Use of Low Molecular Weight Heparins (LMWH) (e.g. Tinzaparin) in Primary Care

Purpose & Scope

This guideline aims to provide sufficient information to ensure LMWHs are used safely and appropriately in primary care. It is aimed at all healthcare professionals involved in the prescribing, dispensing or administration of low molecular weight heparins for patients in primary care. It aims to cover all indications (licensed and unlicensed) for the prevention or treatment of venous thromboembolism. It is applicable to all patients who are to receive a LMWH and have been discharged from hospital, are still under the routine care of a hospital specialist through outpatient follow up, or who are being managed purely by a primary care clinician. It is not intended to guide management of inpatients in hospital or in a community hospital; the relevant Trust policies should be consulted in this instance.

Introduction & Background

Venous thrombosis is a condition in which a blood clot (thrombus) forms in a vein. Blood flow through the affected vein can be limited by the clot, causing swelling and pain in the affected limb or area. Venous thrombosis most commonly occurs in the ‘deep veins’ in the legs, thighs, or pelvis. This is known as a deep vein thrombosis. An embolism is created if a part or all of the blood clot in the deep vein breaks off from the site where it is created and travels through the venous system. If the clot lodges in the lung a very serious condition, pulmonary embolism (PE), arises, which can be life threatening. Venous thrombosis can form in any part of the venous system. However, deep vein thrombosis (DVT) and PE are the most common manifestations of venous thrombosis. DVT and PE are known as venous thromboembolism (VTE).

Low Molecular Weight Heparins

LMWHs are used in the ‘prevention’ of VTE (prophylaxis) in patients at moderate to high risk, and are given in a low dose.

LMWHs are also used in the ‘treatment’ of VTE in patients who develop a DVT or PE and are given in a higher dose.

As LMWHs work very quickly, they are used concurrently with warfarin in the first few days of treatment for patients with VTE and are continued until the INR is in the target range. Once the INR is in the target range for 24 hours (showing that the warfarin is working sufficiently) then the LMWH is stopped. However, not all patients can take warfarin and therefore LMWHs are sometimes used for longer periods of time instead of warfarin.

When used for prevention of VTE, LMWHs are given for as long as the patient is deemed to be at high risk, and then they are stopped.

East Lancashire Health Economy Choice of LMWH is Tinzaparin

There are a number of LMWHs licensed for both prevention and treatment of DVT/PE in the UK. The LMWH agreed for use in both treatment and prophylaxis of VTE in East Lancashire Hospitals for medical, surgical and obstetric patients is Tinzaparin.

For prophylaxis use the 10,000 units / mL syringes. A fixed dose of 4,500 units is recommended for all patients, unless there is high risk of bleeding, in extremes of body weight or in maternity.

For treatment of PE/VTE it is vital that patients are weighed using appropriate equipment, that their weight is accurately recorded, and that the dose of tinzaparin is accurately calculated based on their weight.

For treatment a higher strength 20,000 units / mL range of syringes is available. The dose to be given, and the syringe to be prescribed should only be calculated by weighing the patient and using the charts inside.

How to use this guideline

Secondary Care Specialists

Read the introduction above. Pages 2, 3 and 4 contain guidance for specific indications. Check whether prescribing for the whole course is your responsibility (i.e. via outpatient prescriptions) or whether the GP can be asked to prescribe. For treatment of VTE ensure the patient has been accurately weighed to calculate the correct rounded-up dose and if self-administering that the patient is trained. Communication to GP/primary care (discharge letter) must include the indication, dose, strength and volume of syringe (mLs & units), monitoring requirements, renal status, patient weight and treatment duration. Where referral to district nurse / treatment room is required refer to page 6. Patients must be supplied with written information about their treatment that is understood.

Primary Care Prescribers

Read the introduction above. Go to the central page relevant to the indication you have been asked to prescribe for. Check whether you should prescribe the remainder of the course, or whether the specialist should do so. Follow this advice. If RED indication refer back to the specialist. If AMBER, prescribe including the indication, strength of syringe, dose, weight of patient (treatment dosing only) on the FP10. The weight and indication will need to be added by hand, but are essential. Ensure the patient can self-administer. Where district nursing (housebound pts) or treatment room referral required, refer to last page. Ensure patient written information in a suitable format has been supplied, and is understood.

