Clinical Trial Protocol
Iranian Registry of Clinical Trials

08 Nov 2026

The Effect of Heparin Concentration of 1000 units per ml in Blood Samples on the Results of Venous Blood Gases intensive care unit patients

Protocol summary

Study aim
Determining the effect of heparin concentration of 1000 units per ml in blood sample on venous blood gas results of patients admitted to intensive care unit

Design
clinical trial with control group, with parallel groups, one-way blind, on 282 samples by non-random sampling method and available

Settings and conduct
Intravenous blood samples are taken from 282 (n = 141 intervention group and n = 141 control groups) patients admitted to the intensive care unit of 22 Bahman Hospital in Neishabour. Syringes are placed in two groups of heparin 1000 units and heparin 5000 units. An equal number of insulin syringes will be heparinized by the researcher in one group (A) with 1000 units of heparin solution (0.5 cc) and the other group (B) with 5000 units of heparin with the same amount (0.5 cc) of heparin. (50 units per syringe) will be divided into two insulin syringes heparinized with codes A (heparin 1000 units) and B (heparin 5000 units) that only the researcher knows the nature of. Not given to the analyzer and the answers are compared with each other.

Participants/Inclusion and exclusion criteria
Satisfaction to participate in the study Patients admitted to the cardiac intensive care unit Age 60-18 years Hemoglobin level more than 10 mg per deciliter There coagulopathy or anticoagulant treatment of moderate to high dose Death or discharge from the ward

Intervention groups
An equal number of insulin syringes were heparinized in one group (intervention group) with 1000 units of heparin solution at a rate of 0.1 cc. In the control group, based on the current situation, an injection of 5000 units of heparin in the amount of 0.1 ml will be used to impregnate the insulin syringes used for blood sampling to perform venous blood gas tests.

Main outcome variables
Sodium, kalium, Calcium, PVO2, PVCO2, HCO3, buffer Base, Base Exese, PH

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20200929048885N1**
Registration date: **2020-10-19, 1399/07/28**
Registration timing: **registered_while_recruiting**

Last update: **2020-10-19, 1399/07/28**
Update count: **0**

Registration date
2020-10-19, 1399/07/28

Registrant information

Name
Rasool Lakziyan

Name of organization / entity
Rajaie Cardiovascular Medical and Research Center

Country
Iran (Islamic Republic of)

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+98 51 4262 3781

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taha1992rajaei@rhc.ac.ir

Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2020-10-11, 1399/07/20

Expected recruitment end date
2020-11-30, 1399/09/10

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The Effect of Heparin Concentration of 1000 units per ml in Blood Samples on the Results of Venous Blood Gases intensive care unit patients

Public title

The Effect of Heparin Concentration of 1000 units per ml in Blood Samples on the Results of Venous Blood Gases intensive care unit patients

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria:

Satisfaction to participate in the study Patients admitted to the cardiac intensive care unit Age 60-18 years Hemoglobin level more than 10 mg per deciliter

Exclusion criteria:

There coagulopathy or anticoagulant treatment of moderate to high dose Death or discharge from the ward

Age

From **18 years** old to **60 years** old

Gender

Both

Phase

N/A

Groups that have been masked

- Participant
- Outcome assessor

Sample size

Target sample size: **141**

More than 1 sample in each individual

Number of samples in each individual: **2**

Syringes will be placed in two groups of heparin 1000 units (heparinized syringes with 1000 units) and heparin 5000 units (the common method of heparinized syringes with heparin is 5000 units). An equal number of insulin syringes will be heparinized by the researcher in one group (A) with 1000 units of heparin solution at the rate of 0.05 cc and the other group (B) with 5000 units of heparin with the same amount (0.05 cc). The blood sample was taken by the researcher at the rate of 1 cc from the peripheral venous line of each patient and the same blood prepared from one person in equal amounts (50 units or half a cc) in both syringes (B, A) that were already heparinized , Is distributed.

Randomization (investigator's opinion)

Not randomized

Randomization description

Blinding (investigator's opinion)

Double blinded

Blinding description

First, all participants will be explained how to implement the project. The syringes will then be placed in two groups of heparin 1000 units (heparinized syringes with 1000 units) and heparin 5000 units (the common method of heparinized syringes with heparin is 5000 units). An equal number of insulin syringes will be heparinized by the researcher in one group (A) with 1000 units of heparin solution (0.05 cc) and the other group (B) with 5000 units of heparin with the same amount (0.05 cc). They will be divided equally by the researcher (0.5 cc or 50 units per syringe) into two insulin syringes heparinized with codes A (heparin 1000 units) and B (heparin 5000 units) that only the researcher knew about. It is then placed on ice and sent to the laboratory within 10 minutes, along with a test sheet that lists the necessary parameters (patient biography, body temperature, hemoglobin level, oxygen intake). A laboratory that does not know the amount of heparin in the syringes is given to the analyzer.

