

Clinical Trial Protocol

Iranian Registry of Clinical Trials

10 Jun 2026

The effect of bromelain supplementation on oxidative stress, inflammatory markers and clinical outcomes in patients with traumatic brain injury admitted to the intensive care unit of Besat hospital

Protocol summary

Study aim

Determining the effect of bromelain supplementation on oxidative stress, inflammatory markers, and clinical outcomes in patients with traumatic brain injury admitted to the intensive care unit

Design

a randomized, double-blind, placebo-controlled trial with a parallel design, phase 3, on 58 patients. A stratified block will be used for randomization.

Settings and conduct

In this study, 58 adult patients aged 18 to 65 with moderate to severe traumatic brain injury hospitalized in the intensive care unit of Besat Hospital were selected based on the inclusion criteria and randomly entered into the study groups.

Participants/Inclusion and exclusion criteria

Inclusion criteria: moderate to severe traumatic brain injury with GCS between 7 and 12, age range 18 to 65 years, stability of hemodynamic and metabolic status in the first 24 to 48 hours, having nutritional support through gavage, and willingness to cooperate in the study. Exclusion criteria: Having an underlying cancer disease, autoimmune diseases, congenital metabolic diseases, acute or chronic liver failure, chronic kidney failure and acute kidney failure if the patient needs dialysis, pregnancy and breastfeeding, history of known food allergy, Unwillingness to participate in the study, suffering from sepsis or any acute or chronic infection, allergy to supplements

Intervention groups

Intervention group: People will receive 200 mg of bromelain 3 times a day for 14 days. Control group: Subjects will receive a placebo daily for 14 days.

Main outcome variables

C reactive protein; erythrocyte sedimentation rate; Malondialdehyde; Total antioxidant capacity; 28 days and 60-day mortality; Interleukin-6.

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20181219042047N2**

Registration date: **2023-05-01, 1402/02/11**

Registration timing: **prospective**

Last update: **2023-05-01, 1402/02/11**

Update count: **0**

Registration date

2023-05-01, 1402/02/11

Registrant information

Name

said hadi

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 21 8609 6350

Email address

s.hadinu@yahoo.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2023-05-21, 1402/02/31

Expected recruitment end date

2023-10-22, 1402/07/30

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The effect of bromelain supplementation on oxidative stress, inflammatory markers and clinical outcomes in patients with traumatic brain injury admitted to the intensive care unit of Besat hospital

Public title

Effect of bromelain supplementation in head trauma patients

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria:

Patients with moderate to severe traumatic brain injury hospitalized in the intensive care unit, $7 \leq \text{GCS} \leq 12$ Age range from 18 to 65 years Stability of hemodynamic and metabolic status in the first 24 to 48 hours Having nutritional support for the patient through gavage Willingness to cooperate and sign the informed consent form after being fully informed about the objectives and method of conducting the study by the person herself or her legal guardian.

Exclusion criteria:

Having an underlying cancer disease, autoimmune diseases, congenital metabolic diseases, acute or chronic liver failure, chronic kidney failure, and acute kidney failure if the patient needs dialysis pregnancy and breastfeeding history of known food allergy Unwillingness to participate in the study suffering from sepsis or any acute or chronic infection allergy to supplements

Age

From **18 years** old to **65 years** old

Gender

Both

Phase

3

Groups that have been masked

- Participant
- Investigator
- Outcome assessor

Sample size

Target sample size: **58**

Randomization (investigator's opinion)

Randomized

Randomization description

Patients are categorized and randomly assigned to the bromelain or placebo group. In order to randomly assign the patients to two groups, the classified block randomization method will be used using the website www.sealedenvelope.com. People were classified based on age (18 to 40 years and 40 to 65 years), gender (male/female) and Apache score (0 to 35 and 35 to 71) and divide into the intervention or placebo group based on blocks of four. In order to randomly allocate and based on blocks, patients who are in each of the age, gender, and APACHE II score classes, are entered into the intervention or placebo group. Randomization is concealed in sequentially numbered, sealed, opaque envelopes.

