

THROMBOPHLEBITIS: DEEP VEIN THROMBOSIS (INCLUDING PULMONARY EMBOLI CONSIDERATIONS)

Thrombophlebitis is a condition in which a clot forms in a vein, associated with inflammation/trauma of the vein wall or a partial obstruction of the vein. Clot formation is related to (1) stasis of blood flow, (2) abnormalities in the vessel walls, and (3) alterations in the clotting mechanism (Virchow's triad). Young women and the elderly are at greatest risk.

Thrombophlebitis can affect superficial or deep veins. Although both conditions can cause symptoms, deep vein thrombosis (DVT) is more serious in terms of potential complications, including pulmonary embolism, postphlebotic syndrome, chronic venous insufficiency, and vein valve destruction. *Note:* Approximately 50% of patients with DVT are asymptomatic.

CARE SETTING

Primarily treated at the community level, with short inpatient stay generally indicated in the presence of embolization.

RELATED CONCERNS

Surgical intervention
Ventilatory assistance (mechanical)
Fractures
Psychosocial aspects of care

Patient Assessment Database

ACTIVITY/REST

May report: Occupation that requires sitting or standing for long periods of time
Prolonged immobility (e.g., fractured hip/orthopedic trauma, long hospitalization/bedrest, prolonged sitting or travel without adequate exercise, complicated pregnancy); spinal cord injury/paralysis; progressive debilitating condition
Pain with activity/prolonged standing
Fatigue/weakness of affected extremity, general malaise

May exhibit: Generalized or extremity weakness

CIRCULATION

May report: History of previous peripheral vascular disease, venous thrombosis, varicose veins
Presence of other predisposing factors, e.g., hypertension (pregnancy-induced), diabetes mellitus, MI/valvular heart disease, thrombotic cerebrovascular accident, blood dyscrasias

May exhibit: Tachycardia
Peripheral pulse may be diminished in the affected extremity (DVT)
Varicosities and/or hardened, bumpy/knotty vein (thrombus)
Skin color/temperature in affected extremity (calf/thigh): pale, cool, edematous (DVT); pinkish red, warm along the course of the vein (superficial)
Positive Homans' sign (absence does not rule out DVT, because only about 33% of patients have a positive sign)

FOOD/FLUID

May exhibit: Poor skin turgor, dry mucous membranes (dehydration predisposes to hypercoagulability)
Obesity (predisposes to stasis and pelvic vein pressure)
Edema of affected extremity (present with thrombus in small veins or major venous trunks)

PAIN/DISCOMFORT

May report: Throbbing, tenderness, aching pain aggravated by standing or movement of affected extremity, groin tenderness

May exhibit: Guarding of affected extremity

SAFETY

- May report:** History of direct or indirect injury to extremity or vein (e.g., major trauma/fractures, orthopedic/pelvic surgery, prolonged labor with fetal head pressure on pelvic veins, venous cannulation or catheterization/intravenous therapy)
Presence of malignancy (particularly neoplasms of the pancreas, lung, GI system, prostate); sepsis
- May exhibit:** Fever, chills

TEACHING/LEARNING

- May report:** Use of oral contraceptives/estrogens; recent anticoagulant therapy (predisposes to hypercoagulability)
Recurrence/lack of resolution of previous thrombophlebotic episode
- Discharge plan considerations:** **DRG projected mean length of inpatient stay: 5.8 days**
Temporary assistance with shopping, transportation, and homemaker/maintenance tasks
Properly fitted antiembolic hose

DIAGNOSTIC STUDIES

- Hematocrit:** Hemoconcentration (elevated Hct) potentiates risk of thrombus formation.
- Coagulation profile:** Levels of PT, PTT, and platelets may reveal hypercoagulability.
- Antithrombin:** Useful in determining cause of impaired coagulation/hypercoagulation and in the management of venous thrombotic disease. Elevated in DVT.
- Noninvasive vascular studies (Doppler ultrasound, compression ultrasonography, impedance plethysmography, and duplex venous scanning):** Changes in blood flow and volume identify venous occlusion, vascular damage, and vascular insufficiency. Ultrasonography appears to be most accurate noninvasive method for diagnosing multiple proximal DVT (iliac, femoral, popliteal) but is less reliable in detecting isolated calf vein thrombi.
- Trendelenburg test:** May demonstrate vessel valve incompetence.
- Venography:** Radiographically confirms diagnosis through changes in blood flow and/or size of channels. *Note:* This study carries a risk of inducing DVT and therefore is reserved for patients with negative or difficult-to-interpret noninvasive studies in the presence of high clinical suspicion.
- MRI:** May be useful in assessing blood flow turbulence and movement, venous valvular competence.

