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A Guide to Safe Anticoagulation with Warfarin

Southern Health and Social Care Trust

The Importance of Safe Anticoagulation with Warfarin

Prescribers must be aware of the risks associated with anticoagulants. In the last decade there were over 34,000 UK reports of adverse events associated with the use of oral anticoagulants; 1250 events (3.6%) resulted in the death of the patient. This harm is preventable. Adverse events are largely due to the variation in response to treatment and the number of individuals involved in management. Good **communication** with patients and between health care professionals is paramount.

Initiation of Safe Anticoagulation with Warfarin

The indication for anticoagulation, duration of treatment and target INR should be documented in the medical notes. Baseline FBP, U&E, LFT, Coagulation Screen and INR should be checked prior to the commencement of anticoagulation. A pregnancy test is required in women of child-bearing age. It is SHSCT Haematology recommendation that patients starting anticoagulants should have a Group & Hold obtained. This is not required if the patient's Blood Group is documented on labs.

Patients with a DVT or PE

- Consider the use of a Direct Oral Anticoagulant (DOAC) - apixaban is currently the DOAC of choice for VTE treatment in the SHSCT.
- If a DOAC is not recommended then start low molecular weight heparin (LMWH) as soon as diagnosis of DVT or PE is suspected.
- Warfarin can be commenced on Day 1 of treatment in conjunction with LMWH in most patients. Prescribe warfarin on the medicines Kardex; annotate the medicines Kardex with 'See warfarin chart'.
- Rapid anticoagulation with warfarin is indicated and daily INR tests are required for a minimum of 4 days. The rapid induction schedule used in the SHSCT can be used in all patients including those with lower bodyweight, poor nutritional status, liver disease, heart failure, the elderly and patients on concurrent interacting drug therapy. The schedule is found on the Anticoagulation Prescription and Discharge Form and on Sharepoint.
- LMWH should be continued for at least 5 days and can be discontinued when the INR has been in therapeutic range for at least two days.

Patients with Atrial Fibrillation

- Consider use of a DOAC.
- Warfarin may be initiated with the slow induction protocol found on the Anticoagulation Prescription and Discharge Form and on Sharepoint.
- This regimen can be safely initiated with once weekly monitoring.
- Patients with embolic symptoms may warrant immediate anticoagulation with a DOAC or LMWH and faster warfarin induction: contact the Anticoagulant Pharmacist.

The patient must be informed about their treatment when it is started and again before discharge from hospital. Patients should be given an anticoagulant information pack; they should be asked to read the contents and the purpose of the record book should be explained. Written instructions regarding their warfarin dose should be entered in the yellow record book**.**

The following items must be fully explained to the patient:

Discharging Patients on Warfarin

Discharge arrangements for anticoagulant follow-up must be detailed in the hospital notes, e.g. a copy of the discharge letter should be filed. Both the oral anticoagulant prescription and referral form and the anticoagulation therapy section of the electronic discharge prescription must be completed fully. An appointment should be made for a further INR measurement within 7 days of discharge. The responsibility for discharge arrangements lie with the clinician discharging the patient.

The discharging doctor should telephone the clinic at either the hospital (**contact a member of the anticoagulant team**, see link on how to refer patients) or GP surgery to make the appointment. The patient or their carer should be informed of the arrangements and given written instructions in their yellow record book. If it is not possible to secure a timely clinic appointment, arrange to check the INR on the ward.

If the patient is new to warfarin then it may be appropriate for them to receive the 1st appointment at the hospital clinic. If the patient previously attended their GP surgery then contact the GP surgery to ensure that they are happy to continue with monitoring.

If a patient is discharged at the weekend or out of normal working hours, it the responsibility of the discharging doctor to organise an INR check either with the GP surgery or hospital clinic when these services are open again on the next working day.

Interactions with Warfarin

The INR should be checked within 5-7 days of starting any new drug in a patient on warfarin. Similarly, if a routine drug is withdrawn or the dose altered the INR should be checked within 5-7 days.

- Use of **non-steroidal anti-inflammatory** drugs should be avoided in patients on warfarin,
- **Aspirin**, **clopidogrel, prasugrel, ticagrelor** and **dipyridamole** should not be used routinely in conjunction with warfarin.

For information on interacting drugs, check the BNF or ask a Pharmacist to obtain information if the drug is not listed in the BNF. Do not prescribe apixaban, dabigatran, edoxaban or rivaroxaban (DOAC's) and continue warfarin.

Patients must be cautioned against the use of herbal remedies and other over the counter preparations.

Prevention and Management of Over-anticoagulation with Warfarin

The two most common variables associated with bleeding risk are;

- intensity of anticoagulation (INR >5),
- age.

In every case of over or under anticoagulation, a cause for the out of range INR must be considered, e.g. interacting medication. This will guide corrective measures, e.g. deciding on the need for dose adjustment. If INRs are erratic and inexplicable, then patient compliance with therapy must be questioned. The problem must be discussed with the patient and further education offered.

Guidelines on managing over anticoagulation are available on Clinical Guidelines (hscni.net) and Sharepoint.

Maintenance Monitoring of Warfarin

When a patient is admitted to hospital and has previously been on warfarin, it is important to note their maintenance dose of warfarin. This should help with dosing of warfarin while the patient is in hospital and on discharge. While the patient is in hospital, please refer to the warfarin dosing information on Sharepoint and on the reverse of the Oral Anticoagulation Prescription and Referral Form.

A Short Guide to Anticoagulation with Warfarin

To Commence a Patient on Warfarin

1. Before warfarin is started:
   - Obtain the patient's consent for warfarin treatment and inform the patient of the reason for treatment, side effects and need for monitoring using the counselling checklist.
   - Explain the patient's responsibilities.
   - Provide the patient with an Anticoagulant Information Pack and complete the Anticoagulant record book.
2. Obtain an Oral Anticoagulation Prescription and Referral Form and follow the instructions, completing sections as appropriate and prescribe on the medicines' Kardex.
3. Decide on an induction regimen appropriate to the patient – confirm with a senior clinician.
4. Check baseline FBP, U&E, LFT, coagulation screen, pregnancy test and blood group (blood group only required if not documented on labs). Proceed with the first dose of warfarin. Request INR tests and follow up results, using the appropriate induction schedule.
5. Before discharge, provide the patient with a second opportunity to ask questions and confirm that the patient understands the purpose, risks and monitoring required.
6. Check with the patient's GP if the patient may attend the GP surgery for INR monitoring or if they need to attend the hospital clinic. Inform the patient or their carer of the appointment made to check the first INR after discharge. This should be within 1 week of discharge.
   If the patient requires district nurse to take INR, ensure both the district nursing team **AND** whoever is responsible for monitoring the warfarin (GP surgery or hospital Anticoagulant clinic) are contacted to arrange follow-up.
7. On discharge check that the oral anticoagulant prescription and referral form and the anticoagulation therapy section of the electronic discharge prescription have been completed fully.

When a patient on warfarin is admitted to hospital

On admission, ask the patient for a record of their warfarin monitoring to date. This data should be recorded on the anticoagulation prescription and referral form; return the warfarin monitoring booklet to the patient. Information required includes;

- The reason for anticoagulation and duration of therapy
- The most recent INR and warfarin dose
- The clinic responsible for warfarin monitoring

If this information is not available from the patient or carer, contact the GP surgery. When discharging patients who have been on long term therapy, find out who usually monitors their warfarin and refer the patient back to this clinic for further monitoring by telephoning to make an appointment.

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