Enoxaparin

BSUH Guidance on Therapeutic Dosing for Treatment of Venous Thromboembolism (VTE)

Treatment dose enoxaparin should only be prescribed for VTE patients with haemodynamic instability and for those who may require thrombolysis or any interventions or surgery during the current admission. NICE recommends that all other patients receive a Direct Acting Oral Anticoagulants (apixaban or rivaroxaban) as first line treatment for VTE unless there are any contra-indications. See Diagnosis and Management of Venous Thromboembolism for a brief overview of this guidance. Patients with BMI >40 or weight > 120kg, active cancer, severe renal impairment (provided creatinine clearance is > 15ml/min, see below) or antiphospholipid syndrome should also receive treatment dose enoxaparin rather than a Direct Oral Anticoagulant.

For all patients dose regimens and choice of anticoagulant should be selected by the physician based on individual assessment including evaluation of the thromboembolic risk and of the risk of bleeding.

Before prescribing enoxaparin for treatment of VTE, measure baseline full blood count, renal and hepatic function, PT and APTT but start anticoagulation before results available. Review and if necessary act on results within 24 hours.

**Enoxaparin should be prescribed by brand to ensure continuity of care as devices differ. BSUH current preferred brand is the enoxaparin biosimilar Inhixa**

*Standard VTE dose

Enoxaparin 1.5mg/kg once daily injected subcutaneously

*High risk VTE dose

Enoxaparin 1mg/kg twice daily injected subcutaneously

* High risk groups:

- Acute VTE with large clot burden e.g. massive PE, iliac vein thrombosis
  Discuss with senior if unsure
- Acute VTE on therapeutic anticoagulant for previous VTE with no evidence of subtherapeutic use
  Discuss with senior if unsure
- Consideration should be given to increasing to 1mg/kg twice daily for patients with BMI > 40 or weight > 120kg based on anti- xa level monitoring (target 0.5-1.0 units/ml, take 4-6 hours after 3rd dose). Seek advice from haematology
- Careful consideration should be given to risk of thrombosis versus risk of bleeding in patients with cancer. In the majority of cases, these patients can receive 1.5mg/kg once daily. However, in cancer patients with a high clot burden, failure on treatment dose anticoagulation and additional risk factors such as obesity and previous history of VTE, the 1mg/kg bd dosage regime should be used.
- Patients with mechanical heart valves on warfarin (with target INR 2.5-3.5 or 3-4) with INR<2
  Unlicensed use.

*This dosing regime differs from the SPC and is based on the King’s College Hospital VTE exemplar site protocol*3,4,5,6,7

Click here for dosage and administration charts,
Prescribed doses must be rounded up or down to available syringes
Renal impairment - creatinine clearance 15-30 ml/min

Enoxaparin 1mg/kg once daily injected subcutaneously

Anti-Xa monitoring should be considered for prolonged use (more than 5 days), levels should be checked on day 3 and then levels should be monitored twice weekly. Anti-Xa levels to be checked 4 hour post dose. Contact pathology lab to discuss.

Severe renal impairment – creatinine clearance less than 15ml/min

Not recommended. Use standard heparin infusion.

Monitoring

- **Platelets** – Heparin-Induced Thrombocytopenia/Thrombosis (HITT) can occur in <1% of patients. All patients who are to receive enoxaparin should have a baseline platelet count before starting
  - Post-operative patients and cardiopulmonary bypass patients who have been exposed to heparin in the previous 100 days and are receiving enoxaparin should have a platelet count determined 24 hours after starting.
  - Post-cardiopulmonary bypass patients receiving enoxaparin should have platelet count monitoring performed every 2–3 days from days 4 to 14 or until enoxaparin is stopped.
  - Post-operative patients (other than cardiopulmonary bypass patients), medical patients and obstetric patients receiving enoxaparin do not need routine platelet monitoring.
  - If the platelet count falls by 30% or more and/or the patient develops new thrombosis or skin allergy or any of the other rarer manifestations of heparin-induced thrombocytopenia (HIT) between days 4 and 14 of heparin administration, HIT should be considered and a clinical assessment made.
- **Haemorrhage** – monitor for extensive bruising and bleeding
- **Hyperkalaemia** – occurs in <0.1% patients due to suppression of adrenal secretion of aldosterone. Potassium levels should be monitored weekly in diabetes, CKD, pre-existing metabolic acidosis or if on drugs that increase potassium levels (i.e. potassium sparing diuretics).
- **Renal function** – dose may need to be altered if renal function deteriorates

See [enoxaparin smpc](#) for more detailed prescribing information

Click here for [BSUH Guidance on Thromboprophylaxis, Thrombosis and Coagulopathy in Covid-19](#)
References:

3. Anticoagulation Guideline, King’s Thrombosis Centre Kings’ Thrombosis Centre Anticoagulation Guideline May 2020

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