

Coagulation Guidelines for Invasive Procedures
Abdominal Imaging Division
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Critical coagulation values:

	INR	Platelets
FNA/core of solid organ (targeted or random)	<2.0	>25,000
FNA/core of deep or intraperitoneal structures	<3.0	>25,000
FNA/core of superficial structures (e.g. thyroid, lymph node)	N/A	N/A
Paracentesis	<3.0	>25,000
Thoracentesis,	<2.0	>25,000
Lung biopsy	<2.0	>25,000

Inpatients: INR and Platelet count within 1 week.

Outpatients: INR and platelets within 6 months.

Note that these time limits are somewhat arbitrary and can be changed at the discretion of the attending radiologist.

Management of patients on anticoagulation:

Medication	Efficacy/Duration	Recommendation
Aspirin	7-10 days	-Do not stop (unless elective)
NSAIDs	24 hours to 2 days	-Do not stop (unless elective)
Clopidogrel (Plavix)	7-10 days	- Must consult with ordering physician prior to stopping -Stop 3-5 days before, restart immediately -Restart with loading dose if feasible
Coumadin (Warfarin)	3-5 days	-Stop 3-7 days before, <i>or</i> -Reduce dose to get INR 1.5-2.0 day of, then restart original regimen, <i>or</i> -Stop 3-7 days before, restart immediately and bridge with 2 days heparin before and after
Heparin	6-8 hours	-Stop 6 hours before, restart 6-12 hours after
LMWH	Up to 24 hours	-Stop 12 hours before, restart 12 hours after
IIb/IIIa antagonists	varies	-If possible, delay intervention until medication no longer needed

Management of abnormal coagulation parameters:

Therapy	Use	Risks
Fresh Frozen Plasma	Provides clotting factors Consider dosing at 10-15 ml/kg No real benefit in mildly elevated INR	Transfusion related acute lung injury (TRALI) (1 in 8,000-60,000 units), volume overload (1 in 350 units), allergic reaction, infection, hemolysis
Platelets	Provides platelets	TRALI (1 in 430 to 88,000 "packs"), volume overload, allergic reaction, infection (up to 1 in 25,000 units), hemolysis

Special Considerations:

Arterial stenting (particularly cardiac)

-High risk of cardiac event and death if clopidogrel and aspirin d/c in these patients. Never stop aspirin in these patients and only stop clopidogrel if beyond the following time windows. 2-4 weeks for dilation w/o stent, 1 month for bare metal stent, and >12 months for a drug eluting stent.