Urology Venous Thromboembolism Guideline

- Guideline for the prevention of Thromboembolic disease in Urological Patients
- Guideline for the management of Urological patients on anticoagulant therapy requiring surgery

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DATE: 13 Oct 2006  
REVISION DATE: APRIL 2007
Guidelines for the prevention of Thromboembolic disease in Urology Patients

1. General Measures which should be applied to most patients
   - Early mobilisation
   - Regular analgesia
   - Hydration
   - Graduated Elastic Compression Stockings (GECS),
   - Intra-operative Intermittent Pneumatic Compression (IPC) device

2. Major, Laparoscopic or Open Procedures
   - In patients at significant risk of venous thromboembolism (age over 40 or other risk factor)
     - Subcutaneous LMWH - Enoxaparin 20mg 1800 hrs Day Preop
     - Continue once daily dosage for 5 days or until discharge
     - (Level of Evidence A)
   - For Higher Risk Patients
     - Enoxaparin 40mg 1800 hrs Day Preop
   - In patients in whom LMWHs are contraindicated
     - Mechanical Prophylaxis – GECS +/- IPC
     - (Level of Evidence B)

3. Transurethral resection of the prostate (TURP)
   - GECS + IPC (intraoperative) and all other general measures
   - In patients with increased risk of venous thromboembolism due to multiple risk factors → antithrombotic prophylaxis with LMWH or GECS +/- IPC should be considered. (level of evidence C)
   - LMWH only in higher risk group (Discuss with SpR/Consultant)

4. Patients taking Aspirin
   - Patients on aspirin should increase dose to 150mg daily for 35 days postoperatively. This should be communicated to the patient at the PAC clinic and reinforced during admission
   - Preoperative LMWH are not contraindicated in patients taking aspirin
   - Do not stop aspirin unless prior to TURP.
   - Individual Consultant Preferences prior to TURP are as follows

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\(^1\) Source = Section 6.1 of SIGN guideline: [http://www.sign.ac.uk/pdf/sign62.pdf](http://www.sign.ac.uk/pdf/sign62.pdf)

\(^2\) See Appendix 1
5. Oral Contraceptive Pill

In MOST cases no need to stop.

Risk of venous thromboembolism increases from 0.5% to 1% for pill users - Balance this with risk and complications of an unwanted pregnancy.

Increased risk associated with:
- First year of use
- (30/100000 vs 5 per 100000 women per year)
- Newer generation pill
- Second (3x – 15/100000) and Third (6x – 30/100000) generation pill
- Usual Risk factors
Guideline for the management of Urological patients on anticoagulant therapy requiring surgery

Decisions taken according to
- Risk of bleeding if anticoagulation continued
- Risk of thrombosis if anticoagulation discontinued

1. For patients with low bleeding risk
- e.g. – cystoscopy +/- diathermy
- Aim for INR at low end of range (i.e. 2).
- Stop Warfarin for 1-2 days and check pre-op
- Restart normal dose of warfarin post-operatively
- **No need** to admit patient in advance of surgery – This information should be communicated to the patient at the PAC visit

2. Low thrombosis risk, high bleeding risk (e.g. TURP)
   Low thrombosis risk Includes
   - AF without additional risk factors, or
   - DVT > 3 months earlier, or
   - Bi-leaflet tilting disc aortic valve and less than 2 stroke risk factors
   - Stop Warfarin 5 days pre operatively. **No need to admit patient to do this – this information to be communicated to patient at PAC visit.**
   - Ensure INR <1.4 pre-op on day prior to surgery
   - Restart Warfarin post operatively, once bleeding has settled, and continue until INR is >2.0
   - No need to use loading dose when restarting warfarin, use patient’s normal steady-state dose

3. Moderate Risk of Thrombosis, high bleeding risk
   Moderate thrombosis risk Includes
   - Bi-leaflet tilting aortic valves and two or more stroke risk factors (see appendix 2), or
   - DVT between 1 and 3 months earlier, or
   - Recurrent DVT on cessation of previous anticoagulation, or
   - Chronic AF with two or more stroke risk factors
   - Stop Warfarin 5 days before surgery
   - INR to be measured daily after cessation of warfarin, and use LMWH when INR < 2.5
   - INR monitoring can be performed by ward, or by patient’s general practitioner.

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3 See Appendix 2
4 See Appendix 3
- LMWH can be given daily either by ward staff, District Nurse, or by patient him/herself after adequate tuition. **This decision to be made at PAC visit**
- There is a case for prophylactic dose of LMWH in these cases
- Restart Warfarin post operatively, once bleeding has settled.
- No need to use loading dose when restarting warfarin, use patient’s normal steady-state dose
- Continue LMWH after surgery until INR is in therapeutic range

4. Very High risk of thrombosis, high bleeding risk
   Includes
   - AF with recent stroke or TIA
   - Mitral valve disease
   - Any mitral valve or older aortic valve replacement\(^5\)
   - Hypercoagulable states

   - Admit patient and stop warfarin 5 days prior to procedure
   - As soon as INR falls to < 2.5 give treatment dose of IV unfractionated heparin aiming at APTT of 2.5
   - Stop Heparin 6 hours prior to surgery; Recomence heparin 12 hrs after surgery if adequate haemostasis is present
   - Ensure mobilisation and use of compression stockings
   - Restart Warfarin post operatively, once bleeding has settled.
   - No need to use loading dose when restarting warfarin, use patient’s normal steady-state dose
   - Continue Heparin after surgery until INR is in therapeutic range

   - **Alternative** is treatment with LMMW
     - Stop Warfarin 5 days prior to procedure
     - Give treatment dose of LMHW. This can be given in the outpatient setting.
     - Check INR on day of surgery
     - Restart warfarin as soon as possible after surgery and follow guidelines as above
     - Ensure mobilisation and use of compression stockings

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\(^5\) E.g. Caged ball, Bjork Shiley, Medtronic Hall, Omnicarbon valve
**Clopidogrel**

- Clopidogrel belongs to a class of irreversible noncompetitive platelet aggregation inhibitors.
- These drugs should be discontinued for 7-10 days prior to urological surgery considered to be of moderate of high risk for bleeding
- The risk of thrombosis should be assessed using these guidelines and alternative anticoagulation therapy should be considered according to this risk assessment.
- This assessment should take place at the PAC visit and should involve the SpR +/- Consultant as required.

**References**

- Meyer et al. Managing the warfarinised Urological patient. 2003 *BJU International* 92,351-354
- Keaton C. *Seminars in Thrombosis and Haemostasis* 1998
- Spandorfer J. The management of anticoagulation before and after procedures. *Med Clin Nth America* 2001;85:1109-1116
- Mak S and Amoroso P. Stop those antiplatelet drugs before surgery! *BJU International* 2003 p593-4

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6 Mak and Amoroso. BJU International 2003
Appendix 1. Risk Factors for venous thromboembolism in Urological Patients

General
Major surgery (duration greater than 30 minutes)
Acute medical illness (requiring bed rest for 3 days or more)

Personal Risk factors for venous thromboembolism

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<table>
<thead>
<tr>
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<tbody>
<tr>
<td><strong>Age</strong></td>
<td>Exponential increase</td>
</tr>
<tr>
<td></td>
<td>&lt;40 yrs 1/10000 annual risk</td>
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<tr>
<td></td>
<td>60-69 yrs 1/1000</td>
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<tr>
<td></td>
<td>&gt;80 yrs 1/100</td>
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<td><strong>Obesity</strong></td>
<td>3 x risk if BMI &gt;30</td>
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<tr>
<td><strong>Varicose Veins</strong></td>
<td>1.5 x risk after major general / orthopaedic surgery</td>
</tr>
<tr>
<td><strong>Previous venous thromboembolism</strong></td>
<td>Recurrence – 5% / yr increased by surgery</td>
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<tr>
<td><strong>Thrombophilias</strong></td>
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<tr>
<td><strong>Other Thrombotic States</strong></td>
<td>Malignancy 7x risk</td>
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<tr>
<td></td>
<td>CCF/MI/CVA/ Polycythaemia</td>
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<tr>
<td></td>
<td>Sepsis/ IBD/ Nephrotic syndrome</td>
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<tr>
<td></td>
<td>Polycythaemia, paraproteinaemia</td>
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<tr>
<td><strong>Hormone therapy</strong></td>
<td>OCP, HRT, Tamoxifen x 3 risk</td>
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<td>High dose progestogens x 6 risk</td>
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<td><strong>Pregnancy</strong></td>
<td>10 x risk</td>
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<tr>
<td><strong>Immobility</strong></td>
<td>Bedrest 3 days – 10x risk</td>
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<tr>
<td><strong>Prolonged Travel</strong></td>
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<tr>
<td><strong>Hospitalisation</strong></td>
<td>Acute trauma. Illness. Surgery = 10x risk</td>
</tr>
<tr>
<td><strong>Anaestheisiae</strong></td>
<td>2 x general vs spinal/epidural</td>
</tr>
</tbody>
</table>


NB: Routine coagulation screening is not recommended

**Appendix 2 – Calculated Daily Risk of VTE based on underlying condition**


<table>
<thead>
<tr>
<th>Condition</th>
<th>Daily risk of thromboembolism, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atrial Fibrillation</td>
<td>0.003-0.05</td>
</tr>
<tr>
<td>Mechanical prosthetic heart valve</td>
<td>0.02-0.06</td>
</tr>
<tr>
<td>VTE &lt; 1 month</td>
<td>1</td>
</tr>
<tr>
<td>VTE &lt; 2-3 months</td>
<td>0.2</td>
</tr>
<tr>
<td>VTE &gt; 3 months</td>
<td>0.04</td>
</tr>
</tbody>
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VTE = Venous thromboembolism

**Appendix 3 – Risk factors for Stroke / CVA**

- Atrial Fibrillation
- Previous Stroke / TIA
- Left ventricular dysfunction
- Age > 75 years
- Hypertension
- Diabetes Mellitus