

# **Anticoagulation Therapy:**

Bridging Therapy – Perioperative Management of Patients on Warfarin Anticoagulation

Policy Number: 458 Supersedes: - Healthcare Services No/s 7, 22	Policy Number: 458	Supersedes:		1 22
---	--------------------	-------------	--	------

Version No:	Date Of Review:	Reviewer Name:	Completed Action:	Approved by:	Date Approved:	New Review Date:
1			Completed	MMG	16.7.15	16.7.18
2	September 2015		Completed	MMG	16.9.15	16.7.2018
3	November 2015		Completed	Thrombosis Committee	12.11.15	16.7.2018
4	December 2015		Removal of word prophylactic	Thrombosis Committee	4.12.15	16.7 <i>.</i> 18
5	November 2016		P5/9 references to eGFR have been replaced with the text Creatinine clearance (calculated with Cockcroft & Gault formula)	Thrombosis Committee CPRG	18.11,2016 22.11.2016	16.7.2018

Brief Summary of Document:

This document will form an appendix to the Health Board's Adult Anticoagulation, Thrombosis and Thromboprophylaxis Policy. The management of patients who are receiving warfarin anticoagulation and require surgery or an invasive procedure is a common clinical problem which necessitates an assessment of risk of venous or arterial thrombosis associated with cessation of warfarin. The document aims to provide standardised guidance for the optimum care of patients undergoing surgery.

It should be noted that Endoscopy patients are managed under guidance from the British Gastroenterological Society and the Endoscopy Unit Operational Policy. For details see Scope.

To be read in conjunction with:		nticoagulation, Th		d Thrombo	prophylaxis	s Policy and other	
Classification:	Clinical	Category:	Guideline	# XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	dom Of mation Is	Open	
Authorised by:		Job Title	Medical Director	Sign	ature:		
Responsible Officer/Author:			Job Title:	Consulta	ant Haema	atologist	
Contact Details:	Dept Had	ematology	Base	GGH			
	Tel No		E-mail:				
SIMA	ANISATION VIDE	DIRECTORA	TE	DEPARTI ONL		. COUNTY ONLY	
Staff Group	ninistrative/ Estates cal & Dental	Allied Health Professionals Nursing	<b>J</b>	Ancillar Scientiflo Profession	8 /	Maintenance Other	<b>√</b>
CONSULTATION	Please indic Individual(s) Group(s)	Consultation p Consultation p Consultant Had Anticoagulant of Specialists Thrombosis Co	rocess and sta ematologists olinical nurse	s)/group(s ate date ag Date(s) Date(s)	) or commit reement ob 18.7.14	tee(s) involved in the tained.	
	Gommittee(s)	Medicines Man Group	And the second s	Date(s)	16.7.14		
RATIFYING A (In accordance Schedule of D  NAME OF CO	e with the elegation)	A = Approval Required FR = Final Ratification	Date Approva			MMENTS/ S TO NOTE	
Medicines Manag	gement Group		16.7.14		and the second s		
Date Equality Impact Assessment Undertaken		Group completing Equality impact assessment					
Please enter any keyo used in the policy sear enable staff to locate	ch system to	Thrombosis, the perioperative, a				herapy, arin, atrial f <b>ibrillati</b> d	on

Database No: 458 Page 2 of 9 Version 5.0
Anticoagulation Therapy: Bridging Therapy – Perioperative Management of Patients on Warfarin

Document Implementation Plan					
How Will This Policy Be Implemented?	Global email Dissemination to all consultant haematologists for cascade to teams Dissemination to all surgical leads for cascade to teams, including pre- assessment Dissemination to all anticoagulation nurses for cascade to teams All medically qualified doctors will be expected to be able to follow the guidance.				
Who Should Use The Document?	All healthcare professionals involved in the management and care of patients undergoing elective surgery				
What (if any) Training/Financial Implications are Associated with this document?	None. Medically qualified staff would be expected to be able to follow this guidance.				
	Action	By Whom	By When		
What are the Action					
Plan/Timescales for implementing this policy?					

## **CONTENTS**

1.	INTRODUCTION	.5
	SCOPE	
	OBJECTIVES	
	TRAINING	
5.	MONITORING COMPLIANCE	. 5
6.	PROCEDURE	. 5
7.	Appendix A The perioperative management of anticoagulation therapy flowchart	.7
8.	Appendix B CHADS <sub>2</sub> scoring	7
9.	Appendix C – Plan for perioperative management of anticoagulation	.8

#### 1. INTRODUCTION

The management of patients who are receiving warfarin anticoagulation therapy and require surgery or an invasive procedure is a common clinical problem which necessitates an assessment of risk of venous or arterial thrombosis associated with cessation of warfarin.

#### 2. SCOPE

This guidance on the perioperative management of anticoagulation of patients on warfarin will be used for all patients undergoing elective surgical procedures, whether under local, regional or general anaesthesia.

