Anticoagulation: Low Molecular Weight Heparin

Children's Mercy KANSAS CITY | Evidence Based Practice

Inclusion criteria:
- Therapeutic indication for LMWH management

Exclusion criteria:
- Renal failure
- Diagnosis of HIT

Patient with indication for low molecular weight heparin (LMWH) management

Indications for management:
- Treatment or prophylaxis of VTE
- Treatment or prophylaxis of arterial thrombosis

LMWH Considerations for use

Adverse effects:
- Most common event is bleeding; refer to LMWH antidote for management
- Osteoporosis
  - Rare but may occur with prolonged use of LMWH
  - Refer to monitoring section for additional recommendations
- Thrombocytopenia due to HIT
  - Risk in children is low overall
  - May be asymptomatic
  - Risk increases after 5 days of therapy
  - May be associated with life threatening arterial or venous thrombosis
  - Refer to monitoring section for additional recommendations

Drug Interactions:
- Increased potential for hemorrhage:
  - Anticoagulants: heparin, vitamin K antagonists, direct thrombin inhibitors
  - Thrombolytic agents: alteplase, streptokinase, urokinase
- Drugs affecting platelet function: aspirin, NSAIDs, dipyridamole, clopidogrel, ticlodipine, cilostazol
- Complementary/alternative medications known to have the potential to increase bleeding risk: garlic, ginger, ginkgo biloba, fenugreek, St. John's Wort

Other considerations:
- Fast Facts
- For assistance transitioning between anticoagulants, contact Hematology
- For analgesia, consider alternative agents (e.g. acetaminophen), as clinically appropriate
- Avoid IM injections and arterial punctures
- Encourage mobilization as tolerated

Guidance for holding prior to procedures:
- Hold LMWH doses for 24 hours prior to **immunizations or invasive procedures** such as LP or surgery, unless clinical situation requires emergent intervention.
- Restart 12 hours after the procedure, surgery or immunization.

Initiation and Maintenance

- Indications for Hematology Consult
- Obtain baseline CBC, PT, aPTT
- Refer to Initiation and Maintenance for dosing and titration guidelines
- Patient Education

Monitoring

- Monitor bone density if therapy exceeds 3 months; consider bone densiometry studies on day 1 and appoximately every 12 months to assess for osteoporosis
- Monitor platelet counts weekly until stable on LMWH
  - If platelet count decreases below 150,000/µL or drops by ≥ 50%, determine if decrease in platelet count is related to underlying disorder or LMWH therapy
  - If likely due to LMWH, suspect HIT and discontinue use; initiate an alternative therapy and consult Hematology
- The **optimal sample** for LMWH levels is a fresh venipuncture site
  - Alternate sites may be considered but present limitations with interpretation of levels
  - Capillary samples are not appropriate
  - Ensure sample is not contaminated by heparin (e.g. from arterial line) by drawing adequate waste volume to clear line before obtaining sample

Duration of Therapy

Provoked thrombus	DVT	Minimum 3 months of therapy suggeseted; consider conversion to **warfarin*** based on clinical situation.
	Extensive DVT or large PE	Administer LMWH for 7-14 days prior to considering conversion to **warfarin*.** Minimum 6 months of therapy with prolongation and/or transition to warfarin based on clinical situation.
Unprovoked thrombus		Administer LMWH for 7-14 days prior to considering conversion to **warfarin*.** Minimum 6 months of therapy with prolongation and/or transition to warfarin based on clinical situation.

***Warfarin** (not typically used in infants) is generally added on day 1 for a DVT and day 5 for an extensive DVT or large PE

Abbreviations:
DVT = deep venous thrombosis
HIT = heparin induced thrombocytopenia
IM = intramuscular
PE = pulmonary embolism
VTE = venous thromboembolism

QR code for mobile view

References:

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