Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 2026

Evaluation of intravenous magnesium sulphate in clinical improvement of patients, with acute stroke

Protocol summary

Summary

Background: This study evaluated the effect of intravenous magnesium sulphate in clinical improvement of the patients with acute stroke. In various studies, there is a lot of information about the use of magnesium sulphate in different conditions of brain ischemia. while neuroprotective effects of magnesium sulphate as a neuroprotective agent has been demonstrated in focal and global brain ischemia, in animal models, but the effect of this agent is still unclear. Methods: 80 patients (In this study, 47 percent of patients was female and 53 percent was male) of with acute ischemic stroke signs and symptoms lasting less than 12 hours were included in the study and were divided into two groups, 40 patients received 4 g of MgSO4 over 15 minutes and then 16 g over the next 24 hours, and 40 patients were received placebo. Results: the results show that the rate of clinical improvement was better in group with magnesium sulphate, than the control group.The highest correlation of magnesium sulphate was associated with improvement of upper and lower muscle forces and aphasia and level of consciousness of patients results. The results showed that, in the group with magnesium sulphate, the patients with Grade III decreased and the patient with Grade II , I increased. After 2 weeks in this Group the patients with Grade III, decreased to 12.5 percent and the patients with Grade II and I, increased to 50 percent and 37.5 percent.(According to national institutes of health stroke scale). Conclusion: According to this study,magnesium sulphate,can be used as a neuroprotective agent in patients with acute stroke. Key words: magnesium sulphate, stroke, neuroprotective

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2014060117945N1**

Registration date: **2014-07-20, 1393/04/29**

Registration timing: **retrospective**

Last update:

Update count: **0**

Registration date

2014-07-20, 1393/04/29

Registrant information

Name

Ghasem Fattahzadeh Ardalani

Name of organization / entity

Ardabil University of Medical Sciences

Country

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Phone

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Recruitment status

Recruitment complete

Funding source

Ardabil University of Medical Sciences

Expected recruitment start date

2013-08-21, 1392/05/30

Expected recruitment end date

2014-03-21, 1393/01/01

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Evaluation of intravenous magnesium sulphate in clinical improvement of patients, with acute stroke

Public title

Evaluation of intravenous magnesium sulphate in clinical

imrovement of patients, with acute stroke, in Ardabil Alavi hospital

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria: Age greater than 18 years old; Age less than 80 years old; onset of symptoms less than 12 hour . Exclusion criteria: : Patient with chronic renal failure (more than 5.2); pregnant patients; patients with brain hemorrhage; age less than 18 years old; systolic blood pressure greater than 220 and diastolic lower than 90; patient with severe respiratory disease; patient with heart block; Patients with pre-existing neurological disease or progressive systemic disease that can impair neurological assessment.

Age

From **18 years** old to **80 years** old

Gender

Both

Phase

2-3

Groups that have been masked

No information

Sample size

Target sample size: **80**

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

Ardabil University of Medical Sciences

Street address

Department of Neurology, Alavi hospital

City

Ardebil

Postal code

Approval date

2013-07-14, 1392/04/23

Ethics committee reference number

9108

Health conditions studied

1

Description of health condition studied

Stroke

ICD-10 code

I64

ICD-10 code description

Accident - vascular, brain

Primary outcomes

1

Description

Degree of limb paresis

Timepoint

Admission - three days later - two weeks later

Method of measurement

Standard questionnaire NIHSS

2

Description

Aphasia

Timepoint

Admission - three days later - two weeks later

Method of measurement

Standard questionnaire NIHSS

3

Description

level of consciousness

Timepoint

Admission - three days later - two weeks later

Method of measurement

Standard questionnaire NIHSS

Secondary outcomes

1

Description

The rate of cerebral ischemia.

Timepoint

3 day later - 2 week later

Method of measurement

CT-scan

Intervention groups

1

Description

In the control group the same amount of volume, not weight of normal saline solution over 15 minutes and then within 24 hours for patient was given.

Category

Placebo

2

Description
In the intervention group magnesium sulfate vials has been given for the patient that have stroke in last 12 hour, 4 g intravenous magnesium sulfate in less than 15 minute and then 16 g within 24 hour has been given, the patients was controlled in admission and 3 day later and 2 week later.

Category
Treatment - Drugs

Recruitment centers

1

Recruitment center

Name of recruitment center
Alavi hospital

Full name of responsible person
Dr Ghasem Fattahzadeh

Street address
Ardabil Alavi hospital

City
Ardebil

Sponsors / Funding sources

1

Sponsor

Name of organization / entity
Ardabil University of Medical Sciences

Full name of responsible person
Dr Ghasem Fattahzadeh Ardalani

Street address
Ardabil Alavi hospital

City
Ardebil

Grant name

Grant code / Reference number

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

Title of funding source
Ardabil University of Medical Sciences

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
Ardabil University of Medical Sciences

Full name of responsible person
Dr Ghasem Fattahzadeh Ardalani

Position
Assistant Professor

Other areas of specialty/work

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Person responsible for scientific inquiries

Contact

Name of organization / entity
Ardabil University of Medical Sciences

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Position
Assistant Professor

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Person responsible for updating data

Contact

Name of organization / entity

Full name of responsible person
Masoud Ghasemi

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General Physician

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