

Clinical Trial Protocol

Iranian Registry of Clinical Trials

14 Sep 2026

The effect of expiratory rib cage compression before endotracheal suctioning on hemodynamic changes in mechanically ventilated patients in ICU

Protocol summary

Summary

This research is clinical trial study to determine the effect of rib cage compression on hemodynamic changes in patients under mechanical ventilation in intensive care units. The samples included of 58 mechanically ventilated patients. The patients will be selected gradually according to inclusion criteria. Inclusion criteria includes: age 18 to 65 years, having endotracheal tube for 24 hour, stable hemodynamic status (mean arterial pressure between 110 to 60 mm Hg, heart rate of less than 110 beats per minute), lack of a chest tube, no chest surgery or injuries, no rib fractures, no skin grafts and reconstructive surgery of the chest, no pregnancy, obesity (body mass index (BMI) > 30). The procedure is that patients randomly are divided into two groups. In intervention group, patients receive expiratory rib cage compression before suctioning three times a day and control group receive routine suction without rib cage compression. Then 5 min before and 15, 25 min after intervention, blood pressure, heart rate and O2 saturation measured.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2016021326537N1**
Registration date: **2016-05-12, 1395/02/23**
Registration timing: **prospective**

Last update:

Update count: **0**

Registration date

2016-05-12, 1395/02/23

Registrant information

Name

Maryam Yaghoubi

Name of organization / entity

Ahvaz Jundishapur University of Medical Sciences

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Recruitment status

Recruitment complete

Funding source

Ahvaz University of Medical Sciences

Expected recruitment start date

2016-05-21, 1395/03/01

Expected recruitment end date

2016-06-21, 1395/04/01

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The effect of expiratory rib cage compression before endotracheal suctioning on hemodynamic changes in mechanically ventilated patients in ICU

Public title

The effect of expiratory rib cage compression before endotracheal suctioning on hemodynamic changes

Purpose

Other

Inclusion/Exclusion criteria

Inclusion criteria: age 18 to 65 years, having endotracheal tube for 24 hour, stable hemodynamic status (mean arterial pressure between 110 to 60 mm

Hg, heart rate of less than 110 beats per minute), lack of a chest tube, no chest surgery or injuries, no rib fractures, no skin grafts and reconstructive surgery of the chest, no pregnancy, obesity (body mass index (BMI) > 30) Exclusion criteria: mucolytic and muscle paralysis drugs, start, stop, or change the bronchodilator medications during the study, extubation during the study period, using paralyze anesthesia

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: **58**

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

Ahvaz University of Medical Sciences

Street address

Zip cod: 61357-15794, second floor, Golestan highway, Ahvaz University of Medical Sciences, Ahvaz, , Iran

City

Ahvaz

Postal code

6135715794

Approval date

2016-01-27, 1394/11/07

Ethics committee reference number

IR.AJUMS.REC.1394.589

Health conditions studied

1

Description of health condition studied

Mechanically ventilated patients

ICD-10 code

J00-J99

ICD-10 code description

Diseases of the respiratory system

Primary outcomes

1

Description

Blood pressure

Timepoint

Bp will be measured three times: five minutes prior to the endotracheal suctioning, and 15 and 25 minutes following the procedure

Method of measurement

using of the Sphygmomanometer

2

Description

O2 Saturation

Timepoint

SpO2 will be measured three times: five minutes prior to the endotracheal suctioning, and 15 and 25 minutes following the procedure

Method of measurement

with pulse Oximetry (Monitor observation)

3

Description

Heart Rate

Timepoint

HR will be measured three times: five minutes prior to the endotracheal suctioning, and 15 and 25 minutes following the procedure

Method of measurement

Via monitor observation

Secondary outcomes

1

Description

Respiratory Rate

Timepoint

Respiratory rate will be measured three times: five minutes prior to the endotracheal suctioning, and 15 and 25 minutes following the procedure

Method of measurement

Counting the respiratory rate of the patient

Intervention groups

1

Description

In intervention group use expiratory ribcage compression before suctioning. Then standard suction is done during three times a day

Category

Prevention

2

Description

In control group suctioning without rib cage compression is done

Category

Prevention

Recruitment centers

1

Recruitment center

Name of recruitment center

Glostan hospital in Ahvaz city

Full name of responsible person

Maryam Yaghoubi

Street address

Zip code:6931366853, Mostafa hospital, Keshvary square, Ilam city

City

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2

Recruitment center

Name of recruitment center

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Full name of responsible person

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Vice chancellor for Research of Ahvaz University of Medical Sciences

Full name of responsible person

Dr. Nasrin Elahi

Street address

Zip cod:61357-15794, second floor, Golestan highway, Ahvaz University of Medical Sciences, Ahvaz, Iran

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Ahvaz

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 of Ahvaz 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

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Position

Nursing Critical Care Graduate Student (MSc)

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