Anticoagulation reversal

Head Trauma in Patient Taking Anticoagulants
Order PT/INR, PTT CBC, BMP, CT brain, Chem8

Injury on CT brain?

No

INR < 1.5: Consider discharge if normal exam and has reliable caregiver
INR > 1.5 or abnormal exam or alternative anti-coagulant: consider observation and repeat CT brain at 6 hrs

Yes

What anticoagulants is the patient taking?
How long ago was the last dose?
What is the patient's Cr?
Note: If unknown agent, consider check dilute thrombin time and heparin level (Anti-Xa)
Treatment based on bleeding not lab testing

Warfarin (Coumadin)
Give vitamin K 10 mg IV
Give KCentra based on INR (round to nearest vial)
INR 2.0-3.9: 25 units/kg (max 2500 units)
INR 4-6: 35 units/kg (max 3500 units)
INR >6: 50 units/kg (max 5000 units)-
Order INR 60 minutes after KCentra and follow q 6 hours.
Give FFP if INR > 1.4 within 24 hours after KCentra dosing.

Direct Xa Inhibitor
[Rivaroxban (Xarelto), Apixaban (Eliquis), Edoxaban (Savaysa)]
If last dose within 2 hours consider charcoal 50 g per NGT
Order: LMWH heparin level (Anti-Xa)
Give KCentra 25 u/kg (max 2500 units)
If ineffective consider 2nd dose of 25 units/kg, or low dose recombinant factor VIIa 20 mcg/kg

Direct Thrombin Inhibitor Dabigatran (Pradaxa)
If last dose within 2 hours consider charcoal 50 g per NGT
Give Idarucizumab 5 gm IV (give 2.5 gm vial IV over 5 minutes followed by a second 2.5 gm vial IV over 5 minutes)
For ongoing bleeding consider repeat dose of idarucizimab, hemodialysis, low dose recombinant factor VIIa 20 mcg/kg,or Kcentra 25 – 50 units/kg

Unfractionated Heparin
Give protamine sulfate 1 mg for every 100 u heparin in past 2-3 hours (max 50 mg per dose)
Order PTT 90 minutes post protamine dose
Not indicated for prophylactic UFH
If PTT remains elevated 0.5 mg / 100 u heparin.
If protamine ineffective consider recombinant factor VIIa 20 mcg/kg every 2 hours as needed

LMWH
If given in previous 8 hours
Enoxaparin (Lovenox): Give protamine 1mg per 1mg
Dalteparin (Fragmin) 1mg per 100 units
(max protamine 50 mg per dose)
Note: For treatment dosing only,
Not indicated for prophylactic LMWH
If LMWH given within 8-12 hours use 0.5 mg protamine
If protamine ineffective consider recombinant factor VIIa 20 mcg/kg every 2 hours as needed

Thrombolytics
If within previous 24 hours
Cryoprecipitate 10 units
Alternative TXA 10-15 mg/kg iv over 20 minutes
Check fibrinogen level
If < 150 mg/dl repeat cryo

Aspirin, Dipyridamole (Aggrenox), Clopidogrel (Plavix), Prasurgrel (Effient), Tricagrelor (Brilinta)
Consider platelet function testing if possible, only treat if abnormal
Platelet transfusion (likely ineffective for ticagrelor) only for neurosurgical procedures
Consider desmopressin 0.3 mcg/kg IV over 15 minutes
Platelet transfusion not indicated for IIb/IIIa inhibitors

Pentasaccharide (Fondiparinux)
Kcentra 25 units/kg (max 2500 units.
If ineffective consider low dose recombinant factor VIIa 20 mcg/kg

Frontera et al Crit Care Med 2016; 44:2251