

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

06 Jun 2026

### Comparison of the effects of levetiracetam, sodium valproate, and nortriptyline on migraine headaches control in migraine patients

#### Protocol summary

##### Study aim

Comparison of the effects of levetiracetam, sodium valproate and nortriptyline on migraine headaches

##### Design

In this study, 120 eligible patients with chronic daily headaches who are admitted to the Neurology Clinic of Vali-e-Asr Hospital in Birjand are incorporated.

Participants are randomly assigned into one of the three intervention groups.

##### Settings and conduct

The study is performed in the Neurology Clinic of Vali-e-Asr Hospital in Birjand in a non-blinded manner.

##### Participants/Inclusion and exclusion criteria

Inclusion criteria consist of presence of migraine headaches (headache attacks over 3 attacks per month; each attack with an interval of more than 48 hours of relief from other attacks); age from 18 to 65 years; non-use of other anti-migraine drugs since at least one month ago; no allergy to levetiracetam, sodium valproate, and nortriptyline or their compounds; absence of acute migraine resistant to treatment; not having severe mental disorders; absence of neurodegenerative disorders; no malignancy; absence of pain disorders; no severe infection; and informed consent for participation. Exclusion criteria comprise of pregnant or breast-feeding women; irregular consumption of medications; suffering from severe drug side-effects during the course of the study, which may change treatment regimen; treatment-resistant acute migraine; severe psychiatric disorders; drug or alcohol dependence; renal dysfunction; and excessive use of acute migraine drugs.

##### Intervention groups

Levetiracetam Group: These patients will receive levetiracetam which will start at a dose of 250 milligrams per day in the first week followed by an increased dose of 250 milligrams per week reaching a dose of 1000 milligrams per day in the fourth week. Sodium Valproate Group: These patients will receive 500 milligrams of sodium valproate per day, starting at 250 mg per day in

the first week. In the second week until the end of the fourth week of intervention, patients will receive 500 milligrams per day (250 milligrams twice a day).

Nortriptyline Group: These patients will be prescribed nortriptyline at a dose of 25 milligrams per day throughout the study.

##### Main outcome variables

Severity of headache, frequency of headache, side effects (digestive, nervous, etc.)

#### General information

##### Reason for update

##### Acronym

##### IRCT registration information

IRCT registration number: **IRCT20140519017756N39**

Registration date: **2018-02-20, 1396/12/01**

Registration timing: **registered\_while\_recruiting**

Last update: **2018-02-20, 1396/12/01**

Update count: **0**

##### Registration date

2018-02-20, 1396/12/01

##### Registrant information

##### Name

Mohammad Bagher Roozgar

##### Name of organization / entity

Birjand University of Medical Sciences

##### Country

Iran (Islamic Republic of)

##### Phone

+98 56 3239 5680

##### Email address

mbroozgar@bums.ac.ir

##### Recruitment status

**Recruitment complete**

##### Funding source

**Expected recruitment start date**

2018-01-30, 1396/11/10

**Expected recruitment end date**

2018-03-06, 1396/12/15

**Actual recruitment start date**

empty

**Actual recruitment end date**

empty

**Trial completion date**

empty

**Scientific title**

Comparison of the effects of levetiracetam, sodium valproate, and nortriptyline on migraine headaches control in migraine patients

**Public title**

Effects of levetiracetam, sodium valproate, and nortriptyline on migraine headaches

**Purpose**

Treatment

**Inclusion/Exclusion criteria****Inclusion criteria:**

Presence of migraine headaches (headache attacks over 3 attacks per month; each attack with an interval of more than 48 hours of relief from other attacks) Age from 18 to 65 years Non-use of other anti-migraine drugs since at least one month ago No allergy to levetiracetam, sodium valproate, and nortriptyline or their compounds Absence of acute migraine resistant to treatment Not having severe mental disorders Absence of neurodegenerative disorders No malignancy Absence of pain disorders No severe infection Informed consent for participation

**Exclusion criteria:**

Pregnant or breast-feeding women Irregular consumption of medications Suffering from severe drug side-effects during the course of the study, which may change treatment regimen Treatment-resistant acute migraine Severe psychiatric disorders Drug or alcohol dependence Renal dysfunction Excessive use of acute migraine drugs

**Age**

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

**Gender**

Both

**Phase**

3

**Groups that have been masked**

*No information*

**Sample size**

Target sample size: **120**

**Randomization (investigator's opinion)**

Randomized

**Randomization description**

The participants will be allocated into study groups via permuted block randomization.

