

Periprocedural Anticoagulation Guidelines

No changes in anticoagulants:

The following procedures require NO modification or withholding of anticoagulants prior to procedure:

- Facet joint injections
- Other joint injections
- Arthrograms
- Pseudoaneurysm injection
- Thyroid fine needle aspiration
- PICC line placement
- IVC filter retrieval
- Bone marrow biopsy
- Upper extremity venogram for mapping
- Nephrostogram
- Cholangiogram
- Sinus tract study

Special Considerations

Breast core biopsy: Please consider as category 2, but also hold the following:
Aspirin for 3 days NSAIDs for 3 days

The AC clinic will manage periprocedural Coumadin (warfarin) before and after invasive procedures.

We need repeat INR drawn for outpatient breast core biopsy and epidural steroid injection.

Category 1: Procedures with Low Risk of Bleeding

Vascular

- Dialysis fistulagrams
- Venogram Central line placement IVC filter placement
- Non-tunneled venous or dialysis catheter placement

Non-vascular

- Drain catheter exchange (biliary, nephrostomy, abscess drain) Superficial lymph node FNA or biopsy
- Superficial abscess drainage or aspiration Paracentesis

Warfarin (Coumadin): Refer to AC clinic, INR<2.0

Aspirin, Aggrenox: Do not withhold

Lovenox: Withhold 1 dose or 12 hours before procedure

Clopidogrel (Plavix): Withhold for 5 days

Prasugrel (Effient): Withhold for 5 days

Ticlodipine (Ticlid): Withhold for 5 days

NSAIDs: Do not withhold

Cilostazol (Pletal): Withhold for 2 days

Fondaparinux (Arixtra): Do not withhold

Rivaroxaban (Xarelto): Do not withhold

Apixaban (Eliquis): Do not withhold

Edoxaban (Savaysa): Do not withhold

Dabigatran (Pradaxa): Do not withhold

Platelets: Correct if below 50,000

Category 2: Procedures with Moderate Risk of Bleeding

Vascular

- Angiography*
- Cerebral angiogram*
- Venous interventions*
- Chemoembolization/radioembolization*
- Uterine fibroid embolization
- Trans jugular liver biopsy
- Tunneled dialysis Cath (Permcath)
- Tunneled Groshong, Porta Cath

Non-vascular

- Thoracentesis
- Abdominal abscess drainage
- Abdominal Pleurx drain
- Chest tube/Chest Pleurx drain
- Biopsy (excluding superficial, lung, liver, and renal)
- Percutaneous cholecystostomy (gallbladder drain)
- Gastrostomy tube (G-tube) – initial placement
- Lumbar puncture (LP)
- Myelogram/Discogram
- Injections: Selective nerve root/Epidural steroid – caudal

Warfarin (Coumadin): Refer to AC clinic, INR<1.5

Aspirin, Aggrenox: Do not withhold

Lovenox: Withhold 1 dose or 12 hours before procedure

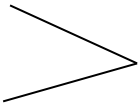
Clopidogrel (Plavix): Withhold for 5 days, except asterisk above*

Prasugrel (Effient): Withhold for 5 days, except asterisk above*

Ticlopidine (Ticlid): Withhold for 7 days, except asterisk above*

NSAIDs: Do not withhold

Cilostazol (Pletal): Withhold for 2 days

Rivaroxaban (Xarelto):		
Apixaban (Eliquis):		If GFR>60: hold for 2 Days
Edoxaban (Savaysa):		If GFR<60: hold for 3 days

Dabigatran (Pradaxa):		
Fondaparinux (Arixtra):		If GFR>60: hold for 3 days If GFR<60: hold for 5 days

Platelets: Correct if below 50,000

Category 3: Procedures w/Significant Bleeding Risk, Difficult to Detect/Control

Vascular

- TIPSS

Non-vascular

- Kyphoplasty and vertebroplasty
- Epidural steroid injection – direct
- Percutaneous lung, renal, and liver biopsy
- RFA or Microwave ablation
- Biliary intervention or drainage – 1st placement
- Nephrostomy tube placement
- EVAR embolization - CT guided
- Celiac plexus block

Warfarin (Coumadin): Refer to AC clinic, INR<1.5

Aspirin, Aggrenox: hold for 5 days

Lovenox: Withhold 2 doses or 24 hours before procedure

Clopidogrel (Plavix): Withhold for 5 days

Prasugrel (Effient): Withhold for 5 days

Ticlopidine (Ticlid): Withhold for 7 days

NSAIDs - Hold as follows:

Short-acting: Hold for 24 hours (Ibuprofen, diclofenac, ketoprofen & indomethacin)

Intermediate-acting: Hold for 2-3 days (Naproxen, sulindac, diflunisal, celecoxib)

Long acting: Hold for 10 days (Meloxicam, nabumetone, piroxicam)

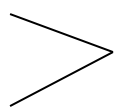
Cilostazol (Pletal): Withhold for 2 days

Fondaparinux (Arixtra):

Rivaroxaban (Xarelto):

Apixaban (Eliquis):

Edoxaban (Savaysa):



If GFR>60: hold for 3 days

If GFR<60: hold for 5 days

Dabigatran (Pradaxa): Same as Xarelto

Platelets: Correct if below 50,000

Intravenous anticoagulants:

Category 1:

Heparin: Stop 1 hour before procedure, check PTT

Eptifibatide (Integrilin): Withhold immediately before procedure

Tirofiban (Aggrastat): Withhold immediately before procedure

Abciximab (ReoPro): Withhold 12-24 hours before, PTT<50s

Argatroban (Acova): Do not withhold

Bivalirudin (Angiomax): Do not withhold

Category 2:

Heparin: Stop 1 hour before procedure, check PTT

Eptifibatide (Integrilin): Hold 4 hours

Tirofiban (Aggrastat): Hold 4 hours

Abciximab (ReoPro): Withhold 24 hours before, PTT<50s

Argatroban (Acova): Defer procedure, otherwise hold 4 hours

Bivalirudin (Angiomax): Defer procedure, otherwise:

- If GFR > 60, hold 2-3 hours
- If GFR < 60, hold 3-5 hours

Category 3:

Heparin: Stop 2-4 hours before procedure, check PTT

Eptifibatide (Integrilin): Hold 4 hours

Tirofiban (Aggrastat): Hold 4 hours

Abciximab (ReoPro): Withhold 24 hours before, PTT<50s

Argatroban (Acova): Defer procedure, otherwise hold 4 hours

Bivalirudin (Angiomax): Defer procedure, otherwise:

- If GFR > 60, hold 2-3 hours
- If GFR < 60, hold 3-5 hours

DISCLAIMER:

The information included in this document is intended to assist in general patient scheduling.

Individual patient management can be tailored at the discretion of the attending physician.

Please consult directly with the attending radiologist for any anticoagulant which cannot be stopped according to guidelines to receive permission to schedule procedure.

Patients with history of coronary intervention must check with their cardiologist before holding aspirin and/or Plavix. This is extremely important as these patients have increased risk of cardiac event and death if their anticoagulation is changed.

References:

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Thromb Haemost 2016; 14:875-85.

UW Health, 2/2013 “Periprocedural Anticoagulation – Adult – Inpatient and Ambulatory – Clinical Practice Guideline”

UW Health, 4/1/13 “Coagulation Guidelines for Invasive Procedures – University of Wisconsin Department of Radiology Abdominal Imaging Division”

<https://www.radiology.wisc.edu/fileShelf/forReferring/coagulationGuidelines.pdf>