance dependent patients under methadone maintenance treatment

Public title
Effect of probiotic supplementation in treatment of methadone maintenance treatment patients

Purpose
Treatment

Inclusion/Exclusion criteria

Inclusion criteria:
Patients under methadone maintenance treatment Age of 18 to 60 years old

Exclusion criteria:
Unwillingness to cooperate Taking probiotic, multivitamin-mineral and antioxidant supplements during the last 3 months before the intervention Current severe depression and mania Psychosis Major cardiovascular disorder

Age
From **18 years** old to **60 years** old

Gender
Both

Phase
3

Groups that have been masked

- Participant
- Investigator
- Outcome assessor

Sample size
Target sample size: **70**

Randomization (investigator's opinion)
Randomized

Randomization description
Randomization will be performed with simple method and random numbers generated by computer software (Stat Trek software) which choose the random numbers. Then, we consider the specific numbers for both groups for example: the even numbers are for intervention group and the odd numbers are for the placebo group.

Blinding (investigator's opinion)
Double blinded

Blinding description
Randomization and allocation will be concealed from the researchers and participants until the final analyses are completed. Another person at the clinic, who is not involved in the trial and not aware of random sequences, will be assigned the participants to the numbered bottles of supplements. Supplements and placebos are in the same packaging at the Barij Essence pharmaceutical company. Only the code is written on the packages. Patients and researcher do not know the type of intervention and after analyzing the data, packet codes are decoded.

Placebo
Used

Assignment
Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee
Ethics committee of Kashan University of Medical Sciences

Street address
Ghotbe Ravandi Boulevard, Kashan

City
Kashan

Province
Isfehan

Postal code
8814187159

Approval date
2020-01-06, 1398/10/16

Ethics committee reference number
IR.KAUMS.MEDNT.REC.1398.116

Health conditions studied

1

Description of health condition studied
Addiction

ICD-10 code
F19

ICD-10 code description
Other psychoactive substance related disorders

Primary outcomes

1

Description
Depression

Timepoint
At the beginning of the study and after 12 weeks of intervention

Method of measurement
Beck Depression Inventory (BDI)

2

Description
Anxiety

Timepoint
At the beginning of the study and after 12 weeks of intervention

Method of measurement
Beck Anxiety Inventory (BAI)

Secondary outcomes

1

Description
Fasting plasma glucose
Timepoint
At the beginning of the study and after 12 weeks of intervention
Method of measurement
Enzymatic kit

2

Description
Insulin
Timepoint
At the beginning of the study and after 12 weeks of intervention
Method of measurement
Elisa kit

3

Description
Triglycerides
Timepoint
At the beginning of the study and after 12 weeks of intervention
Method of measurement
Enzymatic kit

4

Description
Total cholesterol
Timepoint
At the beginning of the study and after 12 weeks of intervention
Method of measurement
Enzymatic kit

5

Description
HDL
Timepoint
At the beginning of the study and after 12 weeks of intervention
Method of measurement
Enzymatic kit

6

Description
Hs-CRP
Timepoint
At the beginning of the study and after 12 weeks of intervention
Method of measurement
Elisa kit

7

Description
Total antioxidant
Timepoint
At the beginning of the study and after 12 weeks of intervention
Method of measurement
Spectrophotometry

8

Description
Glutathione
Timepoint
At the beginning of the study and after 12 weeks of intervention
Method of measurement
Spectrophotometry

9

Description
Malondialdehyde
Timepoint
At the beginning of the study and after 12 weeks of intervention
Method of measurement
Spectrophotometry

10

Description
Nitric oxide
Timepoint
At the beginning of the study and after 12 weeks of intervention
Method of measurement
Spectrophotometry

Intervention groups

1

Description
Intervention group: Probiotic oral capsule containing four strains of Lactobacillus acidophilus (2×109 CFU/g), Bifidobacterium lactis (2×109 CFU/g), Bifidobacterium bifidus (2×109 CFU/g) and bifidobacterium longum (2×109 CFU/g), daily, for 12 weeks.
Category
Treatment - Drugs

2

Description
Control group: Placebo, daily, for 12 weeks orally.
Category
Treatment - Drugs

Recruitment centers

1

Recruitment center

Name of recruitment center
Sultan Mir Ahmad Clinic

Full name of responsible person
Amir Ghaderi

Street address
Motahari Avenue, Kashan

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8115187159

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity
Kashan University of Medical Sciences

Full name of responsible person
Hamid Reza Banafshe

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+98 31 5554 2999

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banafshe57@hotmail.com

Grant name

Grant code / Reference number

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

Title of funding source
Kashan University of Medical Sciences

Proportion provided by this source
100

Public or private sector
Public

Domestic or foreign origin
Domestic

Category of foreign source of funding
empty

Country of origin

Type of organization providing the funding
Academic

Person responsible for general inquiries

Contact

Name of organization / entity
Kashan University of Medical Sciences

Full name of responsible person
Amir Ghaderi

Position
Assistant Professor

Latest degree
Ph.D.

Other areas of specialty/work
Ph.D of addiction

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Person responsible for updating data

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Sharing plan

Deidentified Individual Participant Data Set (IPD)
Undecided - It is not yet known if there will be a plan to make this available
Study Protocol
Undecided - It is not yet known if there will be a plan to make this available
Statistical Analysis Plan
Undecided - It is not yet known if there will be a plan to make this available
Informed Consent Form
Undecided - It is not yet known if there will be a plan to make this available
Clinical Study Report
Undecided - It is not yet known if there will be a plan to make this available
Analytic Code
Undecided - It is not yet known if there will be a plan to make this available
Data Dictionary
Undecided - It is not yet known if there will be a plan to make this available