

Management of Intracranial Bleeding In Patients On Anticoagulant Drugs

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All trauma patients with history of taking an anticoagulant drug and suffering head trauma with any GCS will have a high priority head CT and the following laboratory work up:

- Cbc, diff and plt
- LFT
- Basic metabolic panel
- PTT
- INR
- TT
- Fibrinogen activity
- PFA 100

If laboratory testing is abnormal and it is not due to a specific drug - consult hematology for assistance in management.

Repeat testing of abnormal results, as well as the cbc and plt, should be ordered after any intervention and then every 4 – 12 hours, as indicated.

Specific management protocols summary:

1] Antiplatelet Drugs

Recommendation for bleeding and need for urgent surgery:

- Give 2 units pheresis platelets.
- If have continued bleeding give 2 more units of platelets

If bleeding continues consider:

- rFVIIa - 60mcg/kg

NOTE –There is limited data to support use of rFVIIa in this setting

2] Coumadin

If the patient has an INR > 1.4:

Give all the following

- Transfuse Thawed Plasma 15 ml/kg (4-6 units)
- Vitamin K 10 mg iv (dilute in NS or D5W and give slowly over 30 minutes.) Monitor for anaphylaxis.

Consider: Recombinant Factor VIIa (rFVIIa) (relative contraindication in patients who have had a DVT, PE, MI or CVA 30 days prior to the event or are pregnant.)

< 100 Kg give 1 mg

≥ 100 KG give 2 mg

3] LMWH

NOTE: The reversal of LMWH by protamine is incomplete and is only $\pm 30\%$ at best
If the patient received enoxaparin within the past 8 hours and has a life-threatening bleed

- Dose: 1mg protamine per 1mg of lovenox given
- Check anti Xa LMWH 60 minutes after protamine given
- If the patient continues to bleed after 60 minutes and anti Xa level shows that heparin is still present, a second dose of 0.5mg protamine per 1mg of enoxaparin may be ordered

If the enoxaparin was given > 8 hours a lower dose should be used. (Exact dosing guidelines not available)

4] Heparin

- Protamine 1mg /100units heparin based on total heparin units given over the last three hours.

(Example: if heparin was given at 1000 units/hr over last 3 hours, total units = 3000 units, dose for protamine is 30mg IV X1)

- Check anti Xa UFH 30 minutes after protamine given

5] Thrombolytics

For life threatening bleeding within 36 hours of thrombolytic therapy give:

- Cryoprecipitate 10u
- Platelets 2 pheresis unit
- Plasma 4units

6] Dabigatran

**** NOTE ****

- **All clotting times will be abnormal on dabigatran.**
- **If the Thrombin Time (TT) is normal there is no dabigatran in the blood.**
- **We are not yet sure if fibrinogen testing is reliable on the drug; it may read inappropriately low.**
- Activated charcoal administered if the drug has been given within 2 hours.
- Consider dialysis,
 1. Need to contact IR for placement of an IJ Quinton
 2. Contact renal team, to set up a machine and staff for the dialysis
- Blood transfusion
 1. Transfuse RBCs to keep Hgb above 9 or 10
 2. After the 4th unit of RBCs start giving RBCs and Plasma on a 1:1 ratio (to avoid a dilutional coagulopathy)
 3. Cryoprecipitate, give 10 units after the 8th unit of RBCs, 4th unit of Plasma – May not need cryo if fibrinogen activity is > 100 mg/dl
- Recombinant activated Factor VII - dose of 20-40mcg/kg, or 2mg if <100 kg and 4 mg if > 100 kg. This should be considered if bleeding is life-threatening.