Clinical Trial Protocol
Iranian Registry of Clinical Trials

10 Jun 2026

Analgesic effect of combining Midazolam, Morphine and Diphenhydramine for acute postoperative pain management, A comparative study

Protocol summary

Study aim
Evaluation of the analgesic effect of morphine-ketamine-midazolam combination after surgery

Design
Clinical trial with control group, with parallel groups, double-blind, randomized, phase 2 on 66 patients. The rand function of the Excel software was used for randomization.

Settings and conduct
This study is a clinical trial performed at Sina Hospital, Tehran University of Medical Sciences. Patients are extubated after surgery and recover. In recovery, patients were evaluated based on VAS or Richmond criteria, and if they had a VAS> 4 score or Richmond +2 and above, they entered the study and were randomly assigned to one of the two groups. The first group received 2 cc of the first three drug combinations (including 20 mg of morphine -50 mg of ketamine-5 mg of midazolom, the volume of which was increased to 10 cc with distilled water). The second group received a combination of the second three drugs (including 20 mg of morphine -50 mg of ketamine -50 mg of diphenhydramine, the volume of which is 10 cc with distilled water). Then, the time of starting the effect of the drug, change of VAS or RICHMOND Agitation Sedation scale, stability of the drug effect in patients, nausea and vomiting, blood pressure and heart rate of patients and in the first time of drug application and drug use are recorded in the first 24 hours.

Participants/Inclusion and exclusion criteria
Inclusion criteria:1- Age 20 to 65 years. 2- Restorative surgery 3- Need for postoperative analgesia Exclusion criteria: 1-Drug addiction 2- History of heart disease, kidney, liver and glaucoma.3-History of psychotropic drugs and anti-nausea and vomiting

Intervention groups
All elective patients undergo reconstructive surgery

Main outcome variables
The severity of the pain heart beat blood pressure Anxiety

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20130304012695N2**
Registration date: **2020-05-26, 1399/03/06**
Registration timing: **retrospective**

Last update: **2020-05-26, 1399/03/06**
Update count: **0**

Registration date
2020-05-26, 1399/03/06

Registrant information

Name
mohammadreza khajavi

Name of organization / entity

Country
Iran (Islamic Republic of)

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+98 21 6312 1220

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Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2019-01-21, 1397/11/01

Expected recruitment end date
2019-12-22, 1398/10/01

Actual recruitment start date
2019-02-20, 1397/12/01

Actual recruitment end date
2019-11-22, 1398/09/01

Trial completion date

2019-12-22, 1398/10/01

Scientific title
Analgesic effect of combining Midazolam, Morphine and Diphenhydramine for acute postoperative pain management, A comparative study

Public title
Analgesic effect of combining Midazolam, Morphine and Diphenhydramine for acute postoperative pain management, A comparative study

Purpose
Treatment

Inclusion/Exclusion criteria

Inclusion criteria:
Patients are extubated after surgery and recover. In recovery, patients were evaluated based on VAS or Richmond criteria, and if they had a VAS> 4 score or Richmond +2 and above, they entered the study and were randomly assigned to one of the two groups.

Exclusion criteria:
opioids addiction, underlying ischemic cardiac diseases, renal function and liver function diseases, history of allergic reaction to any of the medications used, and use of any antiemetic and antipsychotic medications, PONV and glaucoma.

Age
From **20 years** old to **65 years** old

Gender
Both

Phase
3

Groups that have been masked

- Participant
- Care provider
- Investigator
- Outcome assessor

Sample size
Target sample size: **66**
Actual sample size reached: **66**

Randomization (investigator's opinion)
Randomized

Randomization description
The sampling is done by easy burst method and according to patient referral to recovery room. Randomization method is balanced block randomization and will be done by Randlist software.

Blinding (investigator's opinion)
Double blinded

Blinding description
The person who makes the medicine add a code to every single medicine . The person who injects the drug does not know the code. The patient is not aware of the type of injectable medication. The researcher is not aware of the type of drug during the study.

Placebo
Not used

Assignment
Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee
Ethics committee of ،tehran University of Medical Sciences

Street address
sina hospital, imam khomeini st.

City
tehran

Province
Tehran

Postal code
1136746911

Approval date
2018-11-19, 1397/08/28

Ethics committee reference number
IR.TUMS.IKHC.REC.1397.224

Health conditions studied

1

Description of health condition studied
postoperative pain

ICD-10 code
S66.0

ICD-10 code description
Injury of long flexor muscle, fascia and tendon of thumb at wrist and hand level

Primary outcomes

1

Description
The effect of the drug combination of midazolam, diphenhydramine and morphine on pain relief

Timepoint
In 5, 10, 15, 30 minutes after the operation, the severity pain was measured

Method of measurement
visual analog scal

Secondary outcomes

1

Description
patients' agitation evaluation

Timepoint
In 5, 10, 15 and 30 minutes after surgery

Method of measurement
richmond agitation scale

Intervention groups

1

Description
Intervention group: Morphine, Midazolam, In this group, in a syringe of 10 cc, 10 mg of morphine, 100 mg of diphenhydramine and 10 mg of midazolam,prepared then increase the volume to 10 cc with distilled water.In patients who have pain and want to take analgesia, we inject one cc of this medicine mixture. Two minutes after the injection, if the pain is not controlled, we take another cc of this mixture. we record the number of injections and reduce the severity of the pain and the duration of the pain reduction per minute.

Category
Treatment - Drugs

2

Description
Control group: Morphine, ketamine, Diphenhydramine.In this group, in a syringe of 10 cc, 10 mg of morphine, 100 mg of diphenhydramine and 10 mg of ketamine,prepared then increase the volume to 10 cc with distilled water.In patients who have pain and want to take analgesia, we inject one cc of this medicine mixture. Two minutes after the injection, if the pain is not controlled, we take another cc of this mixture. we record the number of injections and reduce the severity of the pain and the duration of the pain reduction per minute.

Category
Treatment - Drugs

Recruitment centers

1

Recruitment center

Name of recruitment center
sina hospital

Full name of responsible person
mohammadreza khajavi

Street address
sina hospital, imam khomeini st.

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity
Tehran University of Medical Sciences

Full name of responsible person
mohammad ali sahraeian

Street address
Keshavarz Blvd., corner of Quds St., Central Organization of Tehran University of Medical Sciences

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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
Tehran 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
Tehran University of Medical Sciences

Full name of responsible person
Mohammadreza Khajavi

Position
Professor

Latest degree
Specialist

Other areas of specialty/work
Anesthesiology

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Central building of Tehran University of Medical sciences, Ghods st., Keshavarz blv.

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Person responsible for scientific inquiries

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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
No - There is not a plan to make this available

Data Dictionary
Undecided - It is not yet known if there will be a plan to make this available