

DoM

DEPARTMENT
of MEDICINE
Improving Lives

OBJECTIVES FOR COMMON CLINICAL PROBLEMS

Thromboembolic Disease

A. KNOWLEDGE: Students should be able to define, describe and discuss:

1. Risk factors for developing DVT, including:
 - Prior history of DVT/PE
 - Immobility/hospitalization
 - Increasing age
 - Obesity
 - Trauma
 - Smoking
 - Surgery
 - Cancer
 - Acute MI
 - Stroke and neurologic trauma
 - Coagulopathy
 - Pregnancy
 - Oral estrogens
2. Genetic considerations predisposing to venous thrombosis
3. The symptoms and signs of DVT and PE
4. The differential diagnosis of DVT including the many causes of unilateral leg pain and swelling:
 - Venous stasis and the postphlebitic syndrome
 - Lymphedema
 - Cellulitis
 - Superficial thrombophlebitis
 - Ruptured popliteal cyst
 - Musculoskeletal injury
 - Arterial occlusive disorders

5. The differential diagnosis of PE including the many causes of chest pain and dyspnea:
 - MI/unstable angina
 - Congestive heart failure
 - Pericarditis
 - Pneumonia/bronchitis/COPD exacerbation
 - Asthma
 - Pulmonary hypertension
 - Pneumothorax
 - Musculoskeletal pain

6. Treatment modalities for DVT/PE, including:
 - Unfractionated heparin
 - Low-molecular-weight heparin
 - Warfarin
 - Thrombolytics

7. The risks, benefits, and indications for inferior vena cava filters.

8. The long-term sequelae of DVT and PE.

9. Methods of DVT/PE prophylaxis, their indications and efficacy, including:
 - Ambulation
 - Compression stockings
 - Unfractionated heparin
 - Low-molecular-weight heparin
 - Warfarin

B. SKILLS: Students should demonstrate specific skills, including:

1. History-taking skills: Students should be able to obtain, document and present an age-appropriate medical history that suggests the diagnosis of DVT or PE, including:
 - The presence or absence of known risk factors
 - Presence or absence of leg pain, swelling, warmth, discoloration
 - The presence or absence of dyspnea, chest pain, palpitations, cough, hemoptysis.

2. Physical exam skills: Students should be able to perform a physical examination to establish the diagnosis and severity of disease, including:
 - Assessment of vital signs (i.e. hypotension, tachycardia, tachypnea, fever) and general appearance (i.e. degree of respiratory distress, anxiety)
 - Accurate identification of leg swelling, erythema, warmth, and tenderness
 - Inspection for signs of lower extremity trauma, arthritis, or joint effusion
 - Identification of pleural friction rubs, wheezes, crackles, signs of pneumothorax
3. Differential diagnosis: Students should be able to generate a differential diagnosis for a patient suspected of having DVT/PE, recognizing specific history, physical examination and laboratory findings which suggest DVT/PE, including the disease states noted above
4. Laboratory interpretation: Order and interpret diagnostic and laboratory tests based on the differential diagnosis. These may include:
 - Pulse oximetry
 - 12-lead ECG
 - Chest radiography
 - ABG
 - D-dimer

Students should be able to define the indications for:

- Duplex venous ultrasonography
 - Ventilation perfusion (V/Q) scan.
 - CT angiography (Spiral CT)
 - Pulmonary angiography
 - Echocardiography
5. Management skills: Students should be able to develop an appropriate evaluation and treatment plan for patients that includes:
 - Outlining the acute and long-term treatment of DVT and thromboembolism, including appropriate use and monitoring of heparin and warfarin.
 - Understanding the indications for placement of inferior vena cava filter, indications and complications of thrombolytic therapy, as well as indications for performing a hypercoagulability work-up