Title	VTE Extended Prophylaxis in Orthopaedic Hip and Knee Replacement
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EXTENDED VENOUS THROMBOEMBOLISM (VTE) PROPHYLAXIS FOR ORTHOPAEDIC PATIENTS IN NHS BORDERS

All patients should be risk assessed for VTE against tables 1 and 2 on admission.
Patients with complex issues such as mechanical heart valve or heparin allergy should be discussed with Haematology.
Patients scoring 5 or more on table 1 may require more prolonged thromboprophylaxis. Initial treatment should be with dalteparin 5000 units daily for 7 days, followed by apixaban 2.5mg twice daily as per protocol shown below. Patients needing anticoagulation beyond 14/35 days can continue on apixaban 2.5mg twice daily for a further 2-12 weeks, duration depends on risk of thrombosis and speed of recovery to full mobility.

Extended VTE prophylaxis is indicated for all patients undergoing knee or hip replacement surgery:**

Total Knee Replacement – 7 days of dalteparin 5000units daily*, followed by 7 days of apixaban 2.5mg twice daily to complete 14 days of prophylaxis (total amount supplied on discharge from BGH). Apixaban to commence 24hours after last dose of dalteparin.

Total Hip Replacement - 7 days of dalteparin 5000units daily* followed by 28 days of apixaban 2.5mg twice daily to complete 35 days of prophylaxis (total amount supplied on discharge from BGH). Apixaban to commence 24hours after last dose of dalteparin.

If thromboprophylaxis is withheld or there is deviation from this guidance the reasons must be documented in the patient's case notes.

Table 1 – thrombosis risk factors	Points
obesity (BMI > 30), morbid obesity (BMI > 40)	2
pregnancy, or < month postpartum	1
oral contraceptive, HRT, tamoxifen, raloxifene	1
history of recurrent spontaneous abortions (x3)	1
previous DVT or PE	2
thrombophilic status known thrombophilia with history of clot.	2
protein C or S deficiency, APC resistance, positive factor V Leiden, elevated serum homocysteine, positive lupus anticoagulant, elevated anticardiolipin antibodies, antithrombin III deficiency, etc.	1
family history of DVT or PE	1
congestive cardiac failure, MI within last month	1
sepsis within last month	1
cancer, or chemotherapy within last 6 months	2
abnormal pulmonary function, COPD, serious lung disease	1
lower limb plaster cast or brace	1
hip, pelvis or lower limb fracture within last month	3
immobilisation, current bed rest	1
current swollen legs	1
significant varicose veins	1
nephrotic syndrome	1
stroke (excluding within last month)	3
multiple trauma within last month	3
acute spinal cord injury (paralysis) within last month	3
inflammatory bowel disease	1
age > 60 years	1

Table 2: Bleeding risk assessment - cautions/bleeding risk factors to be considered. (Complex patients can be discussed with haematology)

- Presence of active bleeding
- Concurrent OAC use,platelet inhibitors (clopidogrel, aspirin, warfarin, dipyridamole etc.)**
- Thrombocytopaenia (platelets < 100 000)
- Presence of or history of heparin-induced thrombocytopaenia
- Haemophilia or other coagulopathy
- Severe liver disease
- *Active* peptic ulcer
- Severe uncontrolled hypertension (systolic > 200 or diastolic > 120)
- Acute stroke within last month
- CNS surgery within last 3 months
- Lumbar puncture, epidural/spinal anaesthesia expected within the next 12 hours. Consider also the timing of removal of epidural/spinal catheter. It is recommended that prophylaxis should be avoided within the 12 hours prior to these events.
- Untreated inherited bleeding disorder
- Uncontrolled hypertension (= or > 230/120 mmHg) – any surgery in these circumstances should be postponed until blood pressure is controlled unless it is life-saving surgery.

Low molecular Weight Heparin Dose

***Dalteparin 5000units** daily should be prescribed for 6-8 hours post-surgery (unless concerns over haemostasis), and then at 1800hours daily for a total of 7 days. (Only one dose of dalteparin should be given daily)

- For patients < 46kg, BMI < 19 or eGFR 10-30ml/min dalteparin 2500 units is an appropriate dose.
- If eGFR<10ml/min – mechanical thromboprophylaxis measures only.

Other measures

When pharmacological VTE prophylaxis is contraindicated, **AVI footpumps** should be considered.

AVI foot pumps are favoured for use (+/- dalteparin as indicated) for patients undergoing knee replacement. Foot pump on the alternate side peri-operatively – both feet post op until ambulant.

- Risk factors should be regularly reviewed.
- All prophylaxis should be prescribed on the patient's drug Kardex.
- Hydrate & mobilise all patients as early as possible.
- If thromboprophylaxis is withheld or there is deviation from this guidance the reasons must be documented in the case notes. ***The presence of risk factors for bleeding should prompt consideration of individual specific VTE thromboprophylaxis.*** *Pharmacological intervention may be precluded.*
- Refer to "Prophylaxis and treatment of VTE in NHS Borders" for further information.

Patients being discharged on extended VTE prophylaxis with dalteparin should, if possible, be taught to self administer (or carer taught to administer) dalteparin; alternatively ward nursing staff should confirm that community nurses can administer, and the dalteparin should be prescribed on community prescription chart by ward medical staff on discharge from hospital.

****Patients who are anticoagulated with an alternative anticoagulant, or are receiving dual antiplatelet treatment should not be prescribed apixaban. Patients receiving aspirin 75mg or clopidogrel 75mg for secondary prevention (MI, CVA) should have this withheld while on apixaban & then restarted once course of apixaban is complete. Patients who have had a PCI > year ago should have aspirin 75mg withheld while on apixaban & then restarted once course of apixaban is complete. If <1 year since PCI, discuss with cardiology. Contact haematology or cardiology to discuss complex patients.**

Patients who require NSAID analgesia post-op & for discharge are prescribed ETORICOXIB (60 or 90mg daily) for a max of 7 days post-op, with PPI cover. (Etoricoxib is prescribed because of its lack of antiplatelet effect).

NHS Borders Anticoagulation Committee. Updated May 2022 For review November 2023