NURSING PRIORITIES

1. Maintain/enhance tissue perfusion, facilitate resolution of thrombus.
2. Promote optimal comfort.
3. Prevent complications.
4. Provide information about disease process/prognosis and treatment regimen.

DISCHARGE GOALS

1. Tissue perfusion improved in affected limb.
2. Pain/discomfort relieved.
3. Complications prevented/resolved.
4. Disease process/prognosis and therapeutic needs understood.
5. Plan in place to meet needs after discharge.

NURSING DIAGNOSIS: Tissue Perfusion, ineffective

May be related to

Decreased blood flow/venous stasis (partial or complete venous obstruction)

Possibly evidenced by

Tissue edema, pain
Diminished peripheral pulses, slow/diminished capillary refill
Skin color changes (pallor, erythema)

DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:

Tissue Perfusion: Peripheral (NOC)

Demonstrate improved perfusion as evidenced by peripheral pulses present/equal, skin color and temperature normal, absence of edema.

Engage in behaviors/actions to enhance tissue perfusion.

Display increasing tolerance to activity.

ACTIONS/INTERVENTIONS	RATIONALE
<p>Embolus Care: Peripheral (NIC)</p> <p>Independent</p> <p>Evaluate circulatory and neurological studies of involved extremity—both sensory and motor. Inspect for skin color and temperature changes, as well as edema (from groin to foot). Note symmetry of calves; measure and record calf circumference. Report proximal progression of inflammatory process, traveling pain.</p> <p>Examine extremity for obviously prominent veins. Palpate gently for local tissue tension, stretched skin, knots/bumps along course of vein.</p> <p>Assess capillary refill and check for Homans' sign.</p> <p>Promote bedrest initially, with legs elevated above heart level during acute phase.</p> <p>Elevate legs when in bed or chair, as indicated.</p> <p>Initiate active or passive exercises while in bed (e.g., flex/extend/rotate foot periodically). Assist with gradual resumption of ambulation (e.g., walking 10 min/hr) as soon as patient is permitted out of bed.</p> <p>Caution patient to avoid crossing legs or hyperflexion at knee (seated position with legs dangling, or lying in jackknife position).</p> <p>Instruct patient to avoid rubbing/ massaging the affected extremity.</p> <p>Encourage deep-breathing exercises.</p> <p>Increase fluid intake to at least 2000 mL/day, within cardiac tolerance.</p>	<p>Symptoms help distinguish between thrombophlebitis and DVT. Redness, heat, tenderness, and localized edema are characteristic of superficial involvement. Pallor and coolness of extremity are characteristic of DVT. Calf vein involvement is associated with absence of edema; femoral vein involvement is associated with mild to moderate edema; iliofemoral vein thrombosis is characterized by severe edema.</p> <p>Distension of superficial veins can occur in DVT because of backflow through communicating veins. Thrombophlebitis in superficial veins may be visible or palpable.</p> <p>Diminished capillary refill usually present in DVT. Positive Homans' sign (deep calf pain in affected leg upon dorsiflexion of foot) is a classic but unreliable sign because it is not specific for DVT.</p> <p>Until treatment is instituted, limitation of activity minimizes the possibility of dislodging thrombus/creating emboli.</p> <p>Reduces tissue swelling and rapidly empties superficial and tibial veins, preventing overdistension and thereby increasing venous return. <i>Note:</i> Some physicians believe that elevation may potentiate release of thrombus, thus increasing risk of embolization and decreasing circulation to the most distal portion of the extremity.</p> <p>These measures are designed to increase venous return from lower extremities and reduce venous stasis, as well as improve general muscle tone/strength. They also promote normal organ function and enhance general well-being.</p> <p>Physical restriction of circulation impairs blood flow and increases venous stasis in pelvic, popliteal, and leg vessels, thus increasing swelling and discomfort.</p> <p>This activity potentiates risk of fragmenting/dislodging thrombus, causing embolization, and increasing risk of complications.</p> <p>Increases negative pressure in thorax, which assists in emptying large veins.</p> <p>Dehydration increases blood viscosity and venous stasis, predisposing to thrombus formation.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Embolus Care: Peripheral (NIC)</p> <p>Collaborative</p> <p>Apply warm, moist compresses or heat cradle to affected extremity if indicated.</p> <p>Administer anticoagulants, e.g.:</p> <p>Heparin, e.g., Panheparin or low molecular weight heparin (LMWH), such as enoxaparin (Lovenox), dalteparin (Fragmin), ardeparin (Normiflo) via continuous or intermittent IV, intermittent subcutaneous (SC) injections, and/or PO coumarin derivatives, e.g., warfarin (Coumadin) or dicumarol(Sintrom);</p> <p>Thrombolytic agents, e.g., streptokinase, urokinase.</p> <p>Monitor laboratory studies as indicated: PT, PTT, aPTT, CBC</p> <p>Platelet count, platelet/aggregation test, antiheparin antibody assay</p> <p>Apply/regulate graduated compression stockings, intermittent pneumatic compression, if indicated.</p> <p>Apply elastic support hose following acute phase. Take care to avoid tourniquet effect.</p>	<p>May be prescribed to promote vasodilation and venous return and resolution of local edema. <i>Note:</i> May be contraindicated in presence of arterial insufficiency, in which heat can increase cellular oxygen consumption/nutritional needs, furthering imbalance between supply and demand.</p> <p>Heparin is preferred initially because of its prompt, predictable, antagonistic action on thrombin as it is formed and also because it removes activated coagulation factors XII, XI, IX, and X (intrinsic pathway), preventing further clot formation. LMWH is administered subcutaneously in small doses, has a more predictable dose response and longer half-life than heparin. Coumadin has a potent depressant effect on liver formation of prothrombin from vitamin K and impairs formation of factors VII, IX, and X (extrinsic pathway). Coumadin is generally used for long-term/ postdischarge therapy to keep international normalized ratio (INR) at 2–3.</p> <p>May be used for treatment of acute (less than 5 days old) or massive DVT to prevent valvular damage and development of chronic venous insufficiency. Heparin is usually begun several hours after the completion of thrombolytic therapy.</p> <p>Monitors anticoagulant therapy and presence of risk factors, e.g., hemoconcentration and dehydration, which potentiate clot formation. <i>Note:</i> Lovenox does not require serial monitoring because PT and aPTT are not affected.</p> <p>On occasion, platelet count may decrease as a result of an immune reaction leading to platelet aggregation or the formation of “white clots.” If bacteremia/DIC (disseminated intravascular coagulation) have been ruled out, condition may be the result of heparin-induced thrombocytopenia and thrombosis (HITT), requiring a change to Coumadin or other agents, e.g., dipyridamole (Persantine) and ASA.</p> <p>Sequential compression devices may be used to improve blood flow velocity and empty vessels by providing artificial muscle-pumping action.</p> <p>Properly fitted support hose are useful (once ambulation has begun) to minimize or delay development of postphlebotic syndrome. They must exert a sustained, evenly distributed pressure over entire surface of calves and thighs to reduce the caliber of superficial veins and increase blood flow to deep veins.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Embolus Care: Peripheral (NIC)</p> <p>Collaborative</p> <p>Prepare for surgical intervention when indicated.</p>	<p>Thrombectomy (excision of thrombus) is occasionally necessary if inflammation extends proximally or circulation is severely restricted. Multiple/recurrent thrombotic episodes unresponsive to medical treatment (or when anticoagulant therapy is contraindicated) may require insertion of a vena caval screen/umbrella.</p>

