

Clinical Trial Protocol

Iranian Registry of Clinical Trials

29 Jul 2026

Comparing the effect of intravenous midazolam and oral melatonin on controlling agitation caused by ketamine in emergency department

Protocol summary

Study aim

Comparing the effect of intravenous midazolam and oral melatonin on controlling agitation caused by ketamine in emergency department

Design

Prospective clinical trial with parallel control group, double-blind, randomized with the table of random numbers

Settings and conduct

In this study, 96 patients who are candidate for receiving Ketamine in emergency department of Al-Zahra and Kashani hospitals in Isfahan are divided into three groups using randomized blocking method. The drugs are prepared and packaged by the pharmacology department. The first group is treating with intravenous midazolam and oral placebo and the second group is treated with oral melatonin and intravenous placebo. The third group is control group that is treated with oral and intravenous placebo. Thirty minutes after receiving this intervention, patients are receiving 1-2 mg/kg intravenous Ketamine during 30-60 seconds and then receiving 0.25-0.5 mg/kg intravenous Ketamine every 10 minutes as a maintenance dose (maximum 5 mg/kg).

Participants/Inclusion and exclusion criteria

Inclusion criteria: All patients who aged more than 18 years who are the candidate for receiving Ketamine as an anesthesia for small surgeries. Exclusion criteria: Patients with fever, obesity, head trauma, hydrocephaly, glaucoma, and psychological disorders.

Intervention groups

In this study all patients are receiving intravenous Ketamine as an anesthesia. Patients in the first group are receiving intravenous Midazolam and oral placebo, 30 minutes before receiving Ketamine. Patients in the second group are receiving oral Melatonin and intravenous placebo, 30 minutes before receiving Ketamine. Patients in the third group are receiving oral and intravenous placebo, 30 minutes before receiving Ketamine.

Main outcome variables

Richmond Agitation Scale

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20180129038549N8**

Registration date: **2018-09-24, 1397/07/02**

Registration timing: **retrospective**

Last update: **2018-09-24, 1397/07/02**

Update count: **0**

Registration date

2018-09-24, 1397/07/02

Registrant information

Name

Farhad Heydari

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 31 3786 8804

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2017-06-22, 1396/04/01

Expected recruitment end date

2018-03-21, 1397/01/01

Actual recruitment start date

2017-03-21, 1396/01/01

Actual recruitment end date

2018-03-21, 1397/01/01

Trial completion date

2018-03-21, 1397/01/01

Scientific title

Comparing the effect of intravenous midazolam and oral melatonin on controlling agitation caused by ketamine in emergency department

Public title

Reduction of agitation associated with ketamine

Purpose

Treatment

Inclusion/Exclusion criteria**Inclusion criteria:**

Age over 18 years old Receiving ketamine as an anesthetic agent for small surgeries Patient's consent to participate in the study

Exclusion criteria:

Fever Obesity (BMI>30) Head trauma with loss of consciousness Brain tumor, Hydrocephaly Glaucoma Psychosis Psychological disorders History of using Benzodiazepine during last two weeks

Age

From **18 years** old

Gender

Both

Phase

3

Groups that have been masked

- Participant
- Care provider
- Investigator
- Outcome assessor

Sample size

Target sample size: **96**

Actual sample size reached: **96**

Randomization (investigator's opinion)

Randomized

Randomization description

After the arrival of the patients to the emergency department, they are divided into 3 groups by a computer-generated random number table with 4 blocks.

Blinding (investigator's opinion)

Double blinded

Blinding description

To make sure of the double-blind protocol of the study, preparation of the solutions, injections, and registration of the results were carried out by the pharmacology department. The packets were named A, B, and C following the codes. In one packet, there are intravenous midazolam and oral placebo, in the second packet, there is an equal volume of intravenous placebo and the oral melatonin, and in another packet, there is intravenous and oral placebo. Patients are randomized to receive one of the packets. The patients and their parents and the nurses are unaware of the contents of the drugs. Data collectors, outcome assessors, and data analysts are all kept blinded to the allocation.

Placebo

Used

Assignment

Parallel

Other design features**Secondary Ids**

empty

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

Ethics committee of Isfahan University of Medical Science

Street address

Isfahan University of Medical Science, Hezarjrib Street, Isfahan City

City

Isfahan

Province

Isfahan

Postal code

8174673461

Approval date

2017-06-20, 1396/03/30

Ethics committee reference number

IR.MUI.REC.1396.30.33

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

Agitation

ICD-10 code

R45.1

ICD-10 code description

Restlessness and agitation

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

Richmond Agitation Scale score

Timepoint

Every 5 minutes after ketamine administration

Method of measurement

Richmond Agitation Scale table

Secondary outcomes

empty

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

Intervention group 1: In this group patients are receiving 0.05 mg/kg intravenous midazolam (slow infusion) and

one placebo tablet, 30 minutes before receiving ketamine as an anesthesia. Thirty minutes after receiving this intervention, patients are receiving 1-2 mg/kg intravenous ketamine during 30-60 seconds and then receiving 0.25-0.5 mg/kg intravenous ketamine every 10 minutes as a maintenance dose (maximum 5 mg/kg).

Category

Treatment - Drugs

2

Description

Intervention group 2: In this group patients are receiving 0.3 mg/kg oral melatonin and 2 ml intravenous placebo (distilled water), 30 minutes before receiving ketamine as an anesthesia. Thirty minutes after receiving this intervention, patients are receiving 1-2 mg/kg intravenous ketamine during 30-60 seconds and then receiving 0.25-0.5 mg/kg intravenous ketamine every 10 minutes as a maintenance dose (maximum 5 mg/kg).

Category

Treatment - Drugs

3

Description

Control group: In this group patients are receiving one oral placebo tablet and 2 ml intravenous placebo (stilled water), 30 minutes before receiving ketamine as an anesthesia. Thirty minutes after receiving this intervention, patients are receiving 1-2 mg/kg intravenous ketamine during 30-60 seconds and then receiving 0.25-0.5 mg/kg intravenous ketamine every 10 minutes as a maintenance dose (maximum 5 mg/kg).

Category

Placebo

Recruitment centers

1

Recruitment center

Name of recruitment center

Alzahra hospital

Full name of responsible person

Saeed Majidinejad

Street address

Alzahra hospital, Sofe Street, Isfahan City

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8174675731

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2

Recruitment center

Name of recruitment center

Kashani 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 Haghjou Javanmard

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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

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

Esfahan University of Medical Sciences

Full name of responsible person

Mehdi Botshekan

Position

Resident

Latest degree

Specialist

Other areas of specialty/work

Emergency Medicine

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Person responsible for updating data

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Position

Associate Professor

Latest degree

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Person responsible for scientific inquiries

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Name of organization / entity

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Full name of responsible person

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Position

Associate Professor

Latest degree

Specialist

Other areas of specialty/work

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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

Not applicable

Informed Consent Form

No - There is not 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

Not applicable

Data Dictionary

Not applicable