

Clinical Trial Protocol

Iranian Registry of Clinical Trials

21 Jul 2026

Comparing the effects of Furosemide, Mannitol, and Dopamine on Diuresis in Patients with Cesarean Section under Spinal Anesthesia

Protocol summary

Study aim

Comparing the effects of furosemide, mannitol, and dopamine on diuresis in patients with cesarean section under spinal anesthesia.

Design

Patients are randomly divided into three intervention and one control groups and the study is design as a randomised, controlled, parallel group trial with double blinded outcome assessment. Randomisation will centralised based on simple randomization method using random digits table.

Settings and conduct

Eighty patients undergoing cesarean section are randomly divided and evaluated into three intervention and control groups (n=20) in Ahvaz Imam Khomeini hospital. Participants, researchers responsible for data collection and analyses are blinded to the groups allocation.

Participants/Inclusion and exclusion criteria

Inclusion criteria are patients in age group 18 to 45 years and complete pregnancy period (based on weeks). The exclusion criteria are patients with acute renal failure with inadequate cardiac output and tissue perfusion, dialysis-dependent patients and not having normal levels of creatinine and BUN.

Intervention groups

Mannitol group received 100 ml 20% mannitol serum intravenously for the last 30 min of the surgery; furosemide group received infusion of 0.25 mg/kg of furosemide in 500 cc normal saline serum for 30 min of the surgery, dopamine group received a renal dose of 0.25 to 2 µg/kg/min in 500 cc of normal saline serum, and control group received 500 cc normal saline serum without any drug for 30 min.

Main outcome variables

The urine output is measured at 0 (immediately after admission to recovery room), 2 and 6 hours after the completion of the surgical operation.

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20191012045070N1**

Registration date: **2019-11-05, 1398/08/14**

Registration timing: **registered_while_recruiting**

Last update: **2019-11-05, 1398/08/14**

Update count: **0**

Registration date

2019-11-05, 1398/08/14

Registrant information

Name

Ali Hasani

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 61 3222 2925

Email address

hasani.a@ajums.ac.ir

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2019-09-23, 1398/07/01

Expected recruitment end date

2020-03-15, 1398/12/25

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparing the effects of Furosemide, Mannitol, and Dopamine on Diuresis in Patients with Cesarean Section under Spinal Anesthesia

Public title

Comparing the Effects of Furosemide, Mannitol, and Dopamine on Diuresis in Patients under Cesarean Section

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria:

Age group 18 to 45 years Complete pregnancy period (based on weeks)

Exclusion criteria:

Patients with acute renal failure with inadequate cardiac output and tissue perfusion Dialysis-dependent patients Not having normal levels of creatinine and BUN

Age

From **18 years** old to **45 years** old

Gender

Female

Phase

3

Groups that have been masked

- Participant
- Data analyser

Sample size

Target sample size: **80**

Randomization (investigator's opinion)

Randomized

Randomization description

Individuals are randomly divided into four groups based on simple randomization method using random digits table. In this method, a collection of non-template numbers is randomly generated and arranged as a table. A collection of numbers is considered for each group and the patients are asked to select one of the table numbers. According to the selected number, they are randomly assigned to one of the intervention or control groups.

Blinding (investigator's opinion)

Double blinded

Blinding description

Participants are informed about the purpose and method of study. After receiving informed consent, they are blinded to the study groups to unify patients in terms of their empathy sense. Researchers responsible for data collection and analyses will also be blinded to the groups allocation for preventing personal viewpoint.

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics committee of Ahvaz University of Medical Sciences

Street address

Research deputy, Ahvaz Jundishapur University Of Medical Sciences, Golestan Blvd.

City

Ahvaz

Province

Khouzestan

Postal code

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Approval date

2019-06-08, 1398/03/18

Ethics committee reference number

IR.AJUMS.REC.1398.198

Health conditions studied

1

Description of health condition studied

Cesarean Section

ICD-10 code

O82.8

ICD-10 code description

Other single delivery by caesarean section

Primary outcomes

1

Description

Urine output volume

Timepoint

0 (immediately after admission to recovery room), 2 and 6 hours after the completion of the surgical operation

Method of measurement

Urine output volume based on CC

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group (1): Patients are received 100 ml 20% mannitol serum intravenously for the last 30 min of the surgery.

Category

Treatment - Drugs

2

Description

Intervention group (2): Patients are received infusion of 0.25 mg/kg of furosemide in 500 cc normal saline serum for 30 min of the surgery.

Category

Treatment - Drugs

3

Description

Intervention group (3): Patients are received a renal dose of 0.25 to 2 µg/kg/min dopamine in 500 cc of normal saline serum.

Category

Treatment - Drugs

4

Description

Control group: Patients are received 500 cc normal saline serum without any drug for 30 min.

Category

Treatment - Drugs

Recruitment centers

1

Recruitment center

Name of recruitment center

Imam Khomeini Hospital, Ahvaz Jundishapur
University of Medical Sciences

Full name of responsible person

Kaveh Behaeen

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Ahvaz University of Medical Sciences

Full name of responsible person

Mohammad Badavi, PhD

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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

Ahvaz 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

Ahvaz University of Medical Sciences

Full name of responsible person

Ali Hasani Gohargan

Position

Resident

Latest degree

Medical doctor

Other areas of specialty/work

Anesthesiology

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Person responsible for scientific inquiries

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Associate professor

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Specialist

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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

Not applicable

Data Dictionary

Not applicable