Trust Guideline for the Management of Adult Patients Outpatients placed in Lower Limb Immobilisation (includes plasters/boots/splints/shoes)

A Clinical Guideline

For use in:	Trauma and Orthopaedic Directorate Accident and Emergency
By:	All Professionally qualified staff
For:	Outpatient adult patients placed in lower limb immobilisation
Division responsible for document:	Surgical
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Name and job title of document author's:	Mr David Loveday, Consultant Orthopaedic Foot and Ankle Surgeon
Name and hob title of document author's Line Manager:	Dr Tim Leary, Chief of Surgery
Supported by:	Orthopaedic Directorate Thrombosis and Thromboprophylaxis Committee
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Version and Document Control:

Version Number	Date of Update	Change Description	Author
5.1	17/06/2022	Reviewed with no clinical changes.	Mr David Loveday

This is a Controlled Document

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Abbreviations

DVT	Deep vein Thrombosis
HIT	Heparin induced Thrombocytopenia
IP	In patients
LMWH	Low Molecular weight Heparin
OP	outpatients
PE	Pulmonary Embolism
POP	Plaster of Paris
RAT	Ruptured Achilles Tendon
SC	Subcutaneous
TP	Thromboprophylaxis
ULN	Upper limit normal

VTE Venous Thromboembolism

All outpatient adults placed in lower limb immobilisation (includes lower limb cast, backslab, splint or boot) should be:

1. Risk assessment by Nursing Staff
2. Given written advice leaflet

   – Instructions following application of a cast/splint or surgical boot

Risk factors

- Achilles tendon rupture
- Pregnancy or 6 weeks post partum
- Previous DVT or PE

Medical Review for all patients with a risk factor

- Check contraindications to anticoagulation.(see table 1 and 2)
- Discuss risk and benefits of pharmacological thromboprophylaxis.
- Conversation and decision to be documented in patient record

Pharmacological thromboprophylaxis (TP) LMWH should be suggested for:

- Pregnant patients or up to 6 weeks post partum
- Patients with a previous venous thrombosis or PE
- Patients with Achilles tendon rupture with a plaster, splint or boot
  unless there is a contraindication to anticoagulation or patient refusal

  Pharmacological TP can be offered to other patients at the clinician's discretion but Aspirin 75 mg should be considered for such patients[1,2,3]

Prescribing advice

- LMWH (standard dose Dalteparin 5000 units sc daily but see LMWH dosing sheet for under or overweight patients) to be started as soon as immobilisation is applied if there are no contraindications (see table 1).
- FBC (platelet count check), Coagulation screen (baseline), LFTs and U&Es should be checked pre treatment. First dose can be given before results obtained. Results should be checked and LMWH stopped if contraindications (see table 2)
- LMWH should be continued for the duration of immobilisation. However, consider stopping chemical TP if immobilisation beyond 6 weeks (as per NICE guidance 89)

See flow diagram 1 for protocol for Accident and Emergency

See flow diagram 2 for Fracture Clinic

Table 1 History and Examination - contraindications to LMWH TP

- Allergic or other bad reaction to Heparin
- BP > 180/110
- Cerebrovascular accident within last 3 months
- Patient taking Warfarin/other anticoagulant therapy
- Haemoptysis, haematemesis, haematuria within last 1/12
- History suggesting bleeding disorder e.g. significant bleeding after operations
- Known inherited bleeding disorder e.g. VWD
- Known reason for low platelets e.g. history/ chemo last 3 weeks
- Known renal impairment
- Having retinal treatment from eye department e.g. Diabetic or Wet Macular Degeneration, surgery to brain, spine or eyes (excluding cataracts) in last 3/12

Table 2 Contraindication to LMWH TP – blood investigations

Hb <90 g/L or Platelets < 80 x 10^9/L

eGFR < 20mL/min/1.73m^2

INR > 1.4 or APTT >40 secs

LFTS > 2 x ULN

Flow Diagram 1: Protocol for Accident and Emergency

- **all patients placed in lower limb immobilisation should be risk assessed**

Flow Diagram 2: Protocol for Fracture Clinic

All patients should be given the new general POP advice leaflet containing information on VTE

Objective

Guidance for staff for use of Thromboprophylaxis for prevention of VTE for patients in lower limb immobilsation or who have a ruptured Achilles tendon.

Rationale

Immobilisation of the lower limb in plaster is recognised as a risk factor for VTE. …..

Incidence of VTE for patients in lower limb POP: in the published trials that did not use VTE prophylaxis VTE incidence ranges from 4%–40% However, within these trials there was a range of patients including patients with soft tissue injuries and no operation, those with operated and unoperated fractures and patients having elective procedures.

NNUH data for OP in lower limb POP suggests that the incidence of symptomatic VTE is very low finding 19 in approximately 5000 patients over a two year period. This data identified Ruptured Achilles Tendon (RAT) as a significant risk factor.

Evidence for benefit of LMWH: Summary of results from 5 RCTs[5-9] (but involving the range of patients mentioned above) suggest a benefit for LMWH in reducing the incidence for DVT but not PE with no increase in major bleeding (MB). Although the RCT specifically looking at RAT showed no reduction in DVT with LMWH TP.

Clinical audit standards

Audit will be against these recommendations for patients who have a discussion regarding LMWH thromboprophylaxis

Summary of development and consultation process undertaken

The consensus in version 1 was generated from a working group led by Mr James Wimhurst and discussions at two Orthopaedic Governance meetings. I

Version 2 has taken into account a review of the thromboses occurring following removal of cast in high risk patients (previous VTE, pregnant or up to 6 weeks post partum or Achilles injury) and that Achilles ruptures, whether treated in a full cast, 3D boot or carbon fibre splint seemed to have an increased risk of VTE. This was discussed at an Orthopaedic Governance meeting in April 2013 and discussed consideration of 5 to 7 days TP after removal of lower limb immobilisation.

Version 5 has adjusted for pre treatment blood tests taken in the fracture clinic to be reviewed by the fracture clinic staff. If immobilisation is beyond 6 weeks then there is to be consideration of stopping chemical TP as per the recent NG 89.

Distribution list / dissemination method

Trust intranet

References / source documents

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