Perioperative Management of Anticoagulants in Emergency Surgery

**Warfarin**

If surgery can wait for 6–8 h:
- Give 5 mg of intravenous vitamin K
- Check INR at six hours

If surgery cannot wait:
- Reverse anticoagulation with 25–50 u/kg of four-factor prothrombin complex concentrate
- Check INR at 30 mins

Post-operative management should follow the same strategy as for elective surgery.

**Direct Oral Anticoagulants (DOAC’s)**

**Coagulation studies**

DOAC measurement by indirect methods using dilute thrombin time, ecarin clotting time and calibrated anti-Xa assays should currently be interpreted with caution in the management of patients receiving a DOAC who require emergency surgery:
- A normal prothrombin time (PT) and activated partial thromboplastin time (APTT) do not exclude significant concentrations of dabigatran, rivaroxaban or apixaban
- A normal thrombin time (TT) can be interpreted as indicating that there is a minimal circulating concentration of dabigatran

**Regional anaesthesia /analgesia**
- If an anticoagulant effect cannot be excluded, neuraxial techniques (spinal/epidural) should be avoided

**Reversal and perioperative coagulation management**
- Prothrombin complex concentrates should not be routinely used in patients on DOACs prior to emergency surgery
- **Tranexamic acid is likely to reduce bleeding** in patients who have a residual anticoagulant effect
- Drugs and colloids that impair the haemostatic mechanism should be avoided in the perioperative management of patients receiving DOAC’s
- **Idarucizumab should be used to reverse dabigatran** therapy prior to emergency invasive procedures and surgery where the bleeding risk is considered significant (see “Patients receiving dabigatran requiring emergency reversal for surgery or treatment of haemorrhage guideline” for practical advice on reversal process)
- **Andexanet, when available, should be used to reverse apixaban, rivaroxaban or edoxaban** prior to emergency invasive procedures and surgery where the bleeding risk is considered significant (UK licence expected 2020)