

## Clinical Guideline

### ***Venous thromboprophylaxis in elective total hip replacement (THR) and total knee replacement (TKR)***

Document Detail	
Document Type	Guidelines
Document name	Venous thromboprophylaxis in elective total hip replacement (THR) and total knee replacement (TKR)
Document location	GTi Clinical Guidance Database
Version	9.0
Effective from	10 October 2013
Review date	10 October 2016
Owner	Oncology and Haematology and Cellular Pathology
Author	Professor Beverley Hunt, Consultant in Haematology Rebecca Chanda, Senior Pharmacist Anticoagulation Caroline Broadbent, Principal Pharmacist for Surgery, GI and Acute Pain
Approved by, date	Drug & Therapeutics Committee, October 2013
Superseded documents	8.0
Related documents	
Keywords	VTE, DVT, prophylaxis, venous, thromboprophylaxis, orthopaedic, THR, TKR, hip replacement, knee replacement, dalteparin, heparin, timing, pre-op, post-op
Relevant external law, regulation, standards	

Change History		
Date	Change details, since approval	Approved by
Oct 2013	Enoxaparin switch to dalteparin	DTC

## Venous Thromboprophylaxis in Adult Elective Total Hip Replacement and Total Knee Replacement

All Elective THR and Elective TKR patients have a high risk of VTE and need thromboprophylaxis

**At admission:** AES (unless contra-indicated <sup>a</sup>)  
Check allergies - If patient allergic to heparins/history of HIT, consult on-call Haematology StR for alternatives (via switchboard)  
**Post surgery:** Is pharmacological thromboprophylaxis contra-indicated <sup>b</sup>?

No

Does the patient have renal failure with CrCl < 30 mL/minute?

Yes

Yes

No

Dalteparin (according to weight) subcutaneously

Weight	Dalteparin dose
< 49kg	2500 units OD
50 - 99kg	5000 units OD
100-139kg	7500 units OD
140-179kg	5000 units BD
>180kg	Seek Haematology advice

**Pre-op:** If admitted, continue to give up to 12 hours before surgery  
**Post-op:** Give 6 - 12 hours post wound closure and prescribe this dose on Time Dependent section of drug chart  
Give subsequent daily doses at 08:00 or 18:00

Dalteparin (according to weight) subcutaneously <sup>c</sup>

Weight	Dalteparin dose
< 39kg	1250 units OD
40 - 99kg	2500 units OD
100-179kg	5000 units OD
>180kg	Seek Haematology advice

**Pre-op:** If admitted, continue to give up to 12 hours before surgery  
**Post-op:** Give 6 - 12 hours post wound closure and prescribe this dose on Time Dependent section of drug chart.  
Give subsequent daily doses at 08:00 or 18:00

Continue AES  
And consider intermittent pneumatic compression devices in addition if high risk  
Reassess regularly

Continue pharmacological thromboprophylaxis AND AES for: 28 days (THR) or 10 days (TKR)

### Key:

AES – anti-embolic stockings  
CrCL - creatinine clearance  
HIT – Heparin-induced thrombocytopenia  
THR – total hip replacement  
TKR – total knee replacement  
VTE – venous thromboembolism

### Additional VTE risk factors:

- Active cancer/cancer treatment
- Age > 60 years
- Critical care admission
- Dehydration
- Known thrombophilias
- Obesity (BMI > 30kg/m<sup>2</sup>)
- One or more significant medical co-morbidities e.g. heart disease; metabolic, endocrine or respiratory pathologies; acute infectious diseases; inflammatory conditions
- Personal or first-degree family history of VTE
- Hormone therapy - combined oral contraceptives, HRT, high dose progestogens, selective oestrogen receptor modulators
- Varicose veins with associated phlebitis
- Pregnancy or < 6 weeks post partum – Refer to the 'Management of thrombosis and thromboprophylaxis in pregnancy and the puerperium' guideline

### <sup>a</sup> Contra-indications to AES:

- Gross oedema
- Leg deformity/condition
- Peripheral vascular disease
- If peripheral arterial disease present, seek expert opinion before fitting
- Peripheral neuropathy

### <sup>b</sup> Contra-indications to pharmacological thromboprophylaxis:

- On oral anticoagulant with INR > 2
- Thrombocytopenia (platelets < 50x10<sup>9</sup>/L)
- Known bleeding disorder
- Evidence of active bleeding
- Uncontrolled hypertension (BP > 230/120 mmHg)
- Lumbar puncture/ epidural/ spinal analgesia expected within next 12 hours or performed within last 4 hours (24 hours if traumatic)
- New stroke (ischaemic or haemorrhagic)

### <sup>c</sup> Anti-Xa level testing in renal failure (SEND ON ICE)

- Dalteparin levels can accumulate in renal failure over time. This is taken into account in the dosing table
- Check trough anti-Xa levels if there are concerns about bleeding or bruising after 7 days of dalteparin
- If **trough** (pre-dose) anti-Xa level is **>0.2 international units/mL**, please discuss with Thrombosis StR bleep 0122/switchboard)