UMC HEALTH SYSTEM

UMC LOW MOLECULAR WEIGHT HEPARIN GUIDELINES

Patient Label Here

Mechanism of Action:

- Acts as an anticoagulant by enhancing the inhibition rate of clotting proteases by antithrombin III impairing normal hemostasis and inhibition of factor Xa.
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Pharmacokinetics:

- Onset of action (peak effect): Anti- factor Xa and antithrombin 3-5 hours
- Elimination: Renal
- Half-Life: Based on anti-factor Xa activity 4.5-7 hours (longer in patients with renal impairment)

Dosing: (doses will be rounded to the nearest 10 mg)

- Prophylaxis:
  - General surgery, medical patients, hip replacement: enoxaparin 40 mg subQ daily
    - Renal dose (Crcl<30 ml/min): enoxaparin 30 mg subQ daily
  - Trauma, knee replacement, hip replacement: enoxaparin 30 mg subQ twice daily
    - Renal dose (Crcl<30 ml/min): enoxaparin 30 mg subQ daily
- Treatment:
  - DVT/PE, unstable angina, NSTEMI: enoxaparin 1 mg/kg subQ twice daily
    - Renal dose (Crcl<30 ml/min): enoxaparin 1 mg/kg subQ daily
  - STEMI:
    - <75 yrs: enoxaparin 30 mg IV bolus plus 1 mg/kg subQ followed by 1 mg/kg q12 hours subQ (max of 100 mg for the first two doses only)
    - >75 yrs: No initial IV bolus; enoxaparin 0.75mg/kg q12h subQ (max of 75 mg for the first two doses only)
    - Renal dose (Crcl<30 ml/min):
      - <75 yrs: enoxaparin 30 mg IV bolus plus 1mg/kg subQ followed by 1mg/kg subQ daily
      - >75 yrs: No initial bolus; enoxaparin 1mg/kg subQ daily
  - PCI
    - If enoxaparin 30 mg IV bolus dose plus 1mg/kg dose or ≥ 2 doses of subQ enoxaparin administered (without IV bolus dose)
      - Procedure within 8 hrs of last subQ dose, no additional enoxaparin
      - Procedure within 8-12 hrs of last subQ dose, give enoxaparin 0.3 mg/kg IV in cath lab
    - If no enoxaparin 30 mg IV bolus dose and if only one dose of subQ enoxaparin administered (without IV bolus dose)
      - At time of procedure, give 0.3 mg/kg IV prior to cath/PCI
    - If no enoxaparin has been administered
      - At time of procedure, give enoxaparin 1 mg/kg IV in cath lab if a IIb/IIIa inhibitor is not given; enoxaparin 0.75 mg/kg IV when a IIb/IIIa will be used

Monitoring:

- Routine monitoring is not necessary in most patients
- Baseline labs
  - PT/INR
  - aPTT
  - CBC
  - Platelet count (platelets should be monitored every 2-3 days for the first 2 weeks, then periodically)
  - Serum creatinine (renal function should be periodically assessed during therapy)
- Monitoring anti-factor Xa levels may be warranted in certain high risk patients
  - Morbid obesity (weight > 190 kg)
  - Very low body weight (< 50 kg)
  - Severe renal impairment (CrCl < 30 ml/ml)
  - Pregnancy
  - Patients with extended therapy (> 1 month)
- Anti-factor Xa levels
  - Measure peak concentration 4 hours after the 2nd to 3rd dose
  - Therapeutic range (peak concentration):
    - 0.6-1 units/ml (treatment of VTE with bid dosing)
    - 0.2-0.4 units/ml (prevention of VTE with bid dosing)

☐ TO ☐ Read back

Order taken by Signature: _____ **Date/Time:** _____

Physician Signature_____ **Date/Time**_____

1201

Patient Label Here

Renal Impairment:

- **Enoxaparin is primarily eliminated renally. Patients with severe renal impairment will have a prolonged elimination half life which may increase the risk of bleeding**
- **UFH is recommended in dialysis patients or patients with renal impairment at high risk of bleeding**

Reversal Recommendations:

- **No complete antidote available for LMWH**
- **Protamine sulfate**
  - **neutralizes 60% of the anti-factor Xa activity**
  - **Reserve for patients with clinically significant bleeding episodes**
  - **Dosing:**
    - **LMWH within 8 hrs: administer 1 mg of protamine for every 1 mg (100 units) of LMWH**
    - **LMWH within 8-12 hrs: administer 0.5 mg of protamine for every 1 mg (100 units) of LMWH**
    - **LMWH more than 12 hrs: protamine not recommended**
    - **A second dose of 0.5 mg of protamine per 1 mg (100 units) of LMWH may be administered if bleeding continues**

Bridge Therapy:

- **If overlapping LMWH or heparin with Warfarin, overlap for at least 5 days. Discontinue LMWH or heparin when INR is therapeutic on two consecutive measurements 24 hr apart.**

❑ **TO** ❑ **Read back**

Order taken by Signature: _____Date/Time: _____

Physician Signature_____ Date/Time_____