Clinical Trial Protocol
Iranian Registry of Clinical Trials

14 Jul 2026

Examination of the effect of silybum marianum on thyroid and antioxidant capacity in patients with bipolar disorders under the treatment of lithium

Protocol summary

Study aim

Determination of the silymarin's effect on thyroid parameters in patients with bipolar disorder treated with lithium.

Design

Phase III clinical trial, with control group, with parallel groups, double blind, randomized, two groups consisting of 20 eligible individuals.

Settings and conduct

This study will be performed on patients admitted to hospitalize and outpatient of Farshchian Sina Hospital of Hamadan University of Medical Sciences and the relevant psychiatrist's office. Bipolar disorder is diagnosed in patients by a psychiatrist based on DSM-5. Patients were randomly divided into either drug or placebo groups. In the drug group, in addition to the standard treatments for depression in bipolar depression, silymarin is used at a dose of 140 mg daily for 16 weeks. In the placebo group, along with standard treatments, placebo is similar in appearance to the drug for 16 weeks.

Participants/Inclusion and exclusion criteria

Participants are men and women with an average age of 18 to 70 years. Inclusion criteria are: Patients with depression diagnosis of bipolar disorder by a psychiatrist based on DSM-5, patients receiving lithium. Exclusion criteria are asymptomatic mixed phase depression with manic or hypomanic syndrome, pregnant patients, lactating patients.

Intervention groups

In general, two intervention and control groups will participate in this study. Subjects in the intervention group use silybum marianum. In the control group, a placebo silybum marianum pill form and color is used.

Main outcome variables

Thyroid indices T3, T4, TSH, Serum antioxidant capacity

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20190811044513N2**
Registration date: **2020-03-02, 1398/12/12**
Registration timing: **registered_while_recruiting**

Last update: **2020-03-02, 1398/12/12**
Update count: **0**

Registration date

2020-03-02, 1398/12/12

Registrant information

Name

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Name of organization / entity

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2019-09-22, 1398/06/31

Expected recruitment end date

2020-11-20, 1399/08/30

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Examination of the effect of silybum marianum on thyroid and antioxidant capacity in patients with bipolar disorders under the treatment of lithium

Public title

Examination of the effect of silybum marianum on thyroid and antioxidant capacity in patients with bipolar disorders under the treatment of lithium

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria:

Age group 18 to 70 years Patients with diagnosis of bipolar depression disorder by a psychiatrist based on DSM-5 Patients who receiving lithium

Exclusion criteria:

Patients with mixed depressive phase with simultaneous manic or hypomanic Pregnant patients Lactating patients

Age

From **18 years** old to **70 years** old

Gender

Both

Phase

3

Groups that have been masked

- Participant
- Investigator

Sample size

Target sample size: **40**

Randomization (investigator's opinion)

Randomized

Randomization description

For this purpose we will use quadratic random blocks method. For this purpose, we provide four sheets of paper for each drug and placebo group separately. We write on two sheets of letter A (intervention group) and on the other two sheets of letter C (comparison group). Mix the sheets together and place in a drawer. By referring to each eligible patient, one sheet was randomly drawn and the A or C sheet was drawn according to one of the two groups (silybum recipient) and control group Will be allocated. It should be noted that the drawn sheets will not be returned to the drawer until all four sheets have been drawn. Once the four sheets have been randomly pulled out, all the sheets are returned to the drawer and the procedure will be repeated for the next four patients until the desired sample size is reached.

Blinding (investigator's opinion)

Double blinded

Blinding description

Patients were randomly divided into either drug or placebo groups. Both groups receive standard treatment with lithium and anti-psychotic drugs. In the drug group, in addition to the standard treatments for depression in bipolar depression, silybum is used at a dose of 140 mg daily for 10 weeks. In the placebo group, along with standard treatments, placebo is similar in appearance to the drug for 10 weeks. In this study, the researcher and treating physician who will examine patients will not be aware of the type of medication used for patients. Therefore, this study will be a double blind study.

Placebo

Used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics committee of Hamadan University of Medical Sciences

Street address

Hamadan University of Medical Sciences, Fhahid fahmide Ave

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Province

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Postal code

6517838678

Approval date

2019-12-20, 1398/09/29

Ethics committee reference number

IR.UMSHA.REC.1398.798

Health conditions studied

1

Description of health condition studied

Patients with bipolar disorder

ICD-10 code

F31

ICD-10 code description

Bipolar disorder

Primary outcomes

1

Description

Thyroid markers

Timepoint

Before the intervention and 16 weeks after the intervention.

Method of measurement

Using the ELISA method

2

Description

Serum antioxidant capacity

Timepoint

Before the intervention and 16 weeks after the

intervention.

Method of measurement

Using the Colorimetric Kit

Secondary outcomes

1

Description

The mean of liver parameters

Timepoint

Before intervention and 16 weeks after the intervention

Method of measurement

Using a special kit

2

Description

Blood lithium level

Timepoint

Before intervention and 16 weeks after the intervention

Method of measurement

By the fluorometric method

3

Description

Depression Phase Bipolar Disease

Timepoint

Before intervention and 16 weeks after the intervention

Method of measurement

Patient symptoms and physician diagnosis

Intervention groups

1

Description

Intervention group: The intervention group received 16 mg daily silymarin in addition to standard treatments effective in the depression phase of bipolar disorder.

Category

Treatment - Drugs

2

Description

Control group: The placebo or control group received placebo for 16 weeks in addition to standard treatments.

Category

Placebo

Recruitment centers

1

Recruitment center

Name of recruitment center

Psychiatric Clinic of Sina Farshchian Hospital, Hamadan University of Medical Sciences and relevant

Full name of responsible person

Mohammad Reza Mehdian

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Hamedan University of Medical Sciences

Full name of responsible person

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Grant name

Grant code / Reference number

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

Yes

Title of funding source

Hamedan 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

Hamedan University of Medical Sciences

Full name of responsible person

Sara Ataei

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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