

7 CAESAREAN DELIVERY

7.10 THROMBOPROPHYLAXIS AFTER CAESAREAN BIRTH

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7.10 Thromboprophylaxis after caesarean Birth
Section B
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7.10 THROMBOPROPHYLAXIS AFTER CAESAREAN BIRTH

AIM

To ensure the appropriate prophylaxis for all women undergoing a caesarean birth in order to reduce the risk of venous thromboembolism (VTE).

KEY POINTS

1. VTE during pregnancy and the immediate postnatal period is rare although when it occurs it is associated with high degrees of morbidity and mortality. Pulmonary embolism is the most common direct cause of maternal death in the UK. Some groups of women have a higher risk of developing VTE. Although a number of risk factors have been identified, the size of the increases in risk attributable to these factors is generally poorly quantified.
2. In women with risk factors a combination of pharmacological and non pharmacological methods are recommended. Pharmacological methods have been studied much more extensively than non pharmacological options.¹
3. When used after caesarean delivery, low molecular weight heparin (Enoxaparin) may increase the frequency of bleeding and wound haematoma, although it is associated with less abnormal bleeding than unfractionated heparin. Pharmacological prophylaxis is potentially contraindicated in women with primary postpartum haemorrhage > 1000mL, although these women are actually at increased risk of VTE. The decision to utilise pharmacological thromboprophylaxis in these women should be at the discretion of the obstetrician and anaesthetist.

RISK FACTORS FOR VTE IN THE PERIPARTUM PERIOD²

- Age (> 35 years).
- Active or occult malignancy.
- Previous VTE.
- Varicose veins.
- Obesity (BMI > 30).
- Multiple pregnancy
- Pre eclampsia
- Prolonged or severe immobility (prolonged bedrest, immobilisation in a plaster cast or brace or prolonged travel resulting in limited movement and subsequent venous stasis).
- Paraplegia / lower limb paralysis
- Inherited or acquired thrombophilias.
- Acute medical illness (e.g. severe infection, maternal heart or respiratory disease).

- Recent surgical procedures, but especially abdominal and pelvic surgery).
- Postpartum haemorrhage

PROCEDURE

- All women require early ambulation and adequate hydration.
- Unless contra-indicated all women should have
 - Graduated compression stockings (GCS) fitted pre operatively.

For those with risk factors as detailed above consider

 - Enoxaparin 40mg subcutaneously prescribed at 2000hr post operatively.
- Unless contra-indicated, intermittent pneumatic compression (IPC) devices should be utilised for the intra and post operative periods in women who are unable to wear GCS and / or are unable to receive pharmacological prophylaxis. Their use should also be considered in women who will be immobile post operatively for extended periods of time.
- In women who are considered to be very high risk IPC devices should be used instead of GCS for the intra and post operative period. They should be replaced by GCS when the patient resumes mobility.
- The first dose of pharmacological prophylaxis should be given at least 4 hours after delivery.
- Removal of the epidural catheter should occur at least 12 hours after the last dose of LMWH. After removal, the next dose should be at least 2 hours, but preferably 4 hours later²
- The duration of pharmacological prophylaxis is between 5 to 7 days or until the patient is fully mobile. In high risk patients this may be extended into the discharge period.

GUIDELINES FOR PHARMACOLOGICAL PROPHYLAXIS FOR WOMEN WHO DELIVER OUTSIDE OF NORMAL DAYTIME HOURS.

- With the current administration time of Enoxaparin being fixed at 2000hr, women who deliver after 1600hr or prior to 0800hr may have a considerable delay prior to their first dose of Enoxaparin. In these women the use of subcutaneous Heparin should be considered as a bridging method until their first dose of Enoxaparin. Women who deliver between 1600 and 2400 will require two bridging doses of heparin whilst women who deliver after 2400 will only require one.
 - Women who deliver between 1600 and 2400 hours will be administered a 5000IU subcutaneous dose of unfractionated heparin at 4 and 12 hours post surgical completion (unless contra-indicated).
 - Women who deliver between 2400 and 0800 hours will be administered a single 5000IU subcutaneous dose of unfractionated heparin at 4 hours post surgical completion (unless contra-indicated).

POTENTIAL CONTRAINDICATIONS TO PRESCRIBING ENOXAPARIN OR HEPARIN.

- Low platelet count (<100,000/uL).
- High risk of or current bleeding
- Adverse reaction to Enoxaparin or Heparin.

Patient related risk factors for Bleeding²

- Current active major bleeding (defined as requiring at least 2 units of blood or blood products to be transfused in 24 hours).
- Current chronic, clinically significant and measurable bleeding over 48 hours.
- Bleeding disorders (e.g. haemophilia).
- Recent central nervous system bleeding.
- Intracranial or spinal lesion.
- Renal impairment
- Abnormal blood coagulation including underlying coagulopathy or coagulation factor abnormalities.
- Thrombocytopenia Pharmacological prophylaxis is not recommended for patients with a platelet count < 50,000/uL. It is generally considered safe with a platelet count of > 100,000/uL. A platelet count between these two values should be discussed with senior obstetric and anaesthetic staff.
- Severe platelet dysfunction.
- Active peptic ulcer or active ulcerative gastrointestinal disease.
- Obstructive jaundice or cholestasis.
- Recent major surgical procedure with a high bleeding risk.
- Concomitant use of medication that may affect the clotting process (e.g. anticoagulants, antiplatelet agents).
- Neuraxial anaesthesia or recent lumbar puncture for any reason.
- High risk of falls.

CONTRAINDICATIONS TO MECHANICAL PROPHYLAXIS

- Incorrect fit.
- Severe oedema of the legs.
- Severe lower limb deformity.
- Inflammatory conditions of the lower leg.
- Severe peripheral vascular disease.
- Severe peripheral neuropathy.

REFERENCES

1. Urbankova J, Quiroz R, Goldhaber SZ. Intermittent pneumatic compression and deep vein thrombosis prevention in postoperative patients. **Phlebotomy**.2006; 21:19-22.
2. National Health and Medical Research Council .2009. **Clinical practice guideline for the prevention of venous thromboembolism (deep vein thrombosis and pulmonary embolism) in patients admitted to Australian hospitals**. Melbourne.