DoM | DEPARTMENT of MEDICINE
Improving Lives

OBJECTIVES FOR COMMON CLINICAL PROBLEMS

Coronary Artery Disease

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

1. The primary and secondary prevention of ischemic heart disease through the reduction of cardiovascular risk factors (e.g. controlling hypertension and dyslipidemia, aggressive diabetes management, avoiding tobacco, and aspirin prophylaxis).

2. The basic principles of the role of genetics in IHD

3. Pathogenesis, signs, and symptoms of the coronary syndromes:
    - Stable angina
    - Acute coronary syndromes:
        - Unstable angina
        - Non-ST-elevation myocardial infarction (NSTEMI)
        - ST-elevation myocardial infarction (STEMI)

4. Atypical presentations of cardiac ischemia/infarction

5. The typical clinical course of the acute coronary syndromes.

6. ECG findings and macromolecular markers (myoglobin, CK-MB, Troponin-I, Troponin-T) of acute ischemia/MI

7. The importance of monitoring for and immediate treatment of ventricular fibrillation in acute MI

8. Therapeutic options for acute MI and how they may differ for NSTEMI and STEMI, including:
    - Aspirin
    - Morphine
    - Nitroglycerine
    - Oxygen.
    - Heparin
    - Beta-blockers
    - ACE-I/ARB
    - HMG-CoA reductase inhibitors
    - Thrombolytic agents
    - Emergent cardiac catheterization with percutaneous coronary intervention (PCI)

9. Therapeutic options for stable angina :
    - Aspirin
    - Nitroglycerine
    - Beta-blockers
    - Calcium channel blockers
    - HMG-CoA reductase inhibitors
    - ACE-I/ARB
    - Revascularization strategies (CABG vs. PCI)

10. Pathogenesis, signs, and symptoms of the complications of acute MI, including arrhythmias, reduced ventricular function, cardiogenic shock, pericarditis, papillary muscle dysfunction/rupture, acute valvular dysfunction, cardiac free wall rupture and ventricular septal defect.

11. The general approach to the evaluation and treatment of ventricular tachycardia and fibrillation

12. The importance of post-MI risk stratification, including the burden of residual coronary disease and assessment of left ventricular function

13. Basic principles of cardiac rehabilitation

14. Indications for coronary artery bypass grafting (CABG)

B. SKILLS: Students should be able to demonstrate specific skills, including:

1. History-taking skills: Students should be able to obtain, document, and present an age-appropriate medical history that differentiates among etiologies of disease, including:
    - Cardiac risk factors
    - Location, duration, intensity, exacerbating/ameliorating factors, radiation of chest pain
    - Symptoms associated with chest pain (e.g. nausea, emesis, dyspnea, diaphoresis, palpitations, dizziness, syncope, heartburn belching, etc.)
    - Establishing functional class

2. Physical exam skills: Students should be able to perform a physical exam to establish the diagnosis and severity of disease including:
    - Recognition of dyspnea and anxiety
    - Accurate measurement of vital signs
    - Examination of the heart and vascular system
    - Examination of the lungs

3. Differential diagnosis: Students should be able to generate a prioritized differential diagnosis recognizing specific history and physical exam findings that suggest a specific etiology of chest pain:
    - Stable angina
    - Coronary vasospasm
    - Unstable angina
    - Acute MI
    - Pericarditis/myocarditis
    - Aortic dissection
    - Pulmonary embolism
    - Other noncardiac causes of chest pain

4. Laboratory interpretation: Order and interpret diagnostic and laboratory tests based on the differential diagnosis. These may include:
    - ECG
    - Chest radiograph.
    - Macromolecular markers (myoglobin, CK-MB, Troponin-I, Troponin-T)

Students should be able to define the indications for:

- Echocardiogram
- Cardiac stress testing
- Coronary angiography

5. Management skills: Students should be able to develop an appropriate evaluation and treatment plan for patients that includes:
    - Medical management of stable angina and acute coronary syndromes (unstable angina, NSTEMI and STEMI)
    - CCU monitoring
    - Indications for and complications of thrombolytic therapy, cardiac catheterization with percutaneous coronary intervention, and CABG.
    - Proper pre-discharge risk stratification
    - Secondary risk factor modification