<p>NURSING DIAGNOSIS: Pain, acute/[Discomfort]</p> <p>May be related to</p> <p>Diminished arterial circulation and oxygenation of tissues with production/accumulation of lactic acid in tissues Inflammatory process</p> <p>Possibly evidenced by</p> <p>Reports of pain, tenderness, aching/burning Guarding of affected limb Restlessness, distraction behaviors</p> <p>DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:</p> <p>Pain Control (NOC)</p> <p>Report pain/discomfort is alleviated or controlled. Verbalize methods that provide relief. Display relaxed manner; be able to sleep/rest and engage in desired activity.</p>
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ACTIONS/INTERVENTIONS	RATIONALE
<p>Pain Management (NIC)</p> <p>Independent</p> <p>Assess degree and characteristics of discomfort/pain. Note guarding of extremity. Palpate leg with caution.</p> <p>Maintain bedrest during acute phase.</p> <p>Elevate affected extremity.</p> <p>Provide foot cradle.</p>	<p>Degree of pain is directly related to extent of circulatory deficit, inflammatory process, degree of tissue ischemia, and extent of edema associated with thrombus development. Changes in characteristics of pain may indicate progression of problem/development of complications.</p> <p>Reduces discomfort associated with muscle contraction and movement.</p> <p>Encourages venous return to facilitate circulation, reducing stasis/edema formation.</p> <p>Cradle keeps pressure of bedclothes off the affected leg, thereby reducing pressure discomfort.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p data-bbox="269 306 537 331">Pain Management (NIC)</p> <p data-bbox="237 359 412 384">Independent</p> <p data-bbox="237 411 704 436">Encourage patient to change position frequently.</p> <p data-bbox="237 495 704 520">Monitor vital signs, noting elevated temperature.</p> <p data-bbox="237 642 802 751">Investigate reports of sudden and/or sharp chest pain, accompanied by dyspnea, tachycardia, and apprehension, or development of a new pain with signs of another site of vascular involvement.</p> <p data-bbox="237 856 444 882">Collaborative</p> <p data-bbox="237 905 602 930">Administer medications, as indicated:</p> <p data-bbox="285 932 618 957">Analgesics (narcotic/nonnarcotic);</p> <p data-bbox="285 989 711 1014">Antipyretics, e.g., acetaminophen (Tylenol);</p> <p data-bbox="237 1136 651 1161">Apply moist heat to extremity, if indicated.</p>	<p data-bbox="824 411 1317 464">Decreases/prevents muscle fatigue, helps minimize muscle spasm, maximizes circulation to tissues.</p> <p data-bbox="824 495 1360 604">Elevations in heart rate may indicate increased pain/discomfort or occur in response to fever and inflammatory process. Fever can also increase patient's discomfort.</p> <p data-bbox="824 642 1360 810">These signs/symptoms suggest presence of pulmonary emboli as a complication of DVT, or peripheral arterial occlusion associated with heparin-induced thrombocytopenia and thrombosis (HITT). Both conditions require prompt medical evaluation and treatment.</p> <p data-bbox="824 932 1247 957">Relieves pain and decreases muscle tension.</p> <p data-bbox="824 995 1369 1104">Reduces fever and inflammation. <i>Note:</i> Risk of bleeding may be increased by concurrent use of drugs that affect platelet function, e.g., ASA and nonsteroidal anti-inflammatory drugs (NSAIDs).</p> <p data-bbox="824 1142 1377 1194">Causes vasodilation, which increases circulation, relaxes muscles, and may stimulate release of natural endorphins.</p>

