Clinical Trial Protocol
Iranian Registry of Clinical Trials

17 Sep 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≤GCS≤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
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AJA University Of Medical Sciences, Etemadzadeh street, West Fatemi street, Tehran
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Sponsors / Funding sources

1

Sponsor

Name of organization / entity
Artesh University of Medical Sciences
Full name of responsible person
Reza Mosaed
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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
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
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Other areas of specialty/work
Nutrition
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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