



Pharmacy Today

Topics in Patient Care



Supplement to Pharmacy Today

CONTINUING PHARMACY EDUCATION ■ JULY 2009

■ Inpatient to Outpatient: The Pharmacist's Role in Improving Patient Outcomes in Venous Thromboembolism

Introduction

In the fall of 2008, the Office of the U.S. Surgeon General issued a call for a coordinated, multifaceted plan to reduce the incidence of deep vein thrombosis (DVT) and pulmonary embolism (PE) in the United States. Noting that many of the estimated 100,000 deaths each year from these conditions can be avoided, the report emphasized the need for raising awareness about DVT and PE and increasing the use of evidence-based practices for preventing DVT.¹

Although proven, effective measures are available to prevent DVT and PE in high-risk individuals, a significant proportion of people who could benefit from such services do not receive them. According to the Surgeon General's report, too few health care professionals are aware of the evidence-based practices for identifying high-risk patients and providing preventive, diagnostic, or therapeutic services. There is a clear need to disseminate information more widely about the availability of effective interventions to prevent and treat DVT and PE.¹

The American Pharmacists Association is responding to this call to action by educating its members through programs offered at its Annual Meetings and this edition of TOPICS IN PATIENT CARE. Pharmacists have a tremendous opportunity to educate both patients and other health care providers about these important conditions.

Venous Thromboembolism

Venous thromboembolism (VTE) is a disorder with two primary components: (1) DVT is the formation of a thrombus, or blood clot, in a deep vein, usually in the calf or thigh, which partially or completely obstructs blood flow; (2) PE occurs when a portion of a venous clot breaks off and travels through the bloodstream into the lungs, where it partially or completely blocks a pulmonary artery. PE is a dangerous, life-threatening complication, making it the greatest health threat to an individual with a DVT.^{1,2}

What Causes DVT?

DVT is caused by the interaction of several factors: inherited, acquired, behavioral, and/or environmental. The pathogenesis of VTE typically involves one or more factors: damage to the vessel wall, slow or obstructed venous blood flow, and hypercoagulability.³ Inherited abnormalities of the coagulation system, including variants in factor V Leiden, prothrombin gene mutations, and deficiencies in anticoagulant proteins, lead to hypercoagulability (also called thrombophilia), whereby the patient has an increased tendency to develop venous blood clots.¹

Circumstances that cause immobilization of the extremities, such as paralysis, prolonged bed rest, and hospitalization increase risk for DVT. People taking long airline flights are also at increased risk of developing a DVT (see HOW RISKY ARE LONG FLIGHTS?).⁴

The majority of DVTs and PEs are related to specific, identifiable triggering events or risk factors such as hospitalization, major surgery, trauma, and prolonged periods of immobility. Often, DVT occurs in an individual with genetic and/or acquired risk factors who also experiences one of these precipitating events.¹

More than half of diagnosed DVT cases are asymptomatic, including some that progress to PE. Symptoms of DVT typically include leg swelling, redness or discoloration, pain, and increased warmth of the skin near the clot. Common symptoms of PE are substernal chest pain, shortness of breath, dizziness, fainting, anxiety, and rapid pulse. Because these are similar to symptoms of many other common conditions, it can be difficult to distinguish DVT symptoms from those of an injury, muscle strain, or skin infection; differentiating PE symptoms from those of stroke or heart attack may also be challenging. Specialized imaging studies are usually required to make a definitive diagnosis of DVT and PE. Therefore, individuals who experience these symptoms should seek prompt medical attention.