Clinical Trial Protocol
Iranian Registry of Clinical Trials

13 Jun 2026

Effect of enteral probiotics on prognostic scores and C-reactive protein levels in critically ill multiple trauma patients: A double-blind placebo-controlled randomized clinical trial

Protocol summary

Study aim

To determine the effects of enteral probiotics on inflammatory markers and prognostic scores in the critically ill trauma patients

Design

This is a double-blind, randomized phase 3 clinical trial on 80 critically ill trauma patients. Stratified randomization is used.

Settings and conduct

The study will take place in the ICU of Alzahra hospital in Isfahan, Iran from 23rd of October 2021 for 15 months. After randomization and assessment of baseline data the intervention will start for 7 days. Primary outcomes will be assessed on day 1 and day 8. The study is double-blind and the primary researcher, nurses, patients, and data analyzers will be blind to the intervention.

Participants/Inclusion and exclusion criteria

Inclusion criteria: patients who are admitted to the ICU due to multiple trauma; patients older than 18 and younger than 70 years of age; patients who are expected to stay in the ICU for more than 7 days. Exclusion criteria: patients who do not consent to participate in the study; patients who have an absolute contraindication for enteral feeding; pregnant patients; patients with an APACHE II score of more than 34 (mortality rate of 85% and higher).

Intervention groups

Two capsules of LactoCare from Zist Takhmir pharmaceuticals will be given to each patient every 12 hours in the intervention group for 7 days. Placebo will be given to the control group at an identical dose and time.

Main outcome variables

The primary outcomes of the study will be to assess the changes in CRP and patient prognostic scores such as APACHE II, SOFA, and SAPS on days 1 and 8 of the intervention between the two groups. 28-day mortality and time to discharge will also be assess at the end of the study.

General information

Reason for update

A minor change in the study title - Designation of trial end date - Omission of one of the exclusion criteria as it was not done before randomization but instead excluded after the intervention started.

Acronym

PROTIN

IRCT registration information

IRCT registration number: **IRCT20211006052684N1**
Registration date: **2021-10-19, 1400/07/27**
Registration timing: **prospective**

Last update: **2023-01-07, 1401/10/17**
Update count: **5**

Registration date

2021-10-19, 1400/07/27

Registrant information

Name

Amirhossein Akhavan Sigari

Name of organization / entity

Country

Iran (Islamic Republic of)

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+98 31 3668 8092

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2021-10-23, 1400/08/01

Expected recruitment end date
2023-01-21, 1401/11/01
Actual recruitment start date
2021-11-08, 1400/08/17
Actual recruitment end date
2022-12-25, 1401/10/04
Trial completion date
2022-12-25, 1401/10/04

Scientific title
Effect of enteral probiotics on prognostic scores and C-reactive protein levels in critically ill multiple trauma patients: A double-blind placebo-controlled randomized clinical trial

Public title
Effect of probiotics on multiple trauma patients
Purpose
Treatment
Inclusion/Exclusion criteria
Inclusion criteria:
Patients who are admitted to the intensive care unit (ICU) due to trauma Patients older than 18 and younger than 70 years Patients who are expected to stay in the ICU for 7 days or more
Exclusion criteria:
Patients who do not consent to participate in the study. Patients who have absolute contraindication to enteral feeding or the use of probiotics. Pregnant patients Patients with an APACHE II score of more than 34 (mortality rate of 85% and higher)
Age
From **18 years** old to **70 years** old
Gender
Both

Phase
3
Groups that have been masked

- Participant
- Care provider
- Investigator
- Outcome assessor

Sample size
Target sample size: **80**
Actual sample size reached: **80**
Randomization (investigator's opinion)
Randomized
Randomization description
Stratified randomization based on sex and APACHE II scores will be used and a random list will be generated using Excel. The random list of will be generated using the random function of Excel software. The person giving the intervention will not have access to the list and after list generation, drugs/placebo, anonymously, will be handed over to the person involved in intervention allocation.
Blinding (investigator's opinion)
Double blinded
Blinding description
Drugs and placebo will be kept with a person who is not involved in patient selection and allocating the intervention. After enrolment of qualified individuals based on inclusion and exclusion criteria, drug/placebo boxes will be released to the person giving the intervention. After data analysis, the placebo and intervention group will be revealed.
Placebo
Used
Assignment
Parallel
Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
Research Ethics Committees of School of Medicine - Isfahan University of Medical Sciences
Street address
Alzahra University Hospital, Soffe Blvd
City
Isfahan
Province
Isfehan
Postal code
8174675731
Approval date
2021-09-26, 1400/07/04
Ethics committee reference number
IR.MUI.MED.REC.1400.507

Health conditions studied

1

Description of health condition studied
Traumatic patients
ICD-10 code
T07
ICD-10 code description
Unspecified multiple injuries

Primary outcomes

1

Description
Quantitative C-reactive protein (QCRP)
Timepoint
Before and 7 days after the beginning of intervention.
Method of measurement
Laboratory Kit

2

Description
The Acute Physiology and Chronic Health Evaluation II

score (APACHE II)

Timepoint

Before and 7 days after the beginning of intervention.

Method of measurement

Based on the APACHE II score table

3

Description

The Simplified Acute Physiology Score (SAPS II)

Timepoint

Before and 7 days after the beginning of intervention.

Method of measurement

Based on the SAPS II score table

4

Description

Sequential Organ Failure Assessment (SOFA)

Timepoint

Before and 7 days after the beginning of intervention.

Method of measurement

Based on the SOFA score table

Secondary outcomes

1

Description

28-day mortality

Timepoint

28 days after the start of the intervention

Method of measurement

Questionnaire

2

Description

Time to discharge

Timepoint

At the time of patient discharge

Method of measurement

Total days from the start of intervention to discharge

Intervention groups

1

Description

Intervention group: Two Lactocare probiotic capsules from Zisttakhmir pharmaceuticals will be given to the intervention group every 12 hours for a total of 7 days. The route of administration will be oral or by a nasogastric tube. Each Lactocare capsule contains fructooligosaccharide as prebiotic and Lactobacillus casei, Lactobacillus acidophilus, Lactobacillus rhamnosus, Lactobacillus bulgaricus, Bifidobacterium breve, Bifidobacterium longum, and Streptococcus thermophilus as the probiotic blend (probiotic blend: 10^9 colony forming unit (CFU)). The total number of capsules given to each patient for the total intervention time will be 28 capsules.

Category

Treatment - Drugs

2

Description

Control group: two placebo capsules identical to the original Lactocare probiotic capsules will be given to each patient in the control group every 12 hours for a total of 7 days. The placebo capsules will be provided by Zisttakhmir Pharmaceutical company.

Category

Placebo

Recruitment centers

1

Recruitment center

Name of recruitment center

Kashani University Hospital

Full name of responsible person

Saeed Abbasi

Street address

Kashani St., Kashani University Hospital

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2

Recruitment center

Name of recruitment center

Alzahra University Hospital

Full name of responsible person

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Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Esfahan University of Medical Sciences
Full name of responsible person
Shaghayegh Haghjoo Javanmardi
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Isfahan University of Medical Sciences, Hezar Jerib Ave.
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Email
research@mui.ac.ir
Web page address
https://research.mui.ac.ir
Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Esfahan 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
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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