Clinical Trial Protocol
Iranian Registry of Clinical Trials

27 May 2026

Comparison of effect of lung hyper oxygenation and combination of hyper oxygenation and hyperinflation on arterial blood gas and physiological parameters before and after endo tracheal suctioning in critical care patients in Bahonar and Afzalipur hospital in Kerman.

Protocol summary

Summary

Endotracheal tube suctioning is an essential and frequency nursing intervention in intensive care units. This includes the removal of secretions from the respiratory tract in patient which has an artificial airway is special. Providing appropriate methods to facilitate the clearance of airway secretions, lung volumes for synthetic and save provide measures to minimize complications, the most important part of the nursing care is patients with tracheal tube in intensive care units. The major complication of suction is a Hypoxemic hypoxia. Due to oxygen is off during the procedure and also increases the amount of oxygen consumed, this result to decrease in tissue oxygenation. hyperoxygenation and hyperinflationand combining these two methods are prevention of suctioning-related arterial oxygen depletion. Therefore, the decrease in arterial blood oxygen during suctioning and the detailed information about the quality and effectiveness of each of these methods are not available, in the previous studies, different and contradictory results can be seen and their impact on arterial blood gas and physiologic parameters are not proven. We accomplish these methods to helping nurses with better suction and less complication. This study is a clinical trial (Cross over); 36 patients admitted to the ICU that have the inclusion criteria will be randomly divided into two groups. In hyperoxygenation, patients receive concentration of 100% before and after suctioning procedure for 2 minutes by using keys O2 flush on mechanical ventilation. In combination therapy hyperoxygenation and hyperinflation, before and after suctioning, simultaneously for 2 min, tidal volume mechanical ventilation increased to 150% base rate and respiratory rate cut to 8 breaths per minute and 100% oxygen to the patient. Then researcher take arterial blood sample before, after and during suctioning and checks the impact of these methods on physiological parameters (HR, MAP, BP) and some indicators of arterial blood gas (PH, Pao2, O2Sat, PaCo2 and HCO3-) on 36 patients admitted to the intensive care unit. Instrument for data collection is check list which includes 2 tables to record the results of the demographic characteristics and arterial blood sampling and continuous monitoring of the parameters of the patient.

General information

Acronym

ETS

IRCT registration information

IRCT registration number: **IRCT2013030612726N1**
Registration date: **2013-05-07, 1392/02/17**
Registration timing: **retrospective**

Last update:
Update count: **0**

Registration date

2013-05-07, 1392/02/17

Registrant information

Name

Maryam Mohammadi

Name of organization / entity

Kerman University of Medical Sciences

Country

Iran (Islamic Republic of)

Phone

+98 34 1727 1275

Email address

891563011@collegian.kmu.ac.ir

Recruitment status

Recruitment complete

Funding source
School of Nursing and Midwifery, Kerman

Expected recruitment start date
2013-01-20, 1391/11/01
Expected recruitment end date
2013-02-19, 1391/12/01
Actual recruitment start date
empty
Actual recruitment end date
empty
Trial completion date
empty

Scientific title
Comparison of effect of lung hyper oxygenation and combination of hyper oxygenation and hyperinflation on arterial blood gas and physiological parameters before and after endo tracheal suctioning in critical care patients in Bahonar and Afzalipur hospital in Kerman.

Public title
Impact of using hyperoxygenation and hyperinflation on reducing side complications of suctioning
Purpose
Prevention
Inclusion/Exclusion criteria
Inclusion of patients:1:To reduce the risk of pneumonia caused by hospital error the maximum time that they under mechanical ventilation and intubation is 48 hours . 2: in the range of 50 to 150 beats per minute heart rate and without arrhythmia . 3 : Allen test is positive. 4:they dont have COPD. 5:they dont have sianotic disease and right to left shant and CHF andValvular heart disease . 6:th e patient is not required suctioned frequently (often in less than 60 minutes) . 7 :electrolytes (sodium, potassium and calcium)are in normal ranges and O2sa is above the 92% I: E Ratio, 2:1, and PEEP: 5 and TV: 10-15 mg / kg (the normal amount of sodium: 135 to 145 milligrams per liter Meq. Potassium: 5/3 -5 / 5 mg l Meq. Calcium: 6/8 - 2/10 mg per deciliter). 8: adults within the age of 18 years. 9: the ventilator attached to the patient,is CMV . 10:Patients with Arterial line . excluded Conditions: 1: if the patient hemodynamic imbalances such as: heart rate More than 200 systolic and less than 60, bronchospasm and respiratory distress and severe restlessness, test was stopped and the patient is then connected to the ventilator
Age
From **18 years** old
Gender
Both

