COURSE PLAN

FIRST: BASIC INFORMATION

College	
College	: Medicine
Department	: Internal medicine
Course	
Course Title	: Internal medicine
Course Code	: 31508602
Credit Hours	: 8 hours
Year level	: 6th year
Instructor	
Name	: Sara Haj Ali, Bandar Ghazal, Tarek Mazzawi, Bisher Qawar
Office No.	: 1st floor offices
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E-mail	: sara.hajali@bau.edu.jo
Office Hours	:12-1

Class Times

Building	Day	Start Time	End Time	Room No.
Faculty of medicine	Sunday-Tuesday	1 pm	3 pm	201

Text Book

1. **Davidson's Principles and Practice of Medicine, 20th Edition with STUDENT CONSULT Online Access.** By Nicholas A. Boon, MA, MD, FRCP(Ed), FESC, Nicki R. Colledge, BSc, FRCP(Ed), Brian R. Walker, BSc, MD, FRCP(Ed) and John A. A. Hunter, OBE, BA, MD, FRCP

2. **Kumar and Clark's Clinical Medicine, 7th Edition - With STUDENT CONSULT Online Access.** By Parveen Kumar, CBE, BSc, MD, FRCP, FRCP(Edin) and Michael L. Clark, MD, FRCP

- **Macleod's Clinical Examination, 12th Edition with STUDENT CONSULT Access.** By Graham Douglas, BSc (Hons), MB, ChB, FRCPE, Fiona Nicol, BSc(Hons), MB, BS, FRCGP, FRCPE and Colin Robertson, BA(Hons), MB, ChB, FRCPE, FRCS(Ed

References

- Up to Date
- Medical Journals review articles
- Medscape.com

SECOND: PROFESSIONAL INFORMATION

COURSE DESCRIPTION

It is an eight-week rotation in internal medicine where students will go to KHMC for 4 weeks followed by 4 more weeks at Al-Salt hospital (or vice versa). During this rotation, students will participate in daily bedside clinical rounds to learn inpatient medical care, attend outpatient clinics, present seminars on important medical topics, and will be assigned on-calls in emergency departments to learn principles of emergency medicine.

COURSE OBJECTIVES

1. Interview patients and perform a complete and focused physical examination
2. Consolidate their knowledge of abnormal physical findings
3. Perform analysis of clinical and laboratory information
4. Improve their presentation skills in describing the chief problems and a plan for treatment.
5. In-house calls and prepare a complete history and physical examination for new patient adr to the service
6. Periodically follow up patients' status including interpretation of new findings
7. Use and interpret laboratory and radiographic tests used in diagnosing common disease (ab read chest radiograph, EKG, spirometry, blood film,etc…)
8. Recognize and manage situations related to common emergencies
9. Identify ethical problems which arise in patient treatment and care

Method of instruction

1. Direct patient contact

2. Bedside clinical teaching

3. Outpatient clinic

4. In-house call

5. Interactive seminars

Typical course schedule

Al Salt Hospital	Weeks 1-4		Interviewing Patients	Bedside Teaching	Seminars
		Sunday	8:30 – 9:30	10:00 – 12:00	13:00 – 15:00
		Monday	8:30 – 9:30	10:00 – 12:00	13:00 – 15:00
		Tuesday	8:30 – 9:30	10:00 – 12:00	13:00-15:00
		Wednesday	8:30 – 9:30	10:00 – 12:00	13:00-15:00
		Thursday	8:30 – 9:30	10:00 – 12:00	-------
			Bedside teaching	**Outpatient Specialty clinic**	**Seminars**
King Hussein Medical Center	Weeks 5-8	**Sunday**	**9:00-10:00**	**10:00-12:00**	13:00-15:00
		Monday	**9:00-10:00**	**10:00-12:00**	13:00-15:00
		Tuesday	**9:00-10:00**	**10:00-12:00**	13:00-15:00
		Wednesday	**9:00-10:00**	**10:00-12:00**	13:00-15:00
		Thursday	**9:00-10:00**	**10:00-12:00**	---------
		Thursday (Week 8)	**OSCE+Mini OSCE Exam**		---------

Core Curriculum in Internal Medicine:

