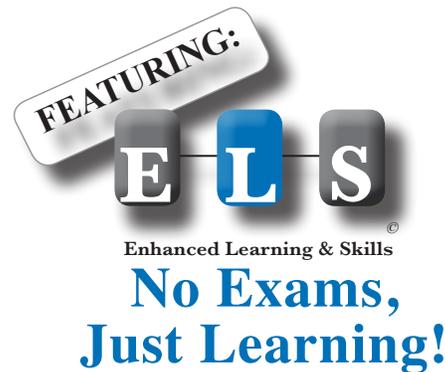

VENOUS THROMBOEMBOLISM: REDUCING THE RISKS

Course # 177
2 Contact Hours

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Purpose and Goals

The goal of this course is to educate nurses and other healthcare professionals to understand the causes, treatment, and prevention of VTE and to promote the safety of the patients under their care.

Instructional Objectives

Upon completion of this course, the learner will:

1. Define VTE, DVT, and PE.
2. Outline the pathophysiology of DVT and PE.
3. List risk factors for VTE.
4. Summarize the signs and symptoms of DVT and PE.
5. Outline diagnostic procedures for DVT and PE.
6. Compare anticoagulation therapies for DVT.
7. Explain prophylaxis treatments for VTE.

8. Utilize patient education materials to instruct patients on measures to prevent VTE incidents.
9. Summarize clinical practice guidelines established for diagnosis, therapy and prevention of DVT.

Introduction

Deep vein thrombosis, or DVT, is a blood clot that occurs in a deep vein of the body; pulmonary embolism, also known as PE, occurs when a clot breaks free from another location in the body and enters the arteries of the lungs. The consequences of VTE are staggering.

Incidence

The CDC revealed estimates of the number of people in the U.S. affected by a DVT/PE could range up to 900,000 with 50% of these cases being hospital related. In the cases of hospital acquired DVT, it was reported that 70% of these cases were preventable through standard accepted prevention measure such as the use of compression devices and pharmacologic means.

Although researchers and healthcare providers have made strides in the prevention and treatment of DVT/PE, it remains the most common preventable cause of hospital death; with the numbers of death related to DVT/PE from 60,000-100,000 persons per the CDC (2017). According to the CDC (2017), over one-half of all VTEs occur during or soon after hospitalizations; and the condition is the fifth most reason for readmissions after surgical procedures; with knee or hip joint replacements leading the way.

In further delving into the seriousness of the problem, the office of the Surgeon General (2008), reports that over half of the cases of DVT/PE go undiagnosed with most patients (up to 75%) with DVT being asymptomatic. The somewhat benign nature of DVT can be misleading as according to Agency on Healthcare and Quality reported the mortality being as high as 10-15% of patients that are diagnosed with this condition along with the added longer term complications of recurrent DVT, post thrombotic syndrome and thrombotic induced pulmonary hypertension. DVT is considered to be the leading cause of preventable death in the United States per the CDC (2017).

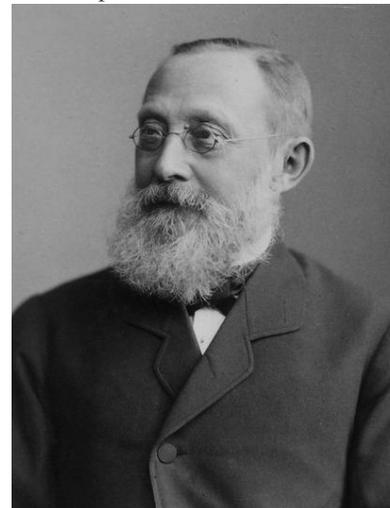
As far as cost is concerned, it is estimated that the United States spends \$10 billion in direct medical costs on VTE each year, not including the costs of long-term complications, according to the CDC (2017). Costs for VTE treatment are considerable and increasing faster than general inflation for medical care services, with hospitalization costs being the

primary cost driver. Readmissions for VTE are generally more costly than the initial VTE admission. Further studies evaluating the economic impact of new treatment options such as the non-vitamin K antagonist oral anticoagulants on VTE treatment are warranted.

