

# Prevention of Venous Thromboembolism in Adult Patients With Cancer in the Acute Care Setting

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Adult patients with cancer in the acute care setting face numerous potential complications related to malignancy. Risk for development of venous thromboembolism (VTE) is among the most critical of adverse outcomes for this patient population, ultimately leading to increased morbidity and mortality rates. Nurses must be familiar with the general pathophysiology of VTE and pathophysiology specific to oncology to prevent the occurrence of this complex hematologic process. Knowledge of pharmacologic prevention methods, such as low-dose unfractionated heparin, low-molecular weight heparin, and warfarin, as well as mechanical prophylaxis such as graduated compression stockings and intermittent pneumatic compression devices, is essential to preventing VTE. The ability to develop and implement an educational plan tailored to the specific learning needs of each patient also is a vital skill that must be incorporated into the practice of nurses caring for patients with cancer in the acute care setting to prevent the incidence of VTE in this population.

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Patients with cancer face a multitude of potential complications related to the disease process and treatment of cancer. Some complications will result regardless of measures taken to prevent them, whereas others can be avoided through the use of adequate screening techniques and effective interventions implemented in advance of their occurrence. One of the most prominent of these latter complications is venous thromboembolism (VTE).

Patients with cancer are four to seven times more likely to develop VTE than those in the general population (Lippi & Franchini, 2008). This increased risk can be attributed to several factors, including the prothrombotic nature of malignancy, administration of chemotherapy, suppression of fibrinolytic activity, use of vascular access devices, and surgical intervention used to treat cancer (Lee & Khorana, 2011). The location of the malignancy also plays a role in the patient's risk for developing VTE. In addition, pancreatic, gastric, ovarian, renal, brain, and lung cancers are associated with increased incidence of VTE, along with hematologic malignancies, particularly leukemia and lymphoma (Lee & Khorana, 2011). Additional risk factors include advanced age, obesity, prechemotherapy thrombocytosis, leukocytosis, prolonged immobility, infection, and hospitalization (National Comprehensive Cancer Network [NCCN], 2013).

VTE is the second leading cause of death in patients with cancer and is associated with a two-fold increase in mortality (Lee & Khorana, 2011). To decrease the risk of VTE and associated mortality among adult patients with cancer, nurses in the acute care setting must be familiar with the pathophysiology of thrombosis, particularly as it pertains to patients with cancer. Recognition of the broad range of acute care settings where these patients might be encountered also is essential to ensuring that patients are adequately screened and receive prophylaxis for VTE. Those include hospitals, outpatient clinics, long-term acute care facilities, transitional care facilities, medical homes, and home healthcare settings. Nurses must also be familiar with VTE prevention, including pharmacologic and nonpharmacologic therapy. In addition, nurses must be able to effectively communicate this knowledge to patients to ensure compliance with prescribed VTE prophylaxis.

## Pathophysiology of Venous Thromboembolism

Knowledge of the basic pathophysiology of VTE is essential to the development of effective prevention strategies. The primary