

Clinical Trial Protocol

Iranian Registry of Clinical Trials

10 Jun 2026

Intravenous Dexmedetomidine versus Nebulised Dexmedetomidine in combination with standardised Propofol-Fentanyl-Midazolam for Procedural sedation during ERCP: a comparative evaluation of sedation efficacy

Protocol summary

Study aim

to compare the sedative efficacy of IV dexmedetomidine and nebulized dexmedetomidine when combined with standard propofol-fentanyl-midazolam during Endoscopic retrograde pancreaticholangiography

Design

Randomised, inferiority, single-blind with blinding of outcome assessor, single centre, randomised controlled trial

Settings and conduct

1. Randomly allocated into two groups using a generated random number table and concealed envelopes for sharing random allocation. 2. Dexmedetomidine administration as per group allocation will be done in the pre-procedure room and the mode of administration will not be known to the outcome assessor during the Endoscopic procedure under sedation. 5. All patients will receive midazolam(.01mg/kg) and fentanyl (1 mcg/kg) for anaesthesia induction based on ideal body weight. In both groups, anaesthesia will be maintained with continuous infusion of propofol @ 100 – 200 mcg/kg/min. If required 10 mg propofol iv bolus will be given to maintain Ramsay Sedation Scale 4

Participants/Inclusion and exclusion criteria

INCLUSION CRITERIA 1. Patients undergoing elective/emergency ERCP procedures under sedation 2. Age between 18-65 years 3. ASA grades I-III EXCLUSION CRITERIA 1. Patient refusal 2. Allergy to drug 3. Heart rate < 50 beats/min, 4. Beta-blockers 5. Shock 6. Oxygen saturation(SpO2) less than 90%, 7. Cardiomyopathy 8. Kidney or hepatic insufficiency. 9. Second or third-degree heart block, 10. Body mass index (BMI) over 36 kg/m2

Intervention groups

1. Group NEB-DEX: Nebulized dexmedetomidine 1 µg/kg diluted in normal saline (0.9%) to a volume of 5 ml 30 minutes before induction of anaesthesia and 2. Group

IVDEX: IV dexmedetomidine 1 mcg/kg diluted in normal saline over 10 minutes 30 minutes before induction of anaesthesia.

Main outcome variables

Propofol consumption per unit time (mg/min)

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20221109056455N2**

Registration date: **2024-09-26, 1403/07/05**

Registration timing: **prospective**

Last update: **2024-09-26, 1403/07/05**

Update count: **0**

Registration date

2024-09-26, 1403/07/05

Registrant information

Name

RISHI ANAND

Name of organization / entity

TATA MAIN HOSPITAL

Country

India

Phone

+91 97165 48587

Email address

rishi.anand1@tatasteel.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2024-10-01, 1403/07/10
Expected recruitment end date
2025-12-31, 1404/10/10
Actual recruitment start date
empty
Actual recruitment end date
empty
Trial completion date
empty

Scientific title
Intravenous Dexmedetomidine versus Nebulised
Dexmedetomidine in combination with standardised
Propofol-Fentanyl-Midazolam for Procedural sedation
during ERCP: a comparative evaluation of sedation
efficacy

Public title
Intravenous Dexmedetomidine versus Nebulised
Dexmedetomidine for procedural sedation during ERCP

Purpose
Treatment

Inclusion/Exclusion criteria

Inclusion criteria:

Patient undergoing procedural sedation for Endoscopic
retrograde cholangio-pancreaticography ASA physical
status 1-3 AGE 18-65 Years

Exclusion criteria:

Patient refusal allergy to study drugs Heart rate less than
50/minute Patient on beta blockers Hemodynamically
unstable or shock. oxygen saturation less than 95 % on
room air Hepatic or renal failure Second degree or third
degree heart block BMI > 36 kg/m²

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

Gender
Both

Phase
Bioequivalence

Groups that have been masked

- Care provider
- Outcome assessor

Sample size
Target sample size: **70**

Randomization (investigator's opinion)
Randomized

Randomization description
1. A list of participants will be created in
spreadsheet/excel sheet 2. Generate random numbers in
next column using excel formula. 3. Sort the list based
on the random numbers. 4. Assign the first half of
participants to Group A and the second half to Group B.
5. Sealed envelop with serial numbers on it with
allocation sealed inside, will be applied to ensure
blinding and confidentiality of group assignment.

