

Clinical Trial Protocol

Iranian Registry of Clinical Trials

18 Sep 2026

Comparison between invasive and noninvasive methods of blood gas monitoring on weaning process outcomes in patients undergoing cardiac surgery

Protocol summary

Summary

The purpose of this study is to compare invasive and noninvasive methods of blood gas monitoring during the weaning process in patients undergoing cardiac surgery. This clinical trial will be conducted in two groups. 60 patients who are undergoing open heart surgery who have our study inclusion criteria will be randomly allocated into two groups of control and intervention. After adequate explanations, written informed consent will be obtained from patients. After the operation and transferring the patients to the intensive care unit, capnography will be used instead of the arterial blood gas for the monitoring of patients in experimental group and then the ventilator Management and setting change will be done based on capnography and pulse oximetry. The weaning in the control group will be done based on hospital routines. Weaning time and arterial blood gases will be compared between groups.

General information

Acronym

Using the capnography during the weaning process

IRCT registration information

IRCT registration number: **IRCT201701016778N6**

Registration date: **2017-03-03, 1395/12/13**

Registration timing: **registered_while_recruiting**

Last update:

Update count: **0**

Registration date

2017-03-03, 1395/12/13

Registrant information

Name

Seyed Tayeb Moradian Vafaei

Name of organization / entity

School of nursing and midwifery, Tehran university of medical sciences

Country

Iran (Islamic Republic of)

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Recruitment status

Recruitment complete

Funding source

Nursing faculty, Baghyattallah University of Medical Sciences

Expected recruitment start date

2016-09-22, 1395/07/01

Expected recruitment end date

2017-03-20, 1395/12/30

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparison between invasive and noninvasive methods of blood gas monitoring on weaning process outcomes in patients undergoing cardiac surgery

Public title

non invasive monitoring during weaning from mechanical ventilation

Purpose

Supportive

Inclusion/Exclusion criteria

Inclusion criteria: patients with non-emergency cardiac surgery; age greater than 20 and less than 70 years; negative history of previous cardiac surgery; Exclusion

criteria were: severe hemodynamic impairment; has a heart rate less than 60 beats per minute; Drainage more than 300 ml in the first hour

Age

From **20 years** old to **70 years** old

Gender

Both

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **60**

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

Baqiyatallah University of Medical Science

Street address

Baqiyatallah University of Medical Sciences, Sheikh Bahaei St, Vanak Square, Tehran, Iran

City

Tehran

Postal code

1234567890

Approval date

2016-10-03, 1395/07/12

Ethics committee reference number

IR.Bmsu.REC.1395.141

Health conditions studied

1

Description of health condition studied

weaning from mechanical ventilator

ICD-10 code

Z51.8

ICD-10 code description

Other specified medical care

Primary outcomes

1

Description

Weaning Time

Timepoint

Since entrance to ICU until extubation

Method of measurement

Using the Clock

Secondary outcomes

1

Description

Vital signs

Timepoint

Hour Since entering until extubation

Method of measurement

Using Patient Monitoring

2

Description

the amount of arterial carbon dioxide tention

Timepoint

ICU entrance and during the extubation

Method of measurement

using the arterial blood gas analysis

Intervention groups

1

Description

In the intervention group for monitoring during the weaning process, capnography and pulseoximetry are used instead of arterial blood gasses.

Category

Other

2

Description

The control group will received no intervention and hospital routine care will be done.

Category

Other

Recruitment centers

1

Recruitment center

Name of recruitment center

jamaran Heart Hospital

Full name of responsible person

Seyed Mohammad Saeid Ghiasi

Street address

jamaran Heart hospital,jamaran st, Niavaran St, Tehran

City
Tehran

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Nursing faculty, Baghyattallah University of Medical Sciences

Full name of responsible person

Morteza Khaghanizadeh

Street address

Tehran, Sadra St., St. Sheikh Bahai University of Medical Sciences ... (Aj)

City

Tehran

Grant name

Grant code / Reference number

Is the source of funding the same sponsor organization/entity?

Yes

Title of funding source

Nursing faculty, Baghyattallah 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

Baqiyatallah university of medical sciences

Full name of responsible person

Seyed Tayeb Moradian

Position

Faculty member

Other areas of specialty/work

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Person responsible for updating data

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Full name of responsible person

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Master of science in critical care nursing student

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

