

Clinical Trial Protocol

Iranian Registry of Clinical Trials

08 Jun 2026

Comparison of the speed of ultrasonic method and anatomical criteria for internal jugular vein catheter insertion in patients requiring cannulation

Protocol summary

Summary

Objectives: In many patients, especially in severely ill patients using a central vein such as internal jugular vein is necessary for hemodynamic monitoring, receiving intravascular fluids, blood, blood products and medications, total parenteral nutrition, hemodialysis or in patients with difficult or impossible peripheral intravenous cannulation. Accuracy in performing cannulation in minimum time and with the least amount of side effects has particular importance. The aim of the present study is to compare ultrasonic method with anatomical criteria for internal jugular vein catheter insertion in adults requiring cannulation. Design: Block randomization, without placebo, single center, trial phase 2, including 90 patients under internal jugular vein cannulation. Setting and conduct: By using a two-cc syringe with needle size equal to 22 and angle of 45-degree, we direct in the groove between the sternocleidomastoid muscles toward the nipple. Participants including major eligibility criteria: All patients who are supposed to undergo internal jugular vein cannulation. Intervention: By using an ultrasound probe and by a two-cc syringe with needle size equal to 22 and angle of 45-degree directs in the groove between the sternocleidomastoid muscle toward the nipple. By using of clinical criteria such as sternal notch, clavicle, and sternocleidomastoid muscle, a two-cc syringe with needle size 22 and 45 degree angle directs in the groove between the sternocleidomastoid muscle toward the nipple. Main outcome measures: The duration of cannulation, success rate, number of attempts to cannulate a patient.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2014112520079N1**

Registration date: **2015-01-02, 1393/10/12**

Registration timing: **registered_while_recruiting**

Last update:

Update count: **0**

Registration date

2015-01-02, 1393/10/12

Registrant information

Name

Seyed Mohsen Ziyaeifard

Name of organization / entity

Iran University of Medical Sciences

Country

Iran (Islamic Republic of)

Phone

+98 21 8670 2503

Email address

mziyaeifard@rhz.ac.ir

Recruitment status

Recruitment complete

Funding source

Iran University of Medical Sciences, Vice Chancellor for Research

Expected recruitment start date

2014-12-22, 1393/10/01

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 the speed of ultrasonic method and anatomical criteria for internal jugular vein catheter insertion in patients requiring cannulation

Public title

Using sonography in finding the cervical vein of critically ill patients

Purpose

Supportive

Inclusion/Exclusion criteria

Inclusion criteria: 1. Age between 14 to 65 years old

Exclusion criteria: 1. Pregnancy 2. Sensitivity to topical anesthetics 3. Infection or burn in neck

Age

From **14 years** old to **65 years** old

Gender

Both

Phase

2

Groups that have been masked

No information

Sample size

Target sample size: **90**

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**

Ethics committee of Iran University of Medical Sciences

Street address

Headquarters building, 5th floor, intersection of Sheikh Fazl-Allah Noori and Shahid Chamran, Western Hemmat highway, Tehran, Iran

City

Tehran

Postal code**Approval date**

2010-09-23, 1389/07/01

Ethics committee reference number

3892/105/93

Health conditions studied**1****Description of health condition studied**

Cardiovascular problem

ICD-10 code

I51.6

ICD-10 code description

Cardiovascular disease, unspecified

Primary outcomes**1****Description**

The duration of cannulation

Timepoint

At the end of cannulation

Method of measurement

Using chronometer and recording in questionnaire

2**Description**

Percentage of successful cannulation

Timepoint

At the end of cannulation

Method of measurement

Recording the number of successful cannulations in questionnaire

3**Description**

Number of attempts to cannulate a patient

Timepoint

At the end of cannulation

Method of measurement

Recording the number of cannulations for a patient in questionnaire

Secondary outcomes

empty

Intervention groups**1****Description**

Intervention 1. Using ultrasound probe and by a needle size 19 attached to a 10 cc syringe, cannulate internal jugular vein groove between the sternocleidomastoid muscle.

Category

Treatment - Other

2**Description**

Intervention 2. By using of clinical criteria, a two-cc syringe with needle size 22 and a 45 degree angle directs in the groove between the sternocleidomastoid muscle toward the nipple.

Category

Treatment - Drugs

Recruitment centers

1

Recruitment center

Name of recruitment center

Rasool-e Akram hospital

Full name of responsible person

Seyed Mohsen Ziyaeifard

Street address

City

Tehran

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Iran University of Medical Sciences, Vice Chancellor
for Research

Full name of responsible person

Dr Seyed Ali Javad Mousavi

Street address

Headquarters building, 2nd floor, intersection of
Sheikh Fazl-Allah Noori and Shahid Chamran, Western
Hemmat highway, Tehran, Iran

City

Tehran

Grant name

Grant code / Reference number

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

Yes

Title of funding source

Iran University of Medical Sciences, Vice Chancellor for
Research

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

Iran University of Medical Sciences

Full name of responsible person

Seyed Mohsen Ziyaeifard

Position

Anesthesiologist

Other areas of specialty/work

Street address

Headquarters building, 5th floor, intersection of
Sheikh Fazl-Allah Noori and Shahid Chamran, Western

Hemmat highway, Tehran, Iran

City

Tehran

Postal code

Phone

+98 21 8670 2503

Fax

Email

mziyaeifard@yahoo.com

Web page address

Person responsible for scientific inquiries

Contact

Name of organization / entity

Iran University of Medical Sciences

Full name of responsible person

Seyed Mohsen Ziyaeifard

Position

Anesthesiologist

Other areas of specialty/work

Street address

Headquarters building, 5th floor, intersection of
Sheikh Fazl-Allah Noori and Shahid Chamran, Western
Hemmat highway, Tehran, Iran

City

Tehran

Postal code

Phone

+98 21 8670 2503

Fax

Email

mziyaeifard@yahoo.com

Web page address

Person responsible for updating data

Contact

Name of organization / entity

Iran University of Medical Sciences

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mziyaeifard@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