University Hospitals of Morecambe Bay NHS Foundation Trust

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Which Principles of the NHS Constitution Apply? **Please list from principles 1-7 which apply** 1-7 Principles	**Which Staff Pledges of the NHS Constitution Apply?** **Please list from staff pledges 1-7 which apply** 1-7 Staff Pledges

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SHARED CARE GUIDELINE

Drug: LOW MOLECULAR WEIGHT HEPARIN (LMWH) ENOXAPARIN

Introduction	**Indication**: Extended treatment and prophylaxis of venous thromboembolism (VTE) in patients in whom oral anticoagulation is contra-indicated or not recommended [unlicensed indications] including: • Cancer patients with active disease and/or receiving chemotherapy • Patients with liver disease especially if prothrombin time is prolonged • Patients unable to comply with oral anticoagulant therapy • Patients awaiting completion of investigations before commencing an oral anticoagulant • All other indications not included in the RED list below The following indications are agreed RED (**full supply from hospital**): • Treatment and prophylaxis of VTE in pregnancy • Prophylaxis of VTE in oncology patients on VTE inducing therapy • Pre and post-operative use as replacement for warfarin in high risk patients i.e bridging therapy. (Primary care to prescribe if due to unforeseen circumstances patients require additional doses). • Prophylaxis post-operatively e.g. TKR, THR, general surgery • Prophylaxis in patients with lower limb plaster cast NB: Travel prophylaxis: Amber, see Clinical Knowledge Summaries for further information: http://cks.nice.org.uk/dvt-prevention-for-travellers#!scenario and consult a haematologist for advice.

Dose & Administration

Enoxaparin is available in boxes of 10 as:

- 20mg, 40mg, 60mg, 80mg and100mg pre-filled syringes containing 100mg/mL enoxaparin
- 120mg and 150mg pre-filled syringes containing 150mg/mL enoxaparin

(also available as 300mg multidose vial containing 100mg/mL enoxaparin – this should **not** be prescribed for patients receiving enoxaparin in primary care).

TREATMENT of DVT

Enoxaparin can be administered SC either as a **ONCE DAILY** injection of 1.5mg/kg (150units/kg) or as **TWICE DAILY** injections of 1mg/kg (100units/kg).

The regimen should be selected by the secondary care physician based on an individual assessment including evaluation of the thromboembolic risk and of the risk of bleeding. The dose regimen of 1.5mg/kg administered once daily should be used in uncomplicated patients with low risk of VTE recurrence. The dose regimen of 1mg/kg administered twice daily should be used in all other patients such as those with obesity, with symptomatic PE, cancer, recurrent VTE or proximal (vena iliaca) thrombosis.

NICE Clinical Guideline (CG) 189 classifies obesity as a body mass index measurement (BMI) greater than 30.

For treatment of VTE (uncomplicated) dose banding has been agreed as follows:

Enoxaparin 1.5 mg/kg subcutaneously once daily	
Weight (kg)	**Dose**
40 – 46	60mg once daily
47 – 59	80mg once daily
60 – 74	100mg once daily
75 – 89	120mg once daily
90 – 110	150mg once daily
111 - 130	180mg once daily (80mg plus 100mg)
In renal impairment (GFR<30mL/min) give 1 mg/kg once daily	

For treatment of complicated VTE dose banding has been agreed as follows:

Enoxaparin 1mg/kg subcutaneously twice daily	
Weight (kg)	**Dose**
35-44	40mg twice daily
45-64	60mg twice daily
65-84	80mg twice daily
85-104	100mg twice daily
105-124	120mg twice daily
125 +	150mg twice daily
In renal impairment (GFR<30ml/min) give 1mg/kg once daily	

PROPHYLAXIS of DVT

The dose of enoxaparin should be amended in accordance with the patient's weight. The suggested doses of enoxaparin for thromboprophylaxis in non-pregnant adults are:

Weight	**<50kg**	**50-100kg**	**100-150kg**	**>150kg**
Enoxaparin	20mg daily	40mg daily	40mg twice daily	60mg twice daily

Dosage should be reduced to 20mg (2,000units) SC once daily in patients with severe renal impairment (creatinine clearance [15-30] ml/min)

Secondary Care Responsibilities	1. Confirm the diagnosis of VTE or the indication for extended prophylaxis. 2. Discuss the benefits and side effects of treatment with the patient. 3. Provide training on self-administration of enoxaparin if appropriate. 4. Provide sufficient enoxaparin for 10 days and a 1litre sharps bin. 5. Arrange for the patient to have an FBC at the specified times during the first 14 days of treatment (see Monitoring below) to rule out thrombocytopenia. Ensure that the patient knows when and where to attend for blood tests and ensure that the GP is informed of the baseline platelet count. 6. Arrange shared care with the patient's GP. 7. Advise the GP on: • the treatment to be prescribed including dose, frequency, indication and expected duration • the patient's weight and initial renal function • any monitoring that is required • when to stop treatment 8. Review the patient as necessary. 9. Ensure that clear backup arrangements exist for GPs to obtain advice.

Primary Care Responsibilities	1. Provide the patient with prescriptions for enoxaparin and a 1 litre sharps bin for the duration of treatment. 2. Ensure systems are in place for daily or twice-daily administration of enoxaparin if the patient is not self-administering. 3. Check dose is appropriate for patient's weight and renal function. 4. Arrange to carry out any monitoring that is advised by the consultant. 5. Report any adverse events to the consultant.
Monitoring	Heparin induced thrombocytopenia (HIT) is a rare side effect of heparin including LMWH. Thrombocytopenia, should it occur, usually appears between days 5 and 14 of treatment. • All patients should have a platelet count before starting treatment. • For patients who have been exposed to heparin of any sort in the last 100 days a platelet count 24 hours after starting enoxaparin should be obtained. • All patients should have a platelet count on days 7 and 14 post initiation. If a significant decrease in the platelet count is observed (>30% drop from the initial value) then enoxaparin must be discontinued immediately. Heparin can suppress adrenal secretion of aldosterone leading to hyperkalaemia. Potassium should be monitored before and during treatment in patients at risk e.g. renal impairment, diabetes mellitus and patients taking potassium sparing drugs. The referring consultant will specify if and with what frequency potassium should be monitored. Routine anti-Xa activity monitoring is not usually required but may be considered in patients at risk of under or over anticoagulation, e.g., in those with renal or hepatic impairment or at extremes of bodyweight. The referring consultant will specify if and with what frequency anti-Xa should be monitored.
Adverse Effects	• Bleeding may occur in the presence of associated risk factors e.g. lesions liable to bleed, invasive procedures or the use of medicines affecting haemostasis. Rarely, major haemorrhage. • Mild, transient, asymptomatic thrombocytopenia during the first few days of therapy. Rarely HIT (see MONITORING above). • Injection site reactions, usually mild and should not cause discontinuation of therapy. Seek advice if severe. • Long-term treatment with heparin increases the risk of osteoporosis.
Drug Interactions	Drugs affecting haemostasis, e.g. • antiplatelets • NSAIDs • systemic glucocorticoids • thrombolytics and anticoagulants If the combination cannot be avoided enoxaparin should be used with careful clinical and laboratory monitoring.

Contra-indications	• Active major bleeding and conditions with a high risk of uncontrolled haemorrhage, including recent haemorrhagic stroke, thrombocytopenia in patients with a positive in-vitro aggregation test in the presence of enoxaparin, active gastric or duodenal ulceration and severe liver disease. • Acute bacterial endocarditis. • Enoxaparin is not recommended in pregnant women with prosthetic heart valves. • Epidural anaesthesia/analgesia is not recommended within 12 hours of prophylactic doses or within 24 hours of treatment doses of enoxaparin.
This guidance does not replace the SPC's, which should be read in conjunction with this guidance.	