APPENDIX 2

WARFARIN REVERSAL CONSENSUS GUIDELINES

Based on The Australasian Society of Thrombosis & Haemostasis recommendations for Australia & New Zealand (MJA 2004; 181(9):492-497)

Guidelines for the management of an elevated INR in adult patients with or without bleeding

Clinical setting		Therapy					
INR	Bleeding	Warfarin	Vitamin K	Prothrombinex	FFP	Measure INR	Comments
> therapeutic range but < 5	None	Reduce or omit next dose	-	-	-	-	Resume warfarin at reduced dose when INR approaches therapeutic range If INR < 10% above therapeutic, dose reduction may not be necessary
5-9*	None	Cease	-	-	-	Within 24 hrs	Resume warfarin at reduced dose when INR approaches therapeutic range
	None (high risk)^	Cease	1-2mg (po) or 0.5-1mg (iv)	-		Within 24 hrs	Resume warfarin at reduced dose when INR approaches therapeutic range
> 9	None (low risk)	Cease	2.5-5mg (po) or 1mg (iv)	-	-	In 6-12 hrs	Resume warfarin at reduced dose when INR < 5
	None (high risk)^	Cease	1mg (iv)	Consider 25-50 IU/kg	Consider 150-300 ml	In 6-12 hrs	Resume warfarin at reduced dose when INR < 5
Clinically significant bleeding where warfarin is a contributing factor		Cease	5-10mg (iv)	25-50 IU/kg	150-300 ml	Assess patient continuously until INR < 5 & bleeding stops If FFP is unavailable, give vitamin K (5-10mg iv) & Prothrombinex (25-50 IU/kg) If Prothrombinex is unavailable, give vitamin K (5-10mg iv) & FFP (10-15 ml/kg)	

* Bleeding risk increases exponentially from INR 5 to 9; INR ≥ 6 should be monitored closely
^ High bleeding risk factors include active gastrointestinal disorders, concomitant anti-platelet therapy, major surgical procedure within preceding 2 weeks, thrombocytopenia

In severe bleeding, prothrombinex is preferable to FFP as it is usually more immediately available.

SEEK EXPERT HAEMATOLOGY ADVICE IF UNSURE

Managing oral anticoagulation during invasive procedures according to risk of thromboembolism

Thromboembolism risk	Therapeutic procedures before and after surgery					
	4-5 days before	2-3 days before	Night/day before	Day of surgery	After surgery	72 hours + after
Low	Withhold warfarin	-	If INR > 2, 1-5 mg vitamin K (iv)	If INR ≤ 1.5 proceed If INR > 1.5 defer If surgery is urgent, Prothrombinex (25-50 IU/kg) + 150-300 ml FFP or FFP alone	Start warfarin on same day at previous maintenance dose Employ thromboprophylaxis as per usual practice	-
High	Withhold warfarin	Start treatment dose unfractionated heparin (iv) or low molecular weight heparin (LMWH)* (subcut)	If using LMWH, last dose (max dose of enoxaparin 1mg/kg) at least 24 hours before surgery	If using unfractionated heparin, discontinue 4-6 hours before surgery	Recommence warfarin ASAP Start heparin or LMWH 12-24 hours post-operatively If using LMWH, give thromboprophylactic dose If using unfractionated heparin, aim to prolong APTT 1.5x	Fully anticoagulate patient with warfarin if no evidence of bleeding Cease heparin or LMWH 48 hours after target INR is reached

* Exercise caution in patients with impaired renal function (creatinine clearance rate < 30 ml/hour). LMWH can accumulate & contribute to bleeding.

NOTE: Patients with prosthetic valves & those who have had an acute thrombosis within the preceding three months should receive bridging anticoagulation peri- and post-operatively.

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