Nursing or Pharmacy Staff involved in Dispensing or Administration

Nursing and Community pharmacy staff should follow the guidance on the last page to facilitate the checking, dispensing and administration of tinzaparin prescriptions in primary care.

Authorship & Governance – Version 4

This best practice guideline was originally developed with a multi-disciplinary input from across a variety of specialties, with representation from primary and secondary care including CCG and provider services across East Lancashire Health Economy. It should be read in conjunction with the Summary of Product Characteristics for Tinzaparin, which gives advice regarding the licensed uses for tinzaparin.

This third version of the best practice guideline was updated & approved by the East Lancashire Medicines Management Board and can be found online at www.elmmb.nhs.uk, click on Shared Care.

PREVENTION of DVT/PE in MEDICAL & SURGICAL PATIENTS

Prevention of VTE in patients at moderate to high risk

PLEASE NOTE THE DOSES USED IN ELHT FOR PROPHYLAXIS DIFFER FROM THE USUAL LICENSED DOSES

Patients on oral anticoagulation do not require tinzaparin or may be bridged with tinzaparin for surgical procedures – see The Peri-Procedural Management of Patients on Oral Anticoagulants and Antiplatelet medicines guidance.

TINZAPARIN 10,000 units/mL strength syringes Caution: there are two strengths of syringes available

<table>
<thead>
<tr>
<th>Specialty</th>
<th>Indication</th>
<th>Licensed</th>
<th>Duration</th>
<th>Traffic Light</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Surgery or Medicine</td>
<td>Immobile patients or those deemed to be at particularly high risk of DVT at home or in care situation</td>
<td>No</td>
<td>For as long as patient is immobile and/or at higher risk of DVT/PE</td>
<td>AMBER</td>
</tr>
</tbody>
</table>

Assessment of risk should be made on an individual basis but it is likely that recent major surgery (within 1 month), active malignancy, previous unprovoked VTE, previous travel-related VTE with no associated temporary risk factor or presence of more than one risk factor identifies those travellers at highest thrombosis risk. Travellers at the highest risk of travel-related thrombosis undertaking journeys of >3 h should wear well fitted below knee compression hosiery. In unusual circumstances where the patient is deemed to be at an additionally high risk, consultant haematologist advice is necessary to discern when pharmacological prophylaxis is considered appropriate using LMWH. Arrange for self-administration or district nurse (housebound pts) or treatment room nurse, and consider need for compression hosiery. The person should be advised on the safe storage and disposal of ‘sharps’, and should be given a letter for security, immigration, and customs officials that explains why it is medically necessary for them to carry needles and syringes when travelling. Ref. British Journal of Haematology, 152, 31–34

RED Traffic Light - Not for GP prescribing. Whole course supplied by hospital. Nursing staff may still administer with written authorisation. Prescribers should ensure adequate supplies for patients are prescribed as they will not be able to obtain via GP

Dosing in Prophylaxis for Surgical and medical patients

<table>
<thead>
<tr>
<th>Weight</th>
<th>Dose</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;50kg</td>
<td>3500 units</td>
<td>Once daily</td>
</tr>
<tr>
<td>50-100kg</td>
<td>4500 units</td>
<td>Twice daily</td>
</tr>
<tr>
<td>&gt;100 – 150kg</td>
<td>4500 units</td>
<td>Twice daily</td>
</tr>
<tr>
<td>&gt;150kg</td>
<td>7000 units</td>
<td>Twice daily</td>
</tr>
</tbody>
</table>

# use 0.35mL of a 0.4mL 20,000 unit/mL treatment dose syringe to administer a 7000 unit dose

The 4500 unit in 0.45mL syringe has a blue cap

The 3500 unit in 0.35mL syringe has a green cap

PLEASE NOTE THE DOSES USED IN ELHT FOR PROPHYLAXIS DIFFER FROM THE USUAL LICENSED DOSES

Choosing the correct dose, strength of syringe, and then size of syringe

PLEASE NOTE that there are VARIETY OF DIFFERENT volumes of Tinzaparin syringes available - PLEASE MAKE SURE YOU HAVE SELECTED THE CORRECT ONE.

