

Clinical Guideline

Risk Assessment for Venous Thromboembolism (VTE) In Patients being discharged from ED with Lower Limb Immobilisation

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Version: 3 (Previous version in use was V2.7 which had temporary authorisation during the COVID pandemic)

Key Points

- All patients receiving lower limb immobilisation should have a VTE assessment at the point of application of the splint or plaster cast.
- The vast majority of patients will not require VTE chemoprophylaxis.
- The highest risk groups are patients with an Achilles tendon rupture, being managed in an equinus cast, along with patients with pre-existing additional risk factors for VTE.
- For patients identified by the risk assessment tool as being in these groups, chemoprophylaxis with rivaroxaban should be the first line option. Where contraindications to this agent exist, LMWH should be considered.

Background

Some patients with lower limb injuries requiring immobilisation are at increased risk of VTE.

These situations include:

- Achilles Tendon rupture (via loss of calf pump and equinus casting position)
- Non-weight bearing lower limb immobilisation (backslab)
- Patient with one or more pre-existing risk factors for VTE

Previous risk assessments recommended higher risk patients towards treatment with LMWH. This necessitated repeat visits for injection education, along with challenges with compliance.

There are publications and anecdotal evidence that the use of rivaroxaban for the above indication is effective¹⁻². Rivaroxaban is not currently licenced for this indication but its use for this indication during this challenging period will reduce the need for patient education and safe syringe disposal.

During the initial stages of the COVID pandemic there was temporary authorisation to move to Rivaroxaban for these indications. This was to reduce unnecessary attendance at the Anticoagulation and Fracture clinics. A secondary aim was to simplify the pathway in the Emergency Department.

Protocol

- Where possible, removable “walking-boot” splints should be used in preference to backslabs or casts. If a patient is being managed in a “walking boot” splint, and allowed to weight-bear, and has no other risk factors, then no chemical thromboprophylaxis is required.
- All patients with a lower limb injury requiring immobilisation should have a Risk Assessment Tool (RAT v5) completed.
- Where chemical VTE prophylaxis is indicated by the RAT, rivaroxaban should be used where possible. LMWH can be used as an alternative if rivaroxaban therapy is contraindicated.

Use of Rivaroxaban

The recommended dose for this indication is rivaroxaban 10mg once-daily.

The dose does not need to be adjusted for renal function or extremes of body weight. However, rivaroxaban not be prescribed if CrCl is <15ml/min. Caution should be exercised if CrCl is between 15 to 29.

FBC, coagulation screen should be assessed prior to starting rivaroxaban. If the patient has one of the following co-morbidities, renal function should have been assessed within the last 3 months:

- Hypertension
- Gout
- Heart failure
- Chronic kidney disease
- Diabetes

The duration of anticoagulation should be until the cast is removed or converted to a weight-bearing functional brace.

Patient exclusions to rivaroxaban

- Pregnant or breastfeeding women
- Liver disease associated with cirrhosis and/or coagulopathy
- Concurrent use of the following medications:
 - Triazole and imidazole antifungals (except fluconazole)
 - Protease inhibitors
 - Strong CYP3A4 inducers e.g. rifampicin, phenytoin, carbamazepine, phenobarbital and St John’sWort

- 1) Haque S, Davies MB. Oral thromboprophylaxis in patients with ankle fractures immobilized in a below the knee cast. [Foot and Ankle Surgery](#) 2015;21:266–8.
- 2) Horner D, Goodacre S, Pandor A, et al. Thromboprophylaxis in lower limb immobilisation after injury (TiLLI) *Emerg Med J* 2020;**37**:36–41.