

Clinical Trial Protocol

Iranian Registry of Clinical Trials

30 Jun 2026

Accuracy of point-of-care focused sonography in predicting outcome of resuscitation in cardiac arrest patients

Protocol summary

Study aim

The aim of this study was to use cardiac sonography as a diagnostic method for the treatment of patients with cardiac arrest and asystole and PEA rhythm by emergency physicians and, if possible, taking therapeutic measures based on specific etiology.

Design

Randomized, parallel group clinical trial

Settings and conduct

In the present study, all adult patients who entered the emergency department of Alzahra and Kashani hospitals with cardiac arrest are divided into two groups using a randomized blocking method. In the first group, the patient undergoes ultrasound during the resuscitation and in the second group, the standard resuscitation is performed.

Participants/Inclusion and exclusion criteria

Inclusion criteria: All patients with cardiopulmonary arrest without organized rhythm. Exclusion criteria: Failure to perform ultrasound resuscitation.

Intervention groups

During resuscitation, without interference in resuscitation measures, an ultrasound probe placed in the subxiphoid area by an emergency medicine specialist or a senior assistant. The resuscitation team leader will be informed the ultrasound performer 5 seconds before the check pulse so that he takes a four-chamber view of the heart within 10 seconds of checking the pulse. In the first time, cardiac organized contraction and pericardial effusion are checked and recorded. In the second check pulse, the presence of hypovolemia (right ventricle collapse) and pulmonary embolism (right ventricular enlargement with left ventricular collapse) is checked and recorded, and in the third check pulse, a pneumothorax is checked in the event of a strong clinical suspicion of it.

Main outcome variables

The main outcome of the study is to determine and cure the reversible causes of cardiac arrest and its impact on

the final outcome of the patients.

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20180129038549N9**

Registration date: **2018-10-04, 1397/07/12**

Registration timing: **registered_while_recruiting**

Last update: **2018-10-04, 1397/07/12**

Update count: **0**

Registration date

2018-10-04, 1397/07/12

Registrant information

Name

Farhad Heydari

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 31 3786 8804

Email address

drfarhadheydari@gmail.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2017-12-11, 1396/09/20

Expected recruitment end date

2018-10-23, 1397/08/01

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Accuracy of point-of-care focused sonography in predicting outcome of resuscitation in cardiac arrest patients

Public title

Ultrasound in cardiac arrest

Purpose

Diagnostic

Inclusion/Exclusion criteria

Inclusion criteria:

Cardiac arrest Pulseless electrical activity or asystole rhythm Age over 18 years old

Exclusion criteria:

Failure to perform ultrasound during resuscitation

Age

From 18 years old

Gender

Both

Phase

3

Groups that have been masked

No information

Sample size

Target sample size: 100

Randomization (investigator's opinion)

Randomized

Randomization description

Block randomization with Table of random numbers

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 Isfahan University of Medical Science

Street address

Isfahan University of Medical Science, Hezarjrib Street, Isfahan City

City

Isfahan

Province

Isfahan

Postal code

8174673461

Approval date

2017-12-10, 1396/09/19

Ethics committee reference number

IR.MUI.RES.1396.2.070

Health conditions studied

1

Description of health condition studied

Cardiac arrest

ICD-10 code

I46

ICD-10 code description

Cardiac arrest

Primary outcomes

1

Description

Cardiac Organized Contractions

Timepoint

During resuscitation

Method of measurement

With ultrasound

2

Description

Cardiac tamponade

Timepoint

During resuscitation

Method of measurement

With ultrasound

3

Description

Right ventricle enlargement

Timepoint

During resuscitation

Method of measurement

With ultrasound

4

Description

Left ventricle enlargement

Timepoint

During resuscitation

Method of measurement

With ultrasound

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group: Sonography during resuscitation in the check pulse period. During resuscitation, an ultrasound curved array probe (2–4 MHz) placed in the subxiphoid area. The resuscitation team leader will be informed the ultrasound performer 5 seconds before the check pulse so that he takes a four-chamber view of the heart within 10 seconds of checking the pulse. In the first time, cardiac organized contraction and pericardial effusion are checked and recorded. In the second check pulse, the presence of hypovolemia (right ventricle collapse) and pulmonary embolism (right ventricular enlargement with left ventricular collapse) is checked and recorded, and in the third check pulse, a pneumothorax is checked in the event of a strong clinical suspicion of it.

Category

Diagnosis

2

Description

Control group: Performing a classic cardiopulmonary resuscitation

Category

N/A

Recruitment centers

1

Recruitment center

Name of recruitment center

Alzahra hospital

Full name of responsible person

Farhad Heydari

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2

Recruitment center

Name of recruitment center

Kashani hospital

Full name of responsible person

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Esfahan University of Medical Sciences

Full name of responsible person

Shaghayegh Haghjou Javanmard

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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

Esfahan University of Medical Sciences

Proportion provided by this source

50

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

Esfahan University of Medical Sciences

Full name of responsible person

Farhad Heydari

Position

Assistant professor

Latest degree

Specialist

Other areas of specialty/work

Emergency Medicine

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Person responsible for updating data

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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

Not applicable

Informed Consent Form

Undecided - It is not yet known if there will be a plan to make this available

Clinical Study Report

Not applicable

Analytic Code

Undecided - It is not yet known if there will be a plan to make this available

Data Dictionary

Not applicable