

Dalteparin

Low Molecular Weight Heparin Shared Care Guideline

Using a printed guideline?
Always check you are using the most up to date version.
See www.ipnsm.hscni.net

Specialist Details	
Name:	_____
Location:	_____
Tel:	_____

Patient Identifier	
Date:	_____

Introduction

Licensed indications: Treatment and prophylaxis of venous thromboembolism (VTE) and for patients with unstable angina awaiting angiography/revascularisation procedures.

Unlicensed indications: see detailed advice from specialist.

- Short term bridging anticoagulant in high risk patients on oral anticoagulant
- Extended therapy beyond two weeks in selected patients
- Treatment and prophylaxis of VTE during pregnancy and following delivery (Guidance of the Royal College of Obstetricians and Gynaecologists www.rcog.org.uk).

All healthcare professionals involved in the prescribing dispensing and administration of LMWHs will need to know essential patient information (dose, weight, renal function, indication and duration of treatment), to ensure that future doses are safe.

Adult dosage and administration: Calculate dose using patients current weight (In pregnancy use early pregnancy booking weight), and renal function. Severe renal impairment:(CrCl<30ml/min)-contact specialist

Treatment of VTE, presenting as DVT, pulmonary embolism or both	Weight (kg)	Dose	Treatment is usually for at least 5 days and until adequate oral anticoagulation is established i.e. the INR has been in the therapeutic range for a minimum of 2 days. In selected patients long term LMWH is used.
	<46	7500 units subcutaneously once daily	
	46-56	10 000 units subcutaneously once daily	
	57-68	12 500 units subcutaneously once daily	
	69-82	15 000 units subcutaneously once daily	
	>83	18 000 units subcutaneously once daily (max dose)	
Prophylaxis of VTE in surgical patients	<p>Moderate Risk: 2500 units subcutaneously every 24 hours until the patient no longer has significantly reduced mobility (generally 5-7 days).</p> <p>High risk: Either 2500 units subcutaneously 8-12 hours after procedure and on the following days, 5000 units subcutaneously each morning. OR 5000 units subcutaneously on the evenings following procedure until the patient no longer has significantly reduced mobility (generally 5-7 days).</p> <p>Extended thromboprophylaxis: knee replacement surgery -10 to14 days; hip replacement surgery, hip fracture - five weeks; major cancer surgery in the abdomen and pelvis - treatment may be continued for four weeks post-operatively. ^(NICE2010)</p>		
Prophylaxis of VTE in medical patients	5000 units subcutaneously once daily until fully mobilised and/or patient is no longer at increased risk of VTE.		
Treatment of VTE in patients with solid tumours and prophylaxis of recurrence	<p>Month 1: 200 units/kg subcutaneously once daily for the first 30 days of treatment. The total daily dose should not exceed 18 000 units daily.</p> <p>Months 2 - 6: approximately 150 units/kg, subcutaneously once daily using pre-filled syringes.</p>		
Treatment of VTE in pregnant patients <i>Do not use multidose vial</i>	<p>Antenatal: 100units/kg (based on early pregnancy booking weight) subcutaneously twice daily</p> <p>Postnatal: 200units/kg (seek specialist advise) subcutaneously once daily .</p> <p>Therapeutic anticoagulant treatment should continue for the duration of the pregnancy, for at least 6 weeks after delivery and to complete treatment period.</p>		
Prophylaxis of VTE in pregnant patients <i>Do not use multidose vial</i>	Use early pregnancy booking weight		* may be given in two divided doses
	Weight (kg)	Dose	
	<50	2500 units subcutaneously once daily	
	50-90	5000 units subcutaneously once daily	
	91-130	7500* units subcutaneously once daily	
	131-170	10 000* units subcutaneously once daily	
	>170	75units/kg/day* units subcutaneously once daily	
	High prophylactic (intermediate) dose for women weighing 50-90kg: 5000 units SC 12 hourly. Postnatal duration: 6 weeks for high risk, and 7 days for intermediate risk. ^(RCOG37)		
Unstable angina while awaiting revascularisation	<p>Day 1 - 8 (usually in-patient):120 units/kg 12 hourly. Max dose 10 000 units/12 hours.</p> <p>Day 8 - 45: women < 80 kg, men <70 kg: 5000 units subcutaneously 12 hourly women ≥ 80 kg, men ≥70 kg: 7500 units subcutaneously 12 hourly.</p>		