Use of Low Molecular Weight Heparins (LMWH) (e.g.Tinzaparin) in Primary Care – BEST PRACTICE GUIDELINE V4
East Lancashire Healthcare Economy
Review date October 2020
### PREVENTION of DVT/PE during PREGNANCY and following delivery

**Prevention of DVT/PE in pregnant patients at moderate to very high risk**

**PLEASE NOTE THE DOSES USED IN PREGNANCY FOR PROPHYLAXIS DIFFER FROM THE USUAL LICENSED DOSES**

**TINZAPARIN 10,000 units/mL strength syringes**

Caution: there are two strengths of syringes available

This guidance below summarises the East Lancashire Hospitals Trust guidelines which are based upon the Royal College of Obstetrics & Gynaecology Guidelines for Thromboprophylaxis during pregnancy, labour and after vaginal delivery (April 2015, Green Top Guideline no. 37). It does not address prophylaxis following caesarean section or the acute management of VTE in pregnancy, which is covered further on.

**MODERATE TO HIGH RISK PATIENTS: NOT ON WARFARIN PRIOR TO PREGNANCY**

**Note:** The table below is an abridged version of the full ELHT guideline which should be referred to for definitive guidance. This table is to give a quick reference guide to this complex area.

<table>
<thead>
<tr>
<th>RED Traffic Light - Not for GP prescribing. Whole course supplied by hospital. Nursing staff may still administer with written authorisation. Prescribers should ensure adequate supplies for patients are prescribed as they will not be able to obtain via GP</th>
<th>Indication</th>
<th>Licensed</th>
<th>Duration</th>
<th>Traffic Light</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very high</td>
<td>Previous VTE on long-term warfarin Antithrombin deficiency. Antiphospholipid syndrome with previous VTE</td>
<td>No</td>
<td>Recommend antenatal high-dose LMWH and at least 6 weeks postnatal LMWH/warfarin. Requires specialist management by experts in haemostasis and pregnancy.</td>
<td>RED</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>Previous recurrent or unprovoked VTE. Previous estrogen-provoked (pill or pregnancy) VTE Previous VTE + thrombophilia. Previous VTE + family history of VTE Asymptomatic thrombophilia (combined defects, homozygous factor V Leiden).</td>
<td>No</td>
<td>Recommend antenatal and 6 weeks postnatal prophylactic LMWH.</td>
</tr>
<tr>
<td>Intermediate</td>
<td>Single previous VTE associated with transient risk factor no longer present without thrombophilia, family history or other risk factor. Asymptomatic thrombophilia (except antithrombin deficiency, combined defects, homozygous factor V Leiden).</td>
<td>No</td>
<td>Consider antenatal LMWH (but not routinely recommended). Recommend 6 weeks postnatal prophylactic LMWH. Recommend 10 days (or 6 weeks if family history or other risk factors) postnatal prophylactic LMWH.</td>
<td>RED</td>
</tr>
</tbody>
</table>

**Weight:** Use pre-pregnancy or booking weight at approximately 16 weeks, NOT the current weight.

**Dosing in Prophylaxis of DVT and PE during PREGNANCY and following DELIVERY**

<table>
<thead>
<tr>
<th>Weight</th>
<th>&lt;50kg</th>
<th>50-90kg</th>
<th>91 – 130kg</th>
<th>131 - 170kg</th>
<th>&gt;170kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>3500 units</td>
<td>4500 units</td>
<td>7000 units</td>
<td>9000 units</td>
<td>75units/kg/day*</td>
<td></td>
</tr>
<tr>
<td>Once daily</td>
<td>Once daily</td>
<td>Daily*</td>
<td>Daily*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*may be given in two divided doses

**Dosing for HIGH Prophylaxis of DVT and PE during PREGNANCY and following DELIVERY**

<table>
<thead>
<tr>
<th>Weight</th>
<th>50-90kg</th>
<th>4500 units</th>
<th>12 hourly</th>
</tr>
</thead>
</table>

The 4500 unit in 0.45mL syringe has a blue cap

The 3500 unit in 0.35mL syringe has a green cap

**IMPORTANT INFORMATION**

Once the woman is in labour or thinks she is in labour, she should be advised not to inject any further low molecular weight heparin (e.g. tinzaparin). She should be reassessed on admission to hospital and further doses should only be prescribed by medical staff.

