

**Jordan University of Science and Technology**  
**Faculty of Medicine**  
**Department of Internal Medicine**  
*Core Curriculum for 4<sup>th</sup> year Medical Students*

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**Course Title:** General Medicine

**Course Code:** M422

**Credit Hours:** 9 Credits

**Calendar Description:** 10 Weeks/Year 4

**Course Coordinator:** Dr. Shaher Samra

**I. Goal of the Course:** to understand the clinical correlation of basic science knowledge and to acquire further medical information and clinical skills necessary for understanding and management of commonly encountered medical problems and diseases of adult patients

**II. General objectives:**

By the end of this course, students are expected to:

1. Acquire essential knowledge about common diseases affecting various organ systems
2. Take proper clinical history, conduct proper clinical examination, and detect physical signs of common medical illnesses
3. Generate a problem list or differential diagnosis for common medical problems
4. Investigate common medical problems in a rationale way
5. Build up proper relations with colleagues, patients, staff members, nurses, and technicians working in the hospital

**III. Methods of Instruction**

- ❖ Bedside teaching sessions
- ❖ Seminars
- ❖ Lectures

**IV. Evaluation and Distribution of Marks**

1. In-course evaluation: 20 %
2. Final Clinical Exam (OSCE): 40 %
3. Final Written Exam (MCQs): 40 %

## **V. Recommended Textbooks**

1. *Davidson's principles and Practice of Medicine*, Twentieth Edition
2. *Kumar and Clark Clinical Medicine*, Fifth Edition
3. *McLeod's Clinical Examination*

## **Knowledge Areas**

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### **CARDIOVASCULAR SYSTEM**

#### **I. Knowledge/Mix of Diseases/Patients**

- A. Ischemic heart disease: unstable angina and myocardial infarction
- B. Heart failure
- C. Congenital heart disease with onset of manifestations in the adult
- D. Valvular heart disease—causes
- E. Clinical diagnosis of rheumatic fever
- F. Hypertension: essential and secondary
- G. Pericarditis
- H. Arrhythmias
  - 1. Distinction between ventricular and supraventricular rhythms
  - 2. Atrial fibrillation, atrial flutter
  - 3. Heart block 1<sup>o</sup>, 2<sup>o</sup>, 3<sup>o</sup>
  - 4. Bundle branch and hemiblocks
  - 5. Main supraventricular tachycardias

#### **II. History Skills**

- A. Obtain history of risk factors for coronary artery disease
- B. Obtain history for rheumatic fever or congenital heart disease
- C. Recognize importance of family history in assessment of cardiovascular disease
- D. Use all modalities in "pain" history to distinguish coronary artery disease from other causes of chest pain
- E. In hypertensive patient, obtain careful history of medication compliance

#### **III. Physical Exam Skills**

- A. Determine venous pressure by examination of neck veins

- B. Assess arterial pulses and recognize pulsus alternans, bisferiens pulse, and paradoxical pulse
- C. Perform hepatojugular reflux test to assess venous pressure
- D. On cardiac auscultation, recognize:
  - 1. Systolic and diastolic murmur--effects of physiologic and pharmacologic interventions
  - 2. Pericardial friction rub
- E. On cardiac auscultation, recognize:
  - 1. S-1, S-2, and normal physiologic splitting
  - 2. S-3, S-4, and how they are best appreciated
  - 3. Systolic and diastolic murmur--effects of physiologic and pharmacologic interventions
  - 4. Special characteristics of the murmur of MVP and HCM
  - 5. Pericardial friction rub

#### **IV. Diagnostic Tests**

- A. Recognize a normal EKG
- B. Recognize a normal Chest X-ray

#### **V. Therapeutic Interventions**

- A. Know therapeutic indications for angioplasty and other therapeutic applications of catheterization
- B. Describe therapeutic approach to clinical syndromes described in I.

### **DISEASES OF THE KIDNEY AND URINARY TRACT**

#### **I. Knowledge/Mix of Diseases/Patients**

- A. Acute renal failure--The student must distinguish prerenal, renal, and post renal disease using clinical and laboratory parameters
- B. Chronic renal failure and its associated metabolic-endocrine, GI, cardiovascular hematologic, and neuromuscular complications
- C. The major glomerulopathies
- D. Tubulointerstitial disease
- E. Vascular injury

#### **II. History Skills**

In the patient who presents with a problem of the urinary tract, the student will determine by history:

- A. Frequency and volume of urine (polyuria, oliguria, anuria)
- B. Urine color, hematuria