VTE will continue to be a major medical concern for many healthcare professionals in the coming years. According to some experts, as the average age of the U.S. population increases, the cases of VTE will outpace the population growth, unless preventative action is taken. Therefore, it is vital that patients, healthcare providers, and other stakeholder groups work together to reduce or even eliminate the number of cases of VTE.

History

The first documented DVT is thought to have occurred in the 13th century, in the leg of a 20-year-old male. At some point, the increased incidence of DVT in women after childbirth was noticed, and in the late 1700s, a public health recommendation was issued to encourage women to breast feed as a means to prevent this phenomenon; the DVT was called



Rudolf Virchow

“milk leg”, as it was thought to result from milk building up in the leg. In 1856, German physician and pathologist Rudolf Virchow published what is referred to as Virchow's triad, **Figure 1**, the three major causes of thrombosis. The triad provides the theoretical framework for the current explanation of venous thrombosis, although it was focused on the effect of a foreign body in the venous system and the conditions required for clot propagation.

Multiple pharmacological therapies for DVT were introduced in the 20th century: oral anti-coagulants in the 1940s.

Pathophysiology

DVT often develops in the calf veins and “grows” in the direction of venous flow, towards the heart. DVT is thought to arise from a combination of factors known as Virchow’s triad—venous stasis, vein wall injury or dilation, and hypercoagulability. Venous stasis occurs with immobility or an obstruction in the central venous system. Immobility occurs in a variety of people and situations, from healthy people who sit in one position for a length of time, such as on an airplane, to those who undergo general anesthesia for a medical procedure to those who are completely bedridden. The lack of mobility results in a slow flow of blood, which increases the viscosity of the blood. Microthrombi, which normally would be removed by fluid movement, increase in size and propagate in the vessels.

Risk Factors

VTE Vigilance

Prevention of VTE requires healthcare professionals to be vigilant in assessment and monitoring.

Be on the lookout for certain groups of people who are at increased risk, including the following:

- Those who are obese
- Those who smoke
- Those who use hormone therapy
- Those who are on bed rest
- Those who are pregnant

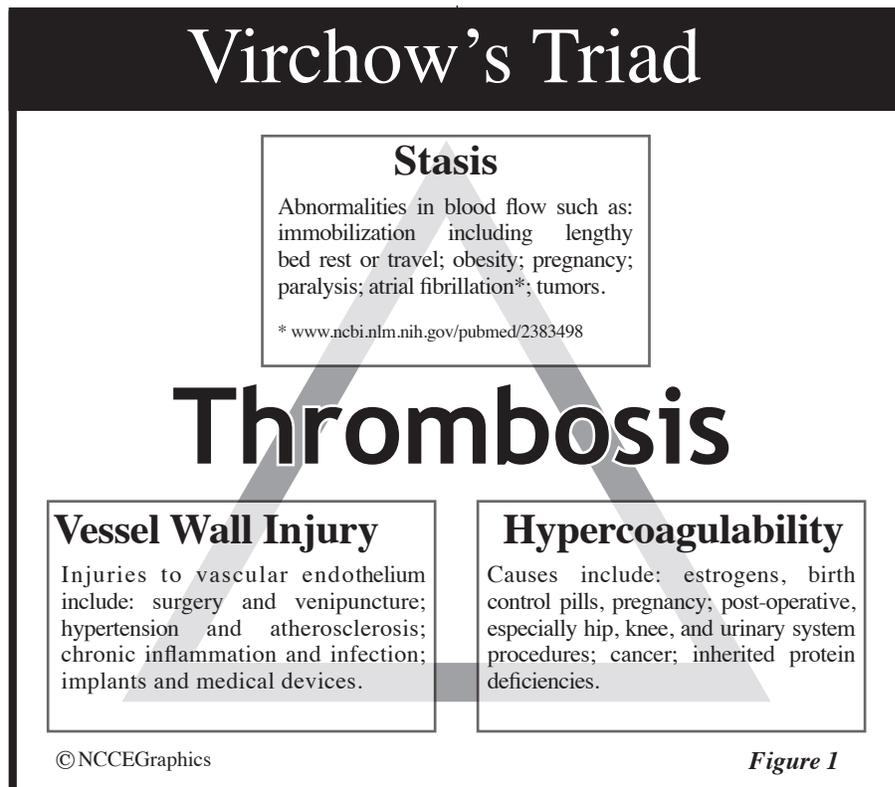
The following types of surgery and injury place people at increased risk for blood clots:

- Gynecological and urological surgery
- Orthopedic surgery
- Spinal cord paralysis
- Multiple limb fractures
- Pelvic injury

The majority of DVT and PE are related to specific triggering events, such as hospitalization, major surgery, prolonged periods of immobility, and trauma.

Hospitalization is a major risk factor for preventable VTE. In fact, some experts consider hospitalization the single most important risk factor for developing DVT/PE. Much of the risk is applied to patients who undergo major surgery. In addition, many hospitalized

Virchow’s Triad



patients have comorbidities such as cancer and infection that increase their risk for VTE. In the absence of appropriate VTE prophylaxis, 10-40% of med-surg patients and 40-60% of patients who undergo major orthopedic surgery develop thrombosis.

Surgery as well as trauma causes injury to body tissues, which causes the body’s clotting process to go into effect, increasing the risk of a blood clot, **Figure 2**. Blood clots caused by trauma and surgery occur relatively quickly. Some occur during or within a few hours of surgery, however, most develop within 2 weeks of surgery. DVT/PE also can occur up to several months after surgery or major trauma.

Certain medical conditions, including the following, also increase the risk of DVT:

- Prior history of these conditions
- Active cancer
- Acute infection or sepsis
- Neurological impairment with lower extremity weakness
- Long-bone fractures
- Chronic kidney disease
- Dehydration
- Acute myocardial infarction
- Congestive heart failure
- Blood Clot Formation

Nursing home residents are more than twice as likely as nonresidents of nursing homes to have a DVT/PE. In fact, this population accounts for more than 13% of all VTE that occur outside of the hospital.

Those who have had a DVT or PE are at

increased risk for another clot. Almost 30% of those who have a DVT will suffer from another clot within 10 years.

Other risk factors include age, gender, and ethnicity. People ages 60 and older are hospitalized with VTE more so than their younger peers. Gender also affects risk, although not as much as age. Women have a higher incidence of DVT during their childbearing years, and pregnant women are especially at risk. After the age of 50, men are at greater risk than women for VTE. For reasons that are not completely understood, ethnicity plays a role in risk. African Americans and Caucasians tend to have a greater risk for VTE than Asian or Native American people. Genetic conditions can increase risk of DVT/PE. Genetic thrombophilia and Factor V Leiden are inherited blood-clotting disorders that make sufferers more susceptible to DVT/PE.

Signs and Symptoms

Signs and symptoms of VTE depend on the location of the embolus. DVT produces signs and symptoms of inflammation and occlusion: pain, swelling, warmth, tenderness, and cyanosis or redness of the affected extremity and low-grade fever. Almost half of all DVT episodes produce few, if any, symptoms. DVT is a short-lived episode (i.e., the symptoms go away once the disease is successfully treated) for some patients; however, almost 30% of patients suffer chronic symptoms, including leg pain and swelling, recurrent skin breakdown,

and painful ulcers. Of important note, Homan's sign is no longer considered definitive for the presence or absence of a DVT.

Symptoms of PE include rapid-onset chest pain, shortness of breath with tachypnea, hemoptysis, tachycardia, syncope, and hypoxemia. Other symptoms include anxiety, hypotension, clammy skin, sweating, and leg pain. Some pulmonary emboli are small, and patients may show few or no symptoms. However, large pulmonary emboli are fatal and frequently cause sudden death. PE is considered a medical emergency.

