THROMBOEMBOLIC DISORDER TREATMENTS: WITHOUT DVT/PE (Part 1 of 3)

Generic	Brand	Indication	Usual Adult Dosing
ANTICOAGULANTS			
Anticoagulant Proteins			
protein C concentrate [human]	**Ceprotin**	Prophylaxis and treatment of venous thrombosis and purpura fulminans in severe congenital protein C deficiency	Individualize. ≥10kg: max infusion rate 2mL/min. *Acute episodes/short term prophylaxis:* initially 100–120 IU/kg, then 60–80 IU/kg every 6hrs for 3 doses (titrate to maintain target peak protein C activity of 100%); *maintenance:* 45–60 IU/kg every 6 or 12hrs (After resolution of acute episode, continue patient on same dose to maintain trough protein C level above 25% for duration of therapy); continue until desired anticoagulation achieved. *Long-term prophylaxis:* 45–60 IU/kg every 12hrs (maintain trough protein C level above 25%).
Antithrombins			
antithrombin [recombinant]	**ATryn**	Prevention of peri-operative and peri-partum thromboembolic events in hereditary antithrombin deficient patients	Individualize. Administer loading dose as 15min IV infusion, followed by continuous IV infusion of maintenance dose. Monitor antithrombin activity once or twice daily and adjust to maintain antithrombin activity between *80–120%. See full labeling.*
antithrombin III [human]	**Thrombate III**	Treatment of hereditary antithrombin III deficiency (AT-III) in surgical or obstetrical procedures or patients who suffer from thromboembolism	Individualize. Dose (units required) = [desired (% of normal) – baseline (% of normal) AT-III level] × weight (kg)/1.4. Give by IV infusion over 10–20min. *Loading dose:* increase AT-III to 120% of normal. Subsequent dose should be based on AT-III levels obtained 20min post-infusion, every 12hrs, and before the next dose. Maintain AT-III levels at 80–120% of normal for 2–8 days. *See full labeling.*
Coumarins			
warfarin	**Coumadin**	Prophylaxis and treatment of thromboembolic complications of atrial fibrillation and/or cardiac valve replacement	Initially 2–5mg daily. *Usual maintenance:* 2–10mg daily. *CYP2C9 or VKORC1 enzymes variations, elderly, debilitated, Asians:* use lower initial dose.
		Reduce risk of death, recurrent MI, and thromboembolic events post-MI	
Direct Thrombin Inhibitors			
argatroban	—	Prophylaxis and treatment of thrombosis in HIT/HITTS	Before administering, discontinue heparin and obtain a baseline aPTT. Initially 2mcg/kg/min continuous IV infusion; check aPTT 2hrs after starting; titrate to 1.5–3x baseline aPTT (max 100sec); max 10mcg/kg/min.
		PCI with or at risk of HIT/HITTS	Initially 25mcg/kg/min by IV infusion, and a 350mcg/kg bolus by large bore IV line over 3–5min; ACT should be checked 5–10min after bolus, and titrate to therapeutic ACT of 300–450sec.
bivalirudin	**Angiomax**	Unstable angina undergoing PTCA	0.75mg/kg IV bolus (may give additional 0.3mg/kg bolus after 5mins, if needed in those without HIT/HITTS), followed by 1.75mg/kg/hr for duration of procedure. May continue infusion up to 4hrs post-op; after 4hrs, may give additional infusion of 0.2mg/kg/hr up to 20hrs, if needed. Give with aspirin 300–325mg daily. *Renal impairment:* CrCl <30mL/min: reduce infusion rate to 1mg/kg/hr; hemodialysis: 0.25mg/kg/hr.
		PCI with provisional GP IIb/IIIa blocker use	
		PCI with or at risk of HIT/HITTS	
dabigatran	**Pradaxa**	Reduce risk of stroke and systemic embolism in non-valvular atrial fibrillation	CrCl>30mL/min: 150mg twice daily. Renal impairment (CrCl 15–30mL/min): 75mg twice daily; CrCl<15mL/min or on dialysis: not recommended. Moderate renal impairment (CrCl 30–50mL/min) with concomitant dronedarone or systemic ketoconazole: consider reducing dose to 75mg twice daily. CrCl <30mL/min with concomitant P-gp inhibitors: avoid.
lepirudin	**Refludan**	HIT and associated thromboembolic disease	≤110kg: Initial 0.4mg/kg slow IV bolus inj for 15–20sec, then 0.15mg/kg/hr as continuous infusion for 2–10 days or longer if needed. >110kg: max initial bolus dose 44mg; max initial infusion dose 16.5mg/hr.