1 Bronchial Asthma
2 Chronic obstructive lung disease
3 Lung cancer
4 Pneumonia
5 Pleural effusion
6 Venous thromboembolism
7 Acute coronary syndrome
8 Heart failure
9 Arrhythmias
10 Hypertension

11 Acute renal failure
12 Chronic renal failure
13 Nephrotic syndrome
14 Urinary tract infection
15 Upper GI bleeding
16 Inflammatory bowel disease
17 Infectious hepatitis
18 Liver cirrhosis
19 Malabsorption
20 Peptic ulcer disease
21 Anemias
22 Lymphomas
23 Leukemias
24 Hemogobinopathies
25 Diabetes mellitus
26 Hypothyroidism
27 Thyrotoxicosis
28 Cushing's syndrome
29 Systemic lupous erythematosus
30 Rheumatoid arthritis
31 Gout arthritis
32 Behcet's disease
33 Familial Mediterranean Fever
34 Tuberculosis
35 Sepsis

Specific Objectives:

CLINICAL EPIDEMIOLOGY/MEDICAL REASONING

A. Describe phases of clinical reasoning
   1. Defining the "clinical problem"
   2. Generating a differential diagnosis
   3. Ordering of appropriate investigations to narrow down the list of differential diagnosis
   4. Planning for treatment and prevention of disease

B. Define:
   1. Prevalence
   2. Sensitivity
   3. Specificity
   4. False negative rate
   5. False positive rate
   6. Negative predictive value (NPV) and positive predictive value (PPV)

CARDIOVASCULAR SYSTEM

I. Knowledge/Mix of Diseases/Patients

A. Ischemic heart disease and myocardial infarction including practice guidelines for the management of unstable angina. Recognize RV infarct, MI complications
B. Congestive heart failure practice guidelines. Systolic vs diastolic
C. Congenital heart disease which may occur in adults
D. Valvular heart disease—causes

E. Clinical diagnosis of rheumatic fever
F. Cardiomyopathies
G. Pericardial disease
H. Hypertension: essential and secondary
I. Arrhythmias
1. Distinction between ventricular and supraventricular arrhythmias
2. Atrial fibrillation, atrial flutter, SVT and MAT
3. Heart block 1^{o}, 2^{o}, 3^{o}
4. Bundle branch and hemiblocks

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. Differentiate between cardiac and non-cardiac chest pain
E. In hypertensive patient, obtain careful history of medication compliance

III. Physical Exam Skills
A. Measure arterial blood pressure in both arms using palpation method initially. Know how to avoid all common errors in blood pressure measurement
B. Determine heart size by palpation of the PMI
C. Appreciate the significance of abnormal pulsations, right and left ventricular heave, thrills
D. Determine venous pressure by examination of neck veins
E. Assess arterial pulses and recognize pulsus alternans, bisferiens pulse, and paradoxical pulse
F. Perform hepatojugular reflux test to assess venous pressure
H. 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
I. Assessment of peripheral vascular disease.

IV. Diagnostic Tests
A. EKG interpretation
B. Chest X-ray--recognize classical findings in HF, pericardial effusion, chamber enlargement
C. Echocardiography--Be able to order when appropriate in evaluation of valvular heart disease, LVH, cardiomyopathy, endocarditis, pericardial effusion

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. Emphasize particularly
1. Indications for thrombolytic therapy in MI
2. Contraindications for thrombolytic therapy in MI
3. Analgesia, oxygen, and sedation
4. Role of ASA, anticoagulation, Beta blockers, magnesium
5. Recognize and treat complications of MI including ventricular tachycardia and fibrillation, idioventricular rhythm, sinus bradycardia, conduction disturbances and heart block.

6. Know how to use common drugs for angina pectoris including types of nitrates, Beta blockers and calcium channel blockers.
7. Understand all modalities in the management of CHF including reduction of workload, control of salt and fluid, diet, diuretic vasodilators and digoxin. Use additional options in acute pulmonary edema.
8. Describe drugs of choice for bradyarrhythmias and tachyarrhythmias
9. Know the approach to acute pericarditis and evaluation of the patient with possible tamponade

VI. Prevention of Cardiac Disease

A. Have plan of intervention for hyperlipidemia
B. Approach patient with options for cessation of cigarette smoking
C. Be able to