**EXCEPTION:** It should be noted that the Endoscopy Departments at all hospitals in the Health Board are required, in accordance with practice across Wales for Endoscopy, to follow guidance from the British Gastroenterological Society: see *Gut* 2008;**57**:1322-1329
<a href="http://www.bsg.org.uk/clinical-guidelines/endoscopy/antibiotic-prophylaxis-in-gastrointestinal-endoscopy.html">http://www.bsg.org.uk/clinical-guidelines/endoscopy/antibiotic-prophylaxis-in-gastrointestinal-endoscopy.html</a>. The guidance is included in the Endoscopy Unit Operational Policy, appendix 10.

#### 3. OBJECTIVES

To provide standardised guidance to provide optimum care for patients undergoing surgery.

#### 4. TRAINING

All medically qualified doctors would be expected to be able to follow the guidance. Training will be provided during induction.

#### 5. MONITORING COMPLIANCE

Regular audit against this guidance should be undertaken. Number of patients undergoing surgery and any complications, bleeding events, thrombotic events.

#### 6. PROCEDURE

It is well documented that warfarin should not be stopped for superficial procedures, e.g. dental work, ophthalmic procedures, and most upper GI endoscopy. For minor procedures it is recommended that the INR is checked 5 days prior to procedure and if within the therapeutic range the procedure can go ahead with no cessation of anticoagulation.

Prior to major elective surgery or procedures considered as high risk for haemorrhage patients taking warfarin need to be categorised into one of the following groups:

- 1. Low risk
- 2. Intermediate risk
- 3. High risk
- 4. Very high risk

The individual's risk group will determine the perioperative management of anticoagulation therapy (see flowchart on Appendix A). If it is unclear which group a patient falls into, the haematologist may be contacted for advice but all relevant information must be obtained first.

Creatinine clearance (calculated with Cockcroft & Gault formula) should be checked in the pre assessment clinic and if less than 20mls/min it is recommended that LMWH is not used. Please discuss each case with a haematologist.

Each patient should have a documented peri-operative plan (see Appendix C, below) completed in pre assessment by nursing staff or by the surgeon/clinician/anaesthetist performing the procedure. This plan should distributed as follows to minimise confusion:

- filed in the patient's notes
- provided to the relevant anticoagulant clinics

- given to the patient
- sent to patient's GP
- · sent to the district nurses

The timing of INR testing will vary according to individual patient and their risk group. This should be documented in Appendix C.

LMWH injections are to be supplied from the hospital pharmacy via a prescription signed by a hospital clinician. This needs to be made clear to the patient who needs to collect the injections from pharmacy before leaving the hospital (see Appendix C).

If emergency surgery is required in an anticoagulated patient, a haematologist must be contacted, via switchboard.

Please refer to separate guidance for the management of oral antiplatelet agents prior to invasive procedures.

# APPENDIX A: PERIOPERATIVE MANAGEMENT OF ANTICOAGULATION THERAPY – FLOWCHART

Pre-operatively, patients should omit their warfarin for 5 days prior to the procedure INR TO BE CHECKED ON DAY OF OPERATION, IF >1.5 CONSIDER CANCELLING OPERATION

Is the patient: low risk, intermediate risk, high risk, or very high risk?