Diagnosis

Venography

Diagnosis of DVT includes imaging tests of the affected leg with ultrasound. If ultrasound is not definitive, a venography may be done, in which dye is injected in the affected leg and x-ray images taken to reveal blood flow. In some cases, a CT or MRI may be taken. Blood may be drawn for a D-dimer, which can indicate the level of fibrin degradation products in the blood. A positive D-dimer may indicate clot formation. Other labs to assist in diagnosing DVT include a PT/INR, PTT and platelet count. Prothrombin Time/ International Normalized Ratio is a measure of coagulopathy to determine the clotting tendency of blood. PT measures factors I (fibrinogen), II (prothrombin), V, VII, and X.

In the case of PE, the doctor may order a CT of the chest, a D-dimer, arterial blood gases, an ultrasound of the legs, and a lung ventilation/perfusion scan, or V/Q scan. A V/Q scan measures air and blood flow in the lungs. In the ventilation portion of the test, radioisotopes



Venography of patient with DVT

(a low-risk radioactive substance) are inhaled as a gas. For the perfusion scan, the radioisotopes are injected into a vein in the patient's

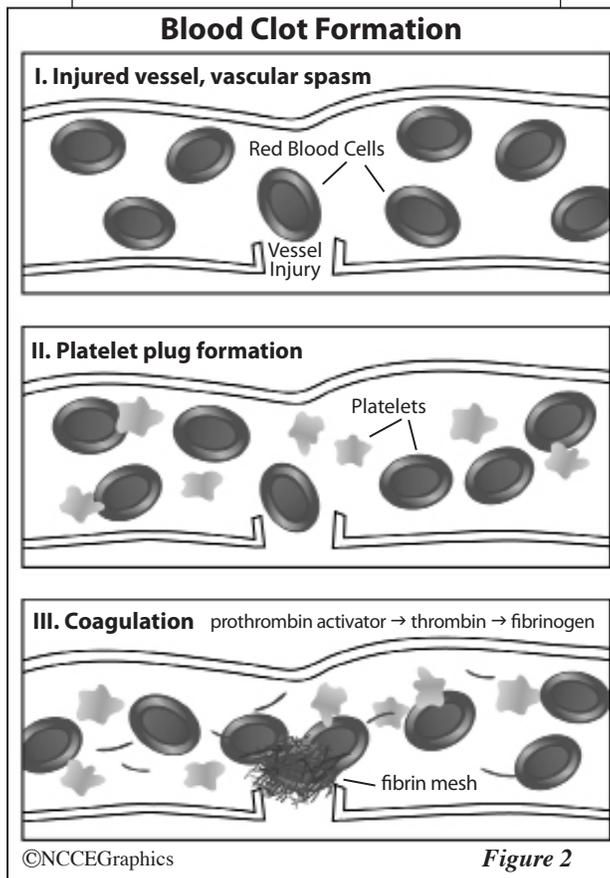


Figure 2

arm. Scanners use the energy released by the radioisotopes to create images of air and blood flow patterns in the lungs.

Treatment

For half a century, the standard therapy for most patients with pulmonary embolism has been the administration of heparin, overlapped and followed by a vitamin K antagonist. This regimen is effective but complex.

The goal of treatment for DVT is to prevent PE and reduce related complications of the clot. Anticoagulation is the initial treatment of choice for DVT. Current evidence-based guidelines recommend one of the following short-term anticoagulation options:

- Subcutaneous (SC) low-molecular-weight heparin (LMWH)
- Intravenous (IV) unfractionated heparin (UFH)
- Fixed-dose unfractionated heparin (FDUH)
- Fondaparinux (Arixtra) SC (a factor Xa inhibitor)

Initial treatment with LMWH, UFH, or fondaparinux should continue for at least 5 days, until the international normalized ratio (INR) is >2 for 24 hours. Before the introduction of LMWH products, UFH was the standard of care. Heparin prevents extension of thrombi and reduces the incidence of PE. However, heparin does not eliminate the risk of PE because it does not affect the existing

thrombus; it only prevents it from growing.

