

THROMBOPROPHYLAXIS FOR SURGICAL INPATIENTS (NOT ORTHOPAEDICS)

Type of admission: Elective / Emergency

Date of surgery: _____

Risk assessment by: _____

Signature: _____

Date: ____ / ____ / _____

Name:

Date of Birth:

Hospital No:

NHS No:

Consultant:

*Patient details
or sticker*

MUST BE ASSESSED AT PRE-OP OR WITHIN 24 HOURS OF ADMISSION

Enoxaparin indicated? Yes No If yes and not given, please state reason _____

ALL PATIENTS

- Encourage early mobilisation and leg exercises
- Ensure adequate hydration
- Assess patient's risk factors for VTE on admission/ at pre-assessment clinic and prescribe thromboprophylaxis as below unless contraindicated (listed overleaf)
- **Patients should have their VTE risk reassessed should there be a change in their clinical condition**

RISK FACTORS FOR VENOUS THROMBOEMBOLISM (VTE)

- | | |
|--|--|
| <input type="checkbox"/> Personal or family history VTE | <input type="checkbox"/> Obesity (BMI greater than 30) |
| <input type="checkbox"/> Acquired or inherited thrombophilia (incl. antiphospholipid syndrome) | <input type="checkbox"/> Active inflammatory bowel disease (crohn's/ ulcerative colitis) |
| <input type="checkbox"/> Acute medical illness/ recent MI | <input type="checkbox"/> Nephrotic syndrome |
| <input type="checkbox"/> Severe infection | <input type="checkbox"/> Immobility (eg. paralysis/ paresis/traction/ lower limb in plaster) |
| <input type="checkbox"/> Heart or respiratory failure | <input type="checkbox"/> Varicose veins with a history of phlebitis |
| <input type="checkbox"/> Active cancer/ cancer therapy | <input type="checkbox"/> Hormone therapy (antiandrogen or oestrogen including combined oral contraceptive pill or hormone replacement therapy) |
| <input type="checkbox"/> Pregnancy or puerperium (within 6 wks of delivery) | <input type="checkbox"/> Central venous catheter in place |
| <input type="checkbox"/> Myeloproliferative disease/ paroxysmal nocturnal haemoglobinuria | <input type="checkbox"/> Age greater than 60 |
| <input type="checkbox"/> Paraproteinaemia | |

RECOMMENDED THROMBOPROPHYLAXIS

- All inpatients undergoing a surgical procedure should be given thigh length graduated elastic compression stockings (GECS) to wear, unless contraindicated (pedal pulses not palpable).
- **LOW RISK: *Minor surgery*** without risk factors other than age
 - Encourage early mobilisation.
- **MODERATE RISK: *Major surgery*** without risk factors or ***minor surgery*** with risk factors:
 - 20 mg of enoxaparin daily
- **HIGH RISK: Patients having *major surgery*** with 1 or more of the above risk factors
 - 40mg of enoxaparin daily
 - 20mg of enoxaparin daily if creatinine clearance less than 30 mL/min*
- **Emergency admissions: Risk assess and prescribe enoxaparin as above (20mg if creatinine clearance less than 30mL/min) and GECS unless contraindicated during assessment period or whilst awaiting theatre.**
- ***Men with creatinine greater than 180micromol/L and women greater than 150micromol/L should have creatinine clearance calculated using Cockcroft-Gault equation (see over)**
- **SEE OVER FOR SPECIFIC NEUROSURGERY, BARIATRIC AND ENDOCRINE GUIDANCE**

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Additional Information

Contraindications to chemical thromboprophylaxis:

- If spinal/epidural anaesthesia anticipated in next 12 hours please discuss with SpR or consultant surgeon or anaesthetist
- Known bleeding disorder/thrombocytopenia (platelet count less than $50 \times 10^9/L$)
- On therapeutic anticoagulation (oral anticoagulants/un-fractionated heparin/enoxaparin/fondaparinux)
- Recent haemorrhagic stroke or risk of central nervous system bleed e.g. head injury (caution in recent ischaemic stroke, see separate guidance)
- Active gastrointestinal bleeding / or severe hepatic failure
- Bacterial endocarditis, pericarditis or thoracic aortic aneurysm
- Heparin induced thrombocytopenia or hypersensitivity to enoxaparin
- Other conditions with high risk of serious bleed
- **Discuss with consultant if risk/benefit balance not clear**

Enoxaparin prescription

- Enoxaparin should be given once a day at 18:00 hrs and prescribed on the drug chart. The first dose should be given at 18:00 hrs the evening before surgery, or **6 hrs post-op** and at 18:00 hrs on subsequent days.
- Spinal/epidural anaesthesia, enoxaparin 20mg should be given 6 hours postoperatively, then 20mg (moderate risk) or 40mg (high risk) at 18.00 hours on subsequent days.
- Spinal/epidural anaesthesia should NOT be performed nor epidural removed until 12 hours have elapsed since the last prophylactic dose of enoxaparin; or within 2 hours prior to next dose.
- If epidural catheters are to be left in situ, postoperative thromboprophylaxis should still continue.
- If heparin exposure within 3 months check full blood count (FBC) next day.
- All patients receiving enoxaparin for thromboprophylaxis should have FBC checked after 5-7 days then again after 12-14 days (if still receiving enoxaparin) to exclude heparin induced thrombocytopenia (HIT) (contact haematology if platelet count falls by 30-50% or less than $150 \times 10^9 /L$).
- Enoxaparin to be given until the patient is discharged or is fully mobile.

Neurosurgery

- All patients to receive mechanical thromboprophylaxis (GECs or IPC)
- Neurosurgical patients with ruptured cranial or spinal vascular malformations not to be offered LMWH prophylaxis until lesion secured
- All other patients having major surgery with 1 or more risk factors for VTE should have
 - 40mg of enoxaparin daily
 - 20mg of enoxaparin daily if creatinine clearance less than 30 mL/min
- **Neurosurgical patients and those undergoing spinal surgery should receive the first enoxaparin dose postoperatively (i.e. no preoperative dose should be given)**

Bariatric surgery

- All bariatric surgery patients to be considered as high risk and should receive enoxaparin 40mg s/c daily while inpatient and for ten days following discharge

Endocrine surgery

- All patients receive IPC intra-operatively and GECs post operatively
- Abdominal surgery follow general guidelines overleaf
- Neck surgery no routine enoxaparin unless thought to be high risk by consultant surgeon

Urology patients

- Transurethral surgery without risk factors other than age: IPC during theatre and graduated elastic compression stockings
- Transurethral surgery with risk factors in addition to age: as above and enoxaparin 40mg once daily (20mg if creatinine clearance less than 30mL/min)
- All other urological surgery: follow general guidance overleaf.

Calculation for creatinine clearance (Cockcroft-Gault Equation)

$$\left(\frac{(140 - \text{age}) \times \text{weight (kg)}}{\text{Serum Creatinine (micromol/L)}} \right) \times \begin{matrix} 1.04 \text{ (female)} \\ \text{or} \\ 1.23 \text{ (male)} \end{matrix} = \text{CrCl (ml/min)}$$