

# Venous Thromboembolism

## A Brief Overview for Health Professionals

### What is VTE?

Venous thromboembolism (VTE) is a common, potentially life-threatening disorder, especially among cancer patients, who are at an increased risk for blood clots:

#### 1 Deep Vein Thrombosis (DVT)

This occurs in one or more deep veins, most commonly the veins of the leg or pelvis. DVT can also occur in the deep veins of the arm, particularly in patients with central venous access devices.

Approximately 50 percent of patients with proximal DVT will have an asymptomatic PE at the time of diagnosis (pleuritic chest pain is actually a delayed symptom of PE.)

#### 2 Pulmonary Embolism (PE)

This occurs when a DVT embolizes from a peripheral deep vein, travels through the heart, and lodges in a lung artery.

### The Importance of Cancer and VTE

- Cancer patients have a 4- to 6-fold higher risk for VTE than people without cancer.
- Cancer patients with VTE have a shorter life expectancy than cancer patients without this complication.
- VTE may impact cancer patients and may delay, interrupt, or halt cancer therapy.
- Patients with cancer are hospitalized more often than non-cancer patients for VTE.<sup>1</sup>
- VTE treatment guidelines are different for cancer patients, since they are more likely to experience anticoagulant-associated bleeding compared to people without cancer.
- The incidence of VTE in cancer patients is thought to be underreported.
- Although blood clots are common in people with cancer, the majority of cancer patients are unaware of their increased risk for blood clots and don't know how to prevent them.

<sup>1</sup> Heit, JA. Cancer and Venous Thromboembolism: Scope of the Problem. *Cancer Control*. 2005;12 (1 suppl):5-10.

### Clinical Features of DVT\*

- Recent, unilateral leg or arm pain and/or swelling
- Tenderness over the course of a deep vein
- Skin that may be warm to the touch
- With very extensive DVT, the leg may be dusky or cyanotic
- The likelihood of DVT increases in patients with risk factors for VTE and in the absence of an alternative explanation for the leg or arm symptoms

### Clinical Features of PE\*

- Shortness of breath, especially if sudden onset
- Pleuritic chest pain
- Hemoptysis
- Palpitations and/or tachycardia
- Presyncope or sudden collapse
- The likelihood of PE increases in patients with risk factors for VTE and in the absence of an alternative explanation for the symptoms

\* Clinical suspicion of DVT or PE requires urgent investigation

# Cancer and Venous Thromboembolism

## Risk Factors for VTE in Cancer Patients

- Cancer and cancer treatment
- Presence of a central venous catheter
- Inherited or acquired thrombophilia
- Previous DVT or PE
- Recent hospitalization
- Recent major surgery
- Recent immobility
- Chronic infection
- A family history of DVT or PE
- Obesity

Cancers most commonly associated with increased risk of VTE include those of the pancreas, brain, stomach and lungs. Patients with metastatic disease are more prone to VTE than those with localized cancer. Combination chemotherapy, hematopoietic growth factors and comorbid conditions, such as surgery, hospitalization, and central venous catheters also contribute to the increased VTE risk.

## Diagnosis of VTE

- If a DVT is suspected, a duplex ultrasound should be performed. Superficial thrombophlebitis may indicate underlying deep vein thrombosis and patient should also undergo imaging.
- If a PE is suspected, either a CT angiogram of the chest or a ventilation/perfusion scan should be performed depending on renal function.

## Treatment of VTE

- In cancer patients, treatment should involve use of a rapidly-acting anticoagulant such as low-molecular-weight heparin (LMWH). Anticoagulation with warfarin should be used for those patients who cannot take LMWH. LMWH is recommended for treatment by the 2008 American College of Chest Physicians consensus committee.
- Most cancer patients with VTE can be treated safely as outpatients without hospitalization.
- Catheter-directed interventions may be considered in cancer patients with extensive iliofemoral DVT.
- Catheter-directed interventions, intravenous thrombolytic therapy, or surgical embolectomy should be considered for cancer patients with massive PE.
- An IVC filter may be required for cancer patients with acute DVT and an absolute contraindication to long-term anticoagulation.
- If there is leg swelling initially, compression bandages can be applied as tolerated, followed by the prescription of elastic compression stockings to prevent the post-thrombotic syndrome.

## Preventing VTE

- The greatest opportunity to reduce the burden of VTE is the use of appropriate thromboprophylaxis in hospitalized cancer patients
- VTE risk should be assessed for all hospitalized cancer patients and thromboprophylaxis provided accordingly:

Patient Group	Thromboprophylaxis Options
Hospitalized cancer patients	<ul style="list-style-type: none"><li>• Low-molecular-weight heparin</li><li>• Low-dose heparin</li></ul>
High bleeding risk	<ul style="list-style-type: none"><li>• Mechanical prophylaxis</li></ul>

**Remember to discuss blood clot risk, prevention, and symptoms with patients.  
Tell them to seek medical care immediately if they have any symptoms.**



The Venous Disease Coalition (VDC) is an alliance of leading health professional societies and patient advocacy groups united to improve the survival rates and quality of life for individuals with, or at risk for, venous disease. It is a division of the Vascular Disease Foundation, a national 501 (c)(3) non-profit organization. Printing is courtesy of educational grants and sponsorships from: AngioDynamics Inc., BioMedix, BSN Jobst, Cook Medical, Eisai Inc., and Juzo.