When intravenous UFH is initiated for DVT anticoagulation, the goal is to achieve and maintain an elevated activated partial thromboplastin time (aPTT) of at least 1.5 times control. Heparin pharmacokinetics are complex, and the half-life is 60-90 minutes (follow hospital protocol for heparin infusions). Warfarin (Coumadin) therapy is overlapped with heparin for 4-5 days until the INR is therapeutic at 2-3.

FDA Warning/Regulatory Alert

Note from the National Guideline Clearinghouse: Important revised regulatory and/or warning information has been released.

Pradaxa (dabigatran etexilate mesylate): The U.S. Food and Drug Administration (FDA) is informing health care professionals and the public that the blood thinner (anticoagulant) Pradaxa (dabigatran etexilate mesylate) should not be used to prevent stroke or blood clots (major thromboembolic events) in patients with mechanical heart valves, also known as mechanical prosthetic heart valves. A clinical trial in Europe (the RE-ALIGN trial) was recently stopped because Pradaxa users were more likely to experience strokes, heart attacks, and blood clots forming on the mechanical heart valves than were users of the anticoagulant warfarin. There was also more bleeding after valve surgery in the Pradaxa users than in the warfarin users. Pradaxa is not approved for patients with atrial fibrillation caused by heart valve problems. FDA is requiring a contraindication (a warning against use) of Pradaxa in patients with mechanical heart valves.

Several LMWH preparations are available, including enoxaparin (Lovenox), dalteparin (Fragmin), and tinzaparin (Innohep). Dosing of enoxaparin for treatment of DVT is 1 mg/kg SC bid, with an overlap of warfarin for at least 5 days until the patient's INR is > 2 for 24 hours. If the INR does not reach 2 within 5 days, LMWH or fondaparinux should be continued.

Warfarin should be continued for at least 3 months and possibly longer, depending on the cause of DVT/PE and underlying risk factors. Patients with cancer, whose risk for VTE is greater, should receive LMWH for the first 3 to 6 months, followed by long-term therapy with warfarin or LMWH until the cancer is resolved. After the term of therapy, risk-benefit should be evaluated to determine if continued therapy is appropriate.

During treatment for DVT, once anticoagulation is started and symptoms are controlled,

patients should be encouraged to ambulate. The patient should not be on strict bed rest for the duration of inpatient treatment.

Patients may be released home with outpatient treatment for DVT. Currently, the treatment of choice is SC LMWH either once or twice a day. Outpatient management of DVT is not recommended for patients with certain comorbidities, such as renal failure, and those with a suspected PE.

Patients with a PE may be administered tPA or streptokinase to dissolve the clot. It is imperative that patients receive emergency treatment for a PE, since life-saving measures may need to be taken.

In some cases, physicians may place an inferior vena cava (IVC) filter in the patient to block any clots from entering the heart. An IVC may be placed in patients who are unable to participate in anticoagulation therapy, although the use of IVC filters is controversial.

Complications

Although people can recover fully from DVT, they may suffer long-term complications from the damage to the vessels caused by the clot. One third of people who have a DVT will be diagnosed with post-thrombotic syndrome (PTS), a condition in which damaged valves in the affect extremity lead to venous stasis. People with PTS have symptoms such as swelling, pain, and discoloration in the affected limb, and they may develop varicose veins. In severe cases, they develop thickened skin and ulcers on the extremity. In some cases, the symptoms can be so severe that a person becomes disabled. Some studies showed that one third of patients who experience DVT develop PTS within 5 years.

PE too often takes the lives of people suddenly; however, if the clot is small and the patient receives appropriate medical treatment, the patient can recover from the PE. However, PE can leave the lungs damaged. Survivors of PE must be vigilant for PE later because they are more likely to suffer another occurrence of PE than DVT.

