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Using platelet function analysis to personalise anti-thrombotic drug therapies

Submission date 16/06/2025	**Recruitment status** Recruiting	[X] Prospectively registered [_] Protocol [_] Statistical analysis plan [_] Results [_] Individual participant data [X] Record updated in last year
Registration date 16/06/2025	**Overall study status** Ongoing	
Last Edited 16/07/2025	**Condition category** Circulatory System	

Plain English summary of protocol

Background and study aims

Platelets are tiny cells in our blood that help stop bleeding by forming clots when blood vessels are damaged. But sometimes, they form clots when they shouldn't. This can block blood flow and cause serious problems like heart attacks and strokes. Medicines that reduce clotting can help, but they also increase the risk of dangerous bleeding. Right now, doctors don't have a good way to know which patients will benefit from these medicines and which might be harmed. This study is testing a new way to measure how platelets behave, to help doctors make better decisions about treatment. The goal is to see how well this test works in people who've had a type of heart attack called a non-STEMI.

Who can participate?

Adults aged 18 or over who have been diagnosed with a non-STEMI heart attack.

What does the study involve?

Participants will have their platelet function tested three times:

-When they are admitted to hospital

-Around two months later (when they are likely taking two anti-clotting medicines)

-At 12 months (after one of the medicines has been stopped)

These tests will help researchers understand how platelets behave over time and how this relates to treatment.

What are the possible benefits and risks of participating?

Taking part may not directly benefit participants, but it could help improve treatment for future patients. The risks are low, but as with any blood test, there may be minor discomfort or bruising.

Where is the study run from?

University of Reading (UK)

When is the study starting and how long is it expected to run for?

June 2025 to August 2030.

Who is funding the study?
British Heart Foundation

Who is the main contact?
Jonathan Gibbins, j.m.gibbins@reading.ac.uk

Contact information

Type(s)
Public, Scientific, Principal investigator

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Additional identifiers

Clinical Trials Information System (CTIS)
Nil known

Integrated Research Application System (IRAS)
357473

ClinicalTrials.gov (NCT)
Nil known

Protocol serial number
CPMS 69135

Study information

Scientific Title
PLatelet phenomics Analysis to guide patient Stratification and anti-platelet Medication In acute Coronary syndrome

Acronym
PLASMIC

Study objectives

Platelet Phenomic Analysis can guide therapeutic choices for patients with acute coronary syndrome

Ethics approval required
Ethics approval required

Ethics approval(s)
submitted 09/06/2025, West Midlands - Edgbaston Research Ethics Committee (2 Redman Place, Stratford, London, E20 1JQ, United Kingdom; +44 2071048137; edgbaston.rec@hra.nhs.uk), ref: 25/WM/0133

Study design
Single-centre longitudinal observational analysis of platelet function using Platelet Phenomic Analysis to refine its use for personalisation of anti-platelet therapy in patients diagnosed with non-STEMI myocardial infarction.

Primary study design
Observational

Study type(s)
Diagnostic, Screening

Health condition(s) or problem(s) studied
Acute coronary syndrome: non-STEMI myocardial infarction

Interventions
Platelet phenomics analysis to be performed at admission, at approximately 2 months (when likely to be on dual anti-platelet therapy) and at 12 months following removal of second anti-platelet agent

Intervention Type
Other

Primary outcome(s)
Platelet phenomics analysis to assess impact of inherent platelet function capacity on responses to single and dual anti-platelet therapies at baseline, 2 months, 12 months

Key secondary outcome(s))
Pharmacogenomic analysis to determine impact on platelet function responses (measured by Platelet Phenomic Analysis) of different anti-platelet agents at baseline, 2 months, 12 months

Completion date
31/08/2030

Eligibility

Key inclusion criteria
Diagnosis of non-STEMI myocardial infarction

Participant type(s)

Patient

Healthy volunteers allowed
No

Age group
Adult

Lower age limit
18 years

Upper age limit
100 years

Sex
All

Key exclusion criteria
Patients already taking P2Y12 antagonists, pregnancy, active or recent malignancy, and renal, liver or other haematological pathologies

Date of first enrolment
01/01/2026

Date of final enrolment
01/07/2028

Locations

Countries of recruitment
United Kingdom

England

Study participating centre
Royal Berkshire Hospital NHS Foundation Trust
University Department of Cardiology
Craven Road
Reading
United Kingdom
RG1 5AN

Sponsor information

Organisation

University of Reading

ROR
https://ror.org/05v62cm79

Funder(s)

Funder type
Charity

Funder Name
British Heart Foundation

Alternative Name(s)
The British Heart Foundation, the_bhf, BHF

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
Brief report aimed at participants will be available at the conclusion of the study.
The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request.
j.m.gibbins@reading.ac.uk (Jonathan Gibbins)
Platelet function analysis – raw and processed using our open source and publicly available software. This will not make much sense without our prior analysis and will form the basis of our future patient stratification procedures. Thus the most helpful way to access with be via email and with our support.
Data will be available from point of publication and will be available in perpetuity via UoReading research data repository.
Likely to be helpful for other groups interest in patient stratification based on platelet function analysis using our analytical systems.
Consent was obtained.
No legal restrictions at this point, although if this forms the basis of new IP protection, this may slow down sharing. Protection of IP will be necessary to support commercialisation that will be essential for wide adoption in the longer term.

IPD sharing plan summary

Available on request