

# Venous Thromboembolism

## Myeloma Nurse Guide

The Myeloma Nurse Guide Series has been developed to enhance nurse knowledge, inform practice and support nurses in the delivery of high quality treatment and care to myeloma patients and families. The information has been reviewed by myeloma nurse and medical experts and should be used in conjunction with local and national policies, protocols and guidelines.

### What is venous thromboembolism?

Venous thromboembolism (VTE) is the formation of a blood clot (thrombus) within a vein. This disorder includes deep vein thrombosis (DVT) which occurs in the veins of the leg, or pulmonary embolism (PE) when the blood clot travels to the lung. Complications of a VTE include venous insufficiency, skin ulceration and ischaemic stroke.

VTE can happen without reason, but myeloma patients have a higher VTE risk, with 10% of patients developing VTE during their disease course. Immunomodulatory drugs (IMiDs) significantly increase risk, particularly when used in combination with high-dose dexamethasone. The risk is highest during the initial treatment phase when tumour burden is high.

### Clinical features

#### Deep vein thrombosis

- Throbbing or cramping pain to one leg, usually the calf or thigh
- Inflammation, redness or darkened skin around the painful area, swollen veins
- Swelling of limb
- Skin hot to touch
- Fever, tachycardia

#### Pulmonary embolism

- Breathlessness
- Chest pain
- Haemoptysis

**If these symptoms occur the patient should call 999.**

## Assessment and monitoring

A patient's risk of VTE is assessed at key points including: diagnosis, before beginning treatment, at relapse, and on admission for planned treatment or emergency care.

Assessment features	Rationale	
Assess patient-related factors (age, previous VTE, immobility, obesity, comorbidities including renal function, infection, indwelling catheters, surgery, trauma, bleeding risk/platelet count)	To determine a patient's individual risk before starting myeloma treatment, to inform treatment decisions and method of anticoagulation	
Assess myeloma-related factors (stage of disease, hyperviscosity)		
Assess treatment-related factors (use of IMiDs, steroids, chemotherapy, other medications e.g. erythropoiesis stimulating agents)		
Monitor patient regularly for signs of VTE	To ensure prompt diagnosis and treatment of VTE	
	Platelet counts, clotting screen	To monitor risk of bleeding
	Renal function	To inform anticoagulation prescribing
Blood tests	Anti-Xa levels for patients on low molecular weight heparin (LMWH) and INR (International Normalised Ratio) if on warfarin	To ensure optimum level of anti-coagulation
	D-dimers	If patient has suspected DVT or PE
Imaging for suspected VTE	Ultrasound (Doppler) scan for symptoms of DVT, CT pulmonary angiogram (CTPA) or ventilation perfusion (VQ) scan if symptoms indicate a PE	

## Prevention and treatment

Preventative approaches include:

- Oral anticoagulants such as aspirin or warfarin
- Direct oral anticoagulants (DOACs) such as apixaban or rivaroxaban
- LMWH injections or unfractionated heparin for patients with significant renal impairment
- Mechanical means (e.g. stockings, exercise)
- Myeloma treatment modification (dose reduction of medications which increase risk)

Consultation with a haemostasis expert may be necessary to decide the best approach for high-risk cases.

Patients with platelet counts  $<100 \times 10^9/L$  need close monitoring. If counts fall below  $50 \times 10^9/L$  anticoagulation may need to be stopped.

Duration of anticoagulation is generally for the first four to six months of myeloma treatment. After this time de-escalation might be considered, depending on risk factors and disease response.

If VTE is suspected, anticoagulation treatment with LMWH, DOACs or warfarin is started. IMiD myeloma treatment may need to be halted until a fully anti-coagulated state is established, and then their myeloma treatment reassessed.

## Nursing management points

### Assessment and monitoring

- Perform VTE risk assessment as required
- Be vigilant for signs of a VTE or anticoagulation side effects and alert the medical team promptly
- Provide patients with a 24-hour contact number and encourage them to seek help at any time if they develop symptoms of a VTE or are concerned about side effects of anticoagulant treatment

### Prevention and treatment

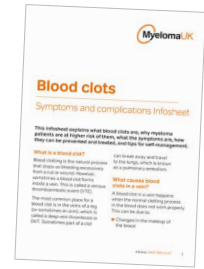
- Advocate on behalf of the patient if they have a particular preference for taking anticoagulant treatment orally or by injection
- Educate patients and their families on LMWH injection technique and safe disposal of needles. Liaise with community nurse teams if required to administer LMWH injections
- Encourage patients to report any anticoagulant treatment side effects, including signs of bruising or bleeding, headaches, dizziness or weakness
- Liaise with haemostasis team and other health professionals (e.g. dental teams, surgery) to ensure safe and coordinated patient care

### Self-care strategies for patients

- Report symptoms promptly
- Take measures to reduce the risk of VTE such as:
  - Wear compression stockings as required or advised
  - Take regular exercise
  - On long journeys take regular breaks and walk around
  - Stop smoking
  - Keep well hydrated
  - Maintain a healthy weight

## Patient information key points

- Inform patients about the risks of VTE and why they may need anticoagulant treatment
- Provide written information on VTE prevention and treatment approaches
- Ensure patients understand the signs and symptoms of VTE and how to report these



## References



A list of key references is available on Myeloma Academy:  
[academy.myeloma.org.uk/myeloma-nurse-guide-references](https://academy.myeloma.org.uk/myeloma-nurse-guide-references)



### Myeloma★Academy

For further nurse guides and other educational resources on myeloma and related conditions:

[academy.myeloma.org.uk](https://academy.myeloma.org.uk)

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