NHSGGC Risk Assessment for Venous Thromboembolism (VTE) in lower limb immobilisation - V7.0	NHS Greater Glasgow and Clyde

This document has been approved for use by Emergency Department (ED) and Orthopaedic teams working in EDs and Minor Injury Units(MIUs) across NHSGGC. **This document should be used for all patients discharged from EDs or MIUs with non-weight bearing Lower Limb IMMOBILISATION and Orthopaedic follow-up. (NB Use Equinus Cast for suspected Achilles Rupture)**	*Addressograph label*

Step 1: VTE Risk Assessment for consideration of thromboprophylaxis

No	Yes	Immobilisation Risk Factor
☐	☐	Back-slab or Equinus cast **non-weightbearing** (not walking boot)

VTE Risk-factor (if **any are** present proceed to assess Bleeding Risk Factors):

No	Yes	VTE Risk Factor
☐	☐	Achilles tendon rupture (any management option)
☐	☐	Obesity (BMI>30Kg/m^2)
☐	☐	Active cancer or cancer treatment
☐	☐	Thrombophilia
☐	☐	Personal history or first degree relative with a history of VTE
☐	☐	Pregnancy or <6 weeks post-partum
☐	☐	Hormone replacement therapy or tamoxifen
☐	☐	Contraceptive pill (oestrogen containing)

Does the patient have any bleeding risk factors?

No	Yes	Bleeding Risk Factor
☐	☐	Concurrent use of therapeutic anticoagulant i.e. warfarin, DOAC (not including aspirin, clopidogrel)
☐	☐	Inherited or acquired bleeding disorder (e.g. haemophilia, Von Willebrands, liver failure)
☐	☐	Systolic BP ≥230 / diastolic BP ≥120 mmHg
☐	☐	Liver disease with coagulopathy

VTE Prophylaxis not required	No Bleeding Risks	Increased bleeding risk
	Prescribe thromboprophylaxis for increased risk as overleaf	Discuss with senior clinical staff before prescribing thromboprophylaxis do not continue with Step 2 or 3.

Step 2: ED Management Plan (Tick all that apply)

Thromboprophylaxis Not Required	*TIME*	*SIGN*
Thromboprophylaxis to be Prescribed		
Assess baseline coagulation and renal function – Send Full Blood Count/Coagulation Screen/Urea & Electrolytes	☐ YES	*SIGN*
For Rivaroxaban (Off label use): (Preferred choice see Step 3) Explain to patient 10 days Rivaroxaban will be supplied by ED/MIU. Provide a Rivaroxaban Patient Information Leaflet and a DOAC Patient Booklet stressing the information on side effects. Rivaroxaban will be continued by Orthopaedic Clinic if appropriate.	☐ YES	☐ NO
For Enoxaparin: (Choose if Rivaroxaban excluded see Step 3) For MIU patients, prescription and administration of the first dose of Enoxaparin will require transfer to ED. Further daily dose in ED may be required depending on weekend availability of local DVT service. Thereafter DVT service to deliver 1 week SC enoxaparin and provide a sharps bin and information leaflets. Enoxaparin will be continued by Orthopaedic Clinic if appropriate.	☐ YES	☐ NO
VTE awareness & prevention leaflet supplied	☐ YES	☐ NO

Step 3: Drug Choice, Dosing and Exclusions (Tick all that apply)

(Prescribe on ED/MIU Card or Out Patient Prescription for Pharmacy)

Drug	**Dose**	**Tick**

Rivaroxaban: use as preferred choice
Continue until cast removed/changed to functional brace and weight bearing
Exclusions to use of rivaroxaban:
• Pregnant or breastfeeding women.
• Active bleeding, or inherited or acquired bleeding disorder.
• Liver disease associated with cirrhosis and/or coagulopathy
• Lesion or condition considered to be at significant risk of major bleeding (e.g. malignant neoplasms at high risk of bleeding, recent brain or spinal surgery, recent intracranial haemorrhage, oesophageal varices).
• Systolic BP >230mmHg. Diastolic BP >120mmHg.
• Rare hereditary problems of galactose intolerance, total lactase deficiency or glucose-galactose malabsorption.
• Concurrent use of the following medications:
  ○ Anticoagulants.
  ○ Triazole and imidazole antifungals (except fluconazole).
  ○ Protease inhibitors.
  ○ Strong CYP3A4 inducers e.g. Rifampicin, Phenytoin, Carbamazepine, Phenobarbital and St John'sWort.
  ○ Dronedarone.
• Rivaroxaban should be avoided if CrCl is <15ml/min. Caution should be exercised if CrCl 15 to 29.
• Known Antiphospholipid Syndrome.
	10mg
	once daily
		☐

