**Bleeding – Management in patients taking oral anticoagulants**

Oral anticoagulants include vitamin K antagonists (warfarin, acenocoumarol, phenindione) direct thrombin inhibitors (dabigatran) and Factor Xa inhibitors (rivaroxaban and apixaban). For patients who are bleeding and taking one of these oral anticoagulants:

**STOP ORAL ANTICOAGULANT THERAPY.** Follow the general steps below and the flow-chart on page 2.

- Initiate standard resuscitation measures.
- Bleeding should be controlled and support provided to balance the haemodynamic state.
- Attempt to reverse the anticoagulant effect where there is life-threatening bleeding.
- Dabigatran, rivaroxaban and apixaban do not have a specific reversal agent and their anticoagulant effect cannot be reversed by administration of vitamin K or plasma infusion.
- Check coagulation screen including activated partial thrombin time (aPTT), thrombin time (TT) and fibrinogen assay.
- Indicate time of last dose of dabigatran, rivaroxaban and apixaban when requesting tests.

**Notes:**

1. **Minor bleeding:** defined as NOT moderate or major.
2. **Moderate to severe bleeding:** Reduction in Hb ≥ 2g/dL, transfusion of ≥ 2 units of red blood cells or symptomatic bleeding in critical area or organ (e.g. intraocular, intracranial, intraspinal, intra-articular or pericardial bleeding).
3. **Life threatening bleeding:** Symptomatic intracranial bleed, reduction in Hb ≥ 5g/dL, transfusion of ≥ 4 units of red cells, hypotension requiring inotropic agents or bleeding requiring surgical intervention
4. Dabigatran half life is increased to 27 hours in renal impairment
5. WUTH Clinical Guidance: Administration of Octaplex® is available on the intranet.
6. This is an off-label use of NovoSeven ®.
7. Risk factors for bleeding: Include – Age > 65, hypertension, diabetes mellitus, renal failure, liver failure, previous gastrointestinal bleed, previous cerebral bleed, concomitant antiplatelet therapy.

**References:**


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### Vitamin K antagonists:
- Warfarin
- Acenocoumarol
- Phenindione

#### Minor bleeding

1. Check INR.
2. If INR < 8 then omit dose and restart when INR < 5.
3. If INR > 8 AND risk factors for bleeding then manage as above AND give 1 to 5mg vitamin K by mouth (Konakion MM® 2mg in 0.2ml ampoules). Repeat dose if INR still high after 24 hours.

### Direct thrombin inhibitors:
- Dabigatran

#### Minor bleeding

1. Consider activated charcoal if dabigatran ingested < 2 hours previously.
2. Local haemostatic measures.
3. Mechanical compression.
4. Tranexamic acid orally 15 to 25 mg/kg two to three times a day.
5. Delay next dose of dabigatran or discontinue treatment as appropriate.

#### Moderate to Severe Bleeding

- Contact consultant haematologist on call:
  1. Check INR.
  2. Give phytomenadione 5 to 10mg vitamin K by slow intravenous injection.
  3. If major bleeding then also give Octaplex® (prothrombin complex concentrate factors II, VII, IX and X)². The dose will vary depending on the INR result and the product is issued by the Blood Transfusion Laboratory after authorisation by a Haematologist.

### Factor Xa inhibitors:
- Rivaroxaban
- Apixaban

#### Minor bleeding

1. Local haemostatic measures.
2. Mechanical compression.
3. Tranexamic acid orally 15 to 25 mg/kg two to three times a day.
4. Delay next dose of rivaroxaban or apixaban or discontinue treatment.

#### Moderate to Severe Bleeding

- Contact consultant haematologist on call:
  1. Local measures.
  2. Fluid replacement.
  4. Tranexamic acid 1g by slow IV injection over 10 minutes followed by 1g three times daily by slow IV infusion over 8 hours.
  5. Octaplex®, APCC and rFVIIa (NovoSeven®)⁵ should be considered after discussion with haematologist.

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- 2. If INR < 8 then omit dose and restart when INR < 5.
- 3. If INR > 8 AND risk factors for bleeding then manage as above AND give 1 to 5mg vitamin K by mouth (Konakion MM® 2mg in 0.2ml ampoules). Repeat dose if INR still high after 24 hours.

**Moderate to Severe Bleeding**

- Contact consultant haematologist on call:
  1. Check INR.
  2. Give phytomenadione 5 to 10mg vitamin K by slow intravenous injection.
  3. If major bleeding then also give Octaplex® (prothrombin complex concentrate factors II, VII, IX and X)². The dose will vary depending on the INR result and the product is issued by the Blood Transfusion Laboratory after authorisation by a Haematologist.

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**Ongoing life-threatening bleeding**: Implement measures as above and consider

- 1. Local measures.
  - Maintain good urine output
  - Consider surgical intervention or wound packing
  - Consider platelets if levels less than 70 to 80 x 10⁹/L or patient on antiplatelet drug
  - Octaplex®, APCC and rFVIIa (NovoSeven®)⁵ should be considered after discussion with haematologist.

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**Bleeding: Management of bleeding in patients taking oral anticoagulants Clinical Guideline v1**

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