Health and Social Care Board

Interface Pharmacist Network
Specialist Medicines

Enoxaparin

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).

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: Dose should be calculated on patients current weight (in pregnancy use early pregnancy booking weight) and renal function.

Treatment of VTE, presenting as DVT, pulmonary embolism or both

1.5mg/kg once daily subcutaneously 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.
Severe renal impairment (CrCl<30ml/min)- 1mg/kg subcutaneously once daily.

Weight (kg)	Dose	Syringe to use	Concentration	Injection Volume
40	60mg sc once daily	60mg	100mg/ml	0.6ml
50	75mg sc once daily	80mg	100mg/ml	0.75ml
60	90mg sc once daily	100mg	100mg/ml	0.9ml
70	105mg sc once daily	*120mg	150mg/ml	0.7ml
80	120mg sc once daily	*120mg	150mg/ml	0.8ml
90	135mg sc once daily	*150mg	150mg/ml	0.9ml
100	150mg sc once daily	*150mg	150mg/ml	1ml

Prophylaxis of VTE in surgical patients

Standard dose 40mg subcutaneously once daily continued daily for 7-10 days, or until risk of thromboembolism has diminished.
Extended thromboprophylaxis: knee replacement surgery -10 to 14 days; hip replacement surgery, hip fracture and major cancer surgery in the abdomen or pelvis - treatment may be continued for four weeks post-operatively. (NICE2010)
Severe renal impairment: (CrCl<30ml/min) 20mg subcutaneously once daily.

Prophylaxis of VTE in medical patients

40mg subcutaneously once daily for a minimum of 6 days and continued until fully mobilised and/or patient is no longer at increased risk of VTE.
Severe renal impairment:(CrCl<30ml/min) 20mg subcutaneously once daily.

Treatment of VTE in pregnant patients

Do not use multidose vial

Antenatal: 1mg/kg 12hourly (based on early pregnancy booking weight) subcutaneously, usually for the remainder of pregnancy.

Postnatal: 1.5mg/kg/daily (seek specialist advise) subcutaneously for at least six weeks postpartum and to complete treatment period Severe renal impairment (CrCl<30ml/min): the specialist will advise on dose.

Prophylaxis of VTE in pregnant patients

Do not use multidose vial

Use early pregnancy booking weight.

Weight (kg)	Dose (mg)
<50	20mg subcutaneously once daily
50-90	40mg subcutaneously once daily
91-130	60mg subcutaneously once daily †
131-170	80mg subcutaneously once daily †
>170	0.6mg/kg subcutaneously once daily †

† may be given in two divided doses

Severe renal impairment (CrCl<30ml/min): the specialist will advise on dose
High prophylactic (intermediate) dose for women weighing 50-90kg: 40mg subcutaneously 12 hourly.
Post natal duration: 6 weeks for high risk and 7 days for intermediate risk. (RCOG37)

Available as

- Enoxaparin 20mg, 40mg, 60mg, 80mg, and 100mg prefilled syringes containing 100mg/mL solution for injection.
- Enoxaparin 120mg and 150mg prefilled syringes containing 150mg/mL solution for injection. (* note higher concentration)
- Enoxaparin multidose 300mg vial containing 100mg/mL solution for injection.

Hospital Specialist responsibilities

- 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:
  - Treatment to be prescribed, dose, weight, renal function, indication, 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 when ever 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

- Prescribe enoxaparin 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:
  - 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)
  - 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 patients 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

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.
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 .
Dosage may need to be reduced to lower the risk of haemorrhage due to drug accumulation in severe renal impairment (eGFR <30ml/min/1.73m^2) or CrCl<30ml/min.
No dose adjustments are recommended in obesity or low body weight, but careful clinical monitoring may be required in patients of low body weight.
Contraindications include: Major bleeding disorders including active peptic ulcer, severe thrombocytopenia, hypersensitivity to enoxaparin or other LMWH.

Common Drug Interactions

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.

Communication

For any queries relating to this patient's treatment with enoxaparin, please contact the specialist named at the top of this document.

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