

Management of Bleeding in Patients Taking Oral Anticoagulants

Vitamin K antagonists:

Warfarin
Acenocoumarol
Phenindione

Minor Bleeding

1. Check INR.
2. If INR < 8, omit dose and restart when INR in therapeutic range.
3. If INR > 8, manage as above AND give vitamin K 2mg 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 vitamin K 5 to 10mg by slow intravenous injection (over at least 30 seconds). May alternatively be given by i.v. infusion (draw up 0.5 to 1 ml of Konakion MM® and add to a 50ml bag of Glucose 5%). Consider re-checking INR after 6 hrs if response inadequate; dose may be repeated.
3. If major bleeding, consider prothrombin complex concentrate (Beriplex® 25-50 IU/kg i.v.) and discuss with Haematologist.

Direct thrombin inhibitors:

Dabigatran

Minor Bleeding

Consider oral activated charcoal if dabigatran taken < 2 hrs ago.

1. Local haemostatic measures.
2. Mechanical compression.
3. Tranexamic acid topically or orally (15mg/kg po qds). Reduce dose in [renal impairment](#)
4. Delay next dose or discontinue treatment as appropriate.

Moderate to Severe Bleeding

Contact Consultant Haematologist on call

Give oral activated charcoal if dabigatran taken < 2 hrs ago. If rapidly deployable, haemodialysis/haemofiltration offers the possibility of enhanced dabigatran clearance.

1. Control haemorrhage:
 - Local haemostatic measures
 - Mechanical compression
 - Consider surgical intervention, wound packing or interventional radiology.
 - Tranexamic acid 1g (by slow i.v. injection over 10 mins) every 6 – 8 hours. Reduce dose in [renal impairment](#)
 2. Fluid replacement. Maintain good urine output.
 3. Maintain tissue oxygenation – oxygen and red cell transfusion (aim for Hb > 70g/L).
 4. Consider platelets if level less than 70 to 80 x 10⁹/L or patient on concomitant antiplatelet therapy.
- Ongoing life-threatening bleeding.** Consider: Beriplex®, APCC, rFVIIa after discussion with Haematologist.

Factor Xa inhibitors:

Rivaroxaban
Apixaban

Minor Bleeding

Contact Consultant Haematologist on call

Additional Notes:

Bleeding Classification

Moderate to Severe Bleeding:

- A clinically overt bleed causing Hb to fall > 20g/L or a bleed requiring transfusion of ≥ 2 units packed red cells, or
- Symptomatic bleeding into a critical area or organ i.e. (intracerebral, intraocular, intraspinal, intraabdominal, retroperitoneal)

Life-threatening Bleeding:

- Symptomatic intracranial bleed, Hb fall of > 50g/L, bleed that requires ≥ 5 units of packed red cells
- Hypotension requiring inotropic agents or an organ related bleed requiring urgent surgical intervention

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.

Blood Tests

- Check coagulation screen including prothrombin time (PT), activated partial thrombin time (aPTT), thrombin time (TT) and fibrinogen assay
- Check FBC, electrolytes including calcium, renal function, and LFTs. The latter is to consider if other causes of coagulopathy may be present
- Indicate time of last dose of dabigatran, rivaroxaban and apixaban when requesting tests

NB half-lives are:

- Warfarin (40 hours)
- Acenocoumarol (8-11 hours)
- Phenindione (5-6 hours)
- Dabigatran (12-14 hours – 27 hours if CrCl < 30ml/min)
- Rivaroxaban (5-9 hours – 11-13 hours in the elderly)
- Apixaban (12 hours)

References:

1. Makris M, Van Veen J, Tait C, et al. British Committee for Standards in Haematology: Guideline on the management of bleeding in patients on antithrombotic agents. *British Journal of Haematology*, 2012, 160, 35–46
2. Summary of Product Characteristics for Konakion MM. Last updated on the eMC: 17/08/2012. Electronic Medicines Compendium. www.medicines.org.uk
3. Summary of Product Characteristics for Pradaxa (dabigatran) . Last updated on the eMC: 28/01/2014. Electronic Medicines Compendium. www.medicines.org.uk
4. Summary of Product Characteristics for Xarelto® (rivaroxaban) . Last updated on the eMC: 06/01/2014. Electronic Medicines Compendium. www.medicines.org.uk
5. Summary of Product Characteristics for Eliquis® (apixaban). Last updated on the eMC: 01/10/2013. Electronic Medicines Compendium. www.medicines.org.uk
6. Summary of Product Characteristics for Marevan® (warfarin) . Last updated on the eMC: 07/12/2012. Electronic Medicines Compendium. www.medicines.org.uk
7. Summary of Product Characteristics for Sinthrome® (acenocoumarol). Last updated on the eMC: 29/02/2008. Electronic Medicines Compendium. www.medicines.org.uk
8. Summary of Product Characteristics for phenindione (AMCo brand). Last updated on the eMC: 04/12/2012. Electronic Medicines Compendium. www.medicines.org.uk