A complication of heparin therapy is heparin-induced thrombocytopenia (HIT). In this condition, platelet aggregation triggers venous or arterial thrombosis. Any patient who develops thrombocytopenia during heparin therapy is at risk for HIT and alternatives to heparin should be considered.

Prevention Is Key

Depending upon the risk for DVT, different preventative measures are used. In ambulatory patients, exercise that contracts the leg muscles, such as walking, should be encouraged. Those with limited mobility, such as

Bleeding Precautions

Patients on **anticoagulation therapy** should be educated on bleeding precautions. To reduce the risk of bleeding, instruct patients to:

- Shave with an electric razor
- Use only a soft-bristle toothbrush
- Floss with waxed, rather than unwaxed, floss
- Avoid activities that may cause trauma
- Avoid taking aspirin or other NSAIDs unless directed to do so by a healthcare provider

travelers on long flights, should be encouraged to perform chair exercises, such as raising and lowering heels from the floor while sitting in a chair. Have patients evaluate their lifestyle choices and make changes to lose weight, quit smoking, and maintain a healthy blood pressure. Patients should always take medications as directed by their physicians, and if they are on warfarin they should monitor their diet for foods high in Vitamin K, which can counteract the effects of the drug.

Nurses have a special role in prevention of VTE in hospitalized patients and those with limited mobility. Promote ambulation in all patients, and ambulate surgical patients soon after surgery. Encourage patients to engage in foot and ankle exercises if they are on bed rest and there are no contraindications to exercise.

Many DVT and PE events can be prevented in high-risk patients through appropriate administration of prophylaxis, which might include pharmacologic agents (e.g., antithrombotic agents) or mechanical devices, depending on the patient's medical condition. Sequential compression devices (SCDs), foot pumps, or compression hose may be ordered for the patient and according to Kesime et al (2011) can reduce the incidence of a DVT by 50%. Therefore, it is essential to remind patients to wear SCDs and foot pumps when they are in bed and remove them before ambulating.

Dosing of enoxaparin for prophylaxis in nonpregnant adults is either 30 mg SC bid or 40 mg SC daily, depending on the patient's medical status, with adjustments made for renal patients. Rivaroxaban (Xarelto) is an oral factor Xa inhibitor indicated for prophylaxis of DVT and PE in patients following hip or knee replacement surgery. Be sure to assess for signs of bleeding in patients receiving pharmaceutical prophylaxis.

Recent Medication Options

Recently developed oral anticoagulants that are directed against factor Xa or thrombin, overcome some limitations of standard therapy, including the need for injection and for regular dose adjustments on the basis of laboratory monitoring.

Xarelto (Rivaroxaban)

A fixed-dose regimen of rivaroxaban, an oral factor Xa inhibitor, has been shown to be as effective as standard anticoagulant therapy for the prophylaxis of deep vein thrombosis (DVT), which may lead to pulmonary embolism in patients undergoing knee or hip replacement surgery; to reduce the risk of stroke without the need for laboratory monitoring. This approach may also simplify the treatment of pulmonary embolism. For details go to <http://www.drugs.com/ppa/rivaroxaban.html>

According to the New England Journal of Medicine report (2010), a randomized, open-label, trial of 4832 patients with acute symptomatic PE, with or without DVT, compared rivaroxaban (15mg PO, BID, x 3 weeks, followed by 20mg QD) with standard therapy with enoxaparin followed by an adjusted-dose vitamin K antagonist for 3, 6, or 12 months. Conclusions: A fixed-dose regimen of rivaroxaban alone was **non-inferior** to standard therapy for the initial and long-term treatment of pulmonary embolism and had a potentially improved benefit-risk profile.

