ISRCTN16600368 https://doi.org/10.1186/ISRCTN16600368

Comparison of a low dose of the anticlotting drug apixaban with the standard dose of apixaban in patients with the heart rhythm disturbance known as atrial fibrillation who have undergone stenting treatment of their heart arteries and are intended to receive standard-dose apixaban along with another anticlotting drug, ticagrelor

Submission date 04/09/2025	**Recruitment status** Recruiting	[X] Prospectively registered [_] Protocol [_] Statistical analysis plan [_] Results [_] Individual participant data [X] Record updated in last year
Registration date 21/11/2025	**Overall study status** Ongoing	
Last Edited 10/03/2026	**Condition category** Circulatory System	

Plain English summary of protocol

Background and study aims
Patients with the heart rhythm disturbance known as atrial fibrillation who have undergone stenting treatment of narrowed heart blood vessels, known as percutaneous coronary intervention or PCI, are often treated in our institution with two anticlotting drugs to prevent stroke and stent blockage, namely apixaban and ticagrelor.

The study will assess if low-dose apixaban, given alongside ticagrelor, reduces bleeding tendency compared with a standard dose of apixaban plus ticagrelor. The study will also describe the anticlotting effects of the different regimens and provide pilot safety and efficacy data for dual therapy with low- dose apixaban and ticagrelor that may support further study of this treatment with a view to reducing the risk of bleeding complications.

Who can participate?
Adult patients aged 18 years or older, who have undergone PCI in the last 7 days.

What does the study involve?
In this study, patients who provide informed consent will be randomised to either a standard dose of the anticlotting drug apixaban (5mg twice per day) plus a standard dose of ticagrelor (90mg twice per day), or apixaban at the lower dose of 2.5mg twice daily plus ticagrelor 90mg twice daily. The doses are taken up to a study visit at 26-28 days when a test known as skin

bleeding time will be performed as well as blood tests to assess the effects of the anticlotting medication. After this visit, participants will continue standard anticlotting medication as recommended by the clinical care team and will be contacted by the research team by telephone after 14 days. The study will assess if low-dose apixaban, given alongside ticagrelor, reduces bleeding tendency compared with a standard dose of apixaban plus ticagrelor. The study will also described the anticlotting effects of the different regimens and provide pilot safety and efficacy data for dual antithrombotic therapy with low-dose apixaban and ticagrelor that may support further study of this treatment with a view to reducing the risk of bleeding complications.

What are the possible benefits and risks of participating?
Benefits:
Not provided at time of registration
Risks:
The main risk associated with the combination of apixaban and ticagrelor is bleeding. Since the study is randomising participants to either standard of care dose of apixaban or a lower dose of apixaban, this risk is likely reduced in those randomised to the lower dose arm. There is a theoretical increased risk of cardiovascular events associated with a reduction in apixaban dose although evidence in this regard is mixed, with some studies showing no increased risk associated with the lower dose of apixaban; however, as participants will also be receiving a standard dose of ticagrelor, we believe this risk is minimal.

Where is the study run from?
Sheffield Teaching Hospitals NHS Foundation Trust (UK)

When is the study starting and how long is it expected to run for?
September 2025 to February 2027

Who is funding the study?
Sheffield Hospitals Charity (UK)

Who is the main contact?
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Contact information

Type(s)
Public, Scientific

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Integrated Research Application System (IRAS)
1005589

Protocol serial number
STH23508

Study information

Scientific Title
Comparison of low-dose and full-dose apixaban in combination with ticagrelor as dual antithrombotic therapy following percutaneous coronary intervention in patients with atrial fibrillation: the LoDAT study

Acronym
LoDAT

Study objectives
Primary objective:
The trial will assess whether using a low dose of the anticlotting drug apixaban, compared with a standard dose of apixaban, leads to a reduced bleeding tendency in patients also treated with another anticlotting drug, ticagrelor.

Secondary objectives:
1. Describe the anticlotting effects of the two different anticlotting regimens.
2. Obtain pilot efficacy and safety data to support future study of the low-dose regimen.

Ethics approval required
Ethics approval required

Ethics approval(s)
Approved 05/11/2025, Yorkshire & The Humber - Sheffield Research Ethics Committee (NHS Blood and Transplant Blood Donor Centre Holland Drive, Newcastle upon Tyne, NE2 4NQ, United Kingdom; -; sheffield.rec@hra.nhs.uk), ref: 25/YH/0201

Primary study design
Interventional

Study design
Interventional randomized parallel group controlled trial

Study type(s)
Safety

Health condition(s) or problem(s) studied
Percutaneous coronary intervention with stenting in patients with atrial fibrillation

Interventions
The trial is a pharmacodynamic study to determine the effect of reduced-dose apixaban 2.5 mg BD with ticagrelor 90 mg BD on haemostasis, fibrin clot dynamics and platelet function compared to the standard treatment of apixaban 5 mg BD with ticagrelor 90 mg BD.

In a randomised open-label parallel-group design, patient participants receiving, or prescribed to start receiving, apixaban 5 mg BD and ticagrelor 90 mg BD without aspirin for prevention of stent thrombosis and stroke will be randomised 1:1 to receive either apixaban 2.5 mg BD with ticagrelor 90 mg BD or apixaban 5 mg BD with ticagrelor 90 mg BD. Randomisation will be handled by an online interactive web-based randomisation service, sealedenvelope.com.

At visit 3, following 28(-2) days on the study medication schedule, participants will attend a study visit at which a skin bleeding time measurement will be performed and blood samples will be obtained 2 to 4 hours after the last dose of IMP of the treatment period. The blood samples will be tested for fibrin clot dynamics and platelet function. Plasma and serum samples will be stored for later analysis of unspecified markers relevant to drug effect and cardiovascular disease.

