Endothelial colony forming cells and plasma for in vitro studies of thrombosis in the elderly

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Primary objective: Compare characteristics of endothelium from older individuals with or without previous unprovoked VTE.Secondary objectives: 1) Determine the blood plasma proteome between the different groups and 2) to evaluate the prothrombotic...

Ethical review	Approved WMO
Status	Recruiting
Health condition type	Coagulopathies and bleeding diatheses (excl thrombocytopenic)
Study type	Observational invasive

Summary

ID

NL-OMON56432

Source
ToetsingOnline

Brief title
Endothelium and plasma in older patients with thrombosis/REPORT

Condition

- Coagulopathies and bleeding diatheses (excl thrombocytopenic)
- Vascular injuries

Synonym
unwanted blood clotting, venous thromboembolism

Research involving
Human

Sponsors and support

Primary sponsor: Leids Universitair Medisch Centrum
Source(s) of monetary or material Support: Trombosestichting Nederland (TSN)

Intervention

Keyword: Deep venous thrombosis, mechanisms, older patients, pulmonary embolism

Outcome measures

Primary outcome

-difference in expression of senescence markers in endothelial colony forming cells (ECFCs) from older individuals with versus without a previous unprovoked VTE.

Secondary outcome

-difference in abundance of 270 plasma proteins as measured with quantitative mass spectrometry between older individuals with or without a previous VTE

-difference in thrombin generation capacity of endothelial colony forming cells (ECFCs) from older individuals with or without previous VTE in an organ on a chip model for thrombosis.

Study description

Background summary

Older individuals have an increased risk of venous thromboembolism (VTE), which could be explained by the accumulation of risk factors and comorbidities that increase with aging. Nevertheless, these risk factors cannot fully explain the mechanisms enhancing VTE risk in older individuals. The expression of p53 in endothelial cells appears to have an essential role in VTE onset in aged mice, as the deletion of p53 completely prevented thrombus formation. Aged mice expressing p53 showed increased plasma levels of the coagulation factor Xa, and p53 inhibition reduced levels of the initiator of blood coagulation, tissue factor, on cultured umbilical vein endothelial cells. Nevertheless, these events have not been studied in a humanized setting. We hypothesize that increased senescence leads to a more pro-coagulant state in older patients.

Study objective

Primary objective: Compare characteristics of endothelium from older individuals with or without previous unprovoked VTE.
Secondary objectives: 1) Determine the blood plasma proteome between the different groups and 2) to evaluate the prothrombotic nature of endothelium from older individuals (with or without previous unprovoked VTE).

Study design

The study is a case-control study where patients with VTE are compared with patients without, using basic science, experimental in vitro techniques that require the sampling of venous peripheral blood of the participants.

Study burden and risks

The objectives of this study can only be reached by studying individuals with VTE and healthy controls. As only 70 ml of blood will be drawn from all participants at one single time point, the burden is low and no AEs, SAEs or SUSARs are expected. While the participants will not directly benefit from the study, the outcomes may lead to better understanding and ultimately prevention of VTE in older people in the future.

Contacts

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Trial sites

Listed location countries

Netherlands

Eligibility criteria

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

Inclusion criteria

-patients/volunteers older than 60 years
-diagnosis of VTE 1 year or longer before blood draw

Exclusion criteria

-active cancer
-symptomatic vascular disease, as defined by the use of platelet aggregation inhibitors
-severe renal insufficiency (eGFR<30),
-diabetes

Study design

Design

Study type:	Observational invasive
Intervention model:	Other
Allocation:	Non-randomized controlled trial
Masking:	Open (masking not used)
Control:	Active
Primary purpose:	Basic science

Recruitment

NL

Recruitment status:	Recruiting
Start date (anticipated):	30-05-2024
Enrollment:	50
Type:	Actual

Ethics review

Approved WMO Date:	20-12-2023
Application type:	First submission
Review commission:	METC Leiden-Den Haag-Delft (Leiden)
	metc-ldd@lumc.nl

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
CCMO	NL83960.058.23