

Management Guidelines for * **NON-URGENT** * Invasive Procedures in Medical Imaging

HIGH RISK	LOW RISK
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**** CAUTION ****

Patient at risk for THROMBOTIC EVENTS may require consultation for bridging anticoagulation therapy (eg. PROSTHETIC HEART VALVES, VENOUS THROMBOEMBOLISM, ATRIAL FIBRILLATION WITH PRIOR STROKE)

Premature discontinuation of anti-platelet drugs in patients with CORONARY STENTS may precipitate acute stent thrombosis

Do not stop anticoagulation in these patients without consultation

HIGH RISK PROCEDURES

HIGH RISK	Anticoagulant / Antiplatelet MEDS	Discontinue Yes*/ No	Suggested Timing of LAST dose BEFORE procedure*	Timing of FIRST dose AFTER day of procedure*	
INR \leq 1.8 or \leq 2.5 with chronic liver disease Target INR for warfarin reversal: \leq 1.5 Platelets $>$ 50 x 10 ⁹ /L Testing within 2 weeks for outpatient					
VASCULAR <ul style="list-style-type: none"> TIPS Catheter-directed thrombolysis Arterial interventions $>$6Fr access 	<ul style="list-style-type: none"> aspirin (ASA), low dose (81 mg) 	Yes	- 5 days	Day + 1	
	<ul style="list-style-type: none"> clopidogrel (Plavix®) aspirin, non-low dose ticagrelor (Brilinta®) 	Yes	- 5 days†	Day + 1 or + 2	
	<ul style="list-style-type: none"> prasugrel (Effient®) 	Yes	- 7 days†	Day + 1 or + 2	
	NON-VASCULAR	<ul style="list-style-type: none"> warfarin (Coumadin®) 	Yes	- 5 days, CHECK INR, TARGET \leq 1.5 *consider bridging in high thrombosis risk cases	Day + 1
		<ul style="list-style-type: none"> subcutaneous heparin (prophylactic) 	Yes	- 8 hrs prior	Day 0 (evening)
		<ul style="list-style-type: none"> low molecular weight heparin (LMWH) 	Yes	prophylactic: $>$ 12 hrs prior therapeutic: $>$ 24 hrs prior	Day 0 (evening)
		<ul style="list-style-type: none"> (IV) unfractionated heparin 	Yes	infusion to stop 4 hrs prior	8 hrs after
	High Risk Spine & Neurological Procedures <ul style="list-style-type: none"> Vertebroplasty Kyphoplasty Cervical spine facet blocks Lumbar punctures and Epidural injection¹ 	<ul style="list-style-type: none"> dabigatran (Pradaxa®) 	Yes	GFR $>$ 50: - 3 days GFR \leq 50: - 5 days	Day + 2 or + 3
		<ul style="list-style-type: none"> rivaroxaban (Xarelto®) apixaban (Eliquis®) edoxaban (Lixiana®) 	Yes	Withhold 2 doses if GFR \geq 50 Withhold 3 doses if GFR $<$ 50	Day + 2 or + 3
		<ul style="list-style-type: none"> fondaparinux (Arixtra®) 	Yes	-3 days for GFR \geq 50 -5 days for GFR $<$ 50	Day + 1 Day + 2 or + 3
NOTE: Specialized Neurovascular Procedures are excluded, including carotid stenting, and intra-cranial embolization					

1. Thrombus Canada guideline indicates high risk bleeding for any neuraxial (spinal or epidural) procedure.

*Ordering Physician must give instructions to patient; † Consider minimum of 7 days if concomitant ASA

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LOW RISK PROCEDURES				
LOW RISK	Anticoagulant / Antiplatelet MEDS	Discontinue Yes*/ No	Suggested Timing of LAST dose BEFORE procedure if discontinuing	Timing of FIRST dose AFTER day of procedure*
<p>No routine pre-procedural INR/CBC unless bleeding diathesis suspected; then consider INR ≤ 3.0 and Platelets > 20 x 10⁹/L. For chronic liver disease, INR is not required.</p>				
<p>VASCULAR</p> <ul style="list-style-type: none"> Dialysis access and venous interventions including varicocele embolization, venography IVC filter placement/removal PICC insertion Uncomplicated catheter/line exchange/removal Angiography/arterial intervention up to 6 Fr access (eg. UAE) Transjugular liver biopsy Tunneled CVC/Port/Hickman 	<ul style="list-style-type: none"> aspirin (ASA), any dose 	No		
	<ul style="list-style-type: none"> clopidogrel (Plavix®) ticagrelor (Brilinta®) 	Possible to continue	Do not withhold	
	<ul style="list-style-type: none"> prasugrel (Effient®) 	Possible to continue	Do not withhold	
	<ul style="list-style-type: none"> warfarin (Coumadin®) 	Possible to continue	- 5 days, TARGET INR ≤ 3.0, *consider bridging in high thrombosis risk cases	Day 0 (evening)
<p>NON-VASCULAR</p> <ul style="list-style-type: none"> Catheter exchange or removal (GU, biliary, abscess) Superficial abscess drainage Core biopsy – breast, extremity or other superficial location Joint injection or aspiration, including facet joint, nerve root /medial branch GI tract stenting (colon, esophagus) Hysterosalpingography, Fallopian Tube Recanalization Non-tunneled chest tube 	<ul style="list-style-type: none"> subcutaneous heparin low molecular weight heparin (LMWH) – prophylactic 	No		
	<ul style="list-style-type: none"> low molecular weight heparin (LMWH) – therapeutic 	Possible to continue	Do not withhold	
	<ul style="list-style-type: none"> (IV) unfractionated heparin 	Possible to continue	Do not withhold	
	<ul style="list-style-type: none"> dabigatran (Pradaxa®) 	Possible to continue	Do not withhold	
<p>Exception: Thoracentesis or paracentesis can be carried out with any platelet count or INR</p>				
<p>Superficial Aspiration / Biopsy (FNAB) Breast, Extremities, Lymph nodes, Thyroid</p> <p><u>NOTE: Most LOW risk procedures do not require the discontinuation of anticoagulation/antiplatelet therapy.</u></p>	<ul style="list-style-type: none"> rivaroxaban (Xarelto®) apixaban (Eliquis®) edoxaban (Lixiana®) 	Possible to continue	Do not withhold	
	<ul style="list-style-type: none"> fondaparinux (Arixtra®) 	Possible to continue	Do not withhold	

*Ordering Physician must give instructions to patient; † Consider minimum of 7 days if concomitant ASA

Booking Clerk Script:

- “You are booked for a: _____ procedure in Medical Imaging.
If you are on any blood thinner medication, you must ask your Ordering Physician for instructions on discontinuing and resuming your medications”.
- We ask that you contact your doctor for more details on this, as we have faxed this info to them.
- If you don't discuss this with your doctor, your procedure may be cancelled.

Please Note:

- Patients on anti-inflammatory medications (NSAIDs) such as the following: (Advil® [ibuprofen], Voltaren®, Celebrex®) may **continue** taking them.
- Please inform your Ordering Physician if you are taking supplements as these may affect blood test results.

References

1. SIR Journal of Vascular Radiology 2019; 30:P1168-1184.E1 – Society of Interventional Radiology Consensus Guidelines for the Periprocedural Management of Thrombotic and Bleeding Risk in Patients Undergoing Percutaneous Image-Guided Interventions—Part II: Recommendations. Retrieved from [https://www.jvir.org/article/S1051-0443\(19\)30407-5/fulltext](https://www.jvir.org/article/S1051-0443(19)30407-5/fulltext)
2. Canadian Journal of Cardiology 2011; 27:S1-S59 – The Use of Antiplatelet Therapy in the Outpatient Setting: Canadian Cardiovascular Society Guidelines. Retrieved from [https://www.onlinecjc.ca/article/S0828-282X\(17\)31221-7/fulltext](https://www.onlinecjc.ca/article/S0828-282X(17)31221-7/fulltext)
3. Department of Hematology, VCHA, 27 Jan 2015 – Recommendations for the Interruption of Anticoagulation or Anti-platelet Therapy for Elective Invasive Procedures or Surgery. Retrieved from <http://shop.healthcarebc.ca/MedicalImaging/ABCD-21-07-90001.pdf>

Island Health

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	1	09-Mar-2023	Adapted from LMMI Guidelines with exception Thrombus Guide indicates high risk bleeding for any neuraxial (spinal or epidural) procedures	Dr. King Dr. Kritzinger
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