

Clinical Trial Protocol

Iranian Registry of Clinical Trials

25 Jul 2026

Investigating the effect of indomethacin on the clinical outcome of patients with severe non-hemorrhagic traumatic brain injury, a randomized placebo-controlled study

Protocol summary

Study aim

Investigating the effect of indomethacin on the clinical outcome of patients with severe traumatic brain injury

Design

Clinical trial with a control group, with parallel groups, double-blind, randomized, phase 2 on 30 patients.

Random Allocation was used for randomization.

Settings and conduct

Eligible patients will be randomly selected and placed in one of two intervention groups (group A) and placebo (group B) by block randomization method. Random Allocation software version 2 will be used for random arrangement of samples in blocks. In this software, we set the number of groups to 2 (1: group A and 2: group B), and the number of samples to 30 (based on the sample size), the size of the blocks is equal, and the coding is a combination of letters and We put a random number. The statistically significant level will also be set at 0.05. SNOSE method is used for the purpose of concealment (blinding) of random allocation. The location of the Imam Khomeini Hospital project in Sari

Participants/Inclusion and exclusion criteria

Registration of informed consent from the patient's first-degree companion to participate in the study, age 16 to 70 years, severe traumatic brain injury with non-hemorrhagic closed or penetrating mechanism, high ICP resistant to treatment, $GCS \leq 8$

Intervention groups

Two intervention groups (group A) and placebo (group B), and we set the number of samples to 30 (based on the sample size), the size of the blocks is equal, and we set the coding as a combination of letters and numbers and random. The statistically significant level will be set at 0.05.

Main outcome variables

Sao2, Pao2, Paco2, mRS and body temperature parameters will be measured before administration.

Sao2, Pao2 and Paco2 parameters will be measured 30, 60 and 120 minutes after receiving the drug. mRS and GOS will be re-measured one month and 6 months after administration

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20220521054939N1**

Registration date: **2022-12-14, 1401/09/23**

Registration timing: **registered_while_recruiting**

Last update: **2022-12-14, 1401/09/23**

Update count: **0**

Registration date

2022-12-14, 1401/09/23

Registrant information

Name

SAEED EHTESHAMI

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 11 3336 1630

Email address

s.ehteshami@ mazums.ac.ir

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2022-07-06, 1401/04/15

Expected recruitment end date

2023-01-20, 1401/10/30

Actual recruitment start date

empty

Actual recruitment end date
empty

Trial completion date
empty

Scientific title
Investigating the effect of indomethacin on the clinical outcome of patients with severe non-hemorrhagic traumatic brain injury, a randomized placebo-controlled study

Public title
Investigating the effect of indomethacin on the clinical outcome of patients with severe non-hemorrhagic traumatic brain injury, a randomized placebo-controlled study

Purpose
Treatment

Inclusion/Exclusion criteria
Inclusion criteria:
 Registration of informed consent of the first degree patient to participate in the study Age 16 to 70 years Severe traumatic brain injury with closed or penetrating mechanism High resistant ICP $8 \leq \text{GCS}$
Exclusion criteria:
 Pregnancy Brain death Coagulation disorders History of gastrointestinal bleeding or active bleeding History of peptic ulcer Acute kidney injury History of allergies to nonsteroidal anti-inflammatory drugs Clinical signs and symptoms of renal failure or its history Hyperkalemia Liver failure

Age
From **16 years** old to **70 years** old

Gender
Both

Phase
3

Groups that have been masked

- Participant
- Care provider
- Outcome assessor
- Data analyser
- Data and Safety Monitoring Board

Sample size
Target sample size: **30**

Randomization (investigator's opinion)
Randomized

Randomization description
Eligible patients will be randomly selected and placed in one of two intervention groups (group A) and placebo (group B) by block randomization method. Random Allocation software version 2 will be used for random arrangement of samples in blocks. In this software, we set the number of groups to 2 (1: group A and 2: group B), and the number of samples to 30 (based on the sample size), the size of the blocks is equal, and the coding is a combination of letters and We put a random number. The statistically significant level will be set at 0.05.

Blinding (investigator's opinion)

Single blinded

Blinding description
In order to hide (blinding) the random allocation, the SNOSE method is used. This method is one of the common methods in hiding random allocation. In this method, first, a random sequence is created using the mentioned software, then based on the sample size, a number of envelopes with aluminum envelopes (in order to make the contents of the envelopes unclear) are prepared and each of the random sequences created (intervention or control group) is recorded on a card and the cards are placed in the envelopes in order. In order to preserve the random sequence, naming is done on the outer surface of the envelopes in the same order as it was produced by the software (for example: TF8G is written on the envelope and the card inside the intervention envelope). Finally, the lids of the envelopes are glued and placed in a box. At the time of starting the registration of participants, based on the order of entry of eligible participants into the study, one of the envelopes will be opened and the allocated group of that participant will be revealed.

Placebo
Used

Assignment
Parallel

Other design features

Secondary Ids
empty

Ethics committees

1

Ethics committee
Name of ethics committee
 Ethics committee in the research of educational center in Mani Imam Khomeini, Sari
Street address
 Amir Mazandarani Boulevard, Imam Khomeini Hospital
City
 Sari
Province
 Mazandaran
Postal code
 33131 - 48166
Approval date
 2022-07-06, 1401/04/15
Ethics committee reference number
 IR.MAZUMS.IMAMHOSPITAL.REC.1401.015

Health conditions studied

1

Description of health condition studied
 Traumatic brain injury
ICD-10 code
 S06.0

ICD-10 code description

Concussion

Primary outcomes

1

Description

Severe traumatic brain injury

Timepoint

It will be measured again one month and 6 months after administration

Method of measurement

Visual Analogue Scale

Secondary outcomes

1

Description

Degree of disability or dependence in daily activities

Timepoint

It will be measured again one month and 6 months after administration

Method of measurement

Visual Analogue Scale

2

Description

Severe traumatic brain injury

Timepoint

It will be measured again one month and 6 months after administration

Method of measurement

Visual Analogue Scale

Intervention groups

1

Description

Intervention group: Indomethacin in the amount of 25 mg for 5 days will be administered intravenously in an initial loading dose of 0.8 mg/kg in 100 cc of normal saline solution over 10-15 minutes. Then it will continue with a dose of 0.5 mg/kg/h. After 2 hours, in order to prevent the phenomenon of ICP rebound, the indomethacin infusion will be reduced by 20% of the dose every 6 hours.

Category

Treatment - Drugs

2

Description

Control group: Placebo in the amount of 25 mg for 5 days

Category

Placebo

Recruitment centers

1

Recruitment center

Name of recruitment center

Imam Khomeini Medical Education Center

Full name of responsible person

Saeed Ehteshami

Street address

Amir Mazandarani St

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Web page address

<https://www.mazums.ac.ir>

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Mazandaran University of Medical Sciences

Full name of responsible person

Majid Saedi

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Moalem Ave

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Web page address

<https://www.mazums.ac.ir>

Grant name

Grant code / Reference number

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

Yes

Title of funding source

Mazandaran 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

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Fax

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Web page address<https://www.mazums.ac.ir>**Person responsible for general inquiries****Contact****Name of organization / entity**

Mazandaran University of Medical Sciences

Full name of responsible person

Saeed Ehteshami

Position

Associate professor

Latest degree

Specialist

Other areas of specialty/work

Neurosurgery

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Latest degree

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Latest degree

Specialist

Other areas of specialty/work

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Phone**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