Clinical Trial Protocol
Iranian Registry of Clinical Trials

10 Jun 2026

Comparison of Syncronized Intermittent Mandatory ventilation and Pressure Support Ventilation in oxygenation and lung mechanics in critically ill patients

Protocol summary

Summary

Pneumonia and Atelectasis are common cause of mortality and morbidity in ICU patients undergo mechanical ventilation and they cause prolongation in ICU stay more than 5 days. In this study, we want to present an acceptable and effective mode of ventilation among PSV and SIMV in order to prevent organ damage which prolong ICU stay and cause mortality. In a randomized clinical trial, 40 patients who were hospitalized in ICU ward at Sina hospital in 2014 and required to mechanical ventilation were randomly assigned to receive SIMV mode(n = 20) or PSV mode (n = 20). Hemodynamic, metabolic, and respiratory indices were assessed within 6 days of ventilation setting.Patients died before 48hr post ICU admission, with a history of pulmonary, hepatic, renal cardiac or brain disease and hypertension, patient discontent and who without spontaneous respiration were excluded from the study.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2013102215109N1**
Registration date: **2015-08-16, 1394/05/25**
Registration timing: **retrospective**

Last update:
Update count: **0**

Registration date

2015-08-16, 1394/05/25

Registrant information

Name

Afarin Zamani

Name of organization / entity

Tehran University of Medical Scinces

Country

Iran (Islamic Republic of)

Phone

+98 216643044

Email address

a_zamani@razi.tums.ac.ir

Recruitment status

Recruitment complete

Funding source

Tehran University Of Medical Sciences

Expected recruitment start date

2014-09-23, 1393/07/01

Expected recruitment end date

2015-02-20, 1393/12/01

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparison of Syncronized Intermittent Mandatory ventilation and Pressure Support Ventilation in oxygenation and lung mechanics in critically ill patients

Public title

Comparison of oxygenation and lung mechanics between two types of mechanical ventilation

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria: need to mechanical ventilation more than 1 week; age between 20-50 years old; normal pulmonary mechanic(C>50 and R<10) Exclusion criteria:patient who death before 48 hours of admission in ICU; History of asthma, COPD, bronchectasis, and

other pulmonary disease; history of liver, brain, heart and kidney disease; inadequate spontaneous breathing; refuse of patient

Age
From **20 years** old to **50 years** old

Gender
Both

Phase
N/A

Groups that have been masked
No information

Sample size
Target sample size: **40**

Randomization (investigator's opinion)
Randomized

Randomization description

Blinding (investigator's opinion)
Single blinded

Blinding description

Placebo
Not used

Assignment
Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee
Ethics committee of Tehran University of Medical Sciences

Street address
Ghods Ave., Keshavarz Blvd.

City
Tehran

Postal code

Approval date
2014-08-25, 1393/06/03

Ethics committee reference number
93/S/1113/130

Health conditions studied

1

Description of health condition studied
Respiratory failure that needs mechanical ventilation

ICD-10 code
J96.9

ICD-10 code description
Respiratory failure, unspecified

Primary outcomes

1

Description
Given Oxygen volume

Timepoint
every day for six days

Method of measurement
Manumeter

2

Description
Compliance

Timepoint
every day for six days

Method of measurement
Spirometer

3

Description
pulmonery end expiratory pressure

Timepoint
every day for six days

Method of measurement
Ventilator

4

Description
100 mili second pressure

Timepoint
every day for six days

Method of measurement
pressure gauge

Secondary outcomes

1

Description
pneumonia

Timepoint
every 3 days for six days

Method of measurement
Symptoms and lung CT scan

2

Description
Symptoms and imaging of acute respiratory distress syndrome

Timepoint
every 3 days for six days

Method of measurement
History taking and lung CT scan

3

Description
Symptoms of Ventilator related injury

Timepoint
every 3 days for six days

Method of measurement
History taking

4

Description
cardiac output
Timepoint
every day for six days
Method of measurement
Echocardiography

5

Description
asynchrony
Timepoint
every day for six days
Method of measurement
Symptoms

Intervention groups

1

Description
Synchronized intermittent mechanical ventilation
Category
Treatment - Other

2

Description
pressure support ventilation
Category
Treatment - Other

Recruitment centers

1

Recruitment center
Name of recruitment center
Sina Hospital
Full name of responsible person
Atabak Najafi
Street address
Sina hospital, Hasan Abad Sq.
City
Tehran

Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Tehran University of Medical Sciences
Full name of responsible person
Masud Yunesian
Street address
Department of Environmental Health Engineering, School of Public Health, Tehran University of Medical Sciences
City
Tehran
Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Tehran 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
Tehran University of Medical Sciences
Full name of responsible person
Afarin Zamani
Position
Resident of Anesthesiology and Critical Care
Other areas of specialty/work
Street address
Sina Hospital, Hasan Abad square
City
Tehran
Postal code
Phone
+98 21 6604 3044
Fax
Email
mitra_az63@yahoo.com
Web page address

Person responsible for scientific inquiries

Contact
Name of organization / entity
Tehran University of Medical Sciences
Full name of responsible person
Atabak Najafi
Position
Assossiate proffesor
Other areas of specialty/work
Street address
Sina Hospital, Hasan Abad sq.
City
Tehran
Postal code
Phone

+98 216312530

Fax

Email

nadjafia@tums.ac.ir

Web page address

Person responsible for updating data

Contact

Name of organization / entity

Tehran University of Medical Sciences

Full name of responsible person

Afarin Zamani

Position

Resident of Anesthesiology and Critical care

Other areas of specialty/work

Street address

Sina Hospital, Hasan Abad sq.

City

Tehran

Postal code

Phone

+98 21 6604 3044

Fax

Email

mitra_az63@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