Frequently asked questions regarding Low molecular weight Heparin drugs (Enoxaparin, Dalteparin).

1. **What doses are required for prophylaxis and treatment.**

Considering Dalteparin the prophylactic doses is at least 5000 iu daily (unless the patient has significant renal impairment with a GFR of < 20) and the treatment dose is 200 iu / kg / once daily.

In the case of Enoxaparin the prophylactic doses is at least 40mg once daily (unless the patient has significant renal impairment with a GFR of < 20) and the treatment dose is 1.5 mg / kg / once daily.

2. **Is there a minimum GFR to safely prescribe LMWH**

Generally this is fine as long as the creatinine clearance / GFR is $\geq$ 20. Under this level we would normally recommend using unfractionated heparin in view of its shorter half-life.

3. **Why do some patients experience an increase in potassium levels whilst receiving unfractionated or low molecular weight heparin (LMWH).**

Heparin can interfere with the effects of the kidney hormone aldosterone hence slowing the renal clearance of potassium.

4. **What is the risk of Heparin induced Thrombocytopenia (HIT) using LMWH and is platelet count monitoring necessary?**

Unlike the situation using unfractionated calcium heparin where the risk can be ~ 5% between days 4 and 14 of treatment, the risk with LMWH is < 1% hence routine platelet count monitoring is not required.

5. **Are anti-Xa levels required when using therapeutic doses of LMWH to treat a venous thromboembolus (VTE).**

These are only needed for those patients with GFRs < 30 who need a prolonged course of > 10 days. Other indications include:-

- Patients with a VTE and known antithrombin deficiency because for these patients much higher doses of LMWH will be required to trigger effective anticoagulation.
- If a venous thrombosis occurs during pregnancy because the renal clearance can be enhanced.
- Progressive VTEs in patients with active cancer.
- VTEs in patients with extremes of body weights especially < 50 or > 100 kg.

6. If indicated when should anti-Xa levels be checked

3 to 4 hours post-morning injection. A citrate blue top sample is required.

7. If indicated what anti-Xa levels are recommended when managing an acute VTE

Once daily Enoxaparin or Dalteparin recommend a level between 1 – 2.0 iu/ml
Twice daily Enoxaparin or Dalteparin recommend a level between 0.5 – 1.0 iu/ml

8. What is a safe platelet count to allow LMWH to be used.

If the platelet count is $\geq$ 50 full dose treatment is fine but if the count is 30 < 50 recommend only using 50% of the therapeutic dose and if the count is < 30 best to stop LMWH.

9. What gap is required post-injection of LMWH to allow an invasive procedure or surgery to safely go ahead (assuming normal renal function).

Prophylactic doses of Enoxaparin or Dalteparin – at least 12 hours
Treatment doses of Enoxaparin or Dalteparin – at least 24 hours

10. If bleeding occurs how can LMWH be reversed.

Using IV Protamine which displaces the drug from binding sites on the natural anticoagulant ANTITHROMBIN. The dose depends on the LMWH dose given and when this was administered.

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