<p data-bbox="269 1415 1230 1440">NURSING DIAGNOSIS: Gas Exchange, impaired (in presence of pulmonary embolus)</p> <p data-bbox="269 1451 467 1476">May be related to</p> <p data-bbox="269 1482 857 1507">Altered blood flow to alveoli or to major portions of the lung</p> <p data-bbox="269 1514 1271 1566">Alveolar-capillary membrane changes (atelectasis, airway/alveolar collapse, pulmonary edema/effusion, excessive secretions/active bleeding)</p> <p data-bbox="269 1577 526 1602">Possibly evidenced by</p> <p data-bbox="269 1608 927 1633">Profound dyspnea, restlessness, apprehension, somnolence, cyanosis</p> <p data-bbox="269 1640 922 1665">Changes in ABGs/pulse oximetry, e.g., hypoxemia and hypercapnia</p> <p data-bbox="269 1682 1000 1707">DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:</p> <p data-bbox="269 1713 737 1738">Respiratory Status: Gas Exchange (NOC)</p> <p data-bbox="269 1745 1105 1770">Demonstrate adequate ventilation/oxygenation by ABGs within patient's normal range.</p> <p data-bbox="269 1776 971 1801">Report/display resolution or absence of symptoms of respiratory distress.</p>
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ACTIONS/INTERVENTIONS	RATIONALE
<p>Embolus Care: Pulmonary (NIC)</p> <p>Independent</p> <p>Note respiratory rate and depth, work of breathing (use of accessory muscles/nasal flaring, pursed-lip breathing).</p> <p>Auscultate lungs for areas of decreased/absent breath sounds and the presence of adventitious sounds, e.g., crackles.</p> <p>Observe for generalized duskiness and cyanosis in “warm tissues” such as earlobes, lips, tongue, and buccal membranes.</p> <p>Monitor vital signs. Note changes in cardiac rhythm.</p> <p>Assess level of consciousness/mentation changes.</p> <p>Assess activity tolerance, e.g., reports of weakness/fatigue, vital sign changes, increased dyspnea during exertion. Encourage rest periods, and limit activities to patient tolerance.</p>	<p>Tachypnea and dyspnea accompany pulmonary obstruction. Dyspnea (“air hunger”) and increased work of breathing may be first or only sign of subacute pulmonary embolus (PE). Severe respiratory distress/failure accompanies moderate to severe loss of functional lung units.</p> <p>Nonventilated areas may be identified by absence of breath sounds. Crackles occur in fluid-filled tissues/airways or may reflect cardiac decompensation.</p> <p>Indicative of systemic hypoxemia.</p> <p>Tachycardia, tachypnea, and changes in BP are associated with advancing hypoxemia and acidosis. Rhythm alterations and extra heart sounds may reflect increased cardiac workload related to worsening ventilation imbalance.</p> <p>Systemic hypoxemia may be demonstrated initially by restlessness and irritability, then by progressively decreased mentation.</p> <p>These parameters assist in determining patient response to resumed activities and ability to participate in self-care.</p>
<p>Airway Management (NIC)</p> <p>Institute measures to restore/maintain patent airways, e.g., coughing, suctioning.</p> <p>Elevate head of bed as patient requires/tolerates.</p> <p>Assist with frequent changes of position, and get patient out of bed/ambulate as tolerated.</p> <p>Assist patient to deal with fear/anxiety that may be present:</p> <p>Encourage expression of feelings, inform patient/SOs of normalcy of anxious feelings, sense of impending doom.</p> <p>Provide brief explanations of what is happening and expected effects of interventions.</p> <p>Monitor frequently, arrange for individual (volunteer, family, others) to stay with patient as indicated.</p>	<p>Plugged/collapsed airways reduce number of functional alveoli, negatively affecting gas exchange.</p> <p>Promotes maximal chest expansion, making it easier to breathe and enhancing physiological/psychological comfort.</p> <p>Turning and ambulation enhance aeration of different lung segments, thereby improving oxygen diffusion.