Participants will be transitioned back to standard-of-care treatment with apixaban 5 mg BD and ticagrelor 90 mg BD at the end of the treatment period and followed up by telephone call 14(±2) days later (visit 4).

Intervention Type
Drug

Phase
Phase IV

Drug/device/biological/vaccine name(s)
Apixaban, Ticagrelor

Primary outcome(s)
Bleeding time test (time taken for bleeding from small puncture wound to stop, measured in seconds) at 28(-2) days following randomisation and 2-4 hours post dose on the day of the test

Key secondary outcome(s)
1. Fibrin clot lag time post-dose – measured via blood sample for laboratory analysis, taken 2-4 hours post dose at visit 3
2. Final clot turbidity post-dose – measured via blood sample for laboratory analysis, taken 2-4

hours post dose at visit 3
3. Fibrin clot lysis time post-dose – measured via blood sample for laboratory analysis, taken 2-4 hours post dose at visit 3
4. Platelet aggregation responses to tissue factor, ADP, AA, and collagen post-dose – measured via blood sample for laboratory analysis, taken 2-4 hours post dose at visit 3
5. Serum thromboxane B2 level – measured via blood sample for laboratory analysis taken 2-4 hours post dose, at visit 3

Completion date
28/02/2027

Eligibility

Key inclusion criteria
1. Provision of informed consent prior to any study-specific procedures.
2. Male or female aged greater than 18 years.
3. PCI within the last 7 days for treatment of an acute or chronic coronary syndrome.
4. Current or previous atrial fibrillation for which long-term oral anticoagulation is indicated.
5. Receiving, or prescribed by the clinical care team to start receiving, apixaban 5 mg BD and ticagrelor 90 mg BD as DAT without aspirin.

Participant type(s)
Patient

Healthy volunteers allowed
No

Age group
Mixed

Lower age limit
18 Years

Upper age limit
99 Years

Sex
All

Total final enrolment
0

Key exclusion criteria
1. At least two out of the three following criteria for approved use of the apixaban 2.5 mg BD dose for prevention of stroke and systemic embolism in non-valvular atrial fibrillation: (i) age ≥80 years; (ii) body weight ≤60 kg; (iii) serum creatinine ≥133 umol/L.
2. Active clinically significant bleeding
3. Any history of haemorrhagic stroke or other intracranial haemorrhage
4. Estimated glomerular filtration rate <30 ml/min
5. Any planned surgery or other procedure expected to occur within 1 month of randomisation

that may require suspension or discontinuation of apixaban or ticagrelor therapy
6. Prior intention by patient or physician to discontinue apixaban or ticagrelor within the study period
7. Planned treatment following randomization with antiplatelet medication apart from ticagrelor (e.g. aspirin, clopidogrel, prasugrel, dipyridamole, ticlopidine)
8. Planned treatment following randomization with an oral anticoagulant apart from apixaban (e.g. warfarin, dabigatran, rivaroxaban, edoxaban) or parenteral anticoagulant (e.g. unfractionated heparin, low-molecular-weight heparin, bivalirudin) except for short-term parenteral anticoagulation required to cover a staged or urgent vascular procedure
9. Current or planned use of a GPIIb/IIIa inhibitor (e.g. tirofiban)
10. Current or planned use of a fibrinolytic agent (e.g. tissue plasminogen activator)
11. Requiring or likely to require treatment with an oral non-steroidal anti-inflammatory drug (NSAID), including regular or intermittent/as required use except for intermittent use of topical preparations that are not expected to have measurable systemic effect
12. Current or planned use of a strong CYP3A4 inhibitor (eg, ketoconazole, itraconazole, voriconazole, telithromycin, clarithromycin [but not erythromycin or azithromycin], nefazadone, ritonavir, saquinavir, nelfinavir, indinavir, atanazavir, cobicistat or over 1 litre daily of grapefruit juice) or strong CYP3A4 inducer (e.g. rifampin/rifampicin, rifabutin, phenytoin, carbamazepine, phenobarbital).
13. Clinically significant liver disease, defined as known or suspected diagnosis of hepatic cirrhosis with current Child Pugh class B or C; or known elevation of serum alanine transferase or aspartate transferase greater than 3 times the upper limit of the normal range for the processing laboratory.
14. History of alcohol or drug abuse, defined as regular use of an illicit substance for recreational purposes or regular consumption of greater than 50 units (males) or 35 units (females) of alcohol per week, in the last year
15. Co-morbidity associated with life expectancy less than 3 months
16. Any other condition deemed by the investigator to significantly affect ability to comply with the study protocol.
17. Women of child-bearing potential (WOCBP) unless negative pregnancy test at screening and willing to use highly-effective contraception for the duration of treatment with study medication.
18. Pregnant or breast-feeding women.
19. Any contraindication for apixaban or ticagrelor treatment as detailed in the respective SmPCs.

Date of first enrolment
10/03/2026

Date of final enrolment
31/12/2026

Locations

Countries of recruitment
United Kingdom

Study participating centre

Sheffield Teaching Hospitals NHS Foundation Trust
Northern General Hospital
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Sponsor information

Organisation
Sheffield Teaching Hospitals NHS Foundation Trust

ROR
https://ror.org/018hjpz25

Funder(s)

Funder type
Charity

Funder Name
Sheffield Hospitals Charity

Alternative Name(s)
Sheffield Hospitals Charitable Trust

Funding Body Type
Government organisation

Funding Body Subtype
Local government

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