**Blinding (investigator's opinion)**

Not blinded

**Blinding description****Placebo**

Not used

**Assignment**

Parallel

**Other design features****Secondary Ids**

empty

**Ethics committees****1****Ethics committee****Name of ethics committee**

Ethics Committee of Birjand University of Medical Sciences

**Street address**

Ghaffari Ave.

**City**

Birjand

**Province**

South Khorasan

**Postal code**

9717853577

**Approval date**

2018-01-29, 1396/11/09

**Ethics committee reference number**

IR.BUMS.REC.1396.313

**Health conditions studied****1****Description of health condition studied**

Migraine headaches

**ICD-10 code**

G43

**ICD-10 code description**

Migraine

**Primary outcomes****1****Description**

Headache severity

**Timepoint**

At the end of intervention

**Method of measurement**

Visual analogue scale

**2****Description**

Frequency of headache incidence

**Timepoint**

After intervention

**Method of measurement**

Patient daily notes during intervention

**3****Description**

Side effects (digestive, nervous, etc.)

**Timepoint**

After intervention

**Method of measurement**

Patient daily notes during intervention

**Secondary outcomes**

empty

**Intervention groups****1****Description**

Intervention Group 1 (Levetiracetam): These patients will receive levetiracetam which will start at a dose of 250 milligrams per day in the first week followed by an increased dose of 250 milligrams per week reaching a dose of 1000 milligrams per day in the fourth week.

**Category**

Treatment - Drugs

**2****Description**

Intervention Group 2 (Sodium Valproate): These patients will receive 500 milligrams of sodium valproate per day, starting at 250 mg per day in the first week. In the second week until the end of the fourth week of intervention, patients will receive 500 milligrams per day (250 milligrams twice a day).

**Category**

Treatment - Drugs

**3****Description**

Intervention Group 3 (Nortriptyline): These patients will be prescribed nortriptyline at a dose of 25 milligrams per day throughout the study.

**Category**

Treatment - Drugs

**Recruitment centers****1****Recruitment center****Name of recruitment center**

Neurology Clinic of Valie-Asr Hospital

**Full name of responsible person**

Dr Hamidreza Riasi

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**Sponsors / Funding sources****1****Sponsor****Name of organization / entity**

Birjand 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**

Birjand University of Medical Sciences

**Proportion provided by this source**

50

**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**

Birjand University of Medical Sciences

**Full name of responsible person**

Zahra Ahani

**Position**

Medical Student

**Latest degree**

Medical doctor

**Other areas of specialty/work**

General Practitioner

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## Person responsible for scientific inquiries

### Contact

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Birjand University of Medical Sciences  
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## Person responsible for updating data

### Contact

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**Other areas of specialty/work**  
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## Sharing plan

### Deidentified Individual Participant Data Set (IPD)

No - There is not a plan to make this available

### Justification/reason for indecision/not sharing IPD

As part of the conditions set by participants for participation, no data about them can be distributed.

### Study Protocol

Yes - There is a plan to make this available

### Statistical Analysis Plan

Yes - There is 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

Yes - There is a plan to make this available

### Analytic Code

Not applicable

### Data Dictionary

Not applicable

### Title and more details about the data/document

study protocol

### When the data will become available and for how long

The protocol will be published in a paper and will be available for as long as the paper is reachable.

### To whom data/document is available

All readers of the paper

### Under which criteria data/document could be used

No certain criteria

### From where data/document is obtainable

the journal publishing the paper

### What processes are involved for a request to access data/document

processes described by the journal

### Comments