Enoxaparin
Low Molecular Weight Heparin Shared Care Guideline

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.

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

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.

<table>
<thead>
<tr>
<th>Weight (kg)</th>
<th>Dose (mg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;50</td>
<td>20mg subcutaneously once daily</td>
</tr>
<tr>
<td>50-90</td>
<td>40mg subcutaneously once daily</td>
</tr>
<tr>
<td>91-130</td>
<td>60mg subcutaneously once daily †</td>
</tr>
<tr>
<td>131-170</td>
<td>80mg subcutaneously once daily †</td>
</tr>
<tr>
<td>&gt;170</td>
<td>0.6mg/kg subcutaneously once daily †</td>
</tr>
</tbody>
</table>

† 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.

Postnatal duration: 6 weeks for high risk and 7 days for intermediate risk. (RCOG37)
Contraindications include:
- Major bleeding disorders including active peptic ulcer, severe thrombocytopenia, hypersensitivity to enoxaparin or other LMWH.
- Major cause of death in patients with systemic lupus erythematosus, active peptic ulcer disease, and other severe gastrointestinal disorders.
- Active peptic ulcer, severe renal impairment (eGFR <30ml/min/1.73m²) 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.

Adverse Effects, Precautions and Contraindications

Hyperkalaemia: LMWH can cause hypoadosteronism, 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 management.

Dosage may need to be reduced to lower the risk of haemorrhage due to drug accumulation in severe renal impairment (eGFR <30ml/min/1.73m²) 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. antplatelets, 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.