Reduced Anticoagulation Targets in Extracorporeal life support

Published: 04-06-2020
Last updated: 07-02-2025

This study has been transitioned to CTIS with ID 2023-509675-16-01 check the CTIS register for the current data. Our objective is to study if reduced anticoagulation targets diminish bleeding complications without an increase in thromboembolic...

Ethical review	Approved WMO
Status	Recruiting
Health condition type	Heart failures
Study type	Interventional

Summary

ID

NL-OMON50046

Source
ToetsingOnline

Brief title
RATE

Condition

- Heart failures
- Respiratory tract infections

Synonym
Heart or lungfailure

Research involving
Human

Sponsors and support

Primary sponsor: Universitair Medisch Centrum Groningen
Source(s) of monetary or material Support: ZonMw

Intervention

Keyword: anticoagulation, ECLS, ECMO, hemorrhage

Outcome measures

Primary outcome

The primary outcome parameter is a combined endpoint consisting of: 1) major bleeding including hemorrhagic stroke according to the ELSO definitions; 2) severe thromboembolic complication defined as ischemic stroke, limb ischemia (not related with distal perfusion catheter), or acute pump failure with emergency exchange; 3) mortality at 6 months.

Secondary outcome

Secondary outcome parameters are: 1) blood transfusions; 2) health related quality of life (HR-QoL) at 6 months; 3) exchange of the membrane oxygenator; 4) vessel thrombosis after ECMO removal detected by echography; 5) pulmonary embolism; 6) costs; 7) the individual components of the composite outcome; and 8) all thromboembolic complications combined.

Study description

Background summary

ECMO treatment has a mortality of 38%, for a large part treatment related due to complications. The most feared complication is ischemic stroke for which heparin is administered with an aPTT target 2.0-2.5 times baseline (approximately 60-75 sec).
However, there is no relation between aPTT and the occurrence of stroke (1.2%), but there is a relation with the much more frequent occurrence of bleeding complications (55%) and blood transfusion. Both are strongly related to outcome.

Study objective

This study has been transitioned to CTIS with ID 2023-509675-16-01 check the CTIS register for the current data.

Our objective is to study if reduced anticoagulation targets diminish bleeding complications without an increase in thromboembolic complications or a negative impact on outcome.

Study design

Three-arm non-inferiority RCT.

Intervention

Randomization between heparin administration with a target of 2-2.5 times baseline aPTT (usual care, about 60-75 sec.), 1.5-2.0 times baseline aPTT (45-60 sec.) or low molecular weight heparin (LMWH) guided by weight and renal function.

Study burden and risks

We estimate that with an aPTT target of 45-60 sec. or with use of LMWH the primary endpoint will be met in 60% of patients compared to 70% with usual care. To show non-inferiority 91 patients per group are needed. To compensate for a lower effect and drop-outs 330 patients will be enrolled. Results will be analyzed by intention to treat.
Apart from anticoagulation targets, treatment will be as usual so study participation will not lead to a burden for the patient, e.g. no extra blood sampling, tests or visits. After 6 months the patients will be contacted for a short questionnaire to measure health-related quality of life. A risk may be that reduced anticoagulation target or anticoagulation with LMWH is inferior to standard practice. A benefit may be that reduced anticoagulation target or anticoagulation with LMWH is superior to standard practice.

Contacts

Public
Universitair Medisch Centrum Groningen

Hanzeplein 1
Groningen 9713 GZ
NL
Scientific
Universitair Medisch Centrum Groningen

Hanzeplein 1
Groningen 9713 GZ
NL

Trial sites

Listed location countries

Netherlands

Eligibility criteria

Age
Adults (18-64 years)
Elderly (65 years and older)

Inclusion criteria

Adults treated with ECMO for heart or lungfailure

Exclusion criteria

• Patients in whom the ECMO is only used to bridge a procedure like a high risk percutaneous coronary intervention or during surgery
• Vital indication for robust anticoagulation (e.g. mechanic mitral valve, pulmonary embolism, clot in cardiac ventricle)
• History of heparin induced thrombocytopenia (HIT)

Study design

Design

Study phase:	3
Study type:	Interventional
Intervention model:	Parallel
Allocation:	Randomized controlled trial

Masking:	Open (masking not used)
Control:	Active
Primary purpose:	Treatment

Recruitment

NL

Recruitment status:	Recruiting
Start date (anticipated):	23-10-2020
Enrollment:	330
Type:	Actual

Medical products/devices used

Product type:	Medicine
Brand name:	Clexane
Generic name:	enoxaparin
Registration:	Yes - NL intended use
Product type:	Medicine
Brand name:	Fraxiparin
Generic name:	nadroparin
Registration:	Yes - NL intended use
Product type:	Medicine
Brand name:	heparin
Generic name:	heparin
Registration:	Yes - NL intended use
Product type:	Medicine
Brand name:	Innohep
Generic name:	tinzaparin
Registration:	Yes - NL intended use
Product type:	Medicine
Brand name:	Orgaran
Generic name:	danaparoid
Registration:	Yes - NL intended use

Ethics review

Approved WMO Date:	04-06-2020
Application type:	First submission
Review commission:	METC Universitair Medisch Centrum Groningen (Groningen)
Approved WMO Date:	02-07-2020
Application type:	First submission
Review commission:	METC Universitair Medisch Centrum Groningen (Groningen)
Approved WMO Date:	27-08-2020
Application type:	Amendment
Review commission:	METC Universitair Medisch Centrum Groningen (Groningen)
Approved WMO Date:	29-04-2022
Application type:	Amendment
Review commission:	METC Universitair Medisch Centrum Groningen (Groningen)

Study registrations

Followed up by the following (possibly more current) registration

No registrations found.

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

No registrations found.

In other registers

Register	ID
EU-CTR	CTIS2023-509675-16-01
EudraCT	EUCTR2019-004125-24-NL
Other	NL 7969
CCMO	NL71811.042.20