Boxed Warning

Discontinuing rivaroxaban places patients at an increased risk of thrombotic events such as stroke. If anticoagulation with rivaroxaban must be discontinued for a reason other than pathological bleeding, consider administering another anticoagulant. Epidural or spinal hematomas, which may result in long-term or permanent paralysis, have occurred in patients treated with rivaroxaban who are receiving neuraxial anesthesia or undergoing spinal puncture. Factors that can increase the risk of developing these hematomas include: use of indwelling epidural catheters, concomitant use of drugs affecting hemostasis such as NSAIDs, platelet inhibitors, or other anticoagulants, or history of traumatic or repeated epidural or spinal puncture, spinal deformity, or spinal surgery. Monitor patients frequently for neurological impairment. If neurological compromise is noted, urgent treatment is necessary. Consider risks/benefits before neuraxial intervention in patients anticoagulated or to be anticoagulated for thromboprophylaxis. (Xarelto.com 2017)

Patient Education

While in the hospital, patients should be educated about signs and symptoms of VTE and prophylaxis, if ordered. At discharge, patients should be educated on the signs and symptoms of VTE and told to consult a doctor immediately if they believe they have a DVT. If they feel sudden onset shortness of breath, experience a cough with bloody sputum, develop sudden onset chest pain or syncope, they should be instructed to call 911 for emergency assistance.

National efforts are aimed at reducing DVT in specific people. For example, a national campaign to reduce DVT in women, *This Is Serious*, was developed in partnership with the Vascular Disease Foundation and the Centers for Disease Control and Prevention.

Research Directions

Newer research in the study of DVT and PE reveal significant changes in how DVT/PE are diagnosed and treated and perceived.

The use of CT scan has decreased from 28.2% in 2007 to 12.5 % in 2009 with the majority of symptoms related to pneumonia versus a PE. (CDC 2017)

There is a higher incidence of work related disability for those with a DVT than for those without a DVT. And the incidence of disability for an unprovoked DVT is at 52%. (CDC 2017)

Healthcare provider knowledge can play a significant role in the application of evidence-based guidelines. Findings suggest that didactic lecture of DVT prophylaxis guidelines improved the knowledge of nurses and physicians in pre and post testing.

Emerging programs by scientific societies and voluntary health organizations hold promise for raising awareness of VTE, and long-term programs are most likely to yield success. The American Heart Association (AHA) held a Vascular Disease Summit in August 2015 to convene scientists and key stakeholders to advise on new organizational initiatives to improve patient and healthcare professional awareness of VTE and peripheral arterial diseases. As new knowledge emerges on the risks, prevention, diagnosis and treatment of VTE, information must be practically disseminated to the public, and translated by healthcare professionals. This knowledge needs to be initiated to patients while hospitalized.

AHRQ Clinical practice guidelines suggested the following:

Guideline Objectives

1. To update evidence-based recommendations for the use of anticoagulant therapy for the management of thromboembolic

conditions

2. To offer guidance for many common anticoagulation-related management problems
3. To optimize patient-important health outcomes and the processes of care for patients who have experienced or are at risk for thrombotic events
4. To identify optimal strategies for the diagnosis of deep vein thrombosis (DVT) in ambulatory adults

Target Population

Ambulatory adult patients at risk for deep vein thrombosis (DVT), including pregnant women

Interventions and Practices Considered

- Clinical assessment of pretest Probability of deep vein thrombosis (DVT)
- D-dimer testing (moderately sensitive or highly sensitive)
- Compression ultrasonography (CUS) of the proximal veins
- Venography
- Whole-leg ultrasound
- Doppler ultrasound of the iliac vein
- Magnetic resonance imaging
- Considerations for pregnancy related DVT and upper extremity DVT

Major Outcomes Considered

- Accuracy (sensitivity and specificity of diagnostic tests)
- Incidence of false-positive and false-negative results
- Fatal and nonfatal pulmonary embolism (PE)
- Fatal bleeding
- Nonfatal intracranial bleeding
- Major, nonfatal, non-intracranial bleeding

For the complete guide visit <https://www.ahrq.gov/sites/default/files/publications/files/vteguide.pdf>

Conclusion

VTE can devastate patients and their loved ones, and at times can even take their life. As healthcare providers, it's frustrating to send a medical or surgical patient home, thinking they are cured, only to see the patient develop a DVT or die from a subsequent PE. An overall awareness in the general public as well as in patients and healthcare professionals can help to reduce or even eliminate VTE. DVT can be debilitating and costly, and at its worst it can lead to a fatal PE. Education and prevention techniques can preserve quality of life, and nurses play a key role in the effort.