Drug	**Dose**		**Tick**
Enoxaparin: use if Rivaroxaban contraindicated *Continue until cast removed or changed to functional brace and weight bearing.*	Standard dosing	40mg once daily	☐
	Reduced dosing if CrCl <30 or Weight <50Kg	20mg once daily	☐
	Increased dosing if Weight>120Kg	40mg twice daily	☐
	If CrCl <15 use Dalteparin	2500U once daily	☐

Assessor's Name	*Assessor's Signature*	*Date*

Rivaroxaban and Lower Limb Injuries

Patient Information Leaflet

NHS Greater Glasgow and Clyde

This leaflet should be read as well as the patient information leaflet contained in the medication box

Why have I been given Rivaroxaban?

This medication is used to reduce the risk of blood clots forming in the legs (deep vein thrombosis [DVT]) and, or travelling to the lungs (pulmonary embolism [PE). You have a lower limb injury that requires immobilisation (not moving about) and your clinician has assessed that you are at an increased risk of a DVT or PE due to the type of injury or other risk factor. These are discussed in more detail below.

Rivaroxaban is widely used to reduce the risk of DVT or PE following common operations such as hip and knee replacements.

It is not currently licensed for use for injuries that are treated without surgery. It has however been successfully used in such cases in several other units in the United Kingdom and it is therefore considered that this is a safe and effective treatment for this indication. Rivaroxaban should be taken for 30 days after injury.

Is there an alternative to taking Rivaroxaban?

The alternative would be to prescribe a daily injection of a medication called enoxaparin. This is also effective but you would need to learn how to inject yourself, and would need to do this every day.

Rivaroxaban is a tablet that you take once a day and is therefore more convenient and comfortable.

Who is most at risk of a DVT or PE?

There are several factors which increase your chance of developing a DVT or PE. Some of the risk factors include:

- Previous DVT or pulmonary embolism (PE).
- Major Orthopaedic operations.
- Trauma.
- Paralysis or immobilisation of lower limbs.
- Family history of DVT or PE.
- Faulty blood clotting.
- Active cancer.
- Recent medical illness (e.g. heart or lung disease, kidney disease; kidney failure or recent heart attack).
- Smoking.
- Obesity or overweight (e.g. BMI more than 30).
- Pregnancy.
- Age over 40 years.
- The contraceptive pill or other hormone treatments which contain oestrogen.
- Very large varicose veins (not operated on).

What are the risks of developing a DVT or PE with a plaster cast?

Fractures, and lower limb plaster casts on the leg for any foot and ankle injuries, are associated with a small risk of a DVT in the leg which can travel to the lung and cause a PE. The risk is very low, particularly if you have a “moon-boot” brace rather than a cast, and you put weight through it when walking.

It is slightly higher with some injuries, such as a rupture of the Achilles tendon. This is thought to be due to a reduction in the calf muscle helping to pump blood back up the leg. These risks are reduced through the use of medication such as Rivaroxaban.

What should I do if I experience a side-effect?

If you experience any bleeding problems (from the nose or gums), unexplained bruising, vomit containing blood or coffee ground material, red urine or black stools, please contact the relevant Orthopaedic Clinic (9.00am to 5.00pm) or Emergency Department below (out with these hours).

RAH Emergency (A&E) Department: 0141 314 7212

RAH Orthopaedic Clinic: 0141 314 6787

IRH Emergency (A&E) Department: 01475 524166

IRH Orthopaedic Clinic: 01475 504547

VOL Orthopaedic Clinic:..... 01389 817645

VOL Minor Injuries Unit: 01389 817530

NHS 24: 111

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Approval Group: Thrombosis Committee & Cross Sector Orthopaedic Clinic Governance Group