

Clinical Trial Protocol

Iranian Registry of Clinical Trials

17 Sep 2026

Comparison the effects of routine versus a minimally invasive endotracheal suctioning

Protocol summary

Summary

Objective: comparison of the effects of routine and minimally invasive endotracheal suctioning methods on suction related pain, airway clearance, airway trauma and physiological indices in patients hospitalized in intensive care units of Al-Zahra Hospital in 2015. Study design: randomized clinical trial. Study population: patients admitted to the intensive care unit at Al-Zahra Hospital. Major inclusion criteria: age over than 18; obtaining informed consent; no blood clotting disorders; no chronic respiratory disease; intubation time between 48 hours and one week. Major exclusion criteria: patients who would discontinue voluntarily; estuation during the study; become unstable hemodynamic parameters such as bradycardia, arrhythmia, cyanosis, loss of arterial oxygen. Sample size: 60 patients. Intervention: in the routine endotracheal suction the method of suctioning will be deep, with normal saline instillation, and with negative pressure of 100-200 mm Hg. In the minimally invasive endotracheal suction the method of suctioning will be shallow, without normal saline instillation, and with negative pressure of 80-120 mm Hg. Design variables will be taken immediately before, immediately after, and 10 minutes after endotracheal suctioning in both groups. Primary outcomes: changes in physiological indices.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2015072423314N1**

Registration date: **2015-08-12, 1394/05/21**

Registration timing: **registered_while_recruiting**

Last update:

Update count: **0**

Registration date

2015-08-12, 1394/05/21

Registrant information

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Name of organization / entity

Qom university of medical sciences

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Recruitment status

Recruitment complete

Funding source

Vice chancellor for research, Isfahan University of Medical Sciences

Expected recruitment start date

2015-08-10, 1394/05/19

Expected recruitment end date

2015-10-29, 1394/08/07

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparison the effects of routine versus a minimally invasive endotracheal suctioning

Public title

The effects of routine versus a minimally invasive endotracheal tube suctioning procedure on suction-related pain, airway clearance, airway trauma and physiological indices in patients hospitalized in intensive care units of Al-Zahra Hospital of Isfahan in 2015.

Purpose

Treatment

Inclusion/Exclusion criteria
Major inclusion criteria: age over than 18; obtaining informed consent; no blood clotting disorders; no chronic respiratory disease; intubation time between 48 hours and one week. Major exclusion criteria: extubation during the study; become unstable hemodynamic parameters such as bradycardia, arrhythmia, cyanosis, loss of arterial oxygen.

Age
No age limit

Gender
Both

Phase
N/A

Groups that have been masked
No information

Sample size
Target sample size: **60**

Randomization (investigator's opinion)
Randomized

Randomization description

Blinding (investigator's opinion)
Not blinded

Blinding description

Placebo
Not used

Assignment
Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics committee of Isfahan university of medical sciences

Street address

Isfahan University of Medical Sciences, Azadi Square, Hezar-Jerib street, Isfahan. Postal cod: 81746-73461

City

Isfahan

Postal code

Approval date

2014-11-26, 1393/09/05

Ethics committee reference number

294003

Health conditions studied

1

Description of health condition studied

Respiratory conditions due to other specified external agents

ICD-10 code

J70.8

ICD-10 code description

Respiratory conditions due to other specified external agents

Primary outcomes

1

Description

Pain

Timepoint

Immediately before, immediately after, and 10 min after endotracheal suctioning

Method of measurement

With numeral rating scale (NRS)

Secondary outcomes

1

Description

Blood pressure

Timepoint

Immediately before, immediately after, and 10 min after endotracheal suctioning

Method of measurement

With vital signs monitoring devices

2

Description

Heart Rate

Timepoint

Immediately before, immediately after, and 10 min after endotracheal suctioning

Method of measurement

With vital signs monitoring devices

3

Description

Respiratory Rate

Timepoint

Immediately before, immediately after, and 10 min after endotracheal suctioning

Method of measurement

With vital signs monitoring devices

4

Description

Spo2

Timepoint

Immediately before, immediately after, and 10 min after endotracheal suctioning

Method of measurement

With vital signs monitoring devices

5

Description

Number of endotracheal suctioning

Timepoint

After each endotracheal suctioning

Method of measurement

Counting the number of endotracheal suctioning

6

Description

Airway traumatization

Timepoint

After endotracheal suctioning

Method of measurement

Viewing bleeding in the airways

Intervention groups

1

Description

In intervention group (minimally invasive endotracheal tube suctioning) the patients were hyper oxygenated only by ventilator for one minute, short suction catheter with effective length was introduced only into the end of the endotracheal tube, a negative pressure (80-120 mmHg) was applied for a maximum duration of 10 seconds while removing the catheter, Manual hyperinflation and installation of normal saline were not applied in this group.

Category

Treatment - Other

2

Description

In control group (routin endotracheal tube suctioning) after disconnecting the patients from the ventilator, manual hyper oxygenation and hyperventilation was carried out for one minute, a suction catheter with an effective length was introduced into the endotracheal tube until resistance was met (reached the carina), after that it was retracted a centimeter and a negative pressure (100-200 mmHg) was applied for a maximum duration of 10 seconds while removing the catheter, Normal saline was instilled before the each suctioning.

Category

Treatment - Other

Recruitment centers

1

Recruitment center

Name of recruitment center

Al-Zahra Hospital

Full name of responsible person

Street address

Al-Zahra Hospital, Sofeh Avenue, Isfahan. Postal cod: 81746-75731

City

Isfahan

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Vice chancellor for research, Isfahan University of Medical Sciences

Full name of responsible person

Dr Mohammad Hashemi

Street address

Isfahan University of Medical Sciences, Azadi Square, Hezar-Jerib street, Isfahan. Postal cod: 81746-73461

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Isfahan

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, Isfahan 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

Isfahan University of Medical sciences

Full name of responsible person

Mahdi Shamali

Position

MSc in critical care nursing

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

Person responsible for updating data

Contact

Name of organization / entity

Qom University of Medical sciences

Full name of responsible person

Mohammad Abbasinia