

A randomised controlled trial of median Sternotomy versus anterolateral left Thoracotomy on morbidity and healthcare resource use in patients having off-pump coronary artery bypass surgery

Submission date 14/12/2006	Recruitment status No longer recruiting	<input type="checkbox"/> Prospectively registered <input type="checkbox"/> Protocol
Registration date 09/02/2007	Overall study status Completed	<input type="checkbox"/> Statistical analysis plan <input checked="" type="checkbox"/> Results
Last Edited 03/07/2014	Condition category Circulatory System	<input type="checkbox"/> Individual participant data

Plain English summary of protocol
Not provided at time of registration

Contact information

Type(s)
Scientific

Contact name
Prof Gianni Angelini

Contact details
Bristol Heart Institute
University of Bristol
Level 7, Bristol Royal Infirmary
Marlborough Street
Bristol
United Kingdom
BS2 8HW
+44 (0)117 928 3145
g.d.angelini@bristol.ac.uk

Additional identifiers

Protocol serial number
CS2005/2169

Study information

Scientific Title

Acronym

SteT

Study objectives

The primary hypothesis is that off-pump coronary artery bypass thoracotomy (OPCAB-Th) will reduce post-operative morbidity and the amount of hospital resources used compared to off-pump coronary artery bypass sternotomy (OPCAB-St).

Ethics approval required

Old ethics approval format

Ethics approval(s)

NHS Southmead Research Ethics Committee, 11/08/2006, ref: 06/Q2002/53

Study design

Multi-centre open randomised controlled trial

Primary study design

Interventional

Study type(s)

Treatment

Health condition(s) or problem(s) studied

Coronary artery disease

Interventions

Coronary artery bypass grafting on the beating heart via a conventional median sternotomy (OPCAB-St) versus coronary artery bypass grafting on the beating heart via a left anterolateral thoracotomy (OPCAB-Th).

Intervention Type

Other

Phase

Not Applicable

Primary outcome(s)

The primary outcome is the time until patients are classified as fit for discharge. A patient must have a chest X-ray with no evidence of pleural effusion requiring drainage, lung collapse /consolidation or pneumothorax, no suspected infection, normal routine blood tests and temperature in order to be classified as fit for discharge. Susceptibility to bias of these components of the primary outcome will be minimised by documenting objective clinical signs and measurements.

Key secondary outcome(s)

1. Intraoperative measurement of cardiac output measured by Swan-Ganz catheter, when each distal anastomosis is being carried out on the target coronary arteries (consecutive sub-sample only, n = 40)
2. A participants judgement about his or her readiness for discharge when the above criteria are met (too soon, about right, could have been discharged earlier)
3. Biochemical inflammatory markers, i.e. complement activation (C3a and C5), interleukin (Interleukin 6 [IL6], Interleukin 8 [IL8] and Interleukin 10 [IL10]); these will be assessed at five time points, i.e. preoperatively, at the end of the operation, and 4, 12 and 24 hours post-operatively (consecutive sub-sample only, n = 60)
4. Alveolar/arterial gradient measured preoperatively (in the anaesthetic room), after extubation, and 1 day after extubation, from arterial blood samples taken through an existing arterial line 5 minutes after administering oxygen by mask, for each of three different oxygen concentrations (consecutive sub-sample only, n = 40)
5. Pulmonary function tests (PFTs) preoperatively and at discharge
6. Pain score measured with a 10 cm (0 to 100 mm) visual analogue scale, or by verbal response (0 to 100) if a participant is not well enough to use the visual analogue scale at 2, 12, 24 and 36 hours after extubation and on discharge
7. The total amount (volume and dose) of local anaesthetic (paravertebral block) and patient-controlled analgesia administered; post-operative days on which paracetamol and non-steroidal anti-inflammatory drugs were dispensed
8. Intensive Care Unit (ICU) and post-operative hospital stay
9. In-hospital mortality and other standard measures of morbidity, e.g. post-operative myocardial infarction (MI), stroke, arrhythmia, need for haemodynamic support, renal failure and wound infection
10. Use of healthcare resources and associated costs, e.g. duration of operation, ICU/High Dependency Unit (HDU) and ward stay, additional interventions to treat complications, readmissions
11. Coronary Revascularisation Outcome Questionnaire (CROQ) preoperatively (preoperative version) and at 3 months (postoperative version)

Completion date

31/12/2008

Eligibility

Key inclusion criteria

All adults aged more than 16 years and less than 80 years having non-emergency, scheduled (urgent or elective) first-time off-pump surgery represent the target study population.

Specific inclusion criteria:

1. Aged more than 16 and less than 80 years
2. Undergoing non-emergency, scheduled (urgent or elective) isolated coronary artery bypass grafting off-pump on the beating heart
3. Participating surgeon willing to carry out the operation via either surgical method

Participant type(s)

Patient

Healthy volunteers allowed

No

Age group

Adult

Sex

All

Key exclusion criteria

1. No previous cardiac surgery
2. No previous lung surgery
3. Not in another invasive research study

Date of first enrolment

08/01/2007

Date of final enrolment

31/12/2008

Locations**Countries of recruitment**

United Kingdom

England

Italy

Trinidad and Tobago

Study participating centre

Bristol Heart Institute

Bristol

United Kingdom

BS2 8HW

Sponsor information**Organisation**

United Bristol NHS Healthcare Trust (UK)

ROR

<https://ror.org/04nm1cv11>

Funder(s)

Funder type

Charity

Funder Name

Garfield Weston Trust (UK) (ref: 06-07/1001)

Results and Publications

Individual participant data (IPD) sharing plan

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	results	01/08/2013		Yes	No
Participant information sheet	Participant information sheet	11/11/2025	11/11/2025	No	Yes