</p> <p>Feelings of fear and severe anxiety are associated with inability to breathe and may actually increase oxygen consumption/demand.</p> <p>Understanding basis of feelings may help patient regain some sense of control over emotions.</p> <p>Allays anxiety related to unknown and may help reduce fears concerning personal safety.</p> <p>Provides assurance that changes in condition will be noted and that assistance is readily available.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p data-bbox="267 310 634 338">Embolus Care: Pulmonary (NIC)</p> <p data-bbox="235 363 444 390">Collaborative</p> <p data-bbox="235 411 448 438">Prepare for lung scan.</p> <p data-bbox="235 585 594 613">Monitor serial ABGs/pulse oximetry.</p>	<p data-bbox="824 411 1365 552">May reveal pattern of abnormal perfusion in areas of ventilation (ventilation/perfusion mismatch), confirming diagnosis of pulmonary embolus (PE) and degree of obstruction. Absence of both ventilation and perfusion reflects alveolar congestion/airway obstruction.</p> <p data-bbox="824 585 1377 697">Hypoxemia is present in varying degrees, depending on the amount of airway obstruction, usual cardiopulmonary function, and presence/degree of shock. Respiratory alkalosis and metabolic acidosis may also be present.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p data-bbox="267 873 566 900">Airway Management (NIC)</p> <p data-bbox="235 915 784 942">Administer supplemental oxygen by appropriate method.</p> <p data-bbox="235 1089 615 1117">Administer fluids (IV/PO) as indicated.</p> <p data-bbox="235 1236 756 1348">Administer medications as indicated: Thrombolytic agents, e.g., streptokinase (Kabikinase, Streptase), urokinase (Abbokinase), alteplase (t-PA, Activase);</p> <p data-bbox="282 1409 643 1436">Morphine sulfate, antianxiety agents.</p> <p data-bbox="235 1497 748 1551">Provide supplemental humidification, e.g., ultrasonic nebulizers.</p> <p data-bbox="235 1585 797 1667">Assist with chest physiotherapy (e.g., postural drainage and percussion of nonaffected area, blow bottles/incentive spirometer).</p> <p data-bbox="235 1728 599 1755">Prepare for/assist with bronchoscopy.</p> <p data-bbox="235 1789 670 1816">Prepare for surgical intervention if indicated.</p>	<p data-bbox="824 915 1365 1085">Maximizes available oxygen for gas exchange, reducing work of breathing. <i>Note:</i> If obstruction is large or hypoxemia does not respond to supplemental oxygenation, it may be necessary to move patient to critical care area for intubation and mechanical ventilation.</p> <p data-bbox="824 1119 1382 1201">Increased fluids may be given to reduce hyperviscosity of blood (potentiates thrombus formation) or to support circulating volume/tissue perfusion.</p> <p data-bbox="824 1262 1377 1373">Indicated in massive pulmonary obstruction when patient is seriously hemodynamically threatened. <i>Note:</i> These patients will probably be initially cared for in/transferred to the critical care setting.</p> <p data-bbox="824 1409 1349 1463">May be necessary initially to control pain/anxiety and improve work of breathing, maximizing gas exchange.</p> <p data-bbox="824 1497 1317 1551">Delivers moisture to mucous membranes and helps liquefy secretions to facilitate airway clearance.</p> <p data-bbox="824 1585 1360 1696">Facilitates deeper respiratory effort and promotes drainage of secretions from lung segments into bronchi, where they may more readily be removed by coughing/suctioning.</p> <p data-bbox="824 1728 1344 1755">May be done to remove blood clots and clear airways.</p> <p data-bbox="824 1789 1377 1900">Vena caval ligation or insertion of an intracaval umbrella may be useful for patients who experience recurrent emboli despite adequate anticoagulation, when anticoagulation is contraindicated, or when septic emboli</p>

