Thromboprophylaxis in pregnant women

One of the objectives of the Thrombosis Guidelines Group of the BSTH (Belgian Society on Thrombosis and Haemostasis) and of the BWGA (Belgian Working Group on Angiology) is to propose practical recommendations that provide practitioners with answers to common issues in daily practice about venous thromboembolism (VTE).

The following tables are based on a previous article published by the Group in 2002 (1), on the consensus of the American College of Chest Physicians (ACCP) of 2004 and 2008 (2,3)) and the Royal College of Obstetricians and Gynaecologists RCOG guidelines (4).

Most of the recommendations included in these guideline documents (1-4) are expert-opinion based because there are relatively few large studies and no randomized trials.

Each pregnant woman should therefore be evaluated on an individual basis taking into account any additional risk factor. For a more complete understanding we refer to the above-mentioned guideline documents (1-4).

References


VTE: venous thromboembolism: VTE includes both deep vein thrombosis and pulmonary embolism

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Risk factors for pregnancy-associated VTE

- Previous VTE
- Inherited or acquired thrombophilia
- Age > 35 years
- Obesity (BMI >30 kg/m$^2$)
- Prolonged bed rest (> 4 days)
- Parity > 4
- Multiple pregnancy
- Caesarian section
Thromboprophylaxis after caesarian section

Recommendations
Graduated elastic compression stockings and early mobilisation

<table>
<thead>
<tr>
<th>For whom?</th>
<th>What?</th>
<th>When?</th>
</tr>
</thead>
<tbody>
<tr>
<td>No additional risk factors*</td>
<td>No pharmacological prophylaxis</td>
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<tr>
<td>Additional risk factors*</td>
<td>Prophylactic dose LMWH</td>
<td>At least 3 to 5 days or</td>
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<td>until mobilisation.</td>
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</table>

LMWH:
- prophylactic dose: 4000 or 5000 IU anti-Xa/24h

* Additional risk factors: emergency caesarean section
  concomitant acute medical illness
  age > 35 years
  obesity (BMI > 30 kg/m²)
  prolonged bed rest (> 4 days)
  parity > 4
  multiple pregnancy
  preeclampsia

In case of previous VTE, see ‘Thromboprophylaxis is pregnant women with previous VTE’
In case of thrombophilia, see ‘Thromboprophylaxis in pregnant women with inherited thrombophilia but without previous VTE’

VTE: Venous thromboembolism
LMWH: low molecular weight heparin

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## Thromboprophylaxis in pregnant women with previous VTE

### Recommendations

**Graduated elastic compression stockings**

<table>
<thead>
<tr>
<th>For whom?</th>
<th>What?</th>
<th>When?</th>
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</thead>
<tbody>
<tr>
<td><strong>Single episode of VTE</strong></td>
<td></td>
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<tr>
<td>Provoked VTE</td>
<td>• Clinical surveillance</td>
<td>• During pregnancy</td>
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<tr>
<td></td>
<td>• Prophylactic dose LMWH</td>
<td>• 6 weeks postpartum</td>
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<td></td>
<td></td>
<td>• Consider prophylactic dose LMWH during pregnancy if additional risk factors*</td>
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<tr>
<td>Unprovoked (idiopathic) VTE or pregnancy-or estrogen-related VTE</td>
<td>Prophylactic dose LMWH</td>
<td>During pregnancy and for 6 weeks postpartum</td>
</tr>
<tr>
<td>Thrombophilia**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Low risk</td>
<td>• Prophylactic dose LMWH</td>
<td>During pregnancy and for 6 weeks postpartum</td>
</tr>
<tr>
<td>• High risk</td>
<td>• Intermediate dose LMWH</td>
<td></td>
</tr>
<tr>
<td><strong>Multiple episodes of VTE or Long term anticoagulation</strong></td>
<td>Intermediate or full-treatment dose LMWH</td>
<td>• During pregnancy and for 6 weeks postpartum or Postpartum resumption of long term anticoagulation</td>
</tr>
</tbody>
</table>

### LMWH:

- prophylactic dose: 4000 or 5000 IU anti-Xa/24h
- intermediate dose: 100 IU anti-Xa/kg/24h
- full-treatment dose: 100 IU anti-Xa/kg/12h or 175-200 IU anti-Xa/kg/24h

