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# Assessing the effects of stenting in significant coronary artery disease prior to transcatheter aortic valve implantation

**Submission date**
04/08/2011

**Recruitment status**
No longer recruiting

**Registration date**
19/12/2011

**Overall study status**
Completed

**Last Edited**
14/04/2022

**Condition category**
Circulatory System

[X] Prospectively registered
[X] Protocol
[_] Statistical analysis plan
[X] Results
[_] Individual participant data

## Plain English summary of protocol

Background and study aims
A novel treatment called transcatheter aortic valve implantation (TAVI) now allows patients who are too high risk to undergo open-heart surgery to have their very stiff heart valves (the aortic valve) replaced. This is achieved using a valve replacement put in place using a balloon, introduced through only a small cut into an artery or the heart itself. The process which leads to this stiffening of the valve is related to that which leads to narrowing within the heart's coronary arteries. In patients undergoing open-heart surgery to replace the valve, any such narrowings can be treated at the same time using a technique called bypass grafting or a 'heart bypass'. This has been shown to be better than not treating these arteries. However, we do not know the best treatment for these narrowed arteries in patients undergoing TAVI. In these patients the alternative to heart bypass surgery is to use a balloon and stent(s) to widen the artery and relieve the narrowing (percutaneous coronary intervention or PCI). This is achieved using very thin tubes passed to the heart either via an artery in the groin or the wrist. However, this has its own risks and it may be better for the patient to not have these narrowings opened until they present the main problem.

Who can participate?
Patients must be 18 years of age or over with severe aortic stenosis.

What does the study involve?
We will randomly assign 310 patients with significant narrowing in their coronary arteries to either undergo PCI or to not undergo PCI. We will then follow these patients up, as well as patients without significant narrowings and those who cannot have the PCI procedure performed. The aim is to answer the question of whether patients with significant narrowings of their coronary arteries who are due to undergo a TAVI for a severely stiffened aortic heart valve should have stenting first, or not. The study compares the effects of treating or not treating coronary artery disease using stenting prior to TAVI.

What are the possible benefits and risks of participating?
There is no direct benefit to study participants, clinical or otherwise. The information we will get

will help improve the treatment of other people with similar conditions in the future. We do not know if the stenting has any beneficial or negative effects upon patients undergoing TAVI. The possible risks of undergoing the stenting procedure are similar to that of your coronary angiogram: blockage of the stent by a process known as thrombosis and excess healing of the artery wall causing restenosis of the stent. Other major complications are uncommon, but include: death, heart attack, which may require emergency heart bypass, stroke and bleeding. Minor complications are: allergy to the contrast medium, impairment of kidney function and complications at the access site, such as bleeding and haematoma. The risks of stenting are much lower than the risks associated with the TAVI procedure.

Where is the study run from?
The lead centre for the trial is the Cardiovascular Department, Guys & St Thomas NHS Foundation Trust, London, UK. The total number of centres involved is to be confirmed. It will involve centres across the UK and the EU.

When is the study starting and how long is it expected to run for?
We expect to begin recruitment of patients in late 2011 and will follow up the patients for 12 months. The expected duration of the trial is 3 years.

Who is funding the study?
The trial is funded by educational grants provided by Boston Scientific Inc. (MA, USA) and Edwards LifeSciences (CA, USA).

Who is the main contact?
Prof Simon Redwood
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(updated 24/11/2020, previously: Dr Martyn R Thomas
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# Contact information

### Type(s)
Scientific

### Contact name
Prof Simon Redwood

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# Additional identifiers

### Protocol serial number

# Study information

### Scientific Title
PercutAneous Coronary inTerventIon prior to transcatheter aortic VAlve implantaTION: a randomised controlled trial (ACTIVATION)

### Acronym
ACTIVATION

### Study objectives
Re-vascularisation of significant coronary artery disease by percutaneous coronary intervention (PCI) prior to transcatheter aortic valve implantation (TAVI) reduces the rate of mortality (and re-hospitalisation) at thirty days and twelve months after the valvular intervention compared to no such revascularisation.

