

1. Introduction

Venous Thromboembolism (VTE), including Deep Vein Thrombosis (DVT) and/or Pulmonary Embolism (PE) is a potentially fatal disease. The aim of treatment is to prevent thrombus extension and decrease the incidence of recurrent VTE, post thrombotic syndrome and chronic thromboembolic pulmonary hypertension.

2. Scope

- 2.1 This document sets out the processes and procedures to follow in the diagnosis and treatment of adult inpatients with a suspected or confirmed DVT and applies to:
- a) Adults who attend as an outpatient and on assessment may have a clinically suspected DVT but are not suitable for treatment as an outpatient (see 3.1)
 - or
 - b) Adults who are currently an inpatient for another reason but develop signs and symptoms of a DVT
- 2.2 The processes and procedures within this document apply to all healthcare professionals who assess, treat and care for these group of patients.
- 2.3 This document supports the UHL Thromboprophylaxis Policy (B9/2016) and must be used in conjunction with this policy
- 2.4 This document does not cover the treatment of adults with a suspected or confirmed DVT as an outpatient, please refer to the Outpatient DVT Policy, Assessment and treatment of patients with suspected/confirmed deep vein thrombosis (DVT) in the Ambulatory DVT clinic, C36/2014
- 2.5 This document supports the UHL policy for assessment and treatment of patients with suspected or confirmed pulmonary embolism (PE) B40/2011 and must be used in conjunction with this policy

3. Patients who may not be suitable for assessment / investigation of a suspected DVT as an outpatient and require admission include those with the following:

- a) Extension of venous thrombosis despite anticoagulation
- b) Signs and symptoms of a pulmonary embolus (PE) in addition to a suspected DVT.
- c) Acute massive venous thrombosis and obstruction of the venous drainage of an extremity, ischaemic form of venous occlusion, phlegmasia cerulea dolens (painful blue inflammation)
- d) Milk leg (phlegmasia alba dolens). This is painful 'white' inflammation caused by massive iliofemoral venous thrombosis with associated arterial spasm. The affected limb is often pale with poor or even absent pulses. The findings suggest acute arterial obstruction but the presence of swelling, petechiae and distended superficial veins point to this condition
- e) Patients with active bleeding
- f) Patients at significant risk of bleeding (not a definitive list)
 - o Active peptic ulceration
 - o Liver disease (PT>2s beyond normal range)
 - o Uncontrolled hypertension
 - o Angiodysplasia
 - o Recent eye or CNS surgery or recent haemorrhagic stroke (within 1 month)
 - o Thrombocytopenia (platelet count below $75 \times 10^9 /l$)
- g) Patients who may require admission for other medical reasons
- h) Patients who develop their DVT whilst admitted for another reason

Once it has been determined that the patient needs to be investigated as an inpatient (whether as a new admission or are currently an inpatient) the following assessment, diagnosis and treatment pathways should be followed.

4.1 Well's Pretest Probability:

| Well's - Pretest Probability Scoring For Deep Vein Thrombosis | | | | | |
|--|-------------|------------------------|-------------|--------------------------|-------------|
| Clinical Feature | | | | | Score |
| Active cancer (ongoing treatment or within 6 months or palliative) | | | | | 1 |
| Paralysis, paresis or recent plaster immobilisation of the lower extremities within last 12/52 | | | | | 1 |
| Recently bedridden for more than 3 days or major surgery within 12 weeks | | | | | 1 |
| Localised tenderness along the distribution of the deep venous system | | | | | 1 |
| Entire leg swollen | | | | | 1 |
| Calf swelling by more than 3cm when compared with the asymptomatic leg (measured 10cm below the tibial tuberosity) | | | | | 1 |
| Pitting oedema (greater in the symptomatic leg) | | | | | 1 |
| Collateral superficial veins (non varicose) | | | | | 1 |
| Previous documented DVT | | | | | 1 |
| Alternative diagnosis as likely or greater than that of DVT | | | | | -2 |
| High 3 or More | Please tick | Moderate 1 or 2 | Please tick | Low – Less than 0 | Please tick |
| <p><u>High score</u> is a total of 3 or more = high probability of DVT (with a prevalence of approximately 60%)</p> <p><u>Low score</u> is a total of 0 or minus score = low probability of DVT (with a prevalence of approximately 5%)</p> <p>(Patients with a Moderate Two score or High score need imaging</p> <p>Patients with Moderate One or low score should have D Dimers checked first)</p> | | | | | |