Available as	<p>Single dose syringe: dalteparin 12 500 units/ml: 0.2ml (2500 units); dalteparin 25 000units/ml: 0.2ml (5000 units); 0.3ml (7500 units); 0.4ml (10 000 units); 0.5ml (12 500 units); 0.6ml (15 000 units); 0.72ml (18 000 units).</p> <p>Graduated syringe: dalteparin 10 000 units/ml: 1ml (10 000 units).</p> <p>Injection vial/ampoule: dalteparin 2500 units/ml: 4ml (10 000 units); 10 000 units/ml: 1ml (10 000 units); 25 000 units/ml: 4ml (100 000 units).</p>
Hospital Specialist Responsibilities	<ul style="list-style-type: none"> • Assess the need for extended prophylaxis or treatment • Provide the patient/carer with relevant written and verbal information on use, side effects, and need for monitoring of medication ^(NICE 2010) • Provide education/training on self administration (preferred sites and rotation of sites) if appropriate and disposal of sharps box • Arrange Shared Care with the patients GP • Provide the GP with the relevant information for each patient: <ul style="list-style-type: none"> ◦ Treatment to be prescribed, dose, weight, indication, renal function and duration of treatment. ^(NPSA/2010 /RRR014) ◦ Indicate if patient has been trained and will self-administer. If patient cannot, contact GP and arrange administration in primary care. ◦ Advise if monitoring is required. If monitoring required, advise on frequency of monitoring platelets, potassium, and renal function, and give baseline results. • Send a written summary to the GP whenever the patient is reviewed • Provide any other advice or information for the GP if required • When indicated, measure and prescribe anti-embolism stockings e.g. TED, and provide instructions on use. Advise GP if graduated compression stockings are to be prescribed. ^(NICE 2010)
GP Responsibilities	<ul style="list-style-type: none"> • Prescribe dalteparin and sharps bin 1 litre for the duration of the course (dose, weight, renal function, indication and duration of treatment should be recorded in the patients clinical record) ^(NPSA2010/RRR014) • Ensure systems are in place for daily administration • Monitoring is not routinely required and is not necessary in pregnant women on prophylaxis • When monitoring is indicated (as per specialist): Arrange and record on-going monitoring as recommended: <ul style="list-style-type: none"> ◦ Repeat FBC between days 5-7 and 10-14. In patients at risk of hyperkalemia (see below) check potassium between days 5-7 and 10-14, and thereafter according to clinical judgement. From Day 15 onwards there is no need for routine monitoring unless clinical condition changes or is likely to change in which case check U&E as necessary • Identify and report adverse reactions to initiating specialist and the usual bodies (e.g. MHRA) <ul style="list-style-type: none"> ◦ From day 5 - 14 of therapy allergic skin reaction at injection site or further thrombosis (arterial or venous) may indicate HITT. Stop LMWH, request FBP and refer urgently to local haematologist for management • Alert the referring consultant to any significant changes in patient weight, renal function or platelet count • When advised by specialist, prescribe graduated compression stockings ^(NICE 2010) • Ensure no drug interactions with other medicines.
Adverse Effects, Precautions and Contraindications	<p>Hyperkalaemia: LMWH can cause hypoaldosteronism, which may result in hyperkalaemia. Potassium should be monitored before and during treatment, particularly in patients at risk of high potassium e.g. renal impairment, ACE inhibitors, angiotensin II receptor blockers, potassium sparing diuretics etc.</p> <p>Heparin Induced Thrombocytopenic Thrombosis (HITT): is a rare side effect of LMWH. HITT should be suspected if platelet count falls by more than 30% from baseline alongside clinical suspicion of a new thrombotic event. Platelet count should be performed before treatment is started and between days 5-7 and 10-14. If HITT is suspected, stop LMWH, request FBP and refer urgently to local haematologist for further management. Seek specialist advice before further prescription of LMWH in patients with history of HITT .</p> <p>Dosage may need to be reduced in elderly patients, in patients with reduced hepatic function, severe renal impairment (ClCr<30ml/min) or chemotherapy induced thrombocytopenia. Dose adjustment may also be necessary in patients at extremes of body weight.</p> <p>Contraindications include: Major bleeding disorders including active peptic ulcer, severe thrombocytopenia, hypersensitivity to dalteparin or other LMWH.</p>
Common Drug Interactions	<p>Drugs affecting haemostasis (e.g. antiplatelets , NSAIDS, systemic glucocorticoids, anticoagulants, thrombolytics) should be discontinued before LMWH is initiated unless their use is essential. If the combination cannot be avoided, LMWH should be used with careful clinical and laboratory monitoring.</p>
Communication	<p>For any queries relating to this patient’s treatment with dalteparin, please contact the specialist named at the top of this document.</p> <p style="text-align: center;">This information is not inclusive of all prescribing information and potential adverse effects. Please refer to full prescribing data in the SPC or in the BNF</p>