

Personalised antiplatelet therapy for patients with narrowing/blocked blood supply to their legs

Submission date 18/10/2023	Recruitment status No longer recruiting	<input type="checkbox"/> Prospectively registered <input type="checkbox"/> Protocol
Registration date 01/11/2023	Overall study status Completed	<input type="checkbox"/> Statistical analysis plan <input type="checkbox"/> Results
Last Edited 13/12/2024	Condition category Circulatory System	<input type="checkbox"/> Individual participant data <input type="checkbox"/> Record updated in last year

Plain English summary of protocol

Background and study aims

Peripheral arterial disease (PAD) is a condition where the blood vessels in the legs get blocked. It affects one out of every five adults over the age of 65. As it is the main cause of amputations, the NHS performs over 20,000 operations every year to prevent them. People with PAD benefit from tablets to thin their blood as this improves outcomes after surgery and prevents heart attacks and strokes. The main tablets for this purpose are called aspirin and clopidogrel. These tablets work well in most people, but up to a third of patients do not get any benefit from them, as their bodies cannot process them. This is called resistance to therapy (RT). Because blood thinning is particularly important after operations people with RT may be at higher risk of their operation failing leading to amputation and/or problems such as heart attacks and strokes. Testing for RT has not traditionally been performed because it requires complex laboratory procedures. Recent developments in technology now mean that bedside tests are available for RT. In this study, a simple bedside test for RT will be used to see if patients with severe PAD have RT and whether this affects their risk of complications after an operation. If it is found that RT does affect outcomes for patients with PAD, the information obtained will be used to plan future research to determine if changing blood thinning therapy in people with RT improves their outcomes.

Who can participate?

Adult patients aged 18 years old and over with PAD

What does the study involve?

The study involves a face-to-face baseline appointment where information will be collected about the participants and their medical health. During this appointment, blood samples will be taken to assess any response to the blood thinning medication currently prescribed. Participants will then be contacted in 6 and 12 months via telephone for a 15-minute conversation regarding their medical health.

What are the possible benefits and risks of participating?

Although participants will not receive any extra benefit from taking part, research like this helps

to continually improve the treatment and care provided to all patients now and in the future. There are no extra risks involved in taking part in this research. Participants will not be asked to try any new treatments. Choosing to participate in any of the additional assessments has the main disadvantage of having to give up some time. In addition, bruising may be experienced when blood samples are taken.

Where is the study run from?
University of Leicester (UK)

When is the study starting and how long is it expected to run for?
November 2021 to March 2025

Who is funding the study?
John and Lucille van Geest Foundation (UK)

Who is the main contact?
Sarah Jane Messeder, sjm104@leicester.ac.uk

Contact information

Type(s)
Public, Scientific, Principal investigator

Contact name
Miss Sarah Jane Messeder

ORCID ID
<https://orcid.org/0000-0003-4104-2904>

Contact details
Vascular Research Office
Clinical Sciences Wing
University of Leicester
Glenfield Hospital
Groby Road
Leicester
United Kingdom
LE3 9QP
+44 (0)116 250 2381
sjm104@leicester.ac.uk

Type(s)
Public

Contact name
Mrs Ann Elsworth

Contact details
Vascular Research Office
Clinical Sciences Wing
University of Leicester

Glenfield Hospital
Groby Road
Leicester
United Kingdom
LE3 9QP
+44 (0)116 250 2381
ame29@leicester.ac.uk

Additional identifiers

Clinical Trials Information System (CTIS)

Nil known

Integrated Research Application System (IRAS)

293977

ClinicalTrials.gov (NCT)

NCT06047002

Protocol serial number

IRAS 293977, 0829

Study information

Scientific Title

Personalised ANtiplatelet THERapy for patients with symptomatic Peripheral Arterial Disease (PANTHER-PAD)

Acronym

PANTHER-PAD

Study objectives

Identification of patients with peripheral arterial disease with resistance to therapy will allow individualisation of anti-platelet treatment, preventing limb loss and reducing the risk of death

Ethics approval required

Ethics approval required

Ethics approval(s)

approved 23/12/2021, East Midlands - Nottingham 1 Research Ethics Committee (The Old Chapel, Royal Standard Place, Nottingham, NG1 6FS, United Kingdom; +44 (0)207 104 8115; nottingham1.rec@hra.nhs.uk), ref: 21/EM/0260

Study design

Prospective observational cohort study

Primary study design

Observational

Study type(s)