- C. Dysuria, diminished stream
- D. Effects of nephrotoxic drugs or drugs that effect bladder emptying or urine color
- E. The clinical syndrome of uremia

### **III. Physical Exam Skills**

- A. Recognize signs of uremia--cognitive, asterixis, odor of breath
- B. Auscultate for bruits
- C. Attempt to palpate for kidneys
- D. Percuss bladder size

### **IV. Diagnostic Tests**

The student should be able to:

- A. Calculate fractional excretion of sodium as a measure of prerenal vs post renal azotemia
- B. Evaluate the patient with glomerulonephritis for multisystem disease
- C. Choose the most appropriate imaging test for the specific patient problem

### **V. Therapeutic Interventions**

The student should be able to:

- A. Manage the patient with acute renal failure and know all indications for dialysis
- B. Recognize the possibility of urinary tract obstruction

## **DISORDERS OF THE RESPIRATORY SYSTEM**

### **I. Knowledge/Mix of Diseases/Patients**

- A. Diseases of airflow limitation
  - 1. Asthma
  - 2. Bronchitis
  - 3. Emphysema
  - 4. Bronchiectasis
  - 5. Cystic fibrosis
- B. Interstitial lung diseases
  - 1. Occupational lung disease
  - 2. Hypersensitivity pneumonias
  - 3. Sarcoidosis
  - 4. Idiopathic pulmonary fibrosis
- C. Infectious lung diseases
  - 1. Community acquired pneumonia
  - 2. Nosocomial pneumonias
  - 3. Tuberculosis
- D. Pulmonary vascular lung diseases

1. Pulmonary thromboembolism
  2. Pulmonary hypertension
  3. Noncardiogenic pulmonary edema (ARDS)
- E. Neoplastic disease of the lung
1. Bronchogenic carcinoma
  2. Paraneoplastic syndromes
- F. Diseases of the pleura
1. Pleural effusion
  2. Pneumothorax

## **II. History Skills**

- A. Correctly characterize respiratory symptoms of dyspnea, cough, and expectoration
- B. Obtain careful history of accidental or occupational exposure to potential lung toxins
- C. Obtain a precise history of tobacco use, including passive cigarette smoke
- D. Obtain family history for cystic fibrosis, emphysema, asthma, tuberculosis, collagen vascular diseases, and lung neoplasm
- E. Obtain history of drug exposure and medication use
- F. Determine risk factors for HIV and TB

## **III. Physical Exam Skills**

- A. Examine the chest by inspection
  1. Identify abnormal respiratory patterns
  2. Recognize findings suggesting pulmonary disease such as deviated trachea, digital clubbing
- B. Examine the chest by palpation
  1. Appreciate the significance of supraclavicular adenopathy, crepitation, and tenderness
- C. Examine the chest by percussion
  1. Distinguish normal and abnormal resonance
  2. Further define areas of dullness by special maneuvers such as vocal and tactile fremitus
- D. Examine the chest by auscultation
  1. Recognize normal breath sounds and characterize
  2. Recognize adventitious breath sounds such as crackles, rhonchi, and wheezes
  3. Understand the diagnostic implications of the adventitious sound

## **IV. Diagnostic Test Skills**

- A. The student should be able to:
  1. Interpret arterial blood gases
  2. Understand the use of the pulse oxymeter
  3. Interpret spirometry including Flow-Volume loops
  4. Interpret the chemical profile of pleural effusions

B. The student should understand the indications for:

1. Pulmonary function tests
2. Thoracentesis
3. Pleural biopsy

## **V. Therapeutic Skills**

A. The student must be familiar with the general management of all diseases listed in I.

B. The student should be able to:

1. Correctly select antimicrobial agents for respiratory infection
2. Recognize a significant reaction to PPD
3. Know the indications and side effects for the commonly used medications in pulmonary medicine

## **ENDOCRINOLOGY AND METABOLISM**

### **I. Knowledge/Mix of Diseases/Patients**

A. Diseases of the pituitary

1. Diabetes insipidus
2. Pituitary tumors
  - a. Acromegaly
  - b. Cushing Disease
  - c. Prolactinoma
3. Hypopituitarism
4. Empty Sella Syndrome

B. Thyroid disease

1. Hypothyroidism causes
2. Hyperthyroidism
  - a. Graves disease
  - b. Toxic multinodular goiter
  - c. Toxic adenoma
  - d. Factitious
3. Thyroiditis
  - a. Chronic thyroiditis (Hashimoto's)
  - b. Subacute thyroiditis (painful and painless)
4. Approach to thyroid nodule

