



SWSAHS AMBULATORY CARE GUIDELINE

GUIDELINES FOR MANAGEMENT OF THROMBO-EMBOLOGIC DISEASE (DEEP VEIN THROMBOSIS +/- PULMONARY EMBOLUS)

Aim:

To provide area-wide guidelines to assist a range of health professionals including general practitioners, hospital medical staff, ambulatory care, hospital and community nurses and pharmacists in management of anticoagulation with least risk of further thrombosis or emboli and least risk of adverse reactions.

These guidelines are based on the literature but there is a lack of level 1 evidence (randomised controlled trials) in this area. Periodic review of the guidelines will be needed to take account of new research findings. The guidelines are seen as assisting but not replacing clinical decision making and it will be necessary to vary from them in particular clinical situations.

Patient Assessment:

Thorough clinical assessment is needed looking at symptoms and signs as well as risk factors such as immobility, obesity, pregnancy, malignancy, atrial fibrillation, congestive cardiac failure, varicose veins, smoking and oestrogen therapy (including oral contraceptive pill). Assessment also involves the patient's general health, social situation and level of support to determine suitability for ambulatory care.

Investigation will be at the discretion of the supervising physician. The standard diagnostic test is a venous doppler study. A venogram or red cell scan may be necessary where there is a high index of suspicion and the doppler study is uninterpretable or inadequate. Pulmonary V/Q is indicated on the basis of symptoms and signs or when the supervising physician is concerned about high risk of pulmonary embolism. A Spiral CT scan of the chest may be helpful if the pulmonary V/Q is indeterminate in probability for pulmonary embolism, or if V/Q is not readily available, or in patients with underlying lung disease.

Other investigations may be clinically indicated to assess for underlying disorder eg coagulopathy in situations such as:

- recurrent DVT without apparent cause

- family history of clotting disorders
- difficulties with anti-coagulation
- other situations as clinically indicated

Other studies that may be indicated in these situations are:

- Protein C, Protein S, Activated Protein C (APC) resistance, Antithrombin (AT) III, homocysteine
- Gene studies: Factor V Leiden, Prothrombin gene mutation, MTHFR (methylene-tetrahydrofolate reductase) mutation.
- Immunology: ANA, Anticardiolipin antibodies, beta-glycoprotein Ab, Lupus anticoagulant,
- Investigations for malignancy as clinically indicated.

Management of proximal versus distal DVT:

Proximal deep vein thrombosis (above the knee) is more likely to be associated with clinical or sub-clinical pulmonary embolism and heparin followed by warfarin is required. An option for distal DVT is to treat with low molecular weight heparin for 10-14 days then reassess with a follow-up doppler study. If there has been no progression then LMWH can be ceased and warfarin may not be required.

Guideline: Thrombo-embolic disease (DVT +/- Pulmonary embolus)

Process	Treatment	Comments
Assess patient suitability for LMWH	<p>Contraindications include :</p> <ul style="list-style-type: none"> renal failure thrombocytopenia, concurrent NSAID therapy, significant bleeding risk, symptomatic pulmonary emboli (with respiratory distress) 	<p>Suitability for home treatment: - safe accessible home: GP or MO supervision of therapy; patient or carer understands treatment and; home phone. Concurrent NSAID therapy is a relative contraindication. Consider stopping it if possible or gastric protection if not.</p>
Baseline investigations	<ol style="list-style-type: none"> Investigation to confirm DVT as above FBC, platelet count, U&E, Creatinine, APTT, INR 	<p>Other investigations may be indicated if increased risk of bleeding or suspected underlying coagulopathy.</p>
Low Molecular Weight Heparin LMWH	<p>Enoxiparine (Clexane) 1.5mg/Kg once daily or 1mg/Kg twice daily by SCI for at least 5 days (max. dose 200mg/day); OR</p> <p>Dalteparin (Fragmin) 100^{IU} units/kg twice daily for at least 5 days (max. dose 20,000^{IU}/day). Choice of medication and dose may be varied by the supervising physician. LMWH is ceased when the INR is in the target range (2-3) for 2 consecutive days.</p>	<p>Enoxiparine requires reduction in dosage (to 1.0mg/kg/day) in renal impairment (Creatinine >0.15mmol/l) and for advanced age (over 80yrs). Patients with renal impairment should be assessed by an appropriate specialist. Caution should be used in those patients over 80 years old.</p>
Warfarin stabilization	<p>Warfarin commence with 5mg per day on day 2 of LMWH therapy. Start at 5mg daily for first two days. (A lower dose may be required if elderly, on antibiotics etc).</p> <p>Second daily INR and adjust dose of warfarin according to INR from day 4 according to schedule:-</p> <p>INR < 1.5: Increase dose by 1mg. INR 1.5-2: Increase dose by 0.5mg INR 2-3: Continue (Target Range) INR 3-3.5: Decrease dose by 0.5mg INR 3.5-5: Decrease dose by 1mg INR 5-8: If no bleeding cease for 24-72 hrs and recommence at half dose once INR<5 INR >8: Consult Haematology or Emergency urgently and administer Vitamin K 1mg (IV or SC) or FFP as advised.</p>	<p>For patients over 80 yrs increase by 0.5mg if below target range. Adjustment of warfarin dose for age may decrease time to stabilisation Check for drug interactions All patients need to receive warfarin education.</p>
Investigations	<p>INR at least second daily from commencement of warfarin. ABC on Day 6 if LMWH to be continued beyond Day 5. Repeat weekly if LMWH is continued. Xa levels not needed for short term LMWH therapy.</p>	<p>Cease LMWH if platelet count below 150 X 10⁹/L APTT is not useful as a guide to LMWH.</p>
Stockings	<p>Graduated compression stockings are advised to reduce risk of post-phlebotic syndrome. Ideally should be worn for 2 years. TED stockings are less effective.</p>	
Clinical	<p>Monitor symptoms of respiratory distress and swelling</p>	<p>Give oxygen and transfer by ambulance to hospital if</p>

monitoring	of patients thigh and calves.	respiratory distress.
Laboratory monitoring	Monitor INR. A typical regimen is weekly for 4 weeks once in target range then monthly while stable. Increase monitoring frequency if there is intercurrent illness, change in drug therapy, change in alcohol intake and diet.	Consider reintroduction of LMW heparin if INR drops below 2.
Duration of treatment for thrombo-embolic disease	First episode - 3 months warfarin or duration of risk factor If no identifiable risk factor – 6 months warfarin Second episode – 6 to 12 months warfarin or longer if at increased risk of further recurrence Three or more episodes – long term	Consider reintroduction of LMW heparin if INR drops below 2. Length of treatment may be varied by supervising physician.

References

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Endorsed by: Ambulatory Care Guidelines Committee November 2000

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