Regardless of their risk of VTE, immobilisation of women during pregnancy, labour and the puerperium should be minimised and dehydration should be avoided.

Warfarin should usually be avoided during pregnancy. It can be used after delivery and during breastfeeding.

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Use of Low Molecular Weight Heparins (LMWH) (e.g. Tinzaparin) in Primary Care – BEST PRACTICE GUIDELINE V4

East Lancashire Healthcare Economy

Review date October 2020
Treatment of DVT/PE in all patients

Treatment of DVT/PE in all patients

TINZAPARIN 20,000 units/mL strength syringes

Full anticoagulation of patients with a diagnosis (or working diagnosis) of DVT/PE

<table>
<thead>
<tr>
<th>Specialty</th>
<th>Indication</th>
<th>Licensed</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AMBER Traffic Light</strong> - For initiation by or on the recommendation of a specialist, and continuation by a primary care prescriber with the relevant competencies to do so. Nursing staff may still administer with written authorisation.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Medicine / Emergency Department</td>
<td>Treatment of suspected DVT only whilst awaiting scan or scan results, usually only over a weekend</td>
<td>Yes</td>
<td>Until warfarin is in range, or scan is negative</td>
</tr>
<tr>
<td>Oncology</td>
<td>Treatment of DVT/PE in an oncology patient with a solid tumour. Tinzaparin given first line (as is superior to warfarin) for the whole of the treatment course. Also given in place of warfarin for patients undergoing chemotherapy that interacts with warfarin</td>
<td>Yes</td>
<td>6 months – DVT and PE then review (NICE CG144)</td>
</tr>
<tr>
<td>General Medicine</td>
<td>Warfarin replacement. Full anticoagulation required but where warfarin is not appropriate or not tolerated, or where INR is out of range with warfarin. Including but not exclusively patients with NG/PEG tubes, hepatic failure, erratic lifestyle (e.g. IV drug abuser), unable to monitor INR, warfarin allergy</td>
<td>No</td>
<td>As per intended duration of warfarin treatment. Usually, 3 to 6 months – DVT 6 months - PE OR as stated by the specialist</td>
</tr>
<tr>
<td>All Surgical Specialities</td>
<td>Warfarin replacement. Given pre-operatively for up to 5 days up until the day of surgery instead of taking warfarin. Allows INR to fall before operation</td>
<td>No</td>
<td>As directed by the surgeon</td>
</tr>
<tr>
<td><strong>RED Traffic Light</strong> - Not for GP prescribing. Whole course supplied by hospital. Nursing staff may still administer with written authorisation. Prescribers should ensure adequate supplies for patients, as they will not be able to get additional supplies from their GP.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All Medical &amp; Surgical Specialities</td>
<td>Given post-operatively in conjunction with warfarin whilst waiting for the INR to come into range</td>
<td>No</td>
<td>Until INR is in range, for a minimum of 6 days treatment with tinzaparin</td>
</tr>
<tr>
<td>Obstetrics &amp; Gynaecology</td>
<td>Treatment of DVT/PE in pregnancy. First line treatment of choice.</td>
<td>No</td>
<td>During pregnancy and for at least 6 weeks post-natally, until at least 3 months is given in total</td>
</tr>
<tr>
<td>Obstetrics &amp; Gynaecology</td>
<td>Patients with mechanical heart valves or those on long term warfarin prior to pregnancy should be discussed by obstetrics/gynaecology consultants with consultant cardiologists/haematologists, ideally before pregnancy</td>
<td>No</td>
<td>As advised by the specialist. Likely to be throughout pregnancy in place of warfarin.</td>
</tr>
</tbody>
</table>

**TINZAPARIN TREATMENT DOSE IN ADULTS**

Syringes and vial containing 20,000 units/mL

Based on Tinzaparin 175units/kg bodyweight once daily. Round up or down to the nearest 0.05mL dose volume.

