Clinical Trial Protocol
Iranian Registry of Clinical Trials

17 Sep 2026

The effect of intravenous magnesium sulfate on intraocular pressure changes following tracheal intubation in adults in Shiraz University affiliated hospital

Protocol summary

Summary

Magnesium sulfate a cost effective and safe drug. Magnesium can act as adrenergic antagonist and inhibited the release of catecholamines. One of the most problems in the anesthesia is control of pressure responses due to laryngoscopic intubation. This study was designed to assess the effect of magnesium sulfate on pressure responses of laryngoscopic intubation in anesthesia including hypertension, tachycardia and increased in intraocular pressure (IOP). This randomized, double blind study was conducted in 180 patients ASA I that were undergoing non ocular surgery. The magnesium group A (n 90) received 30 mg/kg before induction of anesthesia and group B (n 90) received the same volume of normal saline. Intra ocular pressure, hemodynamic variables and heart rate measured in 4 stages: before induction of anesthesia (T1), just before intubation (T2), 1minute after intubation (T3), and 5 minute after intubation (T4). These revealed significant interaction effect when comparing IOP in two groups in T2 to T3; (P=0.031). There were significant differences between in the Systolic BP (p= 0.018), in the Diastolic BP (p= 0.01), in the Mean BP (p= 0.027), in two groups across levels of time. There was not an overall significant difference in the heart rate between two groups. (P= 0.524) Intravenous magnesium sulfate before induction of anesthesia reduced pressure responses of laryngoscopic intubation, and attenuated Iop in the time of before and after intubation. This attenuation is might be related to reduction in the release of catecholamine and vasodilatation of smooth muscle of systemic vessels. Keyword: magnesium sulfate, Iop.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT138812013376N1**
Registration date: **2011-02-16, 1389/11/27**
Registration timing: **retrospective**

Last update:
Update count: **0**

Registration date

2011-02-16, 1389/11/27

Registrant information

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Recruitment status

Recruitment complete

Funding source

Vice Chancellor for Research Affairs of Shiraz University of Medical Science , Anesthesia department

Expected recruitment start date

2007-07-23, 1386/05/01

Expected recruitment end date

2009-09-16, 1388/06/25

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The effect of intravenous magnesium sulfate on intraocular pressure changes following tracheal intubation in adults in Shiraz University affiliated hospital

Public title
The effect of Magnesium sulphate on increased intra ocular pressure due to general anesthesia
Purpose
Prevention
Inclusion/Exclusion criteria
Inclusion criteria: 180 patients (ASA I) healthy adult, (18 to 38years old, both man and woman) that were scheduled for elective non ocular surgery (ENT and ambulatory surgery that needed tracheal intubation), were selected. exclusion criteria: The patients with specific major hepatic, renal and cardio-vascular disease as well as those known to have allergic reaction to magnesium sulphate or other drugs on basis of the history of patients, and hypermagnesemia, hypocalcemia on the basis on lab data, anuria, heart block (ECG), pregnancy, any degree of renal insufficiency, digitalised patients, positive history of glaucoma, or intra ocular hypertension, and patients who refused to participate in this study, were excluded.
Age
From **18 years** old to **38 years** old
Gender
Both

Phase
3
Groups that have been masked
No information
Sample size
Target sample size: **180**
Randomization (investigator's opinion)
Randomized
Randomization description
Blinding (investigator's opinion)
Double blinded
Blinding description
Placebo
Used
Assignment
Parallel
Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
Shiraz University of Medical Science
Street address
Shiraz, Zand avenue, Central building of Shiraz University of Medical Science
City
Shiraz
Postal code
71345 - 1978
Approval date
2008-03-16, 1386/12/26
Ethics committee reference number
3905-86

Health conditions studied

1

Description of health condition studied
Persons encountering health services for specific procedures and health care
ICD-10 code
Z40 - Z41
ICD-10 code description
Persons encountering health services for specific procedures and health care

Primary outcomes

1

Description
iop (Intra ocular pressure)
Timepoint
In 4 stage (T1:Before induction of anesthesia ,T2 :Just before intubation , T3:1 minute after intubation ,T4:5 minute after intubation
Method of measurement
TONOPEN Instrument

Secondary outcomes

1

Description
Systolic BP
Timepoint
4 stages ; T1 :Before Induction of anesthesia , T2 : just before intubation ,T3 : 1 minute after intubation, T4 :5 minute after intubation
Method of measurement
NIBP monitoring

2

Description
Diastolic BP
Timepoint
4 stages ; T1 :Before Induction of anesthesia , T2 : just before intubation ,T3 : 1 minute after intubation, T4 :5 minute after intubation
Method of measurement
NIBP monitoring

3

Description
Mean Arterial Pressure
Timepoint

4 stages ; T1 :Before Induction of anesthesia , T2 : just before intubation ,T3 : 1 minute after intubation, T4 :5 minute after intubation

Method of measurement

NIBP monitoring

4

Description

Heart Rate

Timepoint

4 stages ; T1 :Before Induction of anesthesia , T2 : just before intubation ,T3 : 1 minute after intubation, T4 :5 minute after intubation

Method of measurement

EKG monitoring

Intervention groups

1

Description

administration of magnesium sulphate once 30mg/kg IV before induction of Anesthesia

Category

Prevention

2

Description

administration of normal saline once 30mg/kg IV before induction of Anesthesia

Category

Placebo

Recruitment centers

1

Recruitment center

Name of recruitment center

Khalili and Dastgheib Shiraz University affiliated hospitals

Full name of responsible person

Fatemeh Karami tire shabankare

Street address

Shiraz University of medical of science,Faghihi hospital, nesthesia department

City

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Vice Chancellor for Research of Shiraz University of Medical Science,Anesthesia department

Full name of responsible person

Dr Mohammad ali sahmeddini

Street address

Shiraz university of Medical Science, central buldding,7th stairs,research and technology center

City

Shiraz

Grant name

Grant code / Reference number

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

Yes

Title of funding source

Vice Chancellor for Research of Shiraz University of Medical Science,Anesthesia department

Proportion provided by this source

100

Public or private sector

empty

Domestic or foreign origin

empty

Category of foreign source of funding

empty

Country of origin

Type of organization providing the funding

empty

Person responsible for general inquiries

Contact

Name of organization / entity

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Full name of responsible person

Dr Sina Ghaffari pour

Position

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Other areas of specialty/work

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Sharing plan

Deidentified Individual Participant Data Set (IPD)
empty
Study Protocol
empty
Statistical Analysis Plan
empty
Informed Consent Form
empty
Clinical Study Report
empty
Analytic Code
empty
Data Dictionary
empty