

Clinical Trial Protocol

Iranian Registry of Clinical Trials

30 Oct 2026

Comparison of the effect of two drug combinations: Etomidate-Sufentanil with Ketamine-Sufentanil-Midazolam on changes in heart rate and blood pressure after laryngoscopy and endotracheal intubation

Protocol summary

Study aim

To determine and compare the effects of two different combinations Etomidate-Sufentanil with Ketamine-Sufentanil-Midazolam on heart rate and blood pressure changes after laryngoscopy and endotracheal intubation

Design

Three arm clinical trial with study control group, parallel group trial of 96 patients with blinded outcome assessment. Randomisation was centralised and computerised with randomized allocation software.

Settings and conduct

A clinical trial on 96 patients who will refer to the operating room center of Al-Zahra Hospital in Isfahan in the years 2020-2021. Patients, the physician who will collect the data, and the statistician who will analyze the data will not be informed about the patient's study groups.

Participants/Inclusion and exclusion criteria

Inclusion criteria: Patients aged 18 to 65 years, Patients with ASA I or ASA II, Patients who are candidates for elective surgery under general anesthesia requiring tracheal intubation. Exclusion criteria: Patients with cardiac, hepatic and renal insufficiency, patients with drug addictions, patients with airway anomalies

Intervention groups

First group receive Etomidate 0.3 milligram per kilogram plus Sufentanil 0.1 microgram per kilogram, Atracurium and Lidocaine. Second group receive Ketamine 0.5 milligram per kilogram plus Sufentanil 0.1 microgram per kilogram plus Midazolam 0.07 milligram per kilogram, Atracurium and Lidocaine. Third group which is the control group receive Etomidate 0.3 milligram per kilogram, Atracurium, Lidocaine and also normal saline.

Main outcome variables

Systolic blood pressure; Diastolic blood pressure; Mean blood pressure; Arterial oxygen saturation; Mean heart rate; ST-T changes in electrocardiogram

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20090129001615N4**

Registration date: **2020-10-28, 1399/08/07**

Registration timing: **registered_while_recruiting**

Last update: **2020-10-28, 1399/08/07**

Update count: **0**

Registration date

2020-10-28, 1399/08/07

Registrant information

Name

Azim Honarmand

Name of organization / entity

Alzahra hospital

Country

Iran (Islamic Republic of)

Phone

+98 31 3668 0048

Email address

honarmand@med.mui.ac.ir

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2020-09-22, 1399/07/01

Expected recruitment end date

2020-12-21, 1399/10/01

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title
Comparison of the effect of two drug combinations:
Etomidate-Sufentanil with Ketamine-Sufentanil-
Midazolam on changes in heart rate and blood pressure
after laryngoscopy and endotracheal intubation

Public title
Comparison of the effect of two drug combinations:
Etomidate-Sufentanil with Ketamine-Sufentanil-
Midazolam during laryngoscopy

Purpose
Prevention

Inclusion/Exclusion criteria
Inclusion criteria:
Patients with ASA (American Society of
Anesthesiologists) grade:1 or 2 Patients aged 18 to 65
years Patients who need tracheal intubation and general
anesthesia

Exclusion criteria:
Patients with heart failure disease Patients who are
addicted to drugs Patients with airway anomalies
Patients with hepatic failure disease Patients with renal
failure disease Patients with over 65 years or under 18
years

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

Gender
Both

Phase
3

Groups that have been masked

- Participant
- Care provider
- Investigator
- Outcome assessor
- Data analyser

Sample size
Target sample size: **96**

Randomization (investigator's opinion)
Randomized

Randomization description
Randomization will be performed using Random
Allocation software version 2.0. Ninety-six patients will
be divided into 8 blocks of 12 members. For example,
the first block will be included 12 patients that will be
ordered non sequentially. The unit of randomization will
be individualized. For allocation concealment, the
physician administering the study drugs will not be
informed from sequence of group assignment.

