

Venous thromboembolism management and the new NICE guidance:

what the busy GP needs to know

INTRODUCTION

This article summarises the 2020 National Institute for Health and Care Excellence (NICE) venous thromboembolism (VTE) guidelines, which are also covered in Royal College of General Practitioners (RCGP) Essential Knowledge Updates (EKU) e-learning. This article focuses on rapid detection and treatment, changes in recommendations around anticoagulation, and implications for primary care practice.¹

WHAT CLINICAL FEATURES ARE PARTICULARLY IMPORTANT IN DIAGNOSIS?

Individual signs and symptoms have a low positive predictive value (PPV) for VTE, making the clinical diagnosis difficult. For example, one primary care study found 77.8% of patients with a pulmonary embolism (PE) were breathless at time of assessment and 59.8% had chest pain, but only 29.5% were tachycardic and 28.0% had calf pain.² The PPV of unilateral leg swelling ≥ 2 cm is just 27% for deep vein thrombosis (DVT).³ Reassuringly, the absence of any clinical signs suggestive of DVT in low-risk patients has a negative predictive value of 97%.³

PERC SCORES

To help exclude a PE on clinical grounds, the NICE now recommends using the PERC rule (Pulmonary Embolism Rule-Out Criteria) among selected low-risk patients.⁴ A patient must score zero to exclude a PE. One external validation study including over 8000 patients found that a PERC score of 0 had a false negative rate of just 1.0% (95% confidence interval [CI] = 0.6% to 1.6%) in low-risk patients.⁴ It is important to note that the PERC score was developed in emergency departments and is yet to be externally validated among community cohorts, where patients might be expected to present with less severe symptoms. Despite this, PERC may help primary care clinicians identify which patients to investigate for PE. Patients score 1 point if aged ≥ 50 years, so

the application of the PERC score is limited to younger people without risk factors for VTE where the prevalence of PE is extremely low.

DECIDING ON FURTHER INVESTIGATION IN PRIMARY CARE

Where a clinician suspects a DVT (Table 1) or PE, they should use the Wells score to determine which subsequent investigation is needed. The Wells score alone is not intended to be a VTE rule-out test. Where a Wells score suggests VTE is 'likely', urgent imaging should be arranged via secondary care with either Doppler ultrasound for DVT or computed tomography (CT) pulmonary angiogram for PE. A D-dimer should still be collected, as patients with a high Wells score and positive D-dimer but a negative initial imaging result should have a repeat scan after a 1-week interval to help exclude false negative results.

All patients with a suspected VTE and a low-risk Wells score (≤ 4 for PE or ≤ 1 for DVT) should have a D-dimer checked. In primary care, 5% of patients with a suspected DVT but Wells score ≤ 1 will still have a proximal DVT.⁵ A negative D-dimer and low-risk Wells score in combination have 99% sensitivity for excluding PE or DVT.⁵ For most primary care clinicians, this means patients with a suspected DVT or PE would be referred urgently to secondary care for further assessment, depending on the agreed local pathway. Importantly, for all patients, a treatment decision should be made within 4 hours of a patient being assessed, even when the Wells score suggests VTE is 'unlikely'.

Age-adjusted D-dimer thresholds in patients aged ≥ 50 years are now recommended, to reflect the fact that minor D-dimer elevations are common in older populations and rarely significant. Laboratory D-dimer testing remains the gold standard, but, if this is unavailable or unable to deliver a result within 4 hours, point-of-care (POC) D-dimer testing may

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Table 1. Patient presenting with a possible DVT: risk assessment, clinical features, and potential differential diagnoses

Symptoms	Unilateral lower limb pain, which is localised to the deep venous system and worse with walking or weight bearing. Associated swelling, redness, and heat are also common symptoms
Signs	Tenderness, vein distension, pitting oedema, skin changes including erythema, pyrexia, tachycardia
Risk factors	Personal or family history of venous thromboembolic disease, prothrombotic disorder, active cancer, obesity, pregnancy, recent surgery or immobility, combined hormonal contraceptive (COCP) or hormone replacement therapy (HRT) with oestrogen, smoking
Differential diagnoses	Cellulitis (high fever, more pronounced erythema and a raised white cell count) Superficial thrombophlebitis (pain and swelling localised to the thrombosed vein rather than the more diffuse symptoms of a DVT) Trauma (including Achilles injury or ankle fracture, usually possible to elicit from the history) Ruptured Baker's cyst (pain and tenderness in popliteal region, sometimes with palpable cyst)

DVT = deep vein thrombosis.

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most DOACs do not yet have marketing authorisation for VTE treatment in this group.

FOLLOW-UP

It is important to consider whether a confirmed VTE was 'provoked' by a secondary cause via close history and examination. One important change is that NICE no longer suggests patients with unprovoked VTE should be investigated for cancer, as this is felt to have a low yield and risks causing high levels of patient worry. Cancers associated with a higher risk of DVT include brain, ovary, pancreas, colon, stomach, lung, and kidney.

NICE recommend a minimum of 3 months of anticoagulation for a confirmed VTE, whether provoked or not. An unprovoked VTE may require 6 months of anticoagulation or longer, depending on the risks of recurrence. Some patients who have a recurrent or provoked VTE will need lifelong anticoagulation, such as patients with a long-term malignancy or a clotting disorder. A haematology outpatient appointment is usually recommended to determine duration of treatment. Thrombophilia testing may be arranged for patients who have had an unprovoked VTE, where there is a close family history of the disease or in patients with recurrent VTE who will be treated with a DOAC.

CONCLUSION

The new NICE guideline emphasises the importance of a treatment decision within 4 hours of assessing a patient.¹ For patients with suspected VTE, a Wells score alone cannot be used to exclude the diagnosis and so urgent referral to secondary care for further testing should be considered. DOACs such as apixaban and rivaroxaban are now the mainstay of anticoagulation treatment.

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Competing interests

Thomas Round is Associate Editor for the *BJGP*. Nicholas R Jones is a writer for RCGP ECU e-learning and wrote the ECU 2021.1 module on venous thromboembolic disease. Thomas Round is clinical lead for the ECU programme.