PERIOPERATIVE MANAGEMENT OF CO MORBIDITIES

VENOUS THROMBOPROPHYLAXIS

Risk Assessment and Recommended Venous Thromboembolic Prophylaxis in Patients Admitted for Gynaecological Conditions

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RISK ASSESSMENT AND RECOMMENDED VENOUS THROMBOEMBOLIC PROPHYLAXIS IN PATIENTS ADMITTED FOR GYNAECOLOGICAL CONDITIONS

Key Words: VTE, Venous Thromboembolism, risk factors for VTE, Low Molecular Weight Heparin, LMWH, Unfractionated Heparin, UFH, Deep Vein Thrombosis, DVT, Thromboprophylaxis, Graduated Compression Stockings, TEDS, intermittent pneumatic compression, Heparin.

AIM
To minimise the incidence of venous thromboembolism (VTE) by ensuring every woman hospitalised for a gynaecological condition receives appropriate prophylaxis.

SCOPE
This guideline is not intended for women admitted as day surgery cases.
The risk of developing VTE when undergoing day surgery or minor surgery is considered to be generally low. However if the operative procedure is prolonged (> 60 minutes) or the woman is at significant risk, then VTE prophylaxis should be considered.

BACKGROUND INFORMATION
Venous thromboembolism due to deep vein thrombosis (DVT) and/or pulmonary embolism (PE) is a major health problem associated with significant mortality and morbidity. This ranges from a fatal pulmonary embolism to the sequelae of post-thrombotic chronic venous insufficiency.

Pulmonary embolism remains the commonest cause of preventable death in hospitalised patients. The incidence of DVT (symptomatic and sub-clinical) in women having gynaecological surgery without prophylaxis is 14% to 22%.

In 1999 to 2001 the population incidence rate of venous thromboembolism (VTE) in Western Australia (WA), as ascertained from hospital morbidity data, was approximately 100 cases per 100,000 persons. This finding is consistent with results from other population-based studies. Surgical VTE accounted for approximately 40% of this total.

Risk factors for VTE demonstrated in the study included increasing age, length of hospital stay and a current or previous history of cancer. WA women appeared to have a higher risk of VTE than men in contrast to findings from other population and clinical studies. The prevalence of VTE in all hospital admissions in Western Australia was estimated to be 2-3/1000 with the highest prevalence found in cancer patients (9/1000 admissions).

The rationale for thromboprophylaxis is based on the high prevalence of VTE in hospitalised patients, the serious adverse consequences of VTE and the proven efficacy and cost-effectiveness of prophylaxis.
KEY POINTS

1. Graduated compression stockings are recommended for all women who are admitted to hospital (including non-surgical patients) unless contraindicated.

2. The principles of adequate hydration and encouragement of early ambulation and leg exercises apply to all women regardless of risk status.2, 3, 5, 6

3. Compliance with VTE prophylaxis is the combined responsibility of the health care team in partnership with the woman.

4. Every woman must receive information regarding risks of VTE and the effectiveness of prophylaxis to gain her full cooperation.

5. The woman’s risk status is determined by completion of the Gynaecology VTE Risk Assessment Form (MR249.01) or Medication Chart with pre-printed VTE Risk Assessment section (MR 810.05) if available.

6. Every woman must have documentation of a VTE risk assessment on admission. This should be performed by a medical officer.

7. **Exception** - All oncology patients are considered as high risk so completion of the MR249.01 or MR 810.05 is not required. These patients should have pharmacological prophylaxis commenced post-operatively and continued until at least discharge.

8. The recommended prophylaxis is according to the woman’s risk status.

9. A review of risk status and prophylaxis is required if there is a change in the condition of the woman.

10. The decision whether to prescribe prophylactic Low Molecular Weight Heparin (LMWH) OR Unfractionated Heparin (UFH) will depend on the surgeon’s assessment of the woman’s individual risk for post-operative haemorrhage.

11. Thromboprophylaxis following gynaecology / oncology surgery should be maintained for 7-10 days or until fully mobile.1

12. Consider using extended prophylaxis with LMWH for up to 28 days after major abdominal or pelvic surgery for cancer, especially in patients who are obese, slow to mobilise, have a known thrombophilia (e.g. Protein S Deficiency, Factor V Leiden) or have a past history of VTE.1

RISK FACTORS

- Major surgery (> 60 minutes).
- Age over 40 years.
- Active cancer or treatment.
- Personal or family history of venous thromboembolism.
- Personal or family history or thrombophilia.
- Obesity (BMI >30).
- Oral contraceptive or hormone replacement therapy.
- Immobility (including long distance travel).
- Gross varicose veins.
- Concurrent illness (severe infection, Nephrotic Syndrome, Ovarian Hyperstimulation Syndrome, hyperemesis, inflammatory bowel etc).
- Acute illness (heart failure, respiratory failure, CVA etc).
PROCEDURE

1. Every woman must have her VTE risk status determined by a medical officer at the Pre-admission Clinic or on admission.