C. Diseases of the adrenal cortex

1. Cushing Syndrome
2. Hyperaldosteronism
3. Addison's Disease

D. Pheochromocytoma

E. Diabetes mellitus

1. Diagnosis
2. Classification and pathogenesis

3. Clinical features
4. Complications
5. Treatment
  - a. Diet
  - b. Insulin
  - c. Oral agents
- F. Hypoglycemia
  1. Fasting
  2. Reactive
- G. Disorders of the parathyroid gland and of calcium metabolism
- H. Metabolic bone disease
  1. Osteoporosis
  2. Osteomalacia
  3. Paget's
  4. Renal osteodystrophy

## **II. History Skills**

- A. Demonstrates knowledge necessary to take a proper history for a patient suspected of having an endocrine or metabolic disorder.
- B. In a patient with diabetes mellitus, the student must obtain and put in chronological order a detailed history of the disease, including all complications, hospitalizations, medications.

## **III. Physical Exam**

- A. Know importance of:
  1. Weight
  2. Height
  3. Skeletal proportions
- B. Recognize exophthalmus and abnormal ocular motility
- C. Evaluate thyroid size, nodularity, tenderness, and bruit
- D. Evaluate skin-temperature, moisture, pigmentation, pretibial myxedema, diabetic dermopathy
- E. Evaluate quality of voice
- F. Evaluate texture and pattern of hair
- G. Recognize diabetic retinopathy

## **IV. Diagnostic Skills**

- A. Understand the use of thyroid function tests
- B. Describe the tests necessary to diagnose diseases listed in I.

## **V. Therapeutic Interventions**

A. Understand the indications, side effects, and adverse reactions for each of the following:

1. L-thyroxine
2. Glucocorticoids
3. Antithyroid drugs
4. Oral hypoglycemics
5. Insulin (all forms)

## **GASTROENTEROLOGY**

### **I. Knowledge/Mix of Diseases/Patients**

A. Diseases of the esophagus: anatomic and motor causes of esophagitis (GERD)

B. H Pylori and PUD

C. Disorders of absorption

D. Inflammatory bowel disease

E. Liver and biliary tract disease

1. Acute and chronic hepatitis
2. Cirrhosis and alcoholic liver disease
3. Approach to patients with abnormal LFTs

F. Pancreatic diseases

1. Acute pancreatitis
2. Chronic pancreatitis
3. Pancreatic cancer
4. Endocrine tumors

### **II. History Skills**

In obtaining history from a patient with a GI complaint:

A. Describe all characteristics of abdominal pain

B. Recognize potential importance of family history and medication history and GI side effects of all drugs

C. History of diet, weight, food intolerance, bowel pattern, and bleeding

D. Compare and contrast history of inflammatory bowel disease vs. irritable bowel syndrome

E. Precise history taking in GERD and dysphagia

### **III. Physical Exam Skills**

A. Students must do complete exam of abdomen and rectal exam including:

1. Auscultation for bowel sounds and bruits
2. Percussion for liver size
3. Palpation for spleen

B. Recognize need for additional physical exam maneuvers such as:

1. Shifting dullness and fluid wave when ascites is suspected



2. Murphy's sign for right upper quadrant pain or tenderness
3. Eliciting signs of peritonitis
4. Perform rectal digital exam and check for fecal blood

#### **IV. Diagnostic Studies**

- A. Know indications for paracentesis
- B. Know indications for placement of nasogastric tube
- C. Properly interpret the following laboratory tests:
  1. Serologic studies for viral and autoimmune hepatitis
  2. Liver function tests

#### **V. Therapeutic Skills**

- A. The student should know indications, side effects, interactions and follow-up for the most commonly used GI medications (e.g. PPIs, Laxatives, Prokinetic agents)

### **HEMATOLOGY**

#### **I. Knowledge/Mix of Diseases/Patients**

- A. Pathophysiology of anemia
- B. Anemia of chronic disease
- C. Iron deficiency anemia
- D. Megaloblastic anemia
- E. Hemolytic anemias (congenital and acquired)
- F. Myeloproliferative disorders
- G. Leukemias (acute and chronic)
- H. Lymphoma (Hodgkins, non-Hodgkins and plasma cell myeloma)
- I. Clotting disorders
  1. Platelet and vessel wall
  2. Coagulation and thrombosis
  3. Hypercoagulable state