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THROMBOEMBOLIC DISORDER TREATMENTS: WITHOUT DVT/PE (Part 2 of 3)

Generic	Brand	Indication	Usual Adult Dosing
ANTICOAGULANTS *(continued)*			
Factor Xa Inhibitors			
apixaban	**Eliquis**	Reduce risk of stroke and systemic embolism in non-valvular atrial fibrillation	5mg twice daily; 2.5mg twice daily if patient has any 2 of the following: age ≥80yrs, ≤60kg, or creatinine ≥1.5mg/dL. CrCl <15mL/min or dialysis: not recommended. See full labeling.
rivaroxaban	**Xarelto**	Reduce risk of stroke and systemic embolism in non-valvular atrial fibrillation	CrCl >50mL/min: 20mg once daily with PM meal; CrCl 15–50mL/min: 15mg once daily with PM meal; CrCl <15mL/min: avoid.
Low Molecular Weight Heparins			
dalteparin	**Fragmin**	Prophylaxis of ischemic complications of unstable angina and non-Q-wave MI	120 IU/kg SC (max 10,000 IU) every 12hrs until stabilized with aspirin 75–165mg once daily for 5–8 days.
enoxaparin	**Lovenox**	Prophylaxis of ischemic complications of unstable angina and non-Q-wave MI	1mg/kg SC every 12hrs for 2–8 days; with aspirin 100–325mg once daily.
		Acute STEMI (patients <75yrs); with or without subsequent PCI	30mg IV bolus + 1mg/kg SC dose then 1mg/kg SC every 12hrs at least 8 days (max 100mg for first 2 doses only); with aspirin 75–325mg once daily. If last dose given <8hrs before balloon inflation, no dose needed; >8hrs before balloon inflation: give 0.3mg/kg IV bolus.
		Acute STEMI (patients ≥75yrs)	0.75mg/kg SC every 12hrs (no bolus) at least 8 days (max 75mg for first 2 doses only); with aspirin 75–325mg once daily.
ANTIPLATELETS			
dipyridamole	**Persantine**	Adjunct prophylactic therapy to coumarin anticoagulants after cardiac valve replacement	75–100mg four times a day as an adjunct to usual warfarin therapy.
Antiplatelet + Nonsteroidal Antiinflammatory Drugs (NSAID)			
dipyridamole + aspirin	**Aggrenox**	Reduce risk of stroke after transient ischemia of the brain or complete ischemic stroke due to thrombosis	1 cap twice daily (AM and PM). *Alternative if intolerable headaches:* switch to 1 cap at bedtime and low-dose aspirin in AM; return to usual regimen within 1wk.
Glycoprotein IIb/IIIa (GP IIb/IIIa) Blockers			
abciximab	**Reopro**	Adjunct to PCI for prevention of cardiac ischemic complications	0.25mg/kg IV bolus over 10–60min before start of PCI, then a continuous IV infusion of 0.125mcg/kg/min (max 10mcg/min) for 12hrs. Use with heparin and aspirin.
		Unstable angina not responding to conventional therapy, undergoing PCI within 24hrs	0.25mg/kg IV bolus, then 10mcg/min IV infusion over 18–24hr concluding 1hr after PCI.
eptifibatide	**Integrilin**	ACS: managed medically and those undergoing PCI	180mcg/kg IV bolus, then continuous IV infusion of 2mcg/kg/min until discharge or CABG surgery, up to 72hrs. If PCI planned, continue infusion until discharge, or for up to 18–24hrs after procedure, whichever comes first, allowing up to 96hrs of therapy. Concomitant use with aspirin and heparin.
		PCI, including those undergoing intracoronary stenting	180mcg/kg IV bolus immediately before PCI followed by 2mcg/kg/min continuous infusion; repeat 180mcg/kg IV bolus 10min after the 1st bolus; continue infusion until discharge, or for up to 18–24hrs, whichever comes first, minimum 12hr-infusion recommended. Concomitant use with aspirin and heparin.
tirofiban	**Aggrastat**	ACS: managed medically or those undergoing PTCA or atherectomy	Initially 0.4mcg/kg/min for 30min, then 0.1mcg/kg/min. Severe renal insufficiency (CrCl <30mL/min): reduce rate by ½. Stop infusion if bleeding cannot be controlled by pressure.

