**Appendix I: Obstetric thromboprophylaxis risk assessment and management**

### Antenatal assessment and management (to be assessed at booking and repeated if admitted)

**HIGH RISK**
- Requires antenatal prophyllaxis with LMWH
- Refer to trust-nominated thrombosis in pregnancy expert/team

**INTERMEDIATE RISK**
- Consider antenatal prophylaxis with LMWH

**LOW RISK**
- Mobilise and avoid dehydration

- Any previous VTE except a single event related to major surgery
- Hospital admission
- Single previous VTE related to major surgery
- High-risk thrombophilia + no VTE
- Medical comorbidities e.g. cancer, heart failure, active SLE, IBD or inflammatory polyarthropathy, nephrotic syndrome, type 1 DM with nephropathy, sickle cell disease, current IVDU
- Any surgical procedure e.g. appendicectomy
- OHSS (first trimester only)

#### Four or more risk factors: prophylaxis from first trimester

- High-risk thrombophilia
- Low-risk thrombophilia + FHx
- Multiple pregnancy
- Preterm delivery in this pregnancy (<37+0 weeks)
- Stillbirth in this pregnancy
- Caesarean section in labour
- Caesarean section in labour
- Medical comorbidities e.g. cancer, heart failure, active SLE, IBD or inflammatory polyarthropathy, nephrotic syndrome, type 1 DM with nephropathy, sickle cell disease, current IVDU
- Obesity (BMI > 30 kg/m²)
- Parity ≥ 3
- Smoker
- Elective caesarean section
- Family history of VTE
- Low-risk thrombophilia
- Gross varicose veins
- Current systemic infection
- Immobility, e.g. paraplegia, PGP, long-distance travel
- Current pre-eclampsia
- Multiparty pregnancy
- PPH > 1 litre or blood transfusion

#### Three risk factors: prophylaxis from 28 weeks

- High-risk thrombophilia
- Low-risk thrombophilia + FHx
- Medical comorbidities e.g. cancer, heart failure, active SLE, IBD or inflammatory polyarthropathy, nephrotic syndrome, type 1 DM with nephropathy, sickle cell disease, current IVDU
- Obesity (BMI > 30 kg/m²)
- Parity ≥ 3
- Smoker
- Elective caesarean section
- Family history of VTE
- Low-risk thrombophilia
- Gross varicose veins
- Current systemic infection
- Immobility, e.g. paraplegia, PGP, long-distance travel
- Current pre-eclampsia
- Multiple pregnancy
- Preterm delivery in this pregnancy (<37+0 weeks)
- Stillbirth in this pregnancy
- Mid-cavity rotational or operative delivery
- Prolonged labour (>24 hours)

#### Fewer than three risk factors

- Dehydration/hyperemesis; current systemic infection; long-distance travel

### Postnatal assessment and management (to be assessed on delivery suite)

**HIGH RISK**
- At least 6 weeks' postnatal prophylactic LMWH

**INTERMEDIATE RISK**
- At least 10 days' postnatal prophylactic LMWH

**LOWER RISK**
- Early mobilisation and avoidance of dehydration

- High-risk thrombophilia
- Low-risk thrombophilia + FHx
- Medical comorbidities e.g. cancer, heart failure, active SLE, IBD or inflammatory polyarthropathy, nephrotic syndrome, type 1 DM with nephropathy, sickle cell disease, current IVDU
- Obesity (BMI > 30 kg/m²)
- Parity ≥ 3
- Smoker
- Elective caesarean section
- Family history of VTE
- Low-risk thrombophilia
- Gross varicose veins
- Current systemic infection
- Immobility, e.g. paraplegia, PGP, long-distance travel
- Current pre-eclampsia
- Multiple pregnancy
- Preterm delivery in this pregnancy (<37+0 weeks)
- Stillbirth in this pregnancy
- Mid-cavity rotational or operative delivery
- Prolonged labour (>24 hours)

#### Fewer than two risk factors

- Dehydration/hyperemesis; current systemic infection; long-distance travel

### Antenatal and postnatal prophylactic dose of LMWH

- **Weight < 50 kg**: 20 mg enoxaparin/2500 units dalteparin/3500 units tinzaparin daily
- **Weight 50–90 kg**: 40 mg enoxaparin/5000 units dalteparin/4500 units tinzaparin daily
- **Weight 91–130 kg**: 60 mg enoxaparin/7500 units dalteparin/7000 units tinzaparin daily
- **Weight 131–170 kg**: 80 mg enoxaparin/10 000 units dalteparin/9000 units tinzaparin daily
- **Weight > 170 kg**: 0.6 mg/kg/day enoxaparin/75 u/kg/day dalteparin/75 u/kg/day tinzaparin

**APL** = antiphospholipid antibodies (lupus anticoagulant, anticardiolipin antibodies, β2-glycoprotein 1 antibodies); **ART** = assisted reproductive technology; **BMI** based on booking weight; **DM** = diabetes mellitus; **FHx** = family history; **gross varicose veins** = symptomatic, above knee or associated with phlebitis/oedema/skin changes; **high-risk thrombophilia** = antithrombin deficiency, protein C or S deficiency, compound or homozygous for low-risk thrombophilias; **IBD** = inflammatory bowel disease; **incomplete delivery** = 3 days; **IVDUs** = intravenous drug user; **IVF** = in vitro fertilisation; **LMWH** = low-molecular-weight heparin; **long-distance travel** = > 4 hours; **low-risk thrombophilia** = heterozygous for factor V Leiden or prothrombin G20210A mutations; **OHSS** = ovarian hyperstimulation syndrome; **PGP** = pelvic girdle pain with reduced mobility; **PPH** = postpartum haemorrhage; **thrombophilia** = inherited or acquired; **VTE** = venous thromboembolism.
## Appendix III: Risk assessment for venous thromboembolism (VTE)