#### **II. History Skills**

- A. Knowing presenting signs of anemia
- B. Recognize that dizziness, shortness of breath, headache, exercise intolerance, and sensitivity to cold may be presenting symptoms of anemia
- C. Recognize that symptoms of angina, claudication, TIA may be unmasked by anemia
- D. Recognize the value of reviewing all previous hematologic lab data in evaluation of hematologic disorders
- E. Recognize symptoms of platelet disorders (spontaneous mucocutaneous bleeding, immediate bleeding with trivial trauma) versus symptoms of clotting-factor deficiency (delayed bleeding, deep muscular hematomas, hemarthroses)

- F. Recognize the importance of "B" symptoms (fever, night-sweats, weight loss) in patients with lymphoma
- G. Recognize the importance of the family history in patients with anemia and coagulation disorders

### **III. Physical Diagnosis Skills**

- A. Recognize ecchymotic or petechial rash
- B. Palpate all lymph node areas, spleen and liver

### **IV. Diagnostic Skills**

- A. Know the value of the following tests in the work-up of a patient with hemolytic anemia:
  - 1. Blood smear review
  - 2. Reticulocyte count
  - 3. Coombs test
  - 4. Serum haptoglobin
  - 5. Glucose 6 phosphate dehydrogenase deficiency
  - 6. Hemoglobin electrophoresis
  - 7. Urine hemosiderin
- B. Know the proper evaluation for bleeding disorder

### **V. Therapeutic Interventions**

- A. Know the appropriate indications for transfusion of erythrocytes and platelets
- B. Know indications for fresh frozen plasma, cryoprecipitate, and purified factor concentrates

## **INFECTIOUS DISEASES**

### **I. Knowledge/Mix of Diseases/Patients**

- A. Clinical syndromes
  - 1. Gram-negative sepsis
  - 2. Infective endocarditis
  - 3. Upper and lower respiratory infections
  - 4. Urinary tract infections
  - 5. Soft tissue infection
  - 6. Tuberculosis
  - 7. Mycoplasma pneumoniae pneumonia
- B. Viral infection
  - 1. Influenza and prevention
  - 2. Herpes infection,
  - 3. Hepatitis A, B and C

C. Fever of unknown origin

## **II. History Skills**

A. Demonstrate at bedside ability to elicit history with special attention to relevant travel and residential history, animal contact, work and recreational activity, drug use and sexual history

B. Elicit any co-existing disease which may be relevant to pathogenesis of infection

## **III. Physical Examination**

A. Demonstrate ability to perform thorough physical exam in effort to determine source of infection

B. Recognize skin lesions which may provide diagnostic clues to etiology of infection

C. Recognize fever patterns and their possible diagnostic indications

D. Perform Kernig and Brudzinski tests in evaluating for meningitis

## **IV. Diagnostic Tests**

A. Obtain sputum on patients with pneumonia

B. Interpret body fluid results (CSF, pleural, peritoneal, joint)

## **V. Therapeutic Interventions**

A. Choose appropriate antibiotic regimens for most common infections

B. Know major side effects of antibiotics

# **RHEUMATOLOGY**

## **I. Knowledge**

A. Clinical manifestations of SLE

B. Rheumatoid arthritis

C. Scleroderma

D. Mixed connective tissue disease

E. Sjogren's syndrome

F. Ankylosing spondylitis

G. Vasculitic syndromes

H. Sarcoidosis

I. Osteoarthritis

J. Psoriatic arthritis and arthritis associated with GI diseases

K. FMF

L. Behcet's disease

M. Gout

## **II. History Skills**

- A. Demonstrate ability to elicit history of multisystem disease. Know importance of extra-articular symptoms such as rash, uveitis, aphthous ulcers, alopecia, pleuritic pain
- B. In patient with joint disease, determine presence or absence of morning stiffness, redness, heat, swelling, restricted movement

## **III. Physical Exam Skills**

- A. Know the physical findings associated with each of the diseases listed in I.
- B. Evaluate each joint for swelling, erythema, tenderness, crepitation, contracture, deformity.
- C. Determine range of motion and compare to normal. Identify Heberden node, Bouchard node, ulnar deviation, Swan neck deformity.
- D. Demonstrate joint effusion.
- E. Examine the spine. Evaluate chest expansion for spondylitis.

## **IV. Diagnostic Tests**

The student should be able to:

- A. Know the basics of diagnostic joint aspiration
- B. Know when to order the following tests: rheumatoid factor, anti DNA, anti SM, anti RNP, anti RO (SSA), anti LA (SSB), ANCA

## **V. Therapeutic Interventions**

- A. Know general treatment options for all diseases listed in I

**-End-**