Management of Over Anticoagulation

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Disclaimer: These guidelines are only valid for use in Birmingham Heartlands and Solihull NHS Trust until the specified review date.
MANAGEMENT OF OVER ANTICOAGULATION

**Scope**
This guideline refers to the management of any patient on anticoagulant therapy suspected to be over-anticoagulated because of bleeding or raised INR.

A. **Heparin**
As unfractionated heparin has a short half-life of around 1 hour it is usually sufficient to stop the infusion.
If bleeding is severe reverse anticoagulation with IV protamine sulphate as follows:-

→ 1 mg protamine for every 100 units of heparin given over previous hour
→ Halve protamine dose if heparin infusion has been stopped for 1 hour, quarter dose if stopped for two hours

  *Give protamine slowly (5 mg/min), not more than 40 mg at one time*
  *Note further protamine may be required as the antidote has a short half life.*

B. **Low Molecular Weight Heparin**
- The half-life of LMWH is around 12-24 hours.
- The APTT will not reflect the level of anti-coagulation.
- NOTE: Protamine sulphate is not fully effective in reversal of LMWH and should only be used in severe bleeding.

If bleeding is severe, reverse anticoagulation with IV protamine sulphate as follows:

→ 40 mg protamine sulphate
  *Give protamine slowly (5 mg/min), not more than 40mg at one time.*

C. **Warfarin**
There are five clinical scenarios of over anticoagulation following administration of warfarin:

1) **Immediately Life Threatening e.g. intracerebral bleeding**
   a) Stop Warfarin.
   b) Give Beriplex *(Prothrombin Complex Concentrate)*
      - INR 2 - 3.9, 25u/kg
      - INR 4 - 5.9, 35u/kg
      - INR ≥ 6.0, 50u/kg.
   c) Give vitamin K 5mg IV.
*Beriplex is available from the Blood Bank at BHH – telephone 40706, Bleep 2449 after 8pm. Its use can only be sanctioned by the consultant haematologist on call (contactable via switchboard) as it is potentially thrombogenic (several thrombotic deaths have been reported) and **must only be given to patients who are immediately at risk of dying.** It is contraindicated in patients with DIC or uncompensated liver disease. It is given as a slow IV bolus injection.

2) **Major Bleeding**

a) Stop warfarin  
b) Give FFP 15ml/kg (1 unit FFP = 200-300mls)  
c) Give vitamin K 5mg IV.

3) **INR > 8.0, no bleeding or minor bleeding.**

a) Stop warfarin  
b) Give vitamin K 5mg IV – this will begin to reverse the anticoagulant effect after 4-6 hours  
c) Restart warfarin when INR <5.0

4) **INR <8.0 but > 6.0, no bleeding or minor bleeding.**

a) Stop warfarin  
b) Restart warfarin when INR <5.0

5) **INR < 6.0.**

a) Reduce warfarin dose or stop warfarin until INR <5.0.

Take a full drug history and record any recent changes in medication or lifestyle that may be precipitant factors. Alert anticoagulant outreach team that patient has been admitted or treated and sent home so that appropriate follow-up at the anticoagulant clinic can be arranged. Telephone 4241706 or FAX 4243353 or page 2456 between 9-5.30pm.

**References**