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Shaheed Rajaie Cardiovascular Medical and Research Center

Street address

Tehran - Vali Asr St. (AS) - next to Mellat Park - corner of Niayesh Educational, Research and Treatment Center

City

tehran

Province

Tehran

Postal code

1995614331

Approval date

2020-09-16, 1399/06/26

Ethics committee reference number

IR.RHC.REC.1399.064

Health conditions studied

1

Description of health condition studied

heparin soduim

ICD-10 code

T45.9

ICD-10 code description

Primarily systemic and haematological agent, unspecified

Primary outcomes

1

Description
Pvo2
Timepoint
Immediately after venous blood sampling
Method of measurement
Laboratory, venous blood gas meter

2

Description
Pvco2
Timepoint
Immediately after venous blood sampling
Method of measurement
Laboratory, venous blood gas meter

3

Description
Hco3
Timepoint
Immediately after venous blood sampling
Method of measurement
Laboratory, venous blood gas meter

4

Description
Buffer Base
Timepoint
Immediately after venous blood sampling
Method of measurement
Laboratory, venous blood gas meter

5

Description
Base Exese
Timepoint
Immediately after venous blood sampling
Method of measurement
Laboratory, venous blood gas meter

6

Description
PH
Timepoint
Immediately after venous blood sampling
Method of measurement
Laboratory, venous blood gas meter

Secondary outcomes

1

Description
Sodium
Timepoint
Immediately after venous blood sampling
Method of measurement
Laboratory, venous blood gas meter

2

Description
Kalium
Timepoint
Immediately after venous blood sampling
Method of measurement
Laboratory, venous blood gas meter

3

Description
Calcium
Timepoint
Immediately after venous blood sampling
Method of measurement
Laboratory, venous blood gas meter

Intervention groups

1

Description
Intervention group: Dilute an equal number of insulin syringes in a group (intervention group) with 1000 units of heparin solution (to prepare 1000 units of heparin, dilute one ampoule of 5000 units of heparin with 4 cc of distilled water in a 5 cc syringe and its volume To 5 cc, each cc equal to 1000 units), heparinized to 0.1 cc.
Category
Treatment - Drugs

2

Description
Control group: In the control group, based on the current situation, an ampoule of 5000 units of 0.1 ml of heparin was used to impregnate the insulin syringes used for blood sampling to test venous blood gases.
Category
Treatment - Drugs

Recruitment centers

1

Recruitment center
Name of recruitment center
22 bahman hospital neyshabour
Full name of responsible person
rasool lakziyan
Street address
Noor .ST
City
neyshabour
Province
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Postal code

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Email
ccu1taha1992@gmail.com

Sponsors / Funding sources

1

Sponsor

Name of organization / entity
Shaheed Rajaie Cardiovascular, Medical & Research Center

Full name of responsible person
fidan shabani

Street address
Tehran - Vali Asr St. - Next to Mellat Park - the beginning of Niayesh Highway

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tehran

Province
Tehran

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Email
fidannahal@yahoo.com

Grant name

Grant code / Reference number

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

Title of funding source
Shaheed Rajaie Cardiovascular, Medical & Research Center

Proportion provided by this source
100

Public or private sector
Public

Domestic or foreign origin
Domestic

Category of foreign source of funding
empty

Country of origin

Type of organization providing the funding
Academic

Person responsible for general inquiries

Contact

Name of organization / entity
Shaheed Rajaie Cardiovascular, Medical & Research Center

Full name of responsible person
rasool lakziyan

Position
nurse

Latest degree
Bachelor

Other areas of specialty/work
Nursery

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Person responsible for scientific inquiries

Contact

Name of organization / entity
Shaheed Rajaie Cardiovascular, Medical & Research Center

Full name of responsible person
rasool lakziyan

Position
nurse

Latest degree
Bachelor

Other areas of specialty/work
Nursery

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Person responsible for updating data

Contact

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Full name of responsible person
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Sharing plan

Deidentified Individual Participant Data Set (IPD)
Undecided - It is not yet known if there will be a plan to make this available
Study Protocol
Undecided - It is not yet known if there will be a plan to make this available
Statistical Analysis Plan
Undecided - It is not yet known if there will be a plan to make this available
Informed Consent Form
Undecided - It is not yet known if there will be a plan to make this available
Clinical Study Report
Undecided - It is not yet known if there will be a plan to make this available
Analytic Code
Undecided - It is not yet known if there will be a plan to make this available
Data Dictionary
Undecided - It is not yet known if there will be a plan to make this available