### Ethics approval required
Old ethics approval format

### Ethics approval(s)
Not provided at time of registration

### Study design
Prospective randomised controlled study

### Primary study design
Interventional

### Study type(s)
Treatment

### Health condition(s) or problem(s) studied
Coronary artery disease & aortic stenosis

### Interventions
1:1 Randomisation of pre-TAVI PCI to no pre-TAVI PCI. The 310 patients will be enrolled from 20 - 30 UK and European centres plus 2 registries.

1. Coronary angiography will be used to identify significant coronary artery disease (CAD) defined as ≥1 lesion of ≥70% in ≥1 epicardial coronary artery
2. Patients without significant CAD will be enrolled into Registry 1
3. Patients whose CAD is not suitable for percutaneous coronary intervention (PCI) will be enrolled into Registry 2
4. The remaining patients with CAD amenable to PCI will be randomised into 2 arms with a 1:1 ratio:
4.1. To receive PCI
4.2. To not undergo PCI

### Intervention Type

Other

### Phase
Not Applicable

### Primary outcome(s)
A comparison of mortality and re-hospitalisation at 12 months

### Key secondary outcome(s))
1. Mortality at 12 months
2. Major adverse cardiovascular and cerebrovascular events (MACCE) at 30 days and 12 months
3. Hospitalisation for heart failure at 30 days and 12 months
4. Procedural complications
5. Procedural success
6. Bleeding Complications
7. Access site complications
8. Transient ischaemic attacks
9. Duration of hospital stay
10. Anginal burden

### Completion date
11/02/2020

## Eligibility

### Key inclusion criteria
1. Patients ≥18 years of age
2. Severe aortic stenosis, as defined by:
2.1. Peak transvalvular gradient of ≥40mmHg on transthoracic echocardiography (TTE)
2.2. Transoesophageal echocardiography (TOE)
2.3. Dobutamine stress echocardiography (DSE)
3. Aortic valve area of <1.0cm2
4. Symptoms suggestive of aortic stenosis (dyspnoea, syncope etc)
5. Deemed prohibitive risk for open aortic valve replacement (AVR) by a multi-disciplinary TAVI multidisciplinary team (MDT), as previously defined, and accepted for TAVI by said TAVI MDT
6. ≥1 proximal stenosis of ≥70% in a major epicardial artery deemed suitable for percutaneous coronary intervention (PCI) TAVI via any accepted approach (transfemoral, transapical, subclavian or transaortic) using any CE marked device
7. Written informed consent

### Participant type(s)
Patient

### Healthy volunteers allowed
No

### Age group
Adult

### Lower age limit

18 years

### Sex
All

### Total final enrolment
235

### Key exclusion criteria
1. An obvious acute coronary syndrome within 30 days of randomisation
2. Left main stem disease
3. Pregnancy
4. Active internal bleeding (except menstruation)
5. Allergy to heparin or glycoprotein (GP) IIb/IIIa inhibitors
6. Thrombocytopoenia (platelet count < 100,000 cells/mm3)
7. Patients who have previously been enrolled in this study
8. Patients who are currently enrolled in any other study where involvement in ACTIVATION would involve deviation from either protocol

### Date of first enrolment
04/12/2012

### Date of final enrolment
11/01/2019

## Locations

### Countries of recruitment
United Kingdom

England

France

Germany

### Study participating centre
**Cardiovascular Division**
London
United Kingdom
SE1 7EH

## Sponsor information

### Organisation

Guy's & St Thomas' NHS Foundation Trust (UK)

**ROR**
https://ror.org/00j161312

# Funder(s)

**Funder type**
Industry

**Funder Name**
Boston Scientific Inc. (USA)

**Funder Name**
Edwards LifeSciences Inc. (USA)

# Results and Publications

**Individual participant data (IPD) sharing plan**
Not provided at time of registration

**IPD sharing plan summary**
Not provided at time of registration

**Study outputs**

| Output type | Details | Date created | Date added | Peer reviewed? | Patient-facing? |
|---|---|---|---|---|---|
| Results article | | 27/09/2021 | 14/04/2022 | Yes | No |
| Protocol article | protocol | 24/07/2014 | | Yes | No |
| Participant information sheet | Participant information sheet | 11/11/2025 | 11/11/2025 | No | Yes |