**ADMINISTRATION**

By subcutaneous injection only

**Example Prescription**

The dosing chart to aid in selecting the right dose and syringe strength should be used at all times

Mr. A. Jones Weight: 75kg

Dose calculation: 75kg patient requires Tinzaparin 13,000 units = 0.65mL (from a yellow 0.7mL syringe containing 20,000 units / mL)

Prescribe: Tinzaparin – supply 36 syringes

Strength: 20,000 units/mL

Syringe size: 0.6mL

Dose: 0.65mL (13,000 units) once daily by subcutaneous injection. Treatment of DVT in a patient weighing 75kg. PLUS one 1L Sharpesafe bin with yellow lid.

**PLEASE NOTE** that there are a variety of different volumes of Tinzaparin syringes available, and one multidose vial – PLEASE MAKE SURE YOU HAVE SELECTED THE CORRECT ONE
Contraindications
- Recent cerebral haemorrhage or acute cerebral infarct
- Uncontrolled hypertension (BP > 210/120 mmHg)
- Active peptic ulcer disease or oesophageal varices
- Severe liver disease
- Thrombocytopenia (Platelets < 80 x 10^9/L)
- Active bleeding or raised BASELINE INR >1.5 - seek advice
- Previous heparin induced thrombocytopenia
- Prophylactic doses are not required if receiving therapeutic anticoagulation (e.g. Warfarin)
- Endocarditis
- Recent neurosurgery or eye / ear surgery
- Patients aged 90 years or over who have renal insufficiency
- Impending miscarriage or abortion
- Hypersensitivity to active ingredients

Treatment doses of low molecular weight heparin (e.g. tinzaparin) should not be given in conjunction with spinal or epidural anaesthesia. For prophylactic doses see ‘Thromboprophylaxis Guidelines’ online at www.elmmh.nhs.uk

Cautions
Tinzaparin should be used with caution in patients with a history of asthma due to the presence of sodium bisulphite.

Caution is recommended in the treatment of patients with renal impairment, however within ELHT dose adjustment for prophylaxis is not considered necessary. In moderate renal impairment (GFR<30ml/min) for treatment doses consider monitoring of anti-factor Xa. and in severe impairment (GFR < 20mL/min) seek urgent advice from hospital pharmacy/haematology. Note contraindication in patients over 90yrs with renal impairment above.

Renal Function
For those initiating LMWH at treatment dose, renal function tests should be carried out. This should not delay the first dose but subsequent dosing must be based on renal function.

Weight
The patients weight is required to calculate the appropriate dose of LMWH, and should be recorded in the patients records. Patients should be weighed at the start of therapy and, where applicable, during treatment. In exceptional circumstances, when a patient cannot be weighed, obtain the body weight from patients (or carers) as this is a more reliable source of information than estimates by healthcare staff. Patients who are morbidly obese (BMI=40 kg/m2) may be considered for anti-Xa levels monitoring and treatment dose adjustments.

Licensing of Tinzaparin & other LMWH's
Tinzaparin has been recommended for use locally in some indications for which it is not licensed, but where it is defined that it is best practice to use a LMWH, and specifically tinzaparin in this manner. Tinzaparin has been chosen as the product of choice locally, in line with the NPSA Alert to rationalise the use of LMWHs. Healthcare professionals should follow normal procedures and adhere to their professional guidance when prescribing, dispensing or administering a licensed preparation in an indication/method it is not licensed for, as they would in any other similar situation.