	arising from below the renal veins do not respond to treatment. Additionally, pulmonary embolectomy may be considered in life-threatening situations.
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<p>NURSING DIAGNOSIS: Knowledge, deficient [Learning Need] regarding condition, treatment program, self-care, and discharge needs</p> <p>May be related to</p> <p>Lack of exposure or recall Misinterpretation of information Unfamiliarity with information resources</p> <p>Possibly evidenced by</p> <p>Request for information, statement of misconception Inaccurate follow-through of instructions Development of preventable complications</p> <p>DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:</p> <p>Knowledge: Disease Process (NOC) Verbalize understanding of disease process, treatment regimen, and limitations. Participate in learning process. Identify signs/symptoms requiring medical evaluation.</p> <p>Knowledge: Treatment Regimen (NOC) Correctly perform therapeutic actions and explain reasons for actions.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p style="text-align: center;">Teaching: Disease Process (NIC)</p> <p>Independent</p> <p>Review pathophysiology of condition and signs/symptoms of possible complications, e.g., pulmonary emboli, chronic venous insufficiency, venous stasis ulcers (postphlebotic syndrome).</p> <p>Explain purpose of activity restrictions and need for balance between activity/rest.</p> <p>Establish appropriate exercise/activity program.</p> <p>Problem-solve solutions to predisposing factors that may be present, e.g., employment that requires prolonged standing/sitting, wearing restrictive clothing(girdles/garters), use of oral contraceptives, obesity, prolonged bedrest/immobility, dehydration.</p> <p>Recommend sitting with feet touching the floor, avoiding</p>	<p>Provides a knowledge base from which patient can make informed choices and understand/identify healthcare needs. Up to 33% experience a recurrence of DVT.</p> <p>Rest reduces oxygen and nutrient needs of compromised tissues and decreases risk of fragmentation of thrombosis. Balancing rest with activity prevents exhaustion and further impairment of cellular perfusion.</p> <p>Aids in developing collateral circulation, enhances venous return, and prevents recurrence.</p> <p>Actively involves patient in identifying and initiating lifestyle/behavior changes to promote health and prevent recurrence of condition/development of complications.</p> <p>Prevents excess pressure on the popliteal space.</p>

