

Clinical Trial Protocol

Iranian Registry of Clinical Trials

10 Jun 2026

Survey the effect of rib cage compression on airway - secretion removal and respiratory parameters in mechanically ventilated patients

Protocol summary

Summary

This research is clinical trial study with a crossover design to determine the effect of rib cage compression on airway secretion and respiratory parameters in patients under mechanical ventilation in intensive care units. The samples included of 50 mechanically ventilated patients. The patients will be selected gradually according to inclusion criteria. Inclusion criteria includes: having 7-8.5 mm endotracheal tube, connected to a volume mode ventilator for a minimum of 48 hours, stable hemodynamic status, lack of a chest tube, no chest surgery or injuries, no rib fractures and Exclusion criteria includes: mucolytic and muscle paralysis drugs, start, stop, or change the bronchodilator medications, received endotracheal suctioning in less than an hour, increased brain pressure and vascular fragility. The procedure is that patients randomly are divided into two groups, A (first suctioning without rib cage compression then suction with compression) and B (beginning suction with rib cage compression and then suctioning without compression). So that all patients received suctioning two times a day (if needed), with 3 hours interval between the two intervention. In this technique the researcher apply compression at the beginning of expiration at the lower of the chest and at the end of expiratory phase the pressure is removed. Airway secretion in the weighing chamber is connected to the suction catheter to collect and respiratory parameters with the dynamic compliance and O₂ saturation will be measured immediately before, 5 and 25 minute after suctioning.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2012111911538N1**

Registration date: **2012-12-19, 1391/09/29**

Registration timing: **registered_while_recruiting**

Last update:

Update count: **0**

Registration date

2012-12-19, 1391/09/29

Registrant information

Name

Farideh Hasavari

Name of organization / entity

Guilan University of Medical Sciences (Nursing & Midwifery Faculty)

Country

Iran (Islamic Republic of)

Phone

+98 13 1555 5056

Email address

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Recruitment status

Recruitment complete

Funding source

vice-chancellor for Research, Guilan University of Medical Sciences

Expected recruitment start date

2012-11-30, 1391/09/10

Expected recruitment end date

2013-04-20, 1392/01/31

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Survey the effect of rib cage compression on airway - secretion removal and respiratory parameters in mechanically ventilated patients

Public title

Effect of rib cage compression on airway - secretion

removal and respiratory parameters

Purpose

Prevention

Inclusion/Exclusion criteria

inclusion criteria: age 18 to 65 years, having 7-8.5 mm endotracheal tube, connected to a volume mode ventilator for a minimum of 48 hours, stable hemodynamic status (mean arterial pressure between 110 to 60 mm Hg, heart rate of less than 110 beats per minute and arterial oxygen saturation greater than 90% of the activity in the absence of oxygen ventilator (Fio2 is less than 60 percent), lack of a chest tube, no chest surgery or injuries, no rib fractures, pneumothorax, embolism, subcutaneous emphysema metastatic cancers, no burns, skin grafts and reconstructive surgery of the chest, no spine Fusion, pregnancy, obesity (body mass index (BMI) > 30) and no use of cardiac pacemakers, severe scoliosis, unstable chest, absence abscess or cysts of the lung, report of chest x-ray of infiltration, atelectasis, no history of lung disease, according to records and having a score of -4 or -5 based on criteria Richmond (RASS). Exclusion criteria: mucolytic and muscle paralysis drugs, start, stop, or change the bronchodilator medications during the study, changes in the configuration of mechanical ventilation during the study period, received endotracheal suctioning in less than an hour, closed suction system, severe bronchospasm, increased brain pressure based on The doctor diagnose, and vascular fragility (petechiae, purpura and ecchymosis).

Age

From **18 years** old to **65 years** old

Gender

Both

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **50**

Randomization (investigator's opinion)

Randomized

Randomization description

Blinding (investigator's opinion)

Not blinded

Blinding description

Placebo

Not used

Assignment

Crossover

Other design features

no

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Guilan University of Medical Sciences

Street address

Namjoo street-Guilan University of Medical Sciences

City

Rasht

Postal code

41938-33697

Approval date

2012-11-17, 1391/08/27

Ethics committee reference number

2910264803

Health conditions studied

1

Description of health condition studied

accumulation of airway secretion, complete or partial obstruction, impire in ventilation

ICD-10 code

J44.0

ICD-10 code description

lower respiratory infection

Primary outcomes

1

Description

airway secretion

Timepoint

every 3 hours

Method of measurement

weighing secretions by suctioning out

2

Description

respiratory parameters

Timepoint

every 3 hours

Method of measurement

ventilator monitor observation

Secondary outcomes

empty

Intervention groups

1

Description

A group's intervention: first suctioning without rib cage compression then suction with rib cage compression during expiration time with 3 hours interval between the two intervention

Category

Prevention

2

Description

B group's Intervention : first suctioning with rib cage compression then suction without rib cage compression during expiration time with 3 hours interval between the two intervention

Category

Prevention

Recruitment centers

1

Recruitment center

Name of recruitment center

Poursina training center

Full name of responsible person

Farideh Hasavari

Street address

Poursina training center, Namjoo street

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2

Recruitment center

Name of recruitment center

Razi training center

Full name of responsible person

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Razi training center, Sardare Jangal street

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Vice- chancellor for Research of Guilan University of Medical Science

Full name of responsible person

Dr Abdolrasool Sobhani

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Department of Technology and Research, The skyway, Shahid Beheshti ring way, Circle Gas, Namjoo street

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Grant name

ندارد

Grant code / Reference number

no

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

Yes

Title of funding source

Vice- chancellor for Research of Guilan University of Medical Science

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

Farkhondeh Yousofnia

Position

MS of Critical Care Student(MSc)

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Position

MS in Nursing

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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