Monitoring of blood results
Heparin Induced thrombocytopenia (HIT)
- HIT is a possible complication of treatment with heparins. The immune-mediated type usually occurs 7-11 days (up to 20 days) after initiating treatment
- Patients who are to receive any type of heparin require a baseline platelet count
- No further monitoring is required during or following treatment unless clinically indicated (e.g. following cardiopulmonary bypass) or if the patient has received heparin in the preceeding 100 days
- Post-operative patients and cardiopulmonary bypass patients who have been exposed to heparin in the previous 100 days should have a platelet count 24 hours after starting heparin.
- Medical patients receiving heparin do not need routine platelet monitoring
- If the platelet count falls by 30% or more or the patient develops new thrombosis or skin allergy or any other of the rarer manifestations of HIT between Day 4 and 14 consider a diagnosis of Heparin Induced Thrombocytopenia and discuss with a haematologist URGENTLY.
- There is NO need to monitor the anticoagulant activity of tinzaparin (e.g INR or APTT).

It is the responsibility of the prescriber who initiates tinzaparin to arrange patients attendance for any blood tests. Either directly at the hospital, or with prior agreement with the GP, in primary care.

Side Effects
Skin rashes / minor bruising: These can occur at the site of injection occasionally. Systemic allergic reactions have been reported extremely rarely.
Haemorrhage: LMWHs have been shown to increase the risk of haemorrhage. However, at the recommended dose this risk is low.
Thrombocytopenia: As with heparin, thrombocytopenia may occur rarely.
Skin necrosis: This has been reported. If this occurs treatment must be withdrawn immediately.
Priapism: This has been reported rarely.
Liver Function Tests: As for heparin, a transient increase in aminotransferase levels is frequently seen. Cessation of treatment is not usually required.
Hyperkalaemia: LMWHs can suppress adrenal secretion of aldosterone leading to hyperkalaemia, particularly in patients such as those with diabetes mellitus, chronic renal failure, pre-existing metabolic acidosis, a raised plasma potassium or taking potassium sparing drugs. The risk of hyperkalaemia appears to increase with duration of therapy but is usually reversible. The SPC recommends that plasma potassium should be measured in patients at risk before starting LMWH therapy and monitored regularly thereafter particularly if treatment is prolonged beyond about 7 days. However, the Royal College of Physicians and the British Society of Haematology take a more pragmatic approach advising that the development of symptomatic hyperkalaemia appears to be unlikely in the absence of an additional cause of hyperkalaemia.
Osteoporosis: Long-term LMWH use can cause osteoporosis but the absolute risk of symptomatic osteoporosis is unknown. Several lines of evidence now suggest that LMWHs are associated with a lower risk of osteoporosis than heparin. The conclusion from the data at present is that LMWH is preferred for long-term use and clinicians and patients should be aware of the risks of osteoporosis and consider this knowledge when determining the risk–benefit ratio of LMWH therapy.
Overdose: Emergency advice should be sought immediately Protamine reverses the anticoagulant effect of LMWHs incompletely (about 75-85%), although there is anecdotal evidence of clinical benefit in the bleeding patient. The risks and benefits of reversal should be weighed against the risks of overdose.
Administration

It is not necessary to remove the air bubble from the prefilled syringe before the injection as injection of the small air bubble is quite harmless. Avoiding the removal of the air bubble saves nursing time and helps avoid injection fluid on the tip of the needle, which might cause pain during injection.

It is recommend that tinzaparin should be injected into the abdominal fat layer. Other sites of injection can be used without problems. Administration should be avoided within 5cm of the umbilicus and should be alternated between the left and right side.

A skin fold should be held between the thumb and forefinger and the entire length of the needle inserted at an angle of 90 degrees into the skin fold. The skin fold should be held during the injection and the solution slowly and fully injected.

Provision of Patient Information

It is the responsibility of the initiating prescriber to give patients adequate information about their condition, and their treatment.

Although a patient information leaflet is included alongside any dispensed medication, patients should also be given additional information which is available from the Manufacturer – Leo Pharmaceuticals whose website www.VTE-support.com (password code: innohep) provides a range of patient specific materials including self-injection guidance.

 Patients can also access information online at http://www.medicines.org.uk. Just search for ‘tinzaparin’ for additional patient information produced by the NHS and the pharmaceutical industry.

Out of area, or private referrals?

