

# Bridge or continue coumadin for device surgery

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<b>Last Edited</b> 30/09/2014	<b>Condition category</b> Haematological Disorders	<input type="checkbox"/> Individual participant data <input type="checkbox"/> 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  $\mu\text{mol/l}$
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

Ottawa

Canada

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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?
<a href="#">Results article</a>	results	30/05/2013		Yes	No
<a href="#">Participant information sheet</a>	Participant information sheet	11/11/2025	11/11/2025	No	Yes