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Patient Education Handout

Patient Education Handout

What is DVT?

Deep vein thrombosis (DVT) occurs when an abnormal blood clot forms in a large vein. These clots usually develop in the lower leg, thigh, or pelvis, but can also occur in other large veins in the body. If you develop DVT and it is diagnosed correctly and quickly, it can be treated. However, many people do not know if they are at risk, don't know the symptoms, and delay seeing a healthcare professional if they do have symptoms

Can DVT Happen to Me?

Anyone may be at risk for DVT but the more risk factors you have, the greater your chance of developing DVT. Knowing the risk factors can help prevent DVT.

Hospitalization for a medical illness

- Recent major surgery or injury
- Personal history of a clotting disorder or previous DVT
- Increasing age
- Cancer and cancer treatments
- Pregnancy and the first 6 weeks after delivery
- Hormone replacement therapy or birth control products
- Family history of DVT
- Extended bed rest
- Obesity
- Smoking
- Prolonged sitting when traveling (longer than 6 to 8 hours)
- DVT symptoms and signs:
- The following are the most common and usually occur in the affected limb:
- Recent swelling of the limb
- Unexplained pain or tenderness
- Skin that may be warm to the touch
- Redness of the skin

Since the symptoms of DVT can be similar to other conditions, like a pulled muscle, this often leads to a delay in diagnosis. Some people with DVT may have no symptoms at all.

DVT and Pulmonary Embolism (PE)

DVT can cause a life-threatening complication called pulmonary embolism (PE). Part or all of a clot can break off and travel through the bloodstream and into the lungs. A blood clot in the lungs can be life threatening and can cause death.

Symptoms of possible PE include:

- Recent or sudden shortness of breath
- Chest pain or discomfort, which worsens with a deep breath or coughing
- Coughing up blood
- Sudden collapse

If you have any of these symptoms, it is an emergency and you should seek medical help immediately.

What Can Be Done to Prevent DVT and PE

Most DVT and PE can be prevented.

In General:

- Exercise regularly
- Maintain a healthy weight
- Don't Smoke
- When sitting for long periods of time or when traveling for more than 6 hours
- Exercise your legs frequently while you are sitting
- Get up and walk around every 2 to 3 hours
- Wear loose-fitting clothes
- Drink plenty of water, limit caffeine and alcohol

Before and during hospitalization:

- Before surgery, talk to your health provider about prevention of blood clots.
- Tell your healthcare provider if you have any risk factors for DVT.

Ask Questions

If you have been confined to bed, move around as soon as possible

After surgery or hospitalization for a medical illness, a small dose of anti-coagulant medication is often given to prevent DVT and PE

Diagnosing DVT and PE

- DVT is generally diagnosed using:
- Venous Doppler ultrasound - using sound waves to check the flow of blood in the veins PE is generally diagnosed using:
- Computerized tomography (CT scan) of the lung, a special type of X-ray that can provide pictures of structures inside the body
- Ventilation-perfusion lung scan, a special test that shows how much blood is getting into the lungs
- What is the treatment of DVT and PE?
- DVT Treatment:
- Anticoagulants are also used to treat PE. In cases of severe PE, medicines (thrombolytics) may be given to dissolve the clot, followed by anticoagulants to prevent more clots from forming.
- Compression stockings, also called elastic stockings, are sometimes recommended to relieve pain and swelling after DVT.

PE Treatment

Anticoagulants are also used to treat PE. In cases of severe PE, medicines (thrombolytics) may be given to dissolve the clot, followed by anticoagulants to prevent more clots from forming.

More information about DVT symptoms, treatment and prevention and to take a free risk assessment visit www.thisisserious.org