Patients initiated on any LMWHs from other NHS hospitals or providers should be managed in line with this guidance. This may involve referring prescribing back to the specialist where the indication is RED, or considering changing the patient from another LMWH to tinzaparin where it is AMBER & where the GP is happy to prescribe. Advice should be sought from a member of the PCT medicines management team to advise and facilitate this where necessary.

Patients from private providers should be managed in the same way. People who opt to be referred privately (i.e. outside the NHS) are expected to pay the full cost of any treatment they receive in relation to the referral, including that of any drugs and appliances. Following a private consultation, there is no obligation for the GP to prescribe the recommended treatment if it is contrary to his/her normal clinical practice.

Self Administration?

Patients should be taught how to self-administer tinzaparin, and the majority of patients will be able to do so, or have a carer do so. It is the responsibility of the prescriber initiating treatment to ensure patients and/or their carers are adequately trained where they are to self administer (also see Provision of Patient Information above).

Waste Disposal: Where people inject themselves it is their responsibility to dispose of any waste, clinical or household, that arises in a responsible way. The innohep syringes are supplied in plastic sleeves which are suitable for patients to re-use after administration – and provide adequate sharps protection. However, patients can be supplied with a 1L yellow SharpsSafe®1L bin on an FP10 prescription. The syringes come with a needle already attached. Only fill sharps boxes to 2/3 full before replacing. The sharps bin should be returned to the practice or selected community pharmacists for disposal.

• The PCT administration chart should be completed and signed to allow the nursing staff to see the indication, dose and duration of treatment, patients weight, and allow them to record their administration against this authorisation.
• The PCT administration chart should be completed and signed prior to faxing to District Nurse Liaison. A new detailed transfer form for faxing is also being introduced which will provide additional information such as patient weight, indication, duration and monitoring information.

Guidance for community pharmacists or for nursing staff checking prescriptions for tinzaparin

Community pharmacists and nursing staff should have access to the following information prior to dispensing or administering tinzaparin.

This can be obtained from the patient where possible, or confirmed with the prescriber where missing and this should be recorded:

• Indication: whether prophylaxis or treatment is intended (and whether the patient is pregnant where relevant). This is needed to be able to check the appropriate dose.
• Strength of syringe required: There are two strengths available 10,000 units/mL and 20,000 units/mL.
• Volume of syringe required: There are nine different volumes of syringe, three in the lower strength, and six in the higher strength. There are also multidose vials available.
• Weight of patient: This is required to check that the appropriate dose has been prescribed.
• Dose in International units and in millilitres: The dosing charts on the inside of this guidance should be used to check the dose.
• Frequency of administration: Always given sub-cutaneously, usually self administered.
• Timing of administration: Tinzaparin should be given once daily ideally around the same time of day (exception is twice daily in some pregnant patients and patients with high body weight). In any single 24 hour period the dose time may be occasionally be varied by up to 2 hours before or after the dose time. However, where the dose timing for administering requires amending to facilitate administration (e.g. after hospital discharge), it is acceptable to move the dose time forwards or backwards on one occasion. As long as a dosing gap of at least 12 hours has occurred.

Guidance for community pharmacists dispensing tinzaparin

Community pharmacists are advised to produce Standard Operating Procedures to govern the checking and dispensing of prescriptions for tinzaparin, and potentially other LMWHs. It should be noted that the community pharmacist should have the relevant information outlined above prior to dispensing any prescription, and should obtain this from the patient, or from the GP where it is missing. Community pharmacists are advised to keep minimum stocks of tinzaparin where possible to ensure that patients do not miss doses. In addition, patients should be counselled to order prescriptions in advance of running out of stocks to prevent this.

SharpSafe® bins are allowed on an FP10 Prescription. They are listed in the Hypodermic Equipment/Accessories Section of Part IXA of the Drug Tariff and have a fixed Drug Tariff Price. This product is a 1L bin and has a fixed reimbursement price. Sharps bins are now availablewith different coloured lids, it is therefore important that when supplying sharps bins to a patient, a bin with an appropriate lid colour is supplied. Yellow lidded bins are suitable for sharps that are contaminated with medicinal products, other than cytotoxic drugs.

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