

Clinical Trial Protocol

Iranian Registry of Clinical Trials

26 Jul 2026

Study of the effect of magnesium sulfate 25 mg/kg & 50 mg/kg, on the speed of onset & intensity of muscle relaxation of cisatracurium during induction of anesthesia in the patients candidate for laparotomy

Protocol summary

Summary

This double blind randomized control trial, conducted to assess the effect of magnesium sulfate on the speed & potency of cisatracurium in muscle relaxation. 90 patients between 18 - 80 years old with ASA class I, II who were candidate for elective abdominal surgery were selected for this study. All patients who had history of any neuromuscular or metabolic and systemic diseases were excluded. They were divided to three groups randomly. Before giving any anesthetic drug, in the group 1, normal saline 100 cc as placebo. Magnesium sulfate 25 & 50 mg/kg dissolved in 100 cc normal saline infused respectively during 10 min in 2nd and third group. Anesthesia was induced with standard and equal dose of midazolam, fentanyl & thiopental in all patients. For muscle relaxation 0.15 mg/kg cisatracurium with priming method was used. The speed of relaxation was evaluated with single twitch test and with the help of nerve stimulator. 3 min after muscle relaxant the patients were intubated. The potency of muscle relaxation checked with post tetanic count test (PTC) every 5 min until 30 min after intubation. Vital signs (HR & MAP) were measured and printed in the time course of the study every 5 min also.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT201012135378N1**

Registration date: **2011-04-20, 1390/01/31**

Registration timing: **retrospective**

Last update:

Update count: **0**

Registration date

2011-04-20, 1390/01/31

Registrant information

Name

Mohammad Reza Ghodraty

Name of organization / entity

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Recruitment status

Recruitment complete

Funding source

Vice Chancellor for Research of Medicine Faculty of Iran (Tehran) University of Medical Sciences

Expected recruitment start date

2009-12-20, 1388/09/29

Expected recruitment end date

2010-12-20, 1389/09/29

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Study of the effect of magnesium sulfate 25 mg/kg & 50 mg/kg, on the speed of onset & intensity of muscle relaxation of cisatracurium during induction of anesthesia in the patients candidate for laparotomy

Public title

The effect of magnesium on muscular relaxation with cisatracurium

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria: ASA I,II physical status class; 18 -60 years old; candidate for elective intra abdominal surgery under general anesthesia Exclusion criteria: History of neuromuscular, kidney, hepatic and cardiac diseases; hypo or hyper metabolic diseases; and those consuming drugs that affect neuromuscular junction; & history of cardiac arrhythmias.

Age

From **18 years** old to **60 years** old

Gender

Both

Phase

2-3

Groups that have been masked

No information

Sample size

Target sample size: **90**

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

Ethics Committee of Medicine Faculty of Iran
University of Medical Sciences (Tehran)

Street address

Medicine Faculty, Hemmat Paradise, Hemmat Freeway.

City

Tehran

Postal code

Approval date

2009-06-21, 1388/03/31

Ethics committee reference number

43102

Health conditions studied

1

Description of health condition studied

Elective intra abdominal surgery (General & Gynecologic)

ICD-10 code

Y83.9

ICD-10 code description

Surgical procedure, unspecified

Primary outcomes

1

Description

Speed of muscle relaxation

Timepoint

After intervention

Method of measurement

Every second with nerve stimulator and single twitch test

Secondary outcomes

1

Description

Quality & depth of muscle relaxation

Timepoint

5 min after intervention

Method of measurement

Every 5 min with nerve stimulator and by post tetanic count test

2

Description

Heart rate & blood pressure variation

Timepoint

From arrival of the patient to OR until 30 min after intervention

Method of measurement

Every 5 min

Intervention groups

1

Description

In the control group a single shot 100cc normal saline as placebo before induction of anesthesia.

Category

Placebo

2

Description

In the first group of intervention (group 2 study) 25 mg/kg magnesium sulfate dissolved in 100cc normal saline infused intravenously over 10 min before anesthesia as single dose

Category

Treatment - Drugs

3

Description

In the second group (group 3 study) 50 mg/kg magnesium sulfate dissolved in 100cc normal saline infused in 10 min

Category

Treatment - Drugs

Recruitment centers**1****Recruitment center****Name of recruitment center**

Firoozgar Hospital

Full name of responsible person

Mohammad Reza Ghodraty MD, Assistant Professor of Anesthesia

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Behafarin St, Karim Khan AV.

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Sponsors / Funding sources**1****Sponsor****Name of organization / entity**

Vice Chancellor for Research of Medicine Faculty, Iran University of Medical Sciences (Tehran)

Full name of responsible person

Seyed Ali Javadmousavi MD.

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3th floor, Research Deputy of Medicine Faculty, Hemmat Pardis, Hemmat Freeway.

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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

Vice Chancellor for Research of Medicine Faculty, Iran University of Medical Sciences (Tehran)

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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Web page address

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