

Management Guidelines for Patients Having * **ELECTIVE** * Invasive Procedures in Medical Imaging

HIGH RISK	STANDARD 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	Timing of LAST dose BEFORE procedure*	Timing of FIRST dose AFTER day of procedure*
<div style="border: 1px solid yellow; padding: 5px; margin-bottom: 10px;"> INR ≤ 1.3 Platelets > 80 x 10⁹/L Inpatients 72 hours Outpatients 2 weeks </div> <p>VASCULAR</p> <ul style="list-style-type: none"> TIPS Arterial interventions >7Fr access <p>NON-VASCULAR</p> <p>Abdominal Procedures</p> <ul style="list-style-type: none"> Renal core biopsy PCNL/Nephrostomy Biliary drainage (PTBD) Complex thermal ablation – liver, kidney, lung, MSK <p>NOTE: Specialized Neurovascular Procedures are excluded, including carotid stenting, and intra-cranial embolization</p>	<ul style="list-style-type: none"> aspirin (ASA), low dose (81 mg) 	No		
	<ul style="list-style-type: none"> clopidogrel (Plavix®) aspirin, non-low dose ticagrelor (Brilinta®) 	Yes	- 8 days	Day + 1 or + 2
	<ul style="list-style-type: none"> prasugrel (Effient®) 	Yes	- 8 days	Day + 1 or + 2
	<ul style="list-style-type: none"> NSAIDs 	Yes	- 4 days	Day + 1
	<ul style="list-style-type: none"> warfarin (Coumadin®) 	Yes	- 6 days CHECK INR 24 hrs prior	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 + 1 Day + 2 or + 3
	<ul style="list-style-type: none"> (IV) unfractionated heparin > REQUIRES PTT 	Yes	infusion to stop 4 hrs prior (goal: PTT ≤ 43 s)	12 hrs after
	<ul style="list-style-type: none"> dabigatran (Pradaxa®) 	Yes	GFR >50: - 3 days GFR ≤50: - 5 days	Day + 2 or + 3
	<ul style="list-style-type: none"> rivaroxaban (Xarelto®) apixaban (Eliquis®) 	Yes	- 3 days	Day + 2 or + 3
	<ul style="list-style-type: none"> fondaparinux (Arixtra®) 	Yes	prophylactic: > 24 hrs therapeutic: > 48 hrs	Day + 1 Day + 2 or + 3

*Ordering Physician must give instructions to patient

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STANDARD RISK PROCEDURES

<p>STANDARD RISK</p> <p>INR ≤ 1.5 Platelets > 50 x 10⁹/L Inpatients 72 hours Outpatients 30 days</p>	<p>Anticoagulant / Antiplatelet MEDS</p>	<p>Discontinue *Yes/ No</p>	<p>Timing of LAST dose BEFORE procedure*</p>	<p>Timing of FIRST dose AFTER Day of procedure*</p>
<p>VASCULAR</p> <ul style="list-style-type: none"> Angiography/arterial intervention up to 7 Fr access, including diagnostic neuroangiography Central venous interventions Uterine fibroid embolization Transjugular liver biopsy Tunneled CVC/Port/Hickman 	<ul style="list-style-type: none"> aspirin (ASA), any dose 	No		Day + 1
	<ul style="list-style-type: none"> clopidogrel (Plavix®) ticagrelor (Brilinta®) 	Yes	- 6 days	Day + 1
	<ul style="list-style-type: none"> prasugrel (Effient®) 	Yes	- 8 days	Day + 1
	<ul style="list-style-type: none"> warfarin (Coumadin®) 	Yes	- 6 days CHECK INR 24 hrs prior	Day 0 (evening)
<p>NON-VASCULAR</p> <p>Abdominal/Thoracic Procedures</p> <ul style="list-style-type: none"> Intraabdominal, chest wall, pleural or retroperitoneal abscess drainage, core biopsy Diagnostic or therapeutic thoracentesis or paracentesis Gastrostomy/gastrojejunostomy Percutaneous cholecystostomy Lithotripsy (ESWL/ISWL) Lung biopsy Uncomplicated thermal ablation – liver, kidney, MSK, lung Core biopsy - prostate Transabdominal liver biopsy Fallopian tube recanalization <p>MSK/Spine Procedures</p> <ul style="list-style-type: none"> Lumbar puncture, epidural injection, facet block, rhizotomy, nerve root block Vertebroplasty/kyphoplasty Spine biopsy, paraspinal injection Extremity/MSK core biopsy 	<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 therapeutic: > 24 hrs	Day + 1
	<ul style="list-style-type: none"> (IV) unfractionated heparin > REQUIRES PTT 	Yes	Infusion to stop 4 hours prior (goal: PTT ≤ 50 s)	6 hrs after
	<ul style="list-style-type: none"> dabigatran (Pradaxa®) 	Yes	GFR >50: - 2 days GFR ≤50: - 3 days	Day + 2
	<ul style="list-style-type: none"> rivaroxaban (Xarelto®) apixaban (Eliquis®) 	Yes	- 2 days	Day + 2
	<ul style="list-style-type: none"> fondaparinux (Arixtra®) 	Yes	prophylactic: > 24 hrs therapeutic: > 48 hrs	Day + 1 Day + 2

