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Bridge or continue coumadin for device surgery

Submission date	Recruitment status	[ ] Prospectively registered
13/01/2010	Stopped	[ ] Protocol
Registration date	**Overall study status**	[ ] Statistical analysis plan
15/01/2010	Stopped	[X] Results
Last Edited	**Condition category**	[ ] Individual participant data
30/09/2014	Haematological Disorders	[ ] Record updated in last year

Plain English summary of protocol
Not provided at time of registration

Contact information

Type(s)
Scientific

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Additional identifiers

Clinical Trials Information System (CTIS)
2010-024552-28

ClinicalTrials.gov (NCT)
NCT00800137

Protocol serial number
UOHI-02; CIHR grant no.: 110607, MCT-99717

Study information

Scientific Title
Bridge or continue coumadin for device surgery: randomised controlled trial

Acronym
BRUISE CONTROL

Study objectives
Many cardiac patients requiring device (defibrillator or pacemaker) related surgery are on chronic oral anticoagulation therapy (usually coumadin). The risk of blood clot formation related to stopping oral anticoagulant therapy is currently managed by using bridging heparin therapy in patients with moderate to high risk of blood clot formation. There is a substantial risk of bleeding in the pocket where the device is situated (pocket haematoma) related to bridging therapy. The purpose of this study is to compare the current standard of care of bridging with heparin to an experimental strategy of continuing coumadin therapy in higher risk patients undergoing device surgery, with the hypothesis being that the continued oral anticoagulation group will have a lower pocket haematoma rate as compared to the bridging with heparin group.

Ethics approval required
Old ethics approval format

Ethics approval(s)
Ottawa Hospital Research Ethics Board, 20/112008, ref: 2008628-01H

Study design
Interventional parallel assignment single-blind (outcomes assessor) randomised active-controlled multicentre trial

Primary study design
Interventional

Study type(s)
Treatment

Health condition(s) or problem(s) studied
Blood clot formation/pocket haematoma

Interventions
Current interventions as of 01/02/2011:
Eligible patients will be equally randomised (1:1) to the conventional/control arm (bridging anticoagulation) or to the experimental arm (continued coumadin).
Two options for choosing either A or B for 'bridging in' patients. Option A: bridging in for elective patients who are randomized > 5 days pre-implant. Patients will discontinue oral anticoagulant 5 days before their procedure and start full therapeutic doses of subcutaneous LMWH 4 days pre-procedure. Oral anticoagulant will resume on the evening of the procedure. Full-dose LMWH injections or full-dose IV heparin will start at 24 hours after surgery. Option B allows for bridging in for semi-elective patients randomized < 5 days pre-implant. Choice of LMWH or IV heparin are unchanged. Patients discontinue OAC immediately and PI may give Vitamin K at his/her discretion. Proceed with surgery once INR is < 1.6. In the experimental arm patients will continue on their oral anticoagulant peri-operatively. The INR on the day of surgery will be less than 3.0. ASA will be continued in all patients.

Plavix® will be continued in all patients with drug-eluting stents and in those who have bare metal stents for less than one year. Patients on Plavix® for more than one year since their bare metal stent will have their Plavix® stopped 5 days pre-procedure.

Patients will be monitored for the development of any haematoma or bleeding event during admission for implant. There will be an unblinded team responsible for device implant and follow-up and a blinded team responsible for monitoring of any bleeding events or haematoma and determine if it meets the primary endpoint criteria for the study. The blinded team will have no knowledge of the treatment arm assignment and will be involved only if the patient develops a haematoma or bleeding event. All haematomas and bleeding events will be followed until resolution.

Post-procedure patients will be followed by the unblinded team daily until discharge then by telephone at 3 - 4 days post-procedure and finally at their 1 - 2 week routine post-procedure clinic visit. At the clinic visit patients are asked to grade their quality of life (QOL) since the start of the study by using the EQ5D, satisfaction of blood thinning management score and asked to grade their most severe, average and 'today' pain on the visual analogue scale.