Blinding (investigator's opinion)
Single blinded

Blinding description
The administration of intravenous and nebulised
Dexmedetomidine is done by different personnel neither
involved in study nor procedure sedation to prevent bias.

Randomly assign participants to either the intravenous or
nebulised Dexmedetomidine group using a
randomization table or software. Administration of
medication will be done in pre op area. Anaesthesia
management will be done by anaesthesiologist not
related to study, using Midazolam- Fentanyl- Propofol
combination. All parameters/outcome will be recorded by
caregiver anaesthesiologist in proforma. Investigator will
collect proforma at the end of procedure for data
extraction and analysis.

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Institutional Ethics Committee Tata Main Hospital,
Jamshedpur

Street address

Road C, Northern town, Bistupur, Jamshedpur

City

Jamshedpur

Postal code

831001

Approval date

2024-07-12, 1403/04/22

Ethics committee reference number

TMH/IEC/JULY/164/2024

Health conditions studied

1

Description of health condition studied

choledocholithiasis with obstruction

ICD-10 code

K80.81

ICD-10 code description

Other cholelithiasis with obstruction

Primary outcomes

1

Description

Propofol consumption per unit time

Timepoint

At the end of procedure

Method of measurement

Propofol consumption will be calculated by sum of
amount consumed by infusion and rescue bolus doses of
propofol. It will be divided by duration of infusion to

calculate per unit time propofol consumption.

Secondary outcomes

1

Description

Patient satisfaction score

Timepoint

at the end of procedure

Method of measurement

Patient satisfaction will be assessed using 5 point Gloucester Comfort Score

2

Description

Incidence of Adverse event(Desaturation, hypotension and bradycardia)

Timepoint

At the end of procedure

Method of measurement

Hypotension will be defined by blood pressure falling more than 20 % of baseline as measured by sphygmomanometer. Bradycardia will be counted if heart rate is less than 50 during the procedure. If saturation fall below 95 during procedure, it will be counted as desaturation episode.

Intervention groups

1

Description

Intervention group: Group NEB-DEX will receive nebulized dexmedetomidine 1 µg/kg diluted in normal saline (0.9%) to a volume of 5 ml 30 minutes prior to induction of anesthesia

Category

Treatment - Drugs

2

Description

Control group: Group IVDEX will receive iv dexmedetomidine 1 mcg/kg diluted in normal saline over 10 minutes 30 minutes prior to induction of anesthesia

Category

Treatment - Drugs

Recruitment centers

1

Recruitment center

Name of recruitment center

TATA MAIN HOSPITAL,JAMSHEDPUR

Full name of responsible person

ROUSHAN PATEL

Street address

Northern town, Jamshedpur

City

Jamshedpur

Postal code

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Email

roushan.patel@tatasteel.com

Web page address

<https://www.tatamainhospital.com/>

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Tata Main Hospital, Jamshedpur

Full name of responsible person

Dr Rishi Anand

Street address

Bistupur

City

Jamshedpur

Postal code

831001

Phone

+91 97165 48587

Email

rishi.anand1@tatasteel.com

Web page address

<https://www.tatamainhospital.com/>

Grant name

Grant code / Reference number

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

Yes

Title of funding source

Tata Main Hospital, Jamshedpur

Proportion provided by this source

100

Public or private sector

Private

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

Tata Main Hospital, Jamshedpur

Full name of responsible person

Dr Rishi Anand

Position

specialist

Latest degree

Specialist

Other areas of specialty/work

Anesthesiology

Street address

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Person responsible for scientific inquiries

Contact

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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

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