(continued)

THROMBOEMBOLIC DISORDER TREATMENTS: WITHOUT DVT/PE (Part 3 of 3)

Generic	Brand	Indication	Usual Adult Dosing
ANTIPLATELETS *(continued)*			
Platelet Reducing Agents			
anagrelide	**Agrylin**	Treatment of thrombocythemia secondary to myeloproliferative disorders	Initially 0.5mg four times daily or 1mg twice daily for ≥1week. May increase dose by 0.5mg/day weekly to maintain normal platelet count; max 10mg/day or 2.5mg/dose.
$P2Y_{12}$ Platelet Inhibitor (cyclopentyltriazolopyrimidine)			
ticagrelor	**Brilinta**	Reduce thrombotic CV events in patients with ACS or history of MI	*Loading dose:* 180mg once. *Maintenance:* 90mg twice daily for 1yr, then 60mg twice daily thereafter. Take with aspirin dose of 75–100mg daily.
$P2Y_{12}$ Platelet Inhibitor (thienopyridine)			
clopidogrel	**Plavix**	Acute coronary syndrome (ACS)	75mg once daily. *Non-ST-segment acute coronary syndrome* (give with aspirin 75–325mg once daily): give one 300mg loading dose first. *ST-segment elevation acute MI* (give with aspirin, with or without thrombolytics): may start with or without a loading dose. CYP2C19 poor metabolizers: may need higher doses.
		Recent MI, stroke or established peripheral arterial disease	75mg once daily. CYP2C19 poor metabolizers: may need higher doses.
prasugrel	**Effient**	Reduce thrombotic CV events in patients with ACS, managed with PCI	*Loading dose:* 60mg once. *Maintenance:* 10mg once daily. <60kg: consider 5mg once daily. Take with aspirin (75mg–325mg daily).
ticlopidine	—	Reduce risk of thrombotic stroke in aspirin intolerant patients who've had a completed thrombotic stroke	250mg twice daily with food.
		Reduce incidence of subacute stent thrombosis for successful coronary artery stenting	250mg twice daily with food together with antiplatelet doses of aspirin for up to 30 days of therapy following successful stent implantation.
THROMBOLYTICS			
Tissue Plasminogen Activators (tPA)			
alteplase	**Activase**	Management of acute MI	Max 100mg/dose. *Accelerated infusion:* ≤67kg: 15mg IV bolus, then 0.75mg/kg (max 50mg) infused over 30min, then 0.5mg/kg (max 35mg) over 60min. >67kg: 15mg IV bolus, then 50mg infused over 30min, then 35mg infused over 60min; *3-hour infusion:* >65kg: 60mg infused in the 1st hour (of which 6–10mg is given as bolus), then 20mg/hr for 2hrs; smaller patients (<65kg): 1.25mg/kg over 3hrs. May use concomitantly with heparin.
		Management of acute ischemic stroke	Initiate within 3hrs of symptom onset. 0.9mg/kg (max 90mg) infused over 60min with 10% of total dose given as initial IV bolus over 1min.
		Management of acute massive PE	100mg IV infusion over 2hrs. May use heparin after infusion.
reteplase	**Retavase**	Management of acute MI	10 IU as IV bolus over 2min; repeat dose 30min after initiation of 1st bolus.
tenecteplase	**TNKase**	Reduce mortality associated with AMI	Give as single IV bolus over 5sec. <60kg: 30mg; ≥60–<70kg: 35mg; ≥70–<80kg: 40mg; ≥80–<90kg: 45mg; ≥90kg: 50kg. Max: 50mg.

NOTES

Key: ACS = acute coronary syndrome; ACT = activated clotting time; AMI = acute myocardial infarction; CV = cardiovascular; HIT = heparin-induced thrombocytopenia; HITTS = HIT and thrombosis syndrome; MI = myocardial infarction; PCI = percutaneous coronary intervention; PM = evening; PTCA = percutaneous transluminal coronary angioplasty; SC = subcutaneous

Not an inclusive list of medications, official indications, and/or dosing details. Please see drug monograph at www.eMPR.com and/or contact company for full drug labeling.

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