Clinical Trial Protocol
Iranian Registry of Clinical Trials

17 Sep 2026

Comparison of image quality of low voltage CT angiography (80 kilovoltage) with standard condition (100 kilovoltage) in patients suspicious to pulmonary emboli

Protocol summary

Summary

The aim of the present study is to compare the image quality of CT angiography of 80 kilovoltage with 100 kilovoltage (standard protocol) in suspicious patients to pulmonary emboli. In this triple blind single center clinical trial, 142 patients suspicious to pulmonary emboli referring to Golestan Hospital of Ahvaz city, in two parallel groups with equal sample size, will be evaluated. In intervention group: pulmonary CT Aangiography will be done by 80 kilovoltage condition and in control group: Pulmonary CT Aangiography will be done by 100 kilovoltage condition will be done. Inclusion criteria: written informed consent of the patient and weight lower than 110 kg and exclusion criteria is tendency of the patients to quit from the study every time he/she wants. Main outcome variables are number of sizable arteries in different segments of lungs, pulmonary vascular enhancement, image noise and image quality score.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT201208084811N2**
Registration date: **2013-05-21, 1392/02/31**
Registration timing: **retrospective**

Last update:
Update count: **0**

Registration date

2013-05-21, 1392/02/31

Registrant information

Name

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Name of organization / entity

Shahid Beheshti University of Medical Sciences

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Recruitment status

Recruitment complete

Funding source

Ahvaz Jundishapour University of Medical Sciences

Expected recruitment start date

2012-04-20, 1391/02/01

Expected recruitment end date

2013-04-20, 1392/01/31

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparison of image quality of low voltage CT angiography (80 kilovoltage) with standard condition (100 kilovoltage) in patients suspicious to pulmonary emboli

Public title

Comparing image quality of low voltage CT angiography with 100 kilovoltage

Purpose

Diagnostic

Inclusion/Exclusion criteria

Inclusion criteria: written informed consent of the patient, weight lower than 110 kg. Exclusion criteria: tendency of the patients to quit from the study every time he/she wants (causes of this tendency will be asked to be able for doing sensitivity analysis)

Age
No age limit
Gender
Both

Phase
1
Groups that have been masked
No information
Sample size
Target sample size: **142**
Randomization (investigator's opinion)
Randomized
Randomization description
Blinding (investigator's opinion)
Triple blinded
Blinding description
Placebo
Not used
Assignment
Parallel
Other design features
Patients are allocated to each group based on block randomization method. Patient, physician (who reports the CT Angiographies) and person who do statistical analysis are all blind to the voltage used in each case. All images are coded by a colleague who is not involved in taking and reporting graphies or analyzing data. So, the study is triple blinded.

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
Ethics committee of Ahvaz Jundishapour University of Medical Sciences
Street address
1st Floor, Ahvaz Jundishapour University of Medical Sciences, Vice Chancellor for Research, University city
City
Ahvaz
Postal code
61357-15794
Approval date
2012-07-16, 1391/04/26
Ethics committee reference number
ajums.REC.1392.30

Health conditions studied

1

Description of health condition studied
Pulmonary emboli
ICD-10 code
I26
ICD-10 code description
Pulmonary embolism

Primary outcomes

1

Description
Number of sizable arteries in different segments of lungs
Timepoint
after CT angiography
Method of measurement
CT Angiography

2

Description
Pulmonary vascular enhancement
Timepoint
after CT angiography
Method of measurement
CT Angiography

3

Description
Image noise
Timepoint
after CT angiography
Method of measurement
CT Angiography

4

Description
Image quality score
Timepoint
after CT angiography
Method of measurement
CT Angiography

Secondary outcomes

1

Description
Age
Timepoint
Before intervention
Method of measurement
Taking history from the patient

2

Description
Gender
Timepoint
Before intervention
Method of measurement
Taking history from the patient

3

Description
Weight
Timepoint
Before intervention
Method of measurement
Taking history from the patient

4

Description
Height
Timepoint
Before intervention
Method of measurement
Paper meter

5

Description
Underlying diseases
Timepoint
Before intervention
Method of measurement
Taking history from the patient

6

Description
smoking
Timepoint
Before intervention
Method of measurement
Taking history from the patient

Intervention groups

1

Description
Intervention group: Pulmonary CT Aangiography will be done by 80 kilovoltage condition
Category
Diagnosis

2

Description
Control group: Pulmonary CT Aangiography will be done by 100 kilovoltage condition
Category
Diagnosis

Recruitment centers

1

Recruitment center
Name of recruitment center
Golestan Hospital
Full name of responsible person
Dr Sudabeh BlashAbadi
Street address
Radiology Ward, Golestan Hospital, Golestan Blvd.
City
Ahvaz

Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Vice chancellor for research, Ahvaz Jundishapour University of Medical Sciences
Full name of responsible person
Dr Mostafa Feghhi
Street address
Vice chancellor for research, Ahvaz Jundishapour University of Medical Sciences, University city
City
Ahvaz
Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Vice chancellor for research, Ahvaz Jundishapour University of Medical Sciences
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
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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