University Hospitals Sussex
NHS Foundation Trust

Enoxaparin

Therapeutic Dosing For Treatment of Venous Thromboembolism (VTE)

Royal Sussex County and Princess Royal Hospitals only

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. Treatment dose Enoxaparin is also the only option for patients with VTE in pregnancy and may be the best option for patients with underlying malignancy.

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 >50 or weight > 150kg, 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 patients weighing 120kg-150kg, BMI ≤ 50 see microguide for which DOACs are suitable.

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. UHSussex East current preferred brand is the enoxaparin biosimilar Inhixa

Uncomplicated patients with low risk of VTE recurrence

Enoxaparin 1.5mg/kg once daily injected subcutaneously

All other patients such as those with symptomatic PE, obesity, cancer, recurrent VTE or proximal (iliac vein) thrombosis

Enoxaparin 1mg/kg twice daily injected subcutaneously

Mechanical Heart Valves (unlicensed indication)

Patients with mechanical heart valves on warfarin (with target INR 2.5-3.5 or 3-4) with INR<2 can also be considered for 1mg/kg twice daily dose

Patients with active cancer

In the extended treatment of deep vein thrombosis (DVT) and pulmonary embolism (PE) and prevention of its recurrence in patients with active cancer, physicians should carefully assess the individual thromboembolic and bleeding risks of the patient.

The recommended dose is 1 mg/kg administered twice daily by SC injections for 5 to 10 days, followed by a 1.5 mg/kg once daily SC injection up to 6 months. The benefit of continuous anticoagulant therapy should be reassessed after 6 months of treatment **(SmPC Inhixa)**

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

References:

1. **Inhixa, summary of product characteristics Electronic Medicines Compendium accessed 14/09/22 https://www.medicines.org.uk/emc/product/782**
2. **NICE Guidance NG158 Venous thromboembolic diseases: diagnosis, management and thrombophilia Testing 26 March 2020 https://www.nice.org.uk/guidance/ng158**
3. **Martin, A et al Use of direct oral anticoagulants in patients with obesity for treatment and prevention of venous thromboembolism: Updated communication from the ISTH SSC Subcommittee on Control of Anticoagulation Journal of Thrombosis and Haemostasis 2021 19 (8): 1874-1882**
4. **Watson, H Guidelines on the Diagnosis and Management of Heparin-Induced Thrombocytopenia (2nd Edition) British Journal of Haematology, 2012, 159 (5): 528-540**
5. **Hughes, S et al. Anticoagulation in chronic kidney disease patients—the practical aspects Clin Kidney J. 2014 Oct; 7(5): 442–449.**

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