Blinding (investigator's opinion)
Triple blinded

Blinding description
Blinding will be performed as such: The physician who
will collect the patient's data and the statistician who will
analyze data, have no information from the study group
assignments. The study drugs will be injected by similar
syringes in volume and color and they also will be
administered for patients after induction of anesthesia so
the patients will have no information about the injected

drugs.
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
Sciences

Street address

Hezarjerib Ave.

City

Isfahan

Province

Isfahan

Postal code

8174673461

Approval date

2020-08-31, 1399/06/10

Ethics committee reference number

IR.MUI.MED.REC.1399.438

Health conditions studied

1

Description of health condition studied

patients who need general anesthesia with tracheal
intubation

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

Systolic blood pressure mean in each group

Timepoint

Before intervention and 1, 3, 5 and 10 minutes after
laryngoscopy

Method of measurement

Blood pressure manometer

2

Description

Diastolic blood pressure mean in each group

Timepoint

Before intervention and 1, 3, 5 and 10 minutes after
laryngoscopy

Method of measurement

Blood pressure manometer

3

Description

Heart rate mean in each group

Timepoint

Before intervention and 1, 3, 5 and 10 minutes after laryngoscopy

Method of measurement

Heart monitoring device

Secondary outcomes

1

Description

Arterial oxygen saturation mean in each group

Timepoint

Before intervention and 1, 3, 5 and 10 minutes after laryngoscopy

Method of measurement

Pulse oximeter

2

Description

Electrocardiogram ST-T changes relative frequency in each group

Timepoint

Before intervention and 1, 3, 5 and 10 minutes after laryngoscopy

Method of measurement

Electrocardiogram

Intervention groups

1

Description

Intervention group 1: Patients will receive Etomidate (10 cc ampoules, 2 milligrams per cc, made by Abu Reihan Pharmaceutical Company) in the amount of 0.3 milligrams per kilogram body weight and Sufentanil (5 microgram ampoules per milliliter, made by the service institute Razavi drug) in the amount of 0.1 micrograms per kilogram of body weight. Both drugs will be injected intravenously and at the beginning of induction of anesthesia.

Category

Prevention

2

Description

Intervention group 2: Patients will receive Ketamine (50 milligrams per milliliter ampoule, made by Razavi Pharmaceutical Services Institute) in the amount of 0.5 milligrams per kilogram body weight, Sufentanil in the amount of 0.1 micrograms per kilogram body weight and Midazolam (5 milligrams per milliliter ampoule, made by Razavi Pharmaceutical Services Institute) in the amount

of 0.07 milligrams per kilogram body weight. Both drugs will be injected intravenously and at the beginning of induction of anesthesia.

Category

Prevention

3

Description

Control group: Patients will receive Etomidate in the amount of 0.3 milligrams per kilogram body weight as well as normal saline (manufactured by Samen Pharmaceutical Company) as a placebo. Both will be injected intravenously and at the beginning of induction anesthesia.

Category

Prevention

Recruitment centers

1

Recruitment center

Name of recruitment center

Al zahra hospital

Full name of responsible person

Kimia Karimian

Street address

Al Zahra hospital, Shohadayeh Sofeh Blvd.

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8174675731

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honarmand@med.mui.ac.ir

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Esfahan 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
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
Azim Honarmand

Position
professor

Latest degree
Specialist

Other areas of specialty/work
Anesthesiology

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Person responsible for scientific inquiries

Contact

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Full name of responsible person
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Position
Professor

Latest degree
Specialist

Other areas of specialty/work
Anesthesiology

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Person responsible for updating data

Contact

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Position
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Sharing plan

Deidentified Individual Participant Data Set (IPD)

Yes - There is a plan to make this available

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

No - There is not 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

There is no collected data yet. After collecting patients' information and making patient's identities unrecognizable, all the information will be published in an article.

When the data will become available and for how long

Since the publication of the article

To whom data/document is available

Researchers working in academic, scientific and industrial institutes

Under which criteria data/document could be used

Data publication will be done for additional statistical analysis after verifying the validity of the research center or the researcher who has requested the data.

From where data/document is obtainable

Dr Azim Honarmand honarmand@med.mui.ac.ir

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

The request for data will be answered 1 to 2 weeks after receiving email from the research center or the researcher.

Comments