

SCOPE: National

<p>RED Unsuitable for community admission to HATH. Refer to ED/ Inpatient management. (May become suitable for HATH after inpatient stabilisation).</p>	<ul style="list-style-type: none"> • Co-existing medical conditions requiring hospital admission. • Known or suspected hypersensitivity to warfarin or enoxaparin (unless under the governance of a consultant haematologist or thrombosis clinic at a tertiary centre. • Pregnancy (warfarin is contraindicated in pregnancy)
<p>ORANGE Requires discussion with Medical Governor and/or Haematologist prior to acceptance.</p>	<p>Conditions that may increase the risk of bleeding:</p> <ul style="list-style-type: none"> • History of familial bleeding disorders • Peptic ulcer disease • Increased risk of falls • Thrombocytopenia • Uncontrolled hypertension
<p>GREEN Accepted for HATH protocol.</p>	<ul style="list-style-type: none"> • Clients requiring re-warfarinisation for sub-therapeutic INR. • Client's medical condition has been assessed as stable, has a clear diagnosis/prognosis and is at low risk of deterioration. • Over 13 years, suitable for adult dosing and not under the care of a Paediatrician.

ASSESSMENT

- Check indication for warfarin therapy
- Check target INR
- Check current INR
- Check warfarin dose given to date (including the brand)
- Check client's usual warfarin dose
- Confirm client not on any other oral anticoagulants
- Check weight

PATHOLOGY WORK UP

Verify if any recent pathology has been ordered prior to requesting the below:

- Baseline blood tests:
- Full blood picture (FBP) for baseline platelet counts
- Urea & electrolytes to assess renal function
- Coagulation profile (INR, APTT, fibrinogen)
- Liver function tests.
- Day 5, repeat FBP to assess platelet count for heparin induced thrombocytopenia.

Calculate creatinine clearance using Cockcroft – Gault equation.

GENERAL MANAGEMENT

- Access blood results from referral source.
- Obtain last INR and Warfarin dose from referral source.
- Collaborate with medical governance doctor regarding any abnormal test results.
- Daily nursing assessment as per Re-warfarinisation Care Pathway.
- If client is post-surgical procedure, commence enoxaparin 24 hours post-procedure. The client's usual warfarin dose can be taken on the evening post surgery.
- Monitor INR daily (utilising Coagucheck) and liaise with medical governance doctor for dosing of warfarin (*If INR reading >3.5, formal blood test is required for confirmation).
- For management of bleeding and/or high INR in a patient taking warfarin refer to APPENDIX 1.
- Administer enoxaparin sodium as per medical authority.
- Enoxaparin sodium should be continued until INR is within therapeutic range for 24 hours (can be discontinued on 2nd day of INR in therapeutic range).
- Advise client regarding warfarin use, including its potential complications and interactions with diet and alcohol as per *Living with Warfarin* booklet.

TREATMENT

Recommended warfarin dose

- Liaise with medical governance regarding warfarin dose.

Suggested INR target range

Target INR	Conditions
2.0 – 3.0	<ul style="list-style-type: none"> • DVT prevention in high risk clients, eg hip or knee surgery • DVT or PE therapy • Preventing systemic embolization: AF, valvular disease, post MI, post op bio prosthetic heart valve.
2.5 – 3.5	<ul style="list-style-type: none"> • Bileaflet mechanical heart valve (aortic)
3.0 – 4.5	<ul style="list-style-type: none"> • Mechanical prosthetic valve (high risk)

Recommended enoxaparin dose*

Renal function	Treatment dose
Normal renal function CrCl > 30mL/min	<ul style="list-style-type: none"> • 1.5 mg/kg SC daily** or • 1 mg/kg SC BD
Severe renal impairment CrCl < 30mL/min	<ul style="list-style-type: none"> • 1 mg/kg SC daily
<p>* Twice-daily dosing of enoxaparin is preferred for patients at high risk of bleeding or thrombosis, such as patients who are older, obese or have a malignancy. **If dose required is greater than 150mg, dose must be given as twice daily dose.</p>	

MEDICAL GOVERNANCE

- The client has access to medical governance support for 24 hours per day, 7 days per week.
- Primary medical governance can be by referring medical specialists, credentialed referring GPs or by Silver Chain medical staff.
- When governance is retained by a Silver Chain medical officer the client will have a medical review within 48 hours of admission and the medical officer will determine when the scheduled follow up and discharge will occur.
- Where the primary medical governor is unavailable the Silver Chain medical officer can provide the medical governance.
- Care delivery is planned and provided in consultation with the client, medical officer/specialist holding medical governance and nursing staff.
- In the instance when a client's condition deteriorates the Silver Chain medical officer or nursing staff will confer with an emergency department medical officer.
- A summary of the episode of care is sent to the referrer or the client's GP at discharge.

FOLLOW UP

- Ensure the client has an appointment arranged with own General Practitioner (GP) or previous warfarin service is re-instated prior to discharge to ensure continuity of care.
- Fax protocol with client discharge summary to GP.

APPENDIX 1: MANAGEMENT OF BLEEDING AND/OR HIGH INR (OVERANTICOAGULATION)

Principles

- INR > 3.5 on Point of Care (POC) machine e.g. Coagulocheck mandates laboratory specimen to be taken.
- Laboratory specimen is considered as 'gold standard' and should be utilised in preference to POC machine.

High Bleeding Risk

- Recent major bleed (within 4 weeks)
- Major surgery (within 2 weeks)
- Thrombocytopenia (platelet count < 50 x 10⁹/L)
- Known liver disease
- Concurrent antiplatelet therapy

Management of patients on warfarin therapy with bleeding*

Clinical setting	Recommendation
INR ≥ 1.5 with life threatening bleeding	Cease warfarin and transfer immediately to hospital
INR ≥ 2.0 with clinically significant bleeding	Cease warfarin and transfer immediately to hospital
Any INR with minor bleeding	Omit warfarin, repeat INR following day and adjust warfarin dose to maintain INR in the target therapeutic range If bleeding risk is high or INR > 4.5 refer to hospital for administration of vitamin K

*indication for warfarin therapy should be reviewed; if clinically appropriate, consider permanent cessation.

Management of patients on warfarin therapy with high INR and no bleeding

Clinical setting	Recommendation
INR higher than the therapeutic range but < 4.5 and no bleeding	Lower or omit the next dose of warfarin Resume therapy at a lower warfarin dose when the INR approaches therapeutic range if INR ≤ 10% above therapeutic range dose reduction generally not necessary
INR 4.5-10.0 and no bleeding	Cease warfarin therapy; consider reasons for elevated INR and patient-specific factors. Measure INR within 24h Resume warfarin at reduced dose once INR approaches therapeutic range If bleeding risk is high, send patient to hospital for medical review +/- administration of vitamin K
INR > 10.0 and no bleeding	Cease warfarin therapy Transfer immediately to hospital

Source: Tran H, et al. An Update of Consensus Guidelines for Warfarin Reversal. MED J AUST 2013; 198 (4): 198-199.