

Clinical Trial Protocol

Iranian Registry of Clinical Trials

12 Sep 2026

Comparison the sedative effect of intranasal midazolam and dexmedetomidine with for sedation of children 1 to 6 year-old undergoing Computerized tomography(CT) scan that referred to emergency department of Kashani and Al-zahra hospitals in Isfahan in 2017

Protocol summary

Study aim

Determination and comparison of the sedation efficacy of intranasal injection of midazolam and dexmedetomidine for CT scan imaging in 1-6 years old children referred to emergency department of Kashani and Alzahra hospitals, Isfahan 2017

Design

The present study is a double-blind clinical trial that 162 patients will be randomly divided into two groups ($n_1=n_2=81$). The medication will be prepared by a nurse and placed inside the envelope and labeled A and B. Therefore, both patient and therapist are unaware about the type of treatment.

Settings and conduct

This study was conducted on children referring to Kashani and Al-zahra hospitals in Isfahan for CT scan in 2017. In the first group, Midazolam, and in the second group, it was administered Dexmedetomidine intranasally. The two medications were used by Mucosal Atomization Device, MAD 300. A double blind study involving patient and physician.

Participants/Inclusion and exclusion criteria

Inclusion criteria: 1-Children's age range, 1 to 6- yearold, requiring diagnostic imaging(CT scan). 2-Parental satisfaction to participate in this study. Exclusion criteria: 1-Excessive sensitivity to medications from benzodiazepines family and the alfa-agonist drugs 2-Hemodynamic instability 3-severe hypotension and shock 4-pulmonary disease

Intervention groups

Our study aimed to compare the sedation effect of intranasal injection of Dexmedetomidine and Midazolam in 1-6 years old children who required for CT scan imaging. Intervention group: Will receive Dexmedetomidine by intranasal injection. Control group: Will receive Midazolam by intranasal injection.

Main outcome variables

The beginning of sedation; imaging time (procedure time); blood pressure; pulse rate; blood O₂ saturation; recovery time ;side effects

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20190509043538N1**

Registration date: **2019-08-26, 1398/06/04**

Registration timing: **retrospective**

Last update: **2019-08-26, 1398/06/04**

Update count: **0**

Registration date

2019-08-26, 1398/06/04

Registrant information

Name

Ali Bigdeli

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 25 3292 2172

Email address

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2017-10-23, 1396/08/01

Expected recruitment end date

2018-10-22, 1397/07/30
Actual recruitment start date
 2018-01-10, 1396/10/20
Actual recruitment end date
 2019-01-21, 1397/11/01
Trial completion date
 2019-02-20, 1397/12/01

Scientific title
 Comparison the sedative effect of intranasal midazolam and dexmedetomidine with for sedation of children 1 to 6 year-old undergoing Computerized tomography(CT) scan that referred to emergency department of Kashani and Al-zahra hospitals in Isfahan in 2017

Public title
 Comparison of the sedative effect of intranasal midazolam and dexmedetomidine for pediatric

Purpose
 Other

Inclusion/Exclusion criteria
Inclusion criteria:
 Children's age range from 1 year to 6 years old requires a CT scan. Parental satisfaction to participate in this study.
Exclusion criteria:
 Having excessive sensitivity to benzodiazepines and family members as well as alpha agonists Alertness level based on the Glasgow Coma Score less than 15 Having very low blood pressure or shock Having weak and unstable vital signs Having lung disease

Age
 From **1 year** old to **6 years** old

Gender
 Both

Phase
 3

Groups that have been masked

- Participant
- Investigator

Sample size
 Target sample size: **162**
 Actual sample size reached: **143**

Randomization (investigator's opinion)
 Randomized

Randomization description
 The studied samples will be randomly divided into two groups of 81 individuals by selecting envelopes. Each envelope was contained with one of the two labels A or B representing Midazolam or Dexmedetomidine. Children will be in one of two groups .

Blinding (investigator's opinion)
 Double blinded

Blinding description
 To meet the double blindness of the study, Midazolam (dose of 0.3 mg /kg) and Dexmedetomidine (dose of 3 mcg /kg) will be prepared daily by the emergency nurse (uninformed) and labeled A or B and also will be available for the researcher daily. The researcher will be prescribed the mentioned medicine by syringe intranasally.

Placebo
 Not used

Assignment
 Other

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
 No.15,Yas building, Sadoughi Ave,Yasaman St,
City
 Qom
Province
 Isfahan
Postal code
 3716937314
Approval date
 2017-04-21, 1396/02/01
Ethics committee reference number
 Ir.mui.rec.1396.2.076

Health conditions studied

1

Description of health condition studied
 Head trauma
ICD-10 code
ICD-10 code description

Primary outcomes

1

Description
 Success in sedation intranasally
Timepoint
 0,10,20,30 min
Method of measurement
 By Ramsay scoring

Secondary outcomes

1

Description
 Measurement of blood pressure ; pulse rate; blood oxygen saturation;
Timepoint
 0;10;20;30 minutes
Method of measurement

Intervention groups

1

Description

Intervention group: The intervention group will have received Dexmedetomidine (manufactured by Hospira Co. USA) intranasally. The agent will be prepared daily by a nurse and will be prescribed by Intranasal Mucosal Atomization Device (IMAD), that called MAD Nasal 300 (manufactured by Teleflex Medical Co, USA) by dose 3 µg/kg. Up to 1 ml of the medication will be injected in each nostril of nose by a 2 cc syringe (G 22, manufactured by Avapezeshk Co, Iran). The injection of medication is carried out when the patient is being supine position and in resting. Two minutes after injection of medication into the nostrils, the patient can place in sitting position.

Category

Treatment - Drugs

2

Description

Control group: The control group will have received Midazolam (manufactured by Exir Co, Iran) intranasally. The agent will be prepared daily by a nurse and will be prescribed by Intranasal Mucosal Atomization Device (IMAD), that called MAD Nasal 300 (manufactured by Teleflex Medical Co, USA) by dose 0.3 µg/kg. Up to 1 ml of the medication will be injected in each nostril of nose by a 2 cc syringe (G 22, manufactured by Avapezeshk Co, Iran). The injection of medication is carried out when the patient is being supine position and in resting. Two minutes after injection of medication into the nostrils, the patient can place in sitting position.

Category

Treatment - Drugs

Recruitment centers

1

Recruitment center

Name of recruitment center

Kashani hospital, Al-Zahra hospital

Full name of responsible person

Ali Bigdeli

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No.15, Yas building, Yasaman St, Sadoughi Ave.

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Esfahan University of Medical Sciences

Full name of responsible person

Azizkhani, Reza

Street address

Sufeh Blvd, Al Zahra Hospital, Department of Emergency Medicine

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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

Azizkhani, Reza

Position

Associate professor

Latest degree

Specialist

Other areas of specialty/work

Emergency Medicine

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Person responsible for scientific inquiries

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Position

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Latest degree

Specialist

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Person responsible for updating data

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Full name of responsible person

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Position

Resident

Latest degree

Medical doctor

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

No - There is not 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

Not applicable