Previous interventions:
Eligible patients will be equally randomised (1:1) to the conventional/control arm (bridging anticoagulation) or to the experimental arm (continued coumadin). In the conventional arm patients will discontinue oral anticoagulant 5 days before their procedure and start full therapeutic doses of subcutaneous LMWH 4 days pre-procedure. Oral anticoagulant will resume on the evening of the procedure. Full-dose LMWH injections or full-dose IV heparin will start at 24 hours after surgery. In the experimental arm patients will continue on their oral anticoagulant peri-operatively. The INR on the day of surgery will be less than 3.0. ASA will be continued in all patients.

Plavix® will be continued in all patients with drug-eluting stents and in those who have had bare metal stents for less than one year. Patients on Plavix® for more than one year since their bare metal stent will have their Plavix® stopped 5 days pre-procedure.

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Added 10/07/2013:
The trial was stopped early on 28/02/2013 by the DSMB for efficacy and exceeding the pre-specified primary endpoint at the second interim analysis.

Intervention Type
Device

Phase
Not Applicable

Primary outcome(s)
Clinically significant haematoma, defined as haematoma requiring re-operation and/or transfusion and/or unplanned or prolonged hospitalisation and/or interruption of LMWH or intravenous (IV) heparin or oral anticoagulant. Time frame: device implant until first routine post-procedure visit.

Key secondary outcome(s))
Components of the primary outcome, composite of all other major peri-operative bleeding events and thrombo-embolic events. Time frame: device implant to first routine post-procedure visit.

Completion date
02/04/2012

Reason abandoned (if study stopped)
Objectives no longer viable

Eligibility

Key inclusion criteria
1. Aged greater than 18 years, female and male
2. Any patient undergoing elective device surgery (i.e., de novo device implantation or pulse generator change or lead replacement or pocket revision)
3. Patient at moderate or high risk of arterial thrombo-embolic events (ATE) or high risk of venous thrombo-embolic events (VTE) defined as one or more of the following:
3.1. Prosthetic mitral valve replacement
3.2. Caged ball or tilting disc aortic valve prosthesis
3.3. Bi-leaflet aortic valve prosthesis and one or more of: atrial fibrillation (AF), prior stroke or transient ischaemic attack (TIA), hypertension, diabetes, congestive heart failure (CHF), aged greater than 75 years
3.4. AF associated with rheumatic valvular heart disease
3.5. Non-rheumatic AF and CHADS2 risk criteria score greater than 2
3.6. Non-rheumatic AF and stroke or TIA (within 3 months)
3.7. Recent (within 3 months) VTE
3.8. Severe thrombophilia (protein C or S deficiency or anti-thrombin or anti-phospholipid antibodies or multiple abnormalities)
4. Willing to self-inject or have a relative or friend or nurse inject low molecular weight heparin (LMWH)
5. Persistent/permanent AFib/Flutter on day of acceptance for device implant surgery AND plan for cardioversion or DFT testing at device implant.

Please note 'AF' always refers to atrial fibrillation/atrial flutter within this section.

Participant type(s)
Patient

Healthy volunteers allowed

No

Age group
Adult

Lower age limit
18 years

Sex
All

Key exclusion criteria
1. Unable or unwilling to provide informed consent
2. History of noncompliance of medical therapy
3. Renal failure with creatinine greater than 180 umol/l
4. Prior heparin-induced thrombocytopenia
5. Active device infection

Date of first enrolment
02/04/2009

Date of final enrolment
02/04/2012

Locations

Countries of recruitment
Canada

Study participating centre
University of Ottawa Heart Institute
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Sponsor information

Organisation
University of Ottawa Heart Institute (Canada)

ROR
https://ror.org/03c4mmv16

Funder(s)

Funder type
Research organisation

Funder Name
Canadian Institutes of Health Research (CIHR) (Canada) - http://www.cihr-irsc.gc.ca (ref: MCT-99717)

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	30/05/2013		Yes	No