Blinding (investigator's opinion)

Double blinded

Blinding description

Before starting the study, all boxes containing bromelain or placebo for double-blind implementation are coded as A and B to blind the researcher and participants.

Placebo

Used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Research Ethics Committees of AJA University of Medical Sciences

Street address

AJA University Of Medical Sciences, Etemadzadeh street, West Fatemi street, Tehran

City

Tehran

Province

Tehran

Postal code

1411718541

Approval date

2023-01-15, 1401/10/25

Ethics committee reference number

IR.AJAUMS.REC.1401.182

Health conditions studied

1

Description of health condition studied

traumatic brain injury

ICD-10 code

S06.9

ICD-10 code description

Unspecified intracranial injury

Primary outcomes

1

Description

C reactive protein

Timepoint

At the beginning and 14 days after the intervention

Method of measurement

Serum measurement by enzyme-linked immunosorbent assay (ELISA) method

2

Description

erythrocyte sedimentation rate

Timepoint

At the beginning and 14 days after the intervention

Method of measurement

Special measuring kit

3

Description

Malondialdehyde

Timepoint

At the beginning and 14 days after the intervention

Method of measurement

Special measuring kit

4

Description

Total antioxidant capacity

Timepoint

At the beginning and 14 days after the intervention

Method of measurement

Special measuring kit

5

Description

28 day and 60 day mortality

Timepoint

روز 28 و 60

Method of measurement

Registration of death in the patient's file

6

Description

Interleukin-6

Timepoint

At the beginning and 14 days after the intervention

Method of measurement

Serum measurement by enzyme-linked immunosorbent assay (ELISA) method

Secondary outcomes

1

Description

Glasgow Coma Scale

Timepoint

The beginning of the study, day 7 and 14

Method of measurement

Glasgow coma scale score

2

Description

Acute Physiology and Chronic Health Evaluation (APACHE II)

Timepoint

The beginning of the study, day 7 and 14

Method of measurement

APACHE score

3

Description

Sequential Organ Failure Assessment (SOFA)

Timepoint

The beginning of the study, day 7 and 14

Method of measurement

SOFA score

4

Description

Nutrition Risk in the Critically Ill (NUTRIC)

Timepoint

The beginning of the study, day 7 and 14

Method of measurement

NUTRIC score

Intervention groups

1

Description

Intervention group: People will receive 200 mg of bromelain 3 times a day for 14 days.

Category

Treatment - Drugs

2

Description

Control group: Subjects will receive a placebo daily for 14 days.

Category

Treatment - Other

Recruitment centers

1

Recruitment center

Name of recruitment center

Besat hospital

Full name of responsible person

Said Hadi

Street address

AJA University Of Medical Sciences, Etemadzadeh street, West Fatemi street, Tehran

City

Tehran

Province

Tehran

Postal code

1411718541

Phone

+98 21 4382 2284

Email

s.hadinu@yahoo.com

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Artesh University of Medical Sciences

Full name of responsible person

Reza Mosaed

Street address

AJA University Of Medical Sciences, Etemadzadeh street, West Fatemi street, Tehran

City

Tehran

Province

Tehran

Postal code

1411718541

Phone

+98 21 4382 2284

Email

s.hadinu@yahoo.com

Grant name**Grant code / Reference number****Is the source of funding the same sponsor organization/entity?**

Yes

Title of funding source

Artesh 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**

Artesh University of Medical Sciences

Full name of responsible person

Said Hadi

Position

Associate professor

Latest degree

Ph.D.

Other areas of specialty/work

Nutrition

Street address

AJA University Of Medical Sciences, Etemadzadeh street, West Fatemi street, Tehran

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Phone

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Fax**Email**

s.hadinu@yahoo.com

Person responsible for scientific inquiries

Contact**Name of organization / entity**

Artesh University of Medical Sciences

Full name of responsible person

Said Hadi

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Associate professor

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Phone

+98 21 4382 2284

Fax**Email**

s.hadinu@yahoo.com

Person responsible for updating data

Contact**Name of organization / entity**

Artesh University of Medical Sciences

Full name of responsible person

Said Hadi

Position

Associate professor

Latest degree

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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