Phase
N/A
Groups that have been masked
No information
Sample size
Target sample size: **36**
Randomization (investigator's opinion)
Randomized
Randomization description
Blinding (investigator's opinion)
Not blinded
Blinding description
Placebo
Not used
Assignment
Crossover
Other design features
This study was conducted for the first time in the world

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
Kerman University of Medical Sciences
Street address
kerman-enghelab street - Building Medical Center
City
kerman
Postal code
00000000
Approval date
2012-04-20, 1391/02/01
Ethics committee reference number
90/526/478/90ک

Health conditions studied

1

Description of health condition studied
Patients admitted to the ICU and complications
ICD-10 code
Z00-Z99
ICD-10 code description
This chapter should not be used for international comparison or for primary mortality coding.

Primary outcomes

1

Description
Blood gas
Timepoint
Immediately and 30 min after intervention
Method of measurement
Gem preimer blood gas 2000

2

Description
Physiologic parameters
Timepoint
Immediately and 30 min aftre intervention
Method of measurement
Monitoring

Secondary outcomes

1

Description
age
Timepoint
before intervention
Method of measurement
patient's document

2

Description
sex
Timepoint
before intervention
Method of measurement
patient's document

3

Description
smoking
Timepoint
before intervention
Method of measurement
patient's document

4

Description
Drug Addiction
Timepoint
before intervention
Method of measurement
patient's document

5

Description
dignisis
Timepoint
before intervention
Method of measurement
patient's document

6

Description
tidal volume
Timepoint
before intervention
Method of measurement
ventilator

Intervention groups

1

Description
Hyperoxygenation: prior to and after suctioning using 02 flush key on ventilator ,for two minutes, the patient give 02 100%.
Category
Treatment - Other

2

Description
Combination of hyperoxygenation and hyperinflation: befor and after suctioning for 2 minutes,pt giving o2 100% by ventilator and Simultaneously tidal volume breathing on a ventilator at a rate of 150% of the base rate was raised, and this after suctioning to 2 minutes were repeated.
Category
Treatment - Other

Recruitment centers

1

Recruitment center
Name of recruitment center
Bahonar hospital
Full name of responsible person
Mohammadi Maryam
Street address
Bahonar hospital, Kerman
City
Kerman

Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Kerman University of Medical Sciences
Full name of responsible person
Jila Soltanahmadi
Street address
Pardizeh street
City
Kerman
Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Kerman 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
School of Nursing and Midwifery
Full name of responsible person
Maryam Mohammadi
Position
Critical care student
Other areas of specialty/work
Street address
Kerman
City
Kerman
Postal code
Phone
+98 34 1320 5177
Fax
Email
www.h_m5654@yahoo.com
Web page address

Person responsible for scientific inquiries

Contact

Name of organization / entity
Kerman University of Medical Sciences
Full name of responsible person
Hakimeh Hoseinrezai
Position
PhD
Other areas of specialty/work
Street address
Kerman
City
Kerman
Postal code
Phone
+98 34 1320 5177
Fax
Email
h_m5664@yahoo.com
Web page address

Person responsible for updating data

Contact

Name of organization / entity
Kerman University of Medical Sciences
Full name of responsible person
Maryam Mohammadi
Position
critical care student
Other areas of specialty/work
Street address
Kerman
City
Kerman
Postal code
Phone
+98 71 1727 1275
Fax
Email
891563011@collegian.kmu.ac.ir;
m.mohammadip89@yahoo.com
Web page address

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