

# 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

<b>Submission date</b> 04/09/2025	<b>Recruitment status</b> Recruiting	<input checked="" type="checkbox"/> Prospectively registered <input type="checkbox"/> Protocol
<b>Registration date</b> 21/11/2025	<b>Overall study status</b> Ongoing	<input type="checkbox"/> Statistical analysis plan <input type="checkbox"/> Results
<b>Last Edited</b> 10/03/2026	<b>Condition category</b> Circulatory System	<input type="checkbox"/> Individual participant data <input checked="" type="checkbox"/> Record updated in last year

## 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?

sth.researchadministration@nhs.net

## Contact information

**Type(s)**

Public, Scientific

**Contact name**

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**Contact details**

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**Additional identifiers****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

**Study design**

Interventional randomized parallel group controlled trial

**Primary study design**

Interventional

**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  $\geq 80$  years; (ii) body weight  $\leq 60$  kg; (iii) serum creatinine  $\geq 133$   $\mu\text{mol/L}$ .
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, atazanavir, 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  
Herries Road  
Sheffield  
England  
S5 7AU

## 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

Published as a supplement to the results publication