Anticoagulants are one of the classes of medicines most frequently identified as causing preventable harm and admission to hospital. There are two main groups of oral anticoagulants:

- Vitamin K antagonists (VKAs), including warfarin
- Non-vitamin K antagonists (apixaban, dabigatran, edoxaban and rivaroxaban), known as NOACs or direct oral anticoagulants (DOACs).

The use of non-vitamin K antagonist oral anticoagulants in atrial fibrillation (a heart rhythm disorder) is increasing, although warfarin continues to be widely used. There are several different indications for oral anticoagulant therapy, and it is important to know why patients have been prescribed anticoagulants in order to be able to deliver appropriate advice and support. The most common uses are in the treatment of deep vein thrombosis or pulmonary embolism, collectively known as venous thromboembolism (VTE), and the secondary prevention of stroke in atrial fibrillation (AF).

**Direct oral anticoagulants (DOACs)**

Apixaban, edoxaban, rivaroxaban and dabigatran prevent thrombus (blood clot) formation. The half-life of this drug group ranges between seven and 14 hours and the range of onset of action is between one and four hours. DOACs are metabolised in the liver to form active metabolites and these are excreted by the kidneys.

**Venous thromboembolic events**

Deep vein thrombosis (DVT) is a term used to describe the formation of a thrombus in the deep vein. DVT occurs in approximately one in 1,000 people and is a major cause of morbidity and mortality. Venous thromboembolism can be described as provoked or unprovoked. Provoking factors include significant immobility, surgery, trauma, pregnancy or puerperium (the six-week period following the baby’s birth) and the combined contraceptive pill and hormone replacement therapy (HRT).

These risk factors can be modified, thereby reducing the risk of recurrence, in which case the duration of anticoagulation would normally be limited to three months. If the event was deemed to be unprovoked, then long-term anticoagulation may need to be considered if the cause is not easily correctable or is unknown.

**Secondary prevention of stroke in AF**

A stroke secondary to AF is often severe and results in long-term disability. The risk of death from a stroke is doubled if associated with AF.

**Medicines optimisation**

Medicines optimisation is a person-centred approach to safe and effective medicines use, to ensure people obtain the best possible outcomes from their medicines. Royal Pharmaceutical Society guidance from 2013 identified the following medicines optimisation principles:

- Aim to understand the
making sense of ‘NOAC’ and ‘DOAC’

Pharmacy teams should be aware that patients and fellow healthcare professionals may be confused by the conflicting terminology used in the naming of anticoagulants.

When they first became available, non-vitamin K antagonists were referred to as novel/oral anticoagulants (NOACs). Now that these medicines have been in use for several years, the term NOAC is considered to mean non-vitamin K oral anticoagulants. However, it has been recognised that the abbreviation NOAC has the potential to be misinterpreted as NO anticoagulation, and some people argue that DOAC (direct oral anticoagulants) may be a safer abbreviation for this drug group.

- Patient’s experience
- Evidence-based choice of medicines
- Ensure medicines use as safe as possible
- Make medicines optimisation part of routine practice

Within the field of anticoagulation, the move away from routine monitoring of anticoagulant activity is a change in practice.

Until DOACs became available, all patients who were prescribed warfarin underwent therapeutic drug monitoring with international normalised ratio (INR) testing as frequently as weekly or monthly.

Pharmacy teams can play an important role in providing patients with information to ensure the safe use of DOACs.

DOACs may not be suitable for all patients, and are contraindicated in specific patient groups, including those with cancer or prosthetic mechanical heart valves. Missed and skipped DOAC doses have a greater half-life of this drug group.

Community pharmacy teams should identify patients who are prescribed DOACs and offer support via a new medicines use review (MUR) service.

Evidence-based choice of medicines

In recent clinical guidance from NICE (2014), oral anticoagulants (warfarin or DOACs) were recommended as first line treatment for patients with AF and at increased risk of stroke. Evidence now indicates that patients with AF should not be offered aspirin as a monotherapy for stroke prevention as it is a barrier to appropriate stroke prevention with oral anticoagulation.