Actions to be taken according to Wells Score:

| Wells Score | Action |
|---|---|
| High or Moderate 2 Score Or Low or Moderate 1 score but raised D Dimers, | <ul style="list-style-type: none"> • Weigh patient in Kg and document the renal function • Refer to Patient's Consultant if weight is less than 40 kg or if eGFR is less 30 ml/min. • Start Low Molecular Weight Heparin (LMWH) at treatment dose levels • Arrange imaging directly with the radiology department • Venous ultrasonography via the DVT clinic (in hours) is available if the patient is at the point of discharge and suitable for outpatient care – See outpatient DVT Policy • Patient is allowed gentle mobilisation once LMWH has been commenced. |

4.2 D-dimers

- a) Normal levels can help to exclude a DVT however elevated D-dimer levels are non-specific and have low positive predictive value.
- b) D-dimers should only be performed in patients with a primary presentation of DVT but have a Low or Moderate 1 Well's score.
- c) D-dimers must not be routinely performed on patients with a Moderate 2 or High Well's score

4.3 Routine bloods – to include:

- Coagulation screen
- U & Es
- Glucose
- LFT's
- FBC

4.4 Radiology

- a) **Radiology is performed depending on the following:**
 - Patient has a Moderate 2 or high Well's score
 - Patient has a Low or Moderate 1 Well's score in conjunction with raised D-dimers
- b) **A Positive imaging result** – diagnosis of thrombosis is confirmed, commence appropriate treatment
- c) **A Negative Image result** – document result clearly in the patients case notes, discontinue treatment doses of anticoagulants.
- d) **If calf veins are not visualised or there are other technical difficulties** – a repeat ultrasound is required within 7 days to ensure there is no above-knee extension of a possible undetected calf thrombus

4.5 Other patient assessment and care needs

- Prescribe and administer analgesia as required
- Consider undertaking 'Pretest probability of malignancy following positive DVT' (see appendix one)

5. Treatment

Further information on all aspects of treatment plans, anticoagulation monitoring and patient information can be found in the UHL VTE/Anticoagulation guidelines section on INSITE, including hyperlinks to relevant documents

It is the responsibility of the primary Consultant and their team to initiate and monitor appropriate treatment and care for an inpatient with a confirmed DVT and must include the following:

5.1 Commence and control anticoagulant therapy:

- Doctor to prescribe LMWH and warfarin or DOAC
- Ensure the patient is fully informed of condition and treatment, including possible side effects, drug and food interactions of warfarin, drug and food interactions with DOACs and this is done prior to starting treatment

- Ensure the patient is given the yellow anticoagulation booklet and that this is fully explained

5.2 Assess patient for compression hosiery

Stockings should no longer be prescribed routinely but only used selectively in patients to treat symptoms. Please refer to [Deep Vein Thrombosis in ambulatory patients UHL guideline](#) for more information.

6. Referrals to Specialist Clinics

Patients with a newly diagnosed DVT who are not already under a thrombosis specialist clinic require review after 3 months of treatment according to NICE quality standards 201 (2013 updated 2021). Consider a referral to the Haemostasis and Thrombosis Unit using the Haematology Referrals Mailbox (HaematologyReferralsMailbox@uhl-tr.nhs.uk) complete with patient's details and clinical history.

7. Monitoring and Audit Criteria

Random cases of acute VTE will be audited to ensure compliance with policy. All hospital-acquire cases will automatically fall into the Root cause Analysis process for VTE prevention

8. Further information / References

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White RH The epidemiology of venous thromboembolism **Circulation** 2003;107;14-18

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| DEVELOPMENT AND APPROVAL RECORD FOR THIS DOCUMENT | | | |
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Preset Probability of Malignancy following Positive DVT

| | |
|--|---|
| Patient Ref No: Name: Address: Tel No: GP: | Ultrasound Scan Date: Calf Popliteal Femoral Iliac Prev Thrombotic History: Yes No Known Malignancy: Yes No |
|--|---|

| | | | |
|---|-----|----|--|
| Weight loss >10% of body weight in 6 months | Yes | No | |
| Recent abdominal pain | Yes | No | |
| Recent alteration in bowel habit | Yes | No | |
| Haematuria/ Malaena | Yes | No | |
| Bilateral DVT | Yes | No | |
| Unexplained PV bleeding | Yes | No | YES = contact GAU on 16259 for advice |

YES to any of the above questions refer patient for abdominal ultrasound scan

| | | | |
|---------------------------------------|-----|----|------------------|
| Smoker or smoked within last 5 years | Yes | No | YES = CXR |
| Male >60 years | PSA | | |
| Male < 60 years with urinary problems | PSA | | |

History taken by:

Date: