

## 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**

Dr P Gupta, Urology PRHO  
Mr D Sharma, Urology SpR  
Mr C Dawson, Urology Lead Clinician

**DATE:** 13 Oct 2006

**REVISION DATE: APRIL 2007**

# **Guidelines for the prevention of Thromboembolic disease in Urology Patients<sup>1</sup>**

## **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<sup>2</sup>)
  - 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

---

<sup>1</sup> Source = Section 6.1 of SIGN guideline: <http://www.sign.ac.uk/pdf/sign62.pdf>

<sup>2</sup> See Appendix 1

- Mr Sharma / Mr Dawson – Do NOT stop Aspirin
- Mr Blackford / Miss Nethercliffe – STOP Aspirin UNLESS Patient is on aspirin because of previous TIA

## **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<sup>3</sup>

### 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<sup>4</sup>
  
- 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.

---

<sup>3</sup> See Appendix 2

<sup>4</sup> 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<sup>5</sup>
  - 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; Recommence 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

---

<sup>5</sup> 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 or high risk for bleeding<sup>6</sup>
- 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
- Jafri et al. Periprocedural thromboprophylaxis in patients receiving anticoagulation therapy. *American Heart Journal*, Jan 2004;147(1):3-15
- 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

---

<sup>6</sup> 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**

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

Source: <http://www.sign.ac.uk/pdf/sign62.pdf>

NB: Routine coagulation screening is not recommended

If in any doubt refer to SIGN62 guideline - <http://www.sign.ac.uk/pdf/sign62.pdf>

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

Source: Spandorfer JM. The management of anticoagulation before and after elective surgery. *Med Clin North Am.* 2001;85:1109-1116

Cited on <http://jaapa.com/issues/j20040601/articles/periopanticoag.html> (last accessed 9 Oct 06)

<b><u>Condition</u></b>	<b><u>Daily risk of thromboembolism, %</u></b>
Atrial Fibrillation	0.003-0.05
Mechanical prosthetic heart valve	0.02-0.06
VTE < 1 month	1
VTE < 2-3 months	0.2
VTE > 3 months	0.04

VTE = Venous thromboembolism

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

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