MATERNITY UNIT
GUIDELINE:

VENOUS THROMBOEMBOLISM PREVENTION IN THE POSTNATAL PERIOD

AUTHOR:
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SCOPE:
All health professional providing care to postnatal women in the hospital

PURPOSE:

To reduce the incidence of venous thromboembolism in postpartum women through risk assessment and the use of thromboprophylaxis when indicated.

Background:
Venous thromboembolism (VTE) is a serious complication comprising deep vein thrombosis and pulmonary embolism. Pregnancy and the puerperium are recognized risk factors for VTE. While the incidence is infrequent at only 1-2/1000 births, VTE is one of the most common and potentially preventable causes of maternal mortality in the developed world.

The need for thromboprophylaxis should be assessed antepartum, postpartum, and at any time a patient transitions from outpatient to the inpatient setting. This guideline addresses postpartum VTE prevention, when VTE risk is highest.

Risk assessment of women and recommendations regarding thromboprophylaxis are supported by only weak clinical evidence at best. Most studies do not include parturients. In the absence of evidence to guide practice, guidelines from various medical organizations differ substantially in their recommendations. In this guideline, an attempt is made to extract the best practices from guidelines utilized by the Royal Australia-New Zealand College of Obstetricians and Gynaecologists (RANZCOG), the Royal College of Obstetricians and Gynaecologists (RCOG), the American College of Obstetricians and Gynecologists (ACOG), and Auckland District Health (ADH).

Pregnancy is associated with a 5-10 fold increase in the risk of VTE due to factors specific to pregnancy such as venous stasis, an increase in procoagulant factors, a reduction in natural anticoagulants, and vessel wall injury that occurs during labour and following Caesarean section (CS). Maternal risk factors, both inherited and acquired, layer on top of the baseline risk. These include (but are not limited to) factors such as advanced maternal age, high BMI, thrombophilia, and personal or family history of VTE. Additional risks may arise in the postpartum period such as emergency CS, infection, and postpartum haemorrhage.

Reducing the risk of VTE rests on adequate hydration, mobilisation, pneumatic compression devices, and pharmacologic thromboprophylaxis. Every woman should undergo VTE risk assessment and have a plan for prophylaxis. The overwhelming majority of plans will require only hydration and mobilisation.

GUIDELINE:

For each postnatal woman the question must be asked, what is the risk of VTE and what measures need to be taken to minimize that risk. The risk assessment is required to be completed in the woman's national medication chart and in her Maternity Clinical Information System (MCIS) record (see Documentation).

Significant risk factors, which most frequently will already have been identified as an indication for antenatal treatment, and which require extended post-partum prophylaxis, regardless of mode of delivery are:

- Personal history of VTE
- Use of extended antenatal thromboprophylaxis for any indication
- Family history of VTE and any known inherited thrombophilia
- Family history of VTE with no known thrombophilia, other risk factors present
- No personal or family history of VTE but **significant** thrombophilia (Antithrombin deficiency, Protein C or S deficiency, Homozygous factor V Leiden, combined hereditary defects)

Recommendation: Extended (6 weeks) postpartum pharmacologic thromboprophylaxis

If none of these risks is present, consideration must be made of other risk factors.

Emergency Caesarean alone is an indication for postpartum thromboprophylaxis until fully mobile (usually entire hospitalization). It is also best practice to use pneumatic compression devices for all CSs until full mobilisation is achieved. First dose of Clexane is to be given around 6 hours post-operatively. Timing may be individualized based on the concern for post-operative bleeding or anaesthetic issues.

Other risks may be divided into major and minor risks. Their presence in combination determines the need for pharmacologic prophylaxis**. If 2 major risk factors are present OR 1 major risk factor and 2 minor risk factors are present, postpartum thromboprophylaxis until fully mobile is recommended.**

MAJOR RISK FACTORS

- Elective Caesarean section (CS)
- BMI > or = 30
- Medical comorbidity
- Preeclampsia
- Systemic infection
- Surgical procedure in puerperium

MINOR RISK FACTORS

- Immobilisation
- Age > 35

- Labour > 24 hrs
- Smoker
- Post-partum haemorrhage >1000ml
- Extensive perineal trauma and prolonged repair
- Severe varicose veins
- Parity > or = 3

Please refer to the Postnatal Flowchart.

