Switching patients safely from warfarin to a Non-vitamin K antagonist Oral Anticoagulant (NOAC) – a guide for GPs

In the majority of cases, patients established on warfarin should not be switched to an alternative anticoagulant. However, in some cases, it is appropriate to switch a patient from warfarin to a NOAC and when this occurs it is essential that correct procedures are followed to minimise risk to the patient when switching. The decision to switch from warfarin to a NOAC should be discussed with the patient and clearly documented in the patient’s notes.

Reasons for considering switching from warfarin to a NOAC:

1. The patient now gets all their oral medication in a dosette box – warfarin should not go in a dosette box. Edoxaban, apixaban and rivaroxaban can be put in a standard dosette box. Dabigatran cannot be put in a standard dosette box.

2. INR control on warfarin is poor, defined as:
   - One INR value above 8 within the last six months, OR
   - Two INR values higher than 5 within the last six months, OR
   - Two INR values less than 1.5 within the last six months, OR
   - Time in therapeutic range (TTR) less than 65%.

   Poor INR control due to poor adherence is not a reason to switch to a NOAC. Poor adherence to a NOAC carries the same risks as poor adherence to warfarin.

   Exclude all reasons for poor INR control despite good adherence before considering a NOAC. Low TTRs can be caused by recent antibiotic use, recent hospital admission or recent stopping and starting warfarin for surgery. Not every patient with a low TTR is safer on a NOAC. Warfarin monitoring can aid adherence.

Licensed indications for NOACs:

- Prevention of stroke and systemic embolism in adults with non-valvular atrial fibrillation with one or more risk factor
- Treatment and prevention of recurrent deep vein thrombosis (DVT) and pulmonary embolism (PE) in adults

NOACs are NOT licensed for valvular atrial fibrillation, mechanical heart valves or antiphospholipid syndrome (list not exhaustive).

Process for switching from warfarin to a NOAC:

1. Discuss the switch and document the decision with the patient and/or next of kin

2. Decide upon the most appropriate NOAC to use. Edoxaban is the preferred NOAC in Hertfordshire and should be used unless there are clear clinical reason(s) not to do so.

3. Check INR, FBC, ALT and U&Es. Measure BMI and calculate the CrCl to ensure an appropriate dose of NOAC is given. The Cockcroft-Gault equation is recommended by the manufacturers of all NOACs for calculating creatinine clearance (CrCl) when prescribing these agents – do not base dose decisions on
eGFR as this may lead to inappropriate dosing in up to 50% of patients. When calculating CrCl, use the following guidance:

- **Underweight, normal or overweight (BMI <30 kg/m²) individuals:** estimate CrCl using **actual** body weight.
- **Obese or morbidly obese (BMI ≥ 30 kg/m²) individuals:** estimate CrCl range using **adjusted** body weight.
- The online MD+CALC Cockroft-Gault equation can be used to calculate CrCl based on actual body weight and will calculate a modified estimate of CrCl based on the patients adjusted body weight.
- In patients on the cusp of a dose change it may be particularly important to consider other risk factors such as stroke and bleed risk when choosing the most appropriate dose.

4. Discontinue warfarin.

5. Check INR daily
   - Edoxaban – start when the INR is ≤ 2.5
   - Dabigatran – start when the INR is < 2
   - Apixaban – start when the INR is < 2
   - Rivaroxaban – start when the INR ≤ 3 for stroke and systemic embolism; INR ≤ 2.5 for DVT and PE

6. Provide patient with relevant NOAC alert card:
   - Edoxaban: [https://www.medicines.org.uk/emc/product/6906/rmms](https://www.medicines.org.uk/emc/product/6906/rmms)
   - Dabigatran: [https://www.medicines.org.uk/emc/product/6229/rmms](https://www.medicines.org.uk/emc/product/6229/rmms)
   - Apixaban: [https://www.medicines.org.uk/emc/product/4756/rmms](https://www.medicines.org.uk/emc/product/4756/rmms)
   - Rivaroxaban: [https://www.medicines.org.uk/emc/product/6402/rmms](https://www.medicines.org.uk/emc/product/6402/rmms)

7. Inform the patient’s Anticoagulation Clinic that the patient has been switched to a NOAC in order that they can discharge the patient. WHHT Anticoagulation Clinic can be contacted via whert-tr.anticoagulationservice@nhs.net.

All patients on long term anticoagulants (including NOACs) require a general review at least once a year.

**Patients on NOACs should have their weight and renal function checked and CrCl recalculated:**

- CrCl > 60ml/min - annually
- Age ≥ 75 years OR frail OR CrCl 30-60ml/min – six monthly
- CrCl < 30ml/min (but it is suggested to avoid use in this group of patients) – three monthly
- During acute illness (dose may need to be modified)