

Direct Oral Anticoagulants (DOACs)

Version 2 May 2016; review due May 2018

- ❑ The direct oral anticoagulants include agents which inhibit factor Xa (Apixaban, Edoxaban and Rivaroxaban) or thrombin within the clotting cascade (Dabigatran).
- ❑ 27% of Apixaban, 80% of Dabigatran, 50% of Edoxaban and 65% of Rivaroxaban doses are excreted renally.
- ❑ Vitamin K and plasma infusion will not reverse the effects of these newer anticoagulants, and there are no direct reversal agents available for Apixaban, Edoxaban or Rivaroxaban.
- ❑ There is an agent available to reverse the anticoagulant effects of Dabigatran (known as Praxbind).

Patient presents with bleeding associated with direct oral anticoagulant.

STOP oral anticoagulant agent

General Measures:

- Assess clinical bleeding and resuscitate patient as appropriate.
- Check: FBC, U&E, LFT, glucose and clotting screen for APTT, PT, TT and fibrinogen.
- Indicate time and date of last anticoagulant drug dose when requesting tests.

Interpretation of Coagulation screen:
A normal APTT or TT makes direct oral anticoagulant induced bleeding unlikely.

Minor bleeding: Use local measures only; Delay next dose of oral anticoagulant or discontinue therapy as appropriate

Major/Severe and Life Threatening bleeding Apixaban, Edoxaban or Rivaroxaban:

- Discuss with Haematologist on-call
- Consider specific anti Xa assay (discuss with Haematologist)
- Consider local measures:
 - Mechanical compression
 - Consider surgical/ radiological/ endoscopic intervention or wound packing
- Give oral liquid charcoal with sorbitol 50g x 1 dose if drug ingestion within 2 hours.
- Maintain good urine output with fluid replacement.
- Consider blood product transfusion to keep:
 - Hb > 80 g/L
 - Platelets . 80 x 10⁹ /L
 - Fibrinogen . 1.0 g/L
- Consider IV tranexamic acid - 1g bolus over 10 mins, can be repeated if bleeding persists.

For Life-Threatening bleeding consider:

- **Apixaban/Rivaroxaban – Beriplex 50 units/kg** (prothrombin complex concentrate) as a single dose. If bleeding continues, consider Novoseven (recombinant factor VIIa) 90micrograms/kg IV bolus.
- **Edoxaban – Beriplex 50 units/kg** as a single dose

Major/Severe and Life Threatening bleeding Dabigatran:

- Discuss with Haematologist on call
- Consider local measures:
 - Mechanical compression
 - Consider surgical/ radiological/ endoscopic intervention or wound packing
- Maintain good urine output with fluid replacement.
- **Administer PraxBind 5g IV** as a single dose. A second dose may be considered if there is recurrence of clinically significant bleeding with prolonged clotting times; if potential re-bleeding would be life-threatening and prolonged clotting times are observed; patient requires a second emergency procedure and has prolonged clotting times.
- Consider blood product transfusion to keep:
 - Hb > 80 g/L
 - Platelets > 80 x 10⁹ /L
 - Fibrinogen > 1.0 g/L

Consider Haemodialysis if renal failure present – liaise with on-call Anaesthetist (NB: uncertain efficacy with Apixaban, Edoxaban or Rivaroxaban)

Repeat FBC and clotting screen after blood product replacement

Moderate to Severe bleeding: equal to a reduction in Hb of ≥ 20 g/L, transfusion of 2 units of red cells required or symptomatic bleeding in critical area (i.e. intraocular, intracranial, intraspinal, intramuscular with compartment syndrome, retroperitoneal, intra-articular or pericardial bleeding)

Life-threatening bleeding: equal to a reduction in Hb of ≥ 50 g/L, symptomatic intracranial bleed, transfusion of 4 units of red cells required, hypotension requiring inotropic agents or bleeding requiring surgical intervention.