

Clinical Trial Protocol

Iranian Registry of Clinical Trials

10 Jun 2026

Comparison of Synchronized 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 Sciences

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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 Synchronized 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, bronchiectasis, 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

Manometer

2

Description

Compliance

Timepoint

every day for six days

Method of measurement

Spirometer

3

Description

pulmonary 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

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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**

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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.

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Tehran

Postal code

Phone

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