

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

23 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 O<sub>2</sub> 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

fhasavari@gums.ac.ir

##### 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

##### City

Rasht

### 2

#### Recruitment center

##### Name of recruitment center

Razi training center

##### Full name of responsible person

Farideh Hasavari

##### Street address

Razi training center, Sardare Jangal street

##### City

Rasht

## 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

##### Street address

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

##### City

Rasht

#### 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

Guilan University of Medical Sciences

##### Full name of responsible person

Farkhondeh Yousofnia

##### Position

MS of Critical Care Student(MSc)

##### Other areas of specialty/work

##### Street address

Nursing & Midwifery Faculty, Daneshjoo street, Shahid Beheshti ring way, Rasht

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<http://www.gums.ac.ir/nmr/default-1406.aspx>

## Person responsible for scientific inquiries

#### Contact

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##### Position

MS in Nursing

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**Person responsible for updating data****Contact****Name of organization / entity**

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**Web page address**

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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*