There are also instances when patients should have their anticoagulation therapy re-assessed. NICE recommends a review of: warfarin anticoagulation therapy.

- A time in therapeutic range (TTR) of less than 65 per cent
- Two INRs less than 1.5
- Two INRs greater than five
- One INR reading greater than eight in the last six months.

Patients should be considered for a DOAC if appropriate, but should have their anticoagulation therapy re-assessed if they are non-adherent.

Adherence

Adherence is important for effective DOAC treatment and patients must understand the need to always take their anticoagulant and be committed to continuing to take it. DOACs have a short half-life, so patients who omit doses intentionally or unintentionally are at risk of thrombosis through inadequate anticoagulation.

Given that the anticoagulant effects of DOACs fade rapidly on cessation, it is imperative that poor adherence is identified at any patient contact opportunities.

One study established that 30 per cent of patients prescribed dabigatran for discontinued treatment in consultation with their doctor at some time between three and 12 months after initiation. When interviewed, patients cited the following reasons for discontinuation:

- Gastrointestinal (GI) symptoms, which led to discontinuation within days of the first dose
- Concerns that there was no antidote available

Anticoagulation risks

Patient education is essential for patients and/or carers to understand that they are on an oral anticoagulant, that their blood will take longer to clot and that they must be aware of signs of internal bleeding, which can be life threatening if not addressed in a timely manner.

Drug interactions

A broad range of medicines interact with warfarin. An important counselling point at the start of any new drug that may interact with warfarin is to encourage patients to notify their anticoagulation clinic and to review the date of their next INR test.

Anticoagulation services

Although practice varies, patients prescribed DOACs are routinely monitored by specialist anticoagulation services for the first two to three months of therapy, after which their care may be transferred to primary care.

Patients managed by specialist anticoagulation services may have their DOACs dispensed on site. However, delays in appointment systems may result in patients running out of their DOAC before being recalled for an appointment.

Patient safety can also be compromised if the documentation of an anticoagulant switch from warfarin to a DOAC is not received by GPs before they prescribe a repeat supply of warfarin, resulting in duplicated anticoagulation.

Ideally, patients who are instigated on a DOAC in secondary care should be referred to the community pharmacy for an NMS, in accordance with the service specification. However, in reality this is not common practice.

To improve patient safety there is a need for community pharmacy teams to adopt a proactive approach to case-finding patients who have been instigated on a DOAC.

When dispensing regular repeat medicines, pharmacy teams should consider how they can capture and record all prescribed medicines, including DOACs, irrespective of where they are dispensed.

Members of the pharmacy team could consider asking patients questions such as:

- Have you been seen by any members of the anticoagulation team?
- Have you changed your blood thinning medicines?
- Do you take any medicines that are dispensed in other places, including hospital services?
- Do you take any medicines that are delivered to you at home?
- Do you take any medicines other than the ones that are dispensed by this pharmacy?

Remember, pharmacy teams play an important role supporting patients to stay motivated to take their medicines months and years after being initiated on oral anticoagulant therapy.

Pharmacy teams can play an important role in providing patients with information to ensure the safe use of DOACs

Adherence

- Evidence of patients taking DOACs at four weeks.
- Evidence of patients understanding the need to take DOACs.
- Evidence of patients being motivated to take DOACs.

“Pharmacy teams can play an important role in providing patients with information to ensure the safe use of DOACs”

Anticoagulation risks

- Evidence of patients being advised of the risks of stopping DOACs.
- Evidence of patients being advised of the benefits of staying on DOACs.

Drug interactions

- Evidence of patients being advised of the interactions of DOACs.
- Evidence of patients being advised of the need to stop DOACs.

Anticoagulation services

- Evidence of patients being offered advice on DOAC services.
- Evidence of patients being offered advice on DOAC services.

Reflection exercise

Think about how you could identify patients with AF, especially those who buy low dose aspirin over the counter, and ensure that they have their treatment reviewed.

Go to www.tmmagazine.co.uk to answer the CPD questions.

When you pass, you’ll be able to download a certificate to showcase your learning.

You can also add this to your online, personalised TM learning log.

Next month: We focus on pet health.