Health condition(s) or problem(s) studied

Resistance to antiplatelet therapy in patients with peripheral arterial disease

Interventions

Peripheral arterial disease (PAD) is a condition where the blood vessels in the legs get blocked. It affects one out of every five adults over the age of 65. As it is the main cause of amputations, the NHS performs over 20,000 operations every year to prevent them. People with PAD benefit from tablets to thin their blood as this improves outcomes after surgery and prevents heart attacks and strokes. The main tablets for this purpose are aspirin and clopidogrel. These work in most people, but up to a third of patients do not get any benefit from them, as their bodies cannot process them. This is called resistance to therapy (RT). Since blood thinning is particularly important after operations, people with RT may be at higher risk of their operation failing leading to amputation and/or problems such as heart attacks and strokes. Testing for RT has not traditionally been performed because it requires complex laboratory procedures. Recent development in technology now means that bedside tests are available for RT. In this study, a simple bedside test for RT will be used to see how many patients with severe PAD have RT and whether this affects their risk of complications after an operation. If RT is found to affect outcomes for patients with PAD, the information obtained will be used to plan future research to determine if changing blood thinning therapy in people with PAD improves their outcomes after surgery.

Primary objective:

To examine the feasibility of using the VerifyNow PRU and Aspirin assays to obtain estimates of the prevalence of resistance to antiplatelet therapy (aspirin & clopidogrel) in patients with symptomatic PAD. [Time Frame: 18 months]

Prevalence of resistance to aspirin and clopidogrel will be calculated as:

$$\text{Prevalence} = (\text{Number of patients resistant} / \text{Total study population}) * 100$$

The VerifyNow PRU Test (CPT85576) is reported as P2Y12 Reaction Units (PRU). PRU measures the extent of platelet aggregation in the presence of a P2Y12 inhibitor.

<180 PRU - suggests P2Y12 inhibitor effect

180-376 PRU - suggests lack of P2Y12 inhibitor effect.

The VerifyNow Aspirin (CPT 85576) test is reported as Aspirin Reaction Units (ARU). ARU measures the extent of platelet aggregation in the presence of Arachidonic acid.

<= 549 ARU - Evidence of platelet dysfunction due to aspirin

> 550 ARU - No evidence of aspirin-induced platelet dysfunction.

Secondary objective:

To examine whether resistance to antiplatelet therapy is associated with major adverse cardiac or limb events during the follow-up interval of one year [Time Frame: 18 months]

$$\text{Risk ratio} = \frac{\text{Cumulative incidence of major adverse cardiac/limb events in the Resistant Groups}}{\text{Cumulative Incidence of Major events in the non-Resistant group}}$$

Major adverse cardiac events = myocardial infarction, stroke, cardiovascular death
Major adverse limb events = major amputation, acute limb ischaemia, re-operation.

Events will be assessed through interrogation of electronic medical records and phone calls with participants at both 6 months and one-year follow up.

Intervention Type

Other

Primary outcome(s)

Feasibility of using the VerifyNow PRU and Aspirin assays measured using the obtained estimates of the prevalence of resistance to antiplatelet therapy (aspirin & clopidogrel) in patients with symptomatic peripheral arterial disease at 18 months

Key secondary outcome(s)

To examine whether resistance to antiplatelet therapy is associated with major adverse cardiac or limb events during the follow-up interval of one year measured using the risk ratios in the resistant and non-resistant groups of cumulative incidence of major adverse cardiac/limb events assessed through interrogation of electronic medical records and phone calls with participants at both 6 months and one year follow up

Completion date

31/03/2025

Eligibility**Key inclusion criteria**

1. Aged 18 years old and over
2. Severely symptomatic aorto-iliac and infra-inguinal peripheral arterial disease
3. Ability to provide written informed consent
4. Patients on antiplatelet therapy

Participant type(s)

Patient

Healthy volunteers allowed

No

Age group

Adult

Lower age limit

18 years

Sex

All

Total final enrolment

87

Key exclusion criteria

1. Aged 17 years old and under
2. Unable or unwilling to provide written informed consent
3. Acute limb ischaemia of the lower limb
4. Aneurysmal disease of the arteries of the lower limb
5. Severe diabetic foot sepsis

- 6. A known history of clotting disorders
- 7. Inherited bleeding disorders

Date of first enrolment

25/05/2023

Date of final enrolment

14/03/2024

Locations

Countries of recruitment

United Kingdom

England

Study participating centre

Glenfield Hospital

Groby Road

Leicester

United Kingdom

LE3 9QP

Sponsor information

Organisation

University of Leicester

ROR

<https://ror.org/04h699437>

Funder(s)

Funder type

Charity

Funder Name

John and Lucille Van Geest Foundation

Alternative Name(s)

THE JOHN AND LUCILLE VAN GEEST FOUNDATION

Funding Body Type

Private sector organisation

Funding Body Subtype

Trusts, charities, foundations (both public and private)

Location

United Kingdom

Results and Publications

Individual participant data (IPD) sharing plan

The datasets generated and/or analysed during the current study will be published as a supplement to the results publication

IPD sharing plan summary

Published as a supplement to the results publication

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Participant information sheet	version 1.3	17/05/2023	24/10/2023	No	Yes
Participant information sheet	Participant information sheet	11/11/2025	11/11/2025	No	Yes