- If total score ≥ 4 antenatally, consider thromboprophylaxis from the first trimester.
- If total score 3 antenatally, consider thromboprophylaxis from 28 weeks.
- If total score ≥ 2 postnatally, consider thromboprophylaxis for at least 10 days.
- If admitted to hospital antenatally consider thromboprophylaxis.
- If prolonged admission (≥ 3 days) or readmission to hospital within the puerperium consider thromboprophylaxis.

For patients with an identified bleeding risk, the balance of risks of bleeding and thrombosis should be discussed in consultation with a haematologist with expertise in thrombosis and bleeding in pregnancy.

### Risk factors for VTE

<table>
<thead>
<tr>
<th>Pre-existing risk factors</th>
<th>Tick</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Previous VTE (except a single event related to major surgery)</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Previous VTE provoked by major surgery</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Known high-risk thrombophilia</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Medical comorbidities e.g. cancer, heart failure; active systemic lupus erythematosus, inflammatory polyarthropathy or inflammatory bowel disease; nephrotic syndrome; type I diabetes mellitus with nephropathy; sickle cell disease; current intravenous drug user</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Family history of unprovoked or estrogen-related VTE in first-degree relative</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Known low-risk thrombophilia (no VTE)</td>
<td>1*</td>
<td></td>
</tr>
<tr>
<td>Age (&gt; 35 years)</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Obesity</td>
<td>1 or 2b</td>
<td></td>
</tr>
<tr>
<td>Parity ≥ 3</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Smoker</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Gross varicose veins</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

### Obstetric risk factors

<table>
<thead>
<tr>
<th>Obstetric risk factors</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-eclampsia in current pregnancy</td>
<td>1</td>
</tr>
<tr>
<td>ART/IVF (antenatal only)</td>
<td>1</td>
</tr>
<tr>
<td>Multiple pregnancy</td>
<td>1</td>
</tr>
<tr>
<td>Caesarean section in labour</td>
<td>2</td>
</tr>
<tr>
<td>Elective caesarean section</td>
<td>1</td>
</tr>
<tr>
<td>Mid-cavity or rotational operative delivery</td>
<td>1</td>
</tr>
<tr>
<td>Prolonged labour (&gt; 24 hours)</td>
<td>1</td>
</tr>
<tr>
<td>PPH (&gt; 1 litre or transfusion)</td>
<td>1</td>
</tr>
<tr>
<td>Preterm birth &lt; 37th weeks in current pregnancy</td>
<td>1</td>
</tr>
<tr>
<td>Stillbirth in current pregnancy</td>
<td>1</td>
</tr>
</tbody>
</table>

### Transient risk factors

<table>
<thead>
<tr>
<th>Transient risk factors</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any surgical procedure in pregnancy or puerperium except immediate repair of the perineum, e.g. appendicectomy, postpartum sterilisation</td>
<td>3</td>
</tr>
<tr>
<td>Hyperemesis</td>
<td>3</td>
</tr>
<tr>
<td>OHSS (first trimester only)</td>
<td>4</td>
</tr>
<tr>
<td>Current systemic infection</td>
<td>1</td>
</tr>
<tr>
<td>Immobility, dehydration</td>
<td>1</td>
</tr>
</tbody>
</table>

### TOTAL

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<tr>
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</tbody>
</table>

**Abbreviations:** ART assisted reproductive technology; IVF in vitro fertilisation; OHSS ovarian hyperstimulation syndrome; VTE venous thromboembolism.

*a* If the known low-risk thrombophilia is in a woman with a family history of VTE in a first-degree relative postpartum thromboprophylaxis should be continued for 6 weeks.

*b* BMI ≥ 30 = 1; BMI ≥ 40 = 2
### Contraindications/cautions to LMWH use

<table>
<thead>
<tr>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Known bleeding disorder (e.g. haemophilia, von Willebrand's disease or acquired coagulopathy)</td>
</tr>
<tr>
<td>Active antenatal or postpartum bleeding</td>
</tr>
<tr>
<td>Women considered at increased risk of major haemorrhage (e.g. placenta praevia)</td>
</tr>
<tr>
<td>Thrombocytopenia (platelet count &lt; 75 × 10⁹/l)</td>
</tr>
<tr>
<td>Acute stroke in previous 4 weeks (haemorrhagic or ischaemic)</td>
</tr>
<tr>
<td>Severe renal disease (glomerular filtration rate [GFR] &lt; 30 ml/minute/1.73m²)</td>
</tr>
<tr>
<td>Severe liver disease (prothrombin time above normal range or known varices)</td>
</tr>
<tr>
<td>Uncontrolled hypertension (blood pressure &gt; 200 mmHg systolic or &gt; 120 mmHg diastolic)</td>
</tr>
</tbody>
</table>

Clinical and laboratory thresholds are taken from the Department of Health's guidelines based on evidence from the nonpregnant population.³