2. The risk status is determined by completion of the Gynaecology VTE Risk Assessment Form (MR249.01) or Medication Chart with pre-printed VTE Risk assessment section.(MR 810.05)

3. The medical officer must review the contra-indications to both pharmacological and mechanical prophylaxis prior to prescribing prophylaxis.

4. Therapeutic anticoagulation is prescribed on the Anticoagulation Medication Chart (MR 810.11)

5. Prophylactic anticoagulation is prescribed on the MR 810 or MR 810.05.

6. Graduated compression stockings are recommended for all women until fully mobile.

7. Graduated compression stockings must be prescribed TDS on the Medication Chart (MR810). This will ensure nursing staff will check for compliance, correct size and fit of stockings TDS.

8. If one or more risk factors apply then LMWH or unfractionated heparin is recommended, commencing post-operatively for women requiring surgery.

9. Heparin 5000 units is recommended TDS (unless there is a clinical indication to prescribe same BD. e.g. weight 50Kg) The rationale for the decision to prescribe BD Heparin must be documented in the medical record.

10. If clinically appropriate, pharmacological prophylaxis may be changed to Clexane 40mg daily from day 2 post-operatively.

11. Intermittent pneumatic calf compression (IPCC) should be considered in women who would normally be indicated for LMWH or unfractionated heparin but who unable to receive it (e.g. bleeding risk), in women who will be immobile for extended periods post operatively and in women who are unable to wear graduated compression stockings and have additional risk factors (e.g. obesity, immobility). IPCC devices should be administered instead of graduated stockings and not in addition to them.

12. Post-operative thromboprophylaxis management should be outlined in the post-operative instructions on the Operation Record (MR315) by the woman’s surgeon.

13. Documentation by the medical officer must include completion of the Gynaecology VTE Risk Assessment Form (MR249.01), with date, signature and prescription of the recommended prophylaxis.

14. If the VTE prophylaxis differs from the recommendations, then the reason must be documented at the bottom of Gynaecology VTE Risk Assessment Form (MR249.01) or in the patient’s medical record (MR 250).

15. Patients considered to be at significant high risk are discharged home on Clexane 40 mg daily for at least 28 days. Such patients are taught to self administer their Clexane prior to discharge.

When completing the MR249.01 the following applies:

- Family history of VTE or thrombophilia refers to first degree relatives (i.e. parents, siblings and offspring).
- Long distance travel is defined as any continuous travel longer than 3 hours in the 4 weeks before or after surgery.6
- Mechanical prophylaxis refers to graduated compression stockings and intermittent pneumatic compression devices.
REFERENCES


Medical staff to complete this form at pre-admission clinic or on admission for every gynaecology woman, except women who will be Day Surgery cases.

- **Prescribe** appropriate prophylaxis on the Medication Chart MR810 (including TED stockings)
  - The decision whether to prescribe Low Molecular Weight Heparin (LMWH) OR Low Dose Unfractionated Heparin (LDUH) will depend on the surgeon’s assessment of the woman’s individual risk of post operative haemorrhage.

- **Prescribe** intermittent pneumatic calf compression on the Operation Record MR315

- **Refer** to KEMH Clinical Guidelines, Section C, 4.1.1 for further information

### Step 1. All women need:
- Attention to hydration
- Early ambulation
- Graduated compression stockings if not fully mobile (unless contraindicated)

### Step 2. Assessment of Risk Factors
- Major surgery (> 60 mins)
- Age over 40 years
- Active cancer or treatment
- Personal or family history of venous thrombo-embolism
- Personal or family history of thrombophilia
- Obesity (BMI ≥ 30)
- Oral contraceptives or hormone replacement therapy
- Immobility (including long distance travel)
- Gross varicose veins
- Concurrent illness (severe infection, Nephrotic Syndrome, Ovarian Hyperstimulation Syndrome, hyperemesis, Inflammatory Bowel Disease, etc)
- Acute illness (heart failure, respiratory failure, CVA, etc)

### Step 3. Outcome of Assessment

<table>
<thead>
<tr>
<th>A No risk factors present</th>
<th>B ONE risk factor is present</th>
<th>C TWO or MORE risk factors are present</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does not require Enoxaprin or Heparin</td>
<td>Surgical patients commence post-operatively Non-surgical oncology patients commence on admission</td>
<td>Consider intermittent pneumatic calf compression postoperatively</td>
</tr>
<tr>
<td>Enoxaprin 40mg subcutaneous daily at 2000hrs OR Heparin 5000units subcutaneous TDS at 0600hrs, 1400hrs and 2200hrs</td>
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</tbody>
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### Contraindications to prescribing Enoxaprin or Heparin
- Therapeutic anticoagulation
- High risk of bleeding (e.g. Haemophilia, thrombocytopaenia, active peptic ulcer)
- Adverse reaction to Enoxaprin or Heparin

### Contraindications to prescribing TEDs or pneumatic calf compression
- Stockings cannot be fitted correctly
- Severe peripheral vascular disease
- Severe peripheral neuropathy
- Severe lower limb oedema

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**D Treatment varies from guideline** (Note why VTE prophylaxis will vary from the guideline)

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**NAME:**

**SIGNATURE:**

**DATE:**