

Clinical Trial Protocol

Iranian Registry of Clinical Trials

31 May 2026

Comparing diagnostic yield of high-pitch CT angiography with low-dose radiation and normal breathing with routine breath hold CT angiography

Protocol summary

Registration timing: **registered_while_recruiting**

Study aim

Evaluating the diagnostic performance of low-dose high-pitch CT angiography in evaluating pulmonary thromboembolism

Last update: **2018-06-06, 1397/03/16**

Update count: **0**

Registration date

2018-06-06, 1397/03/16

Design

Patients referring to the Imam Reza hospital imaging center (Mashhad) during the study period will be enrolled in the study. After obtaining written consent, the patients are randomized into two groups. One group will be imaged routinely and imaging will be performed with high-pitch, low-dose, free breathing in the other group. CT angiographic images will be blinded and interpreted by radiologists. Image quality, contrast to noise ratio, signal to noise ratio, and motion artifact will be recorded. Patient's effective dose will also be calculated using imaging data.

Registrant information

Name

Bitra Abbasi

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 51 3852 5004

Email address

abbasib@mums.ac.ir

Settings and conduct

The study will be conducted in the Radiology Department, Imam Reza hospital, Mashhad, Iran.

Recruitment status

Recruitment complete

Funding source

Participants/Inclusion and exclusion criteria

Inclusion criteria: clinical suggestion of pulmonary thromboemboli age more than 18 year-old weight over 45 kg conscious patients Exclusion criteria: Unconscious patient weight over 80 kg Allergy to contrast material

Expected recruitment start date

2018-05-26, 1397/03/05

Expected recruitment end date

2019-03-20, 1397/12/29

Intervention groups

Patients undergoing pulmonary CT angiography to evaluate pulmonary thromboembolism

Actual recruitment start date

empty

Actual recruitment end date

empty

Main outcome variables

Image quality Signal to noise ratio Contrast to noise ratio Motion artifact Patient's effective dose Image acquisition speed

Trial completion date

empty

General information

Scientific title

Comparing diagnostic yield of high-pitch CT angiography with low-dose radiation and normal breathing with routine breath hold CT angiography

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20180519039721N1**

Registration date: **2018-06-06, 1397/03/16**

Public title

Low-dose, high-pitch pulmonary CT angiography in evaluating pulmonary thromboembolism

Purpose

Diagnostic

Inclusion/Exclusion criteria

Inclusion criteria:

Ability to hold the breathing Clinical suggestion of pulmonary thromboembolism Conscious patient weight over 45 kg

Exclusion criteria:

Weight over 80 kg unconsciousness contrast material allergy

Age

From **18 years** old

Gender

Both

Phase

N/A

Groups that have been masked

- Participant
- Care provider
- Investigator
- Outcome assessor
- Data analyser
- Data and Safety Monitoring Board

Sample size

Target sample size: **40**

Randomization (investigator's opinion)

Randomized

Randomization description

simple randomization with 1:1 allocation

Blinding (investigator's opinion)

Triple blinded

Blinding description

The only person who knew the technique used for each patient, was the radiology technician, who saved the regarding data for further reference.

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethic committe, Mashhd University of Medical Sciences, Mashhad, Iran.

Street address

Radiology Department, Imam Reza hospital, Razi Sq.

City

Mashhad

Province

Razavi Khorasan

Postal code

98

Approval date

2017-10-11, 1396/07/19

Ethics committee reference number

IR.MUMS.fm.REC.1396.421

Health conditions studied

1

Description of health condition studied

pulmonary thromboembolism

ICD-10 code

I26

ICD-10 code description

Pulmonary embolism

Primary outcomes

1

Description

Image quality

Timepoint

immediately after the intervention

Method of measurement

Osirix imaging software

Secondary outcomes

1

Description

Radiation dose

Timepoint

Immediately after the intervention

Method of measurement

DICOM data

Intervention groups

1

Description

Intervention group: High-pitch, low-dose CT angiography

Category

Diagnosis

Recruitment centers

1

Recruitment center

Name of recruitment center

Imam Reza hospital, Mashhad

Full name of responsible person

Bitra Abbasi

Street address

Radiology Department, Imam Reza hospital, Mashhad

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity
Mashhad University of Medical Sciences
Full name of responsible person
Masoud Pezeshki-Rad
Street address
Imam Reza hospital
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Email
pezeshkiradm@mums.ac.ir
Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
No
Title of funding source
Mashhad 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
Mashhad University of Medical Sciences
Full name of responsible person
Bitra Abbasi
Position
Assistant professor
Latest degree
Subspecialist
Other areas of specialty/work
Radiology

Person responsible for scientific inquiries

Contact

Name of organization / entity
Mashhad University of Medical Sciences
Full name of responsible person
Bitra Abbasi
Position
Assistant professor
Latest degree
Specialist
Other areas of specialty/work
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Person responsible for updating data

Contact

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Position
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Fax**Email**

abbasib@mums.ac.ir

Sharing plan**Deidentified Individual Participant Data Set (IPD)**

Yes - There is a plan to make this available

Study Protocol

Yes - There is a plan to make this available

Statistical Analysis Plan

Yes - There is a plan to make this available

Informed Consent Form

Yes - There is a plan to make this available

Clinical Study Report

Yes - There is a plan to make this available

Analytic Code

Yes - There is a plan to make this available

Data Dictionary

Yes - There is a plan to make this available

Title and more details about the data/document

All data will be available upon individual request

When the data will become available and for how long

for three months after publication

To whom data/document is available

Academic investigators

Under which criteria data/document could be used

no further information

From where data/document is obtainable

Upon individual request by the corresponding author

What processes are involved for a request to access data/document

Email by verified organization

Comments