

Clinical Trial Protocol

Iranian Registry of Clinical Trials

29 Jun 2026

Comparison of ultrasound guided central venous catheterization in brachiocephalic vein and internal jugular vein for ease of access and incidence of complications, a clinical trial

Protocol summary

Study aim

Comparison of ultrasound guided central venous catheterization in brachiocephalic vein and internal jugular vein for ease of access and incidence of complications

Design

A study is conducted with parallel group, single blinded, randomized clinical trials. Patients are divided into two groups based on 4 randomized permutations.

Settings and conduct

Written informed consent is obtained from all patients who are referred to department of interventional radiology of Golestan hospital of Ahvaz for central venous catheterization. Then patients are divided into two groups. Patients are blinded to group. Physician blinding is not possible.

Participants/Inclusion and exclusion criteria

Inclusion criteria: Volume resuscitation Central venous pressure monitoring Emergent venous access Hemodialysis Nutritional support Inotropes Age 18 to 80 years Exclusion criteria: Venous thrombosis Uncorrected coagulopathy Skin site infection

Intervention groups

Patients are divided into two groups of internal jugular vein and brachiocephalic vein .

Main outcome variables

mechanical complication of central venous catheter insertion; Infectious complications

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20170416033470N2**

Registration date: **2018-08-18, 1397/05/27**

Registration timing: **prospective**

Last update: **2018-08-18, 1397/05/27**

Update count: **0**

Registration date

2018-08-18, 1397/05/27

Registrant information

Name

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Name of organization / entity

Ahvaz jundishapur university of medical science

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2018-08-23, 1397/06/01

Expected recruitment end date

2018-09-23, 1397/07/01

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparison of ultrasound guided central venous catheterization in brachiocephalic vein and internal jugular vein for ease of access and incidence of complications, a clinical trial

Public title

complications of catheterization

Purpose

Prevention

Inclusion/Exclusion criteria**Inclusion criteria:**

Volume resuscitation Central venous pressure monitoring
Emergent venous access Hemodialysis Nutritional
support Inotropes age 18 to 80 years

Exclusion criteria:

venous thrombosis uncorrected coagulopathy skin site
infection

AgeFrom **18 years** old to **80 years** old**Gender**

Both

Phase

N/A

Groups that have been masked

- Participant

Sample sizeTarget sample size: **25****Randomization (investigator's opinion)**

Randomized

Randomization description

Patients are divided into two groups based on 4
randomized permutations. Patients are blinded to group.
Physician blinding is not possible.

Blinding (investigator's opinion)

Single blinded

Blinding description

Before procedure written informed consent will
obtain, and then patients are randomly assigned to one of
two groups.

Placebo

Not used

Assignment

Parallel

Other design features**Secondary Ids**

empty

Ethics committees**1****Ethics committee****Name of ethics committee**

Ahvaz Jundishapur University of Medical Science

Street address

golestan

City

Ahvaz

Province

Khouzestan

Postal code

00988

Approval date

2018-05-19, 1397/02/29

Ethics committee reference number**Health conditions studied****1****Description of health condition studied**

Infection due to central venous catheter

ICD-10 code

T80.21

ICD-10 code description

Infection due to central venous catheter

2**Description of health condition studied**

Bloodstream infection due to central venous catheter

ICD-10 code

T80.211

ICD-10 code description

Bloodstream infection due to central venous catheter

3**Description of health condition studied**

Local infection due to central venous catheter

ICD-10 code

T80.212

ICD-10 code description

Local infection due to central venous catheter

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

mechanical complication of central venous catheter
insertion

Timepoint

During the catheter insertion

Method of measurement

Time measurement and frequency of attempts to insert a
catheter based on location

Secondary outcomes**1****Description**

Infectious complications

Timepoint

from the time of catheter insertion to 48 h after catheter
removal

Method of measurement

According to CDC guideline, CVC-related infection
requires a combination of clinical signs of infection, a
positive culture of blood aspirated from the catheter or of
a catheter segment, and one or more positive blood
cultures with the same pathogen taken from a different
location.

Intervention groups

1

Description

Intervention group 1: Internal jugular group The steps are as follows: skin scrubbing with Povidone-iodine then CVC placement carried out bedside using the Seldinger technique .US-guided internal jugular approach with a GE voluson E6 (GE Healthcare, the austria) equipped with wide-band linear probe is done. We used real-time US needle guidance with an in-plane technique, with the operator holding the US probe in one hand and manipulating the needle with the other. The US probes and cables were protected by a sterile sheath, and a sterile gel was used for the US guidance procedure. Then under guide of fluoroscopy catheter is fixed.The CVCs were standard polyurethane catheters.

Category

Treatment - Devices

2

Description

Intervention group 2: Brachiocephalic group The steps are as follows: skin scrubbing with Povidone-iodine then CVC placement carried out bedside using the Seldinger technique .US-guided brachiocephalic approach with a GE voluson E6 (GE Healthcare, the austria) equipped with wide-band linear probe is done. We used real-time US needle guidance with an in-plane technique, with the operator holding the US probe in one hand and manipulating the needle with the other. The US probes and cables were protected by a sterile sheath, and a sterile gel was used for the US guidance procedure. Then under guide of fluoroscopy catheter is fixed.The CVCs were standard polyurethane catheters.

Category

Treatment - Devices

Recruitment centers

1

Recruitment center

Name of recruitment center

Golestan hospital

Full name of responsible person

Asadollah Jalil

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Radiology dep.,Golestan hospital, Golestan Ave.

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Ahvaz University of Medical Sciences

Full name of responsible person

Mohammad Badavi

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Grant name

Grant code / Reference number

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

Yes

Title of funding source

Ahvaz University of Medical Sciences

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

Ahvaz University of Medical Sciences

Full name of responsible person

Azim Motamedfar

Position

Assistant professor

Latest degree

Subspecialist

Other areas of specialty/work

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Latest degree

Medical doctor

Other areas of specialty/work

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Sharing plan

Deidentified Individual Participant Data Set (IPD)

No - There is not a plan to make this available

Justification/reason for indecision/not sharing IPD

"There is no further information"

Study Protocol

No - There is not a plan to make this available

Statistical Analysis Plan

No - There is not a plan to make this available

Informed Consent Form

No - There is not a plan to make this available

Clinical Study Report

No - There is not a plan to make this available

Analytic Code

No - There is not a plan to make this available

Data Dictionary

No - There is not a plan to make this available