Clinical Trial Protocol
Iranian Registry of Clinical Trials

16 Nov 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(begging 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

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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
inclusionl 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,sever 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,compplete 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 suctionning 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
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Poursina training center, Namjoo street
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2

Recruitment center
Name of recruitment center
Razi training center
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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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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

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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