

This guideline details management of acute overdose of the direct thrombin inhibitor (dabigatran), and Factor Xa inhibitors (rivaroxaban and apixaban)

Toxicity / Risk Assessment

- Usually asymptomatic in overdose.
- Single-dose ingestions in naïve individuals or double dose ingestions in those on therapy are benign and do not require investigations or monitoring.
- Coagulation studies do NOT reliably predict risk of haemorrhage following exposure to DOACs.
- Risk factors for increased toxicity: renal failure, concomitant use of p-glycoprotein inhibitors with Factor Xa inhibitors e.g. verapamil, ketoconazole.
- Elderly or disabled patients are at increased risk of complications from falls

Clinical features:

- Usually asymptomatic.
- Haemorrhage is rare even in massive Overdose.

Management

Decontamination: 50g activated charcoal (paediatric: 1g/kg) within two hours of overdose.

Management of life-threatening haemorrhage, or haemodynamic instability:

- Resuscitate and administer – Prothrombinex 50 IU/kg intravenously, and two units of fresh frozen plasma (FFP).
- Obtain urgent haematology consult. Consider activating massive transfusion protocol as per local policy.
- Vitamin K is **not** effective in the management of haemorrhage caused by DOAC overdose.
- Whilst dabigatran is dialysable, the risks of bleeding versus benefit should be carefully considered.
- There is **no** role for dialysis in Factor Xa inhibitor overdose.
- Idarucizumab (for dabigatran reversal) should be administered to patients with severe life-threatening haemorrhage associated with dabigatran overdose. Dose: 5g intravenously as single dose (discuss with haematologist).
- Reversal agents for Factor Xa inhibitors are not routinely available.

Management of patients without active bleeding (the majority):

- Check Thrombin Time (TT) for dabigatran or anti-Xa concentration for Xa inhibitors at time of presentation (NOTE: anti-Xa concentration interpretation is dependent on then individual DOAC: discuss with local laboratory service).
- Repeat at 6 hourly intervals (using time of ingestion if known) until normalized.

Disposition:

- Minor accidental exposure does not require admission or investigation.
- Well patients with normal TT or anti-Xa concentrations at 12 hours post overdose can be discharged.
- Well patients with abnormal coagulation studies should be admitted for 6-hourly coagulation studies until normal.
- Well patients normally receiving a DOAC therapeutically can be discharged once the anti-Xa conc. is within safe range.