* Additional risk factors: age > 35 years, obesity (BMI > 30 kg/m²), prolonged bed rest (> 4 days), parity > 4, multiple pregnancy

** Low risk thrombophilia: protein C or S deficiency, heterozygous factor V Leiden or prothrombin gene mutation G20210A, high factor VIII (> 200%)**

** High risk thrombophilia: antithrombin deficiency, ≥ 2 thrombophilic conditions, homozygous factor V Leiden or prothrombin gene mutation G20210A**

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## Thromboprophylaxis in pregnant women with inherited thrombophilia but without previous VTE

### Recommendations
Graduated elastic compression stockings

<table>
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<tr>
<th>For whom?</th>
<th>What?</th>
<th>When?</th>
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<tbody>
<tr>
<td>Inherited thrombophilia**</td>
<td>• Clinical surveillance&lt;br&gt;• Prophylactic dose LMWH</td>
<td>• During pregnancy&lt;br&gt;6 weeks postpartum&lt;br&gt;Consider prophylactic dose LMWH during pregnancy if additional risk factors*</td>
</tr>
<tr>
<td>• Low risk</td>
<td>• Prophylactic dose LMWH&lt;br&gt;Consider intermediate or full-treatment dose LMWH in antithrombin-deficient women</td>
<td>• During pregnancy and for 6 weeks postpartum</td>
</tr>
<tr>
<td>• High risk</td>
<td>• Prophylactic dose LMWH</td>
<td></td>
</tr>
</tbody>
</table>

### LMWH:
- prophylactic dose: 4000 or 5000 IU anti-Xa/24h
- intermediate dose: 100 IU anti-Xa/kg/24h
- full-treatment dose: 100 IU anti-Xa/kg/12h or 175-200 IU anti-Xa/kg/24h

* Additional risk factors: age > 35 years<br>obesity (BMI > 30 kg/m²)<br>prolonged bed rest (> 4 days)<br>parity > 4<br>multiple pregnancy

** Low risk thrombophilia: protein C or S deficiency, heterozygous factor V Leiden or prothrombin gene mutation G20210A, high factor VIII (>200%)
High risk thrombophilia: antithrombin deficiency, ≥ 2 thrombophilic conditions, homozygous factor V Leiden or prothrombin gene mutation G20210A

♦ these women require individual risk assessment and joint specialist management by obstetricians and experts in haemostasis

VTE: venous thromboembolism
LMWH: low molecular weight heparin

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# Thromboprophylaxis in pregnant women with antiphospholipid antibodies but without previous VTE

**Recommendations**
Graduated elastic compression stockings

<table>
<thead>
<tr>
<th>For whom?</th>
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<th>When?</th>
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<tbody>
<tr>
<td>No previous adverse pregnancy outcomes**</td>
<td>• Clinical surveillance + aspirin® 100mg/day</td>
<td>• During pregnancy</td>
</tr>
<tr>
<td></td>
<td>• Prophylactic dose LMWH + aspirin® 100 mg/day</td>
<td>• Consider prophylactic dose LMWH during pregnancy if additional risk factors*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• 6 weeks postpartum</td>
</tr>
<tr>
<td>Previous adverse pregnancy outcomes**</td>
<td>• Prophylactic or intermediate dose LMWH + aspirin® 100mg/day</td>
<td>• During pregnancy and for 6 weeks postpartum</td>
</tr>
</tbody>
</table>

**LMWH:**
- prophylactic dose: 4000 or 5000 IU anti-Xa/24h
- intermediate dose: 100 IU anti-Xa/kg/24h

* Additional risk factors: age > 35 years
  - obesity (BMI > 30 kg/m²)
  - prolonged bed rest (> 4 days)
  - parity > 4
  - multiple pregnancy

** Adverse pregnancy outcomes: pregnancy losses (≥ 3 early or ≥ 1 late pregnancy loss)
  - preeclampsia
  - intrauterine growth restriction
  - abruptio or unexplained intrauterine foetal death

♦ these women require individual risk assessment and joint specialist management by obstetricians and experts in haemostasis

VTE: venous thromboembolism
LMWH: low molecular weight heparin

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