Development of an ultrasound method for measuring lung aeration

No registrations found.

Ethical review	Positive opinion
Status	Recruitment stopped
Health condition type	-
Study type	Observational non invasive

Summary

ID

NL-OMON29300

Source

Brief title herQLUS

Health condition

Increased lung density, decreased amount of air in the lung, verhoogde longdichtheid, verminderde luchthoudendheid van de long.

Sponsors and support

Primary sponsor: Academic Medical Center (AMC), Amsterdam Source(s) of monetary or material Support: Academic Medical Center (AMC), Amsterdam

Intervention

Outcome measures

Primary outcome

Lung aeration of the 12 lung regions evaluated through Lung Ultrasound (LUS).

Secondary outcome

1 - Development of an ultrasound method for measuring lung aeration 11-05-2025

- Estimation of lung aeration on CT scans
- Estimation of lung aeration by a conventional visual LUS scoring

- Other LUS findings (e.g., pleural line abnormalities, lung pulse, lung sliding abolition, pleural effusion)

Study description

Background summary

Monitoring of lung aeration is crucial in Intensive Care Unit (ICU) patients, especially in invasively ventilated patients. The gold standard for measuring lung aeration is chest Computed Tomography (CT). Unfortunately, a chest CT scan is difficult to obtain in invasively ventilated ICU patients and cannot be repeated frequently. Lung Ultrasound (LUS) as a point-of-care imaging tool is increasingly used in the (ICU) setting. Lung aeration by LUS is presently evaluated through semi-quantitative visual scores. Automated quantification could improve accuracy of lung aeration estimations. Our objective is to develop a computer-based algorithm for quantitative LUS analysis that accurately estimates lung aeration. A chest Computed Tomography (CT) scan will be used as the reference test.

Study objective

Artifacts on LUS images adequately reflect chest CT scan findings in invasively ventilated ICU patients; artifacts could be used in a computer-based quantitative algorithm for lung aeration.

Study design

The Lung Ultrasound is performed close in time to the chest CT-scan.

Intervention

Lung Ultrasound

Contacts

Public

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Eligibility criteria

Inclusion criteria

- Admitted to the intensive care unit for adults of the Academic Medical Center in Amsterdam, The Netherlands

- Receiving invasive ventilation
- Receiving a chest Computed Tomography (CT) scan on a clinical indication

Exclusion criteria

- Age < 18 years
- Lung Ultrasound (LUS) not feasible (e.g., severe chest trauma, extensive burns, open wounds)
- No written informed consent of the patient or his/her formal representative

- Reported allergy to skin tape, necessary to attach the skin markers to identify fields at chest CT scans

Study design

Design

Study type: Intervention model: Observational non invasive Other

3 - Development of an ultrasound method for measuring lung aeration 11-05-2025

Masking:	Open (masking not used)
Control:	N/A , unknown

Recruitment

NL	
Recruitment status:	Recruitment stopped
Start date (anticipated):	15-02-2018
Enrollment:	40
Туре:	Actual

IPD sharing statement

Plan to share IPD: Undecided

Ethics review

Positive opinion	
Date:	23-03-2018
Application type:	First submission

Study registrations

Followed up by the following (possibly more current) registration

ID: 46372 Bron: ToetsingOnline Titel:

Other (possibly less up-to-date) registrations in this register

No registrations found.

In other registers

ID
NL6915
NTR7110
NL64089.018.17

4 - Development of an ultrasound method for measuring lung aeration 11-05-2025

Register OMON

ID NL-OMON46372

Study results

Summary results None