TREATMENT

Pneumatic compression stockings when not mobilising.

Low molecular weight heparin (LMWH) – Clexane - is the pharmacologic prophylaxis most frequently recommended due to its efficacy, predictability, and daily dosing. It is compatible with breast feeding.

Dose is weight-dependent.

Weight	**Clexane dose**
Up to 90kg	40 mg SC daily
91-130 kg	60 mg SC/daily
131-170 kg	80 mg SC/daily
>170 kg	0.6 mg/kg/day

Treatment duration is generally until full mobilisation is achieved, which normally is the full time in hospital.

Contraindications to Low-molecular-weight heparin (LMWH)

LMWH should be avoided, discontinued or postponed in women at risk of bleeding after careful consideration of the balance of risks of bleeding and thrombosis.

Postnatal Flow Chart

Is postpartum thromboprophylaxis required?

Does one of the following apply?

- Personal history of VTE
- Received extended antenatal thromboprophylaxis for any indication
- Family history of VTE and any known inherited thrombophilia
- Family history of VTE with no known thrombophilia, other risk factors present
- No personal or family history of VTE but **significant** thrombophilia (see above)

If **YES –** extended postpartum thromboprophylaxis is indicated

If **NO -- Was delivery by Emergency Caesarean Section?**

If **YES** – Postpartum thromboprophylaxis until fully mobile

If **NO –** assess Major and Minor Risk Factors

Major Risk Factors

- Elective Caesarean section
- BMI >= 30
- Medical comorbidity
- Preeclampsia
- Systemic infection
- Surgical procedure in puerperium

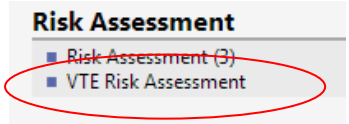
Minor Risk Factors

- Immobilisation
- Age >= 35
- Prolonged labour (>24 hrs)
- Smoker
- PPH > 1000ml
- Extensive perineal trauma and prolonged repair
- Severe varicose veins
- Parity >=3

IF >= 2 Major Risks **OR** 1 Major and >= 2 Minor Risk Factors –Postpartum thromboprophylaxis until fully mobile. In the absence of this combination of risks, early mobilisation and avoidance of dehydration alone is indicated.

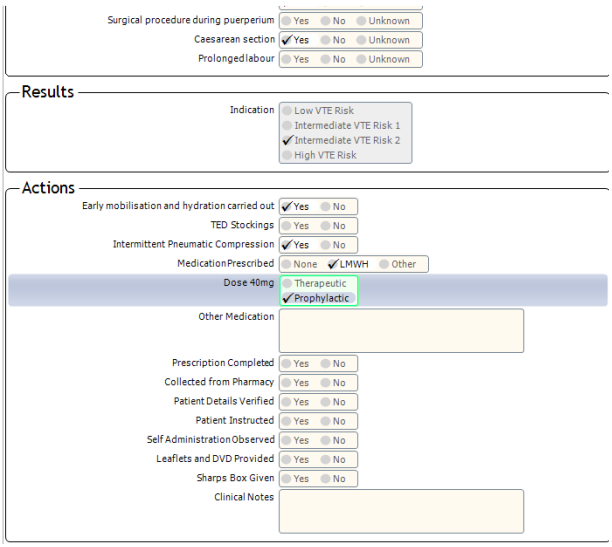
MCIS DOCUMENTATION:

- The **VTE Risk assessment** sits in **Risk assessments** in all the main tabs



- The page will open defaulting to the current date and time with the known risk factors prepopulated. Please add any other risk factors.

- And appropriate fields to enter prophylaxis or treatment. Then save and close.



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Auckland District Health Board. Venous Thromboembolism in Pregnancy – Prevention. 2016.

National Health and Medical Research Council (Australia). Clinical Practice Guideline For the Prevention of Venous Thromboembolism in Patients Admitted to Australian Hospitals. 2009.

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EVALUATION: By monthly national medication chart audit and audit of women's MCIS records.

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