crossing of legs.	
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ACTIONS/INTERVENTIONS	RATIONALE
<p>Embolus Care: Pulmonary (NIC)</p> <p>Independent</p> <p>Discuss purpose, dosage of anticoagulant. Emphasize importance of taking drug as prescribed.</p> <p>Identify safety precautions, e.g., use of soft toothbrush, electric razor for shaving, gloves for gardening, avoiding sharp objects (including toothpicks), walking barefoot, engaging in rough sports/activities, or forceful blowing of nose.</p> <p>Review possible drug interactions, and stress need to read ingredient labels of OTC drugs.</p> <p>Identify untoward anticoagulant effects requiring medical attention, e.g., bleeding from mucous membranes (nose, gums), continued oozing from cuts/punctures, severe bruising after minimal trauma, development of petechiae.</p> <p>Stress importance of medical follow-up/laboratory testing.</p> <p>Encourage wearing of medical alert identification bracelet/ tag, as indicated.</p> <p>Review purpose and demonstrate correct application/ removal of antiembolic hose.</p> <p>Instruct in meticulous skin care of lower extremities, e.g., prevent/promptly treat breaks in skin and report development of lesions/ulcers or changes in skin color.</p>	<p>Promotes patient safety by reducing risk of inadequate therapeutic response/ deleterious side effects.</p> <p>Reduces the risk of traumatic injury, which potentiates bleeding/clot formation.</p> <p>Salicylates and excess alcohol decrease prothrombin activity, whereas vitamin K (multivitamins, bananas, leafy green vegetables) increases prothrombin activity. Barbiturates increase metabolism of coumarin drugs; antibiotics alter intestinal flora and may interfere with vitamin K synthesis.</p> <p>Early detection of deleterious effects of therapy (prolongation of clotting time) allows for timely intervention and may prevent serious complications. <i>Note:</i> Even regular use of acetaminophen may prolong clotting times. In addition, use of herbal products, such as ginkgo biloba, garlic, vitamin E, also impairs clotting and should be avoided during anticoagulant therapy.</p> <p>Understanding that close supervision of anticoagulant therapy is necessary (therapeutic dosage range is narrow and complications may be deadly) promotes patient participation.</p> <p>Alerts emergency healthcare providers to use of anticoagulants.</p> <p>Understanding may enhance cooperation with prescribed therapy and prevent improper/ineffective use.</p> <p>Chronic venous congestion/postphlebotic syndrome may develop (especially in presence of severe vascular involvement and/or recurrent episodes), potentiating risk of stasis ulcers/infection.</p>

POTENTIAL CONSIDERATIONS following discharge from care setting (dependent on patient's age, physical condition/presence of complications, personal resources, and life responsibilities)

Therapeutic Regimen: ineffective management—perceived seriousness of condition, susceptibility to recurrence, benefit of therapy.