fibrillation with a CHADS2 score 1-2 (see Appendix B)  Non-valvular atrial fibrillation with CHADS2 score 3-4 and no previous stroke/TIA  Non-valvular atrial fibrillation with CHADS2 score 3-4 and no previous stroke/TIA  Non-valvular atrial fibrillation with CHADS2 score 3-4 and no previous stroke/TIA  Non-valvular atrial fibrillation with CHADS2 score 3-4 and no previous stroke/TIA  Non-valvular atrial fibrillation with CHADS2 score 3-4 and no previous stroke/TIA  Non-valvular atrial fibrillation with CHADS2 score 3-4 (see Appendix B)  Recurrent DVT or PE DVT or PE within last 3/12 (avoid surgery if possible) Antithrombin deficiency; discuss with haematologist Antiphospholipid syndrome First generation ball/cage aortic valve  Low risk  Pre-op: prophylactic dose LMWH on evening of day-3,-2 and -1 before 9pm (must be 12hrs before spinal or epidural)  Post-op:  Post-op:  Post-op:  Restart prophylactic LMWH on evening of procedure (Restart warfarin as below)  If the patient has an epidural in place or they have had a spinal anaesthetic, LMWH can be given 4 hrs after spinal or epidural insertion. In case of any doubt, contact the Anaesthetist check with the anaesthetist before giving LMWH	Low risk	Intermediate risk	High Risk	Very high risk
Pre-op: no alternative anticoagulation required  Pre-op: prophylactic dose LMWH on evening of day-3,-2 and -1 before 9pm, (must be 12hrs before spinal or epidural)  Post-op:  Post-op:  Post-op:  Post-op:  Restart prophylactic LMWH on evening of procedure evening of procedure  (Restart warfarin as below)  If the patient has an epidural in place or they have had a spinal anaesthetic, LMWH can be given 4 hrs after spinal or epidural insertion. In case of any doubt, contact the Anaesthetist check with the anaesthetist before giving LMWH  Pre-op: prophylactic dose  LMWH on evening of day-3, -2 and -1, before 9am (24hrs needed before spinal or epidural). Omit on morning of surgery  Post-op:  Restart LMWH prophylactic dose on evening of procedure and therapeutic dose on evening of procedure and therapeutic dose at 48 hrs  If the patient has an epidural in place or they have had a spinal anaesthetic, LMWH can be given 4 hrs after spinal or epidural insertion. In case of any doubt, contact the Anaesthetist check with the anaesthetist before giving LMWH	fibrillation with a CHADS <sub>2</sub> score 1-2	more than 3/12 ago  Non-valvular atrial fibrillation with CHADS <sub>2</sub> score 3-4 and no previous	of the following a) previous history of stroke/TIA b) known valve disease c) severe left atrial enlargement d) left ventricular ejection fraction < 35% e) CHADS <sub>2</sub> >4 (see Appendix B) Recurrent DVT or PE DVT or PE within last 3/12 (avoid surgery if possible) Antithrombin deficiency: discuss with haematologist Antiphospholipid syndrome First generation ball/cage	All mechanical prosthetic cardiac valves
Start prophylactic LMWH on evening of procedure  (Restart warfarin as below)  If the patient has an epidural in place or they have had a spinal anaesthetic, LMWH can be given 4 hrs after spinal or epidural insertion. In case of any doubt, contact the Anaesthetist check with the anaesthetist before giving LMWH	Pre-op: no alternative	Pre-op: prophylactic dose LMWH on evening of day- 3,-2 and -1 before 9pm, (must be 12hrs before spinal	Pre-op therapeutic LMWH on morning -3, -2 and -1, before 9am (24hrs needed before spinal or epidural). Omit on	
evening of procedure  (Restart warfarin as below)  If the patient has an epidural in place or they have had a spinal anaesthetic, LMWH can be given 4 hrs after spinal or epidural insertion. In case of any doubt, contact the Anaesthetist check with the anaesthetist before giving LMWH	Post-op:	Post-op;	Post-op:	
be given 4 hrs after spinal or epidural insertion. In case of any doubt, contact the Anaesthetist check with the anaesthetist before giving LMWH		evening of procedure	dose on evening of procedure	
	be given 4 hrs after spinal or e	epidural insertion. In case of any	doubt, contact the Anaesthetist	
5 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		<b>************</b>	······································	1
Continue prophylactic dose LMWH (as in patient or outpatient) until INR in range	Continue prophylactic do	se LMWH (as in patient or out	patient) until INR in range	

Re-starting oral anticoagulant:

Once haemostasis has been achieved, epidural catheter has been removed and oral intake has been re-established, warfarin can be restarted. If warfarin is not restarted on the day of surgery, recheck INR before doing so. If INR is 1.5 or less then re load with twice usual maintenance dose followed by usual dose the next day. Check INR on Day +2 (surgery is day 0).

Database No: 458 Page 7 of 9 Version 5.0

# APPENDIX B: CHADS<sub>2</sub> SCORING SYSTEM

Risk fa	ctor	Score
None		0
С	Heart failure	1
Н	Hypertension	1
Α	Age ≥ 75	1
D	Diabetes mellitus	1
$S_2$	Stroke/transient ischaemic attack	2

APPENDIX C: PLAN FOR PERIOPERATIVE MANAGEMENT OF ANTICOAGULATION Name of patient: Hospital number: Address: D.O.B: Indication for anticoagulation: Procedure to be performed: Provisional date for procedure: Responsible clinician: If the patient is having major elective surgery, assess patient's risk of thrombosis (see flowchart) as this determines treatment regime peri-operatively. Risk Group: Creatinine clearance (calculated with Cockcroft & Gault formula): Treatment plan for patients: In order for you to proceed with the above surgical procedure you are not required/required (delete as appropriate) to discontinue your warfarin therapy 5 days before your procedure. As you are at a low/intermediate/high risk of thrombosis (delete as appropriate) it has been decided that you do not need/need (delete as appropriate) low molecular weight heparin injection to be started 3 days before the procedure. If you are having low molecular weight heparin, you will be given a prescription for the injections at the hospital. You should take the prescription to the hospital pharmacy so that you can collect the injections before you leave the hospital. Arrangements will be made for a district nurse to administer the injections if you require this. Name: Position: Date: Signature: