Intrapartum and Peripartum Management of Anticoagulation VTE Prophylaxis

Developed by: Dr. Gillian Ramsay Obstetrical Internist

For physician reference only.

Patient specific orders provided by the internist group. Patients should have a copy with their prenatal records.

September 2009
Intra/Peripartum Management of Anticoagulation

1. **Patient’s receiving prophylactic anticoagulation**:
   a. Hold the anticoagulation at the first sign of labour
   b. Safe to have an epidural if anticoagulation held for 12 hours
   c. Restart the LMWH 12 hours after vaginal, 24 hours after c-section if
      hemostasis achieved
      i. NB: see section on neuraxial anesthesia below
   d. If unable to restart anticoagulation for >24 hours (eg: because of
      bleeding or hemorrhagic spinal) then use compression stockings
      (either TEDs – make sure they are removed for an hour every nursing
      shift- or pneumatic compression stockings)

2. **Patient’s receiving therapeutic anticoagulation for high risk indication**
   (ie: DVT/PE within 4 weeks, mechanical heart valve etc):
   a. Planned induction is easiest in order to avoid excessive bleeding
   b. Day prior to induction, consider admission to hospital and changing to
      unfractionated heparin drip (in lieu of that evenings dose of LMWH if
      on bid dosing; if pt on once daily dosing, they should be given reduced
      dose the morning prior to induction (eg: enoxaparin 1mg/kg) and
      then have the drip started 12 hours after their morning injection)
   c. Hold UFH for 6 hrs prior to neuraxial anesthesia and/or anticipated
      delivery
   d. Pneumatic stockings (ideally pneumatic stockings, if not available TED
      stockings are acceptable) to be used once anticoagulation is stopped
      and continued until therapeutic anticoagulation re-started
   e. Post-partum, anticoagulation should be held for 6 hours after vaginal
      delivery, 12 hours after c-section (up to 24hrs if concerns about
      hemostasis)
      i. Once hemostasis achieved, iv heparin should be re-started at
         500 units/hr for 24 hours, then increased to rate previously
         used to maintain a therapeutic PTT, and then as per protocol
   f. At 48 hours post-partum, BID LMWH may be restarted
   g. Coumadin can be started 5-7 days post-partum by the family
      physician.
   h. LMWH should be continued until the INR is >2 for 24 hours

3. **Patient’s receiving therapeutic anticoagulation for lower risk indication**
   (ie: DVT/PE earlier in pregnancy, chronic Coumadin for previous clots etc)
   a. No planned induction:
      i. Switch to bid UFH at therapeutic dosing at 37 weeks (earlier if
         twins or expected pre-term delivery), do mid-interval PTT and
         heparin levels after 3rd dose (the internist will help guide this)
Please note that patient’s will be more likely to be excessively anticoagulated at the time of delivery, and that a PTT may be falsely low because of the elevated factor VIII levels in pregnancy.

**b. Planned induction:**

i. Last dose of BID LMWH given on AM of day prior to induction

ii. Consider proph dose UFH when pt first admitted if presume long-time before delivery

**c. Post-partum:**

i. Pneumatic compression stockings (or TEDs if pneumatics not available) until 12hrs after vaginal, 24hrs after c-section and able to start anticoagulation

ii. Then start intermediate dose anticoagulation (0.5mg/kg bid enoxaparin for example) for 24 hrs, then resume full dose LMWH bid

a. Coumadin to start at 7d post-partum

**4. Patient’s not receiving VTE prophylaxis antepartum but who qualify for 6 week post-partum anticoagulation** (eg: single previous VTE with reversible risk factor, or asymptomatic lesser thrombogenic thrombophilia)

a. Start LMWH (eg: Fragmin 5000 units sc q24h or enoxaparin 40mg sc q24 h–q12h if wt >90kg) ~12 hours after vaginal delivery, ~24hours after c-section once hemostasis has been achieved.

b. May continue on LMWH for the 6 weeks post-partum or switch to Coumadin

c. If wishing to start Coumadin, start 5-7 days post-partum with 5mg daily, continue LMWH until INR >2 for 24 hours (the family doctor can usually assist with this)

**5. Patient’s not receiving antepartum prophylaxis but who meet criteria for thromboprophylaxis post c-section:**

a. ie: ≥1 risk factor (e.g.: emergency section in labor, age >35, high BMI)

b. Give Enoxaparin 40mg sc q24h or Dalteparin 5000iu sc q24 h (bid dosing if weight >90kg)

c. If unable to give LMWH (eg: patient with bleeding difficulties or complicated epidural) may use pneumatic compression stockings or TED stockings (these can be started once the patient is transferred to the ward)

**Neuraxial anesthesia for delivery:**

- Safe 12 hours after proph dose LMWH or 24hrs after therapeutic dose LMWH
- Hold LMWH for 3 hrs after epidural catheter removed; cannula shouldn’t be removed within 10-12 hours of most recent injection
- Avoid in patients:
  - With known bleeding disorder
- Pts who’ve received proph dose anticoagulation w/in 12 hrs, therapeutic dose within 24 hrs
- Delay post-partum anticoagulation if hemorrhagic aspirate during initial spinal needle placement

**A note about compression stockings:**
For peripartum management, either pneumatic stockings or TED stockings are acceptable. If the patient is obese with diabetes, pneumatic stockings might be preferable as TED stockings have a higher risk of creating ulcers. For whichever stocking type is used, they should be taken off for at least one hour every 4-6 hours, to decrease the risk of developing ulcers.

The compression stockings can be started once the patient is out to the ward, they are just precautions and there is no evidence to suggest how quickly they need to be started post-partum. However, preferably, they should be started within 6 hours after delivery if possible.

Reference:
Chest 2008 guidelines
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