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LOW RISK PROCEDURES

<p>LOW RISK</p> <p>Confirm INR ≤ 2.0 if known or suspected liver disease</p>	<p>Anticoagulant / Antiplatelet MEDS</p>	<p>Discontinue Yes*/ No</p>	<p>Timing of LAST dose BEFORE procedure if discontinuing</p>	<p>Timing of FIRST dose AFTER day of procedure*</p>
<p>VASCULAR</p> <ul style="list-style-type: none"> Dialysis access or peripheral venous interventions, including varicocele embolization IVC filter placement/removal PICC insertion Uncomplicated catheter/line exchange/removal Diagnostic venography 	<ul style="list-style-type: none"> aspirin (ASA), any dose 	<p>No</p>		
	<ul style="list-style-type: none"> clopidogrel (Plavix®) ticagrelor (Brilinta®) 	<p>Possible to continue</p>	<p>- 6 days</p>	<p>Day + 1</p>
	<ul style="list-style-type: none"> prasugrel (Effient®) 	<p>Possible to continue</p>	<p>- 8 days</p>	<p>Day + 1</p>
<p>NON-VASCULAR</p> <ul style="list-style-type: none"> Catheter exchange or removal (GU, biliary, abscess) Superficial abscess drainage Core biopsy - breast Peripheral joint injection or aspiration GI tract stenting (colon, esophagus) Hysterosalpingography 	<ul style="list-style-type: none"> warfarin (Coumadin®) > RECOMMEND INR ≤ 2.0 	<p>Possible to continue</p>	<p>- 4 days CHECK INR 24 hrs prior</p>	<p>Day 0 (evening)</p>
	<ul style="list-style-type: none"> subcutaneous heparin low molecular weight heparin (LMWH) – prophylactic 	<p>No</p>		
	<ul style="list-style-type: none"> low molecular weight heparin (LMWH) – therapeutic 	<p>Possible to continue</p>	<p>> 24 hrs</p>	<p>Day + 1</p>
<p>Superficial Aspiration / Biopsy (FNAB)</p> <ul style="list-style-type: none"> Breast Extremities Lymph nodes Thyroid 	<ul style="list-style-type: none"> (IV) unfractionated heparin 	<p>Possible to continue</p>	<p>Infusion to stop 4 hrs prior</p>	<p>4 hrs</p>
	<ul style="list-style-type: none"> dabigatran (Pradaxa®) 	<p>Possible to continue</p>	<p>GFR >50: - 2 days GFR ≤50: - 3 days</p>	<p>Day + 1</p>
	<ul style="list-style-type: none"> rivaroxaban (Xarelto®) apixaban (Eliquis®) 	<p>Possible to continue</p>	<p>- 2 days</p>	<p>Day + 1</p>
<p>NOTE: Most LOW risk procedures do not require the discontinuation of anticoagulation/antiplatelet therapy.</p>	<ul style="list-style-type: none"> fondaparinux (Arixtra®) 	<p>Possible to continue</p>	<p>prophylactic: > 24 hrs therapeutic: > 48 hrs</p>	<p>Day + 1</p>

***Ordering Physician must give instructions to patient**

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, except for HIGH RISK procedures.
- Please inform your Ordering Physician if you are taking supplements as these may affect blood test results.

References

1. SIR Journal of Vascular Radiology 2009; 20:S240-S249 – Consensus Guidelines for Periprocedural management of Coagulation Status and Hemostasis Risk in Percutaneous Image-guided Interventions
2. Canadian Journal of Cardiology 2011; 27:S1-S59 – The Use of Antiplatelet Therapy in the Outpatient Setting: Canadian Cardiovascular Society Guidelines
3. Department of Hematology, VCHA, 27 Jan 2015 – Recommendations for the Interruption of Anticoagulation or Anti-platelet Therapy for Elective Invasive Procedures or Surgery

External links to online version

http://www.vch.ca/403/7676/?program_id=2148

http://www.fraserhealth.ca/find_us/services/our_services?program_id=8647

Intranet links to online version

http://vhnet/programs_services/diagnostic_imaging/medical_imaging_modalities/angiography/page_33891.htm

http://fhpulse/clinical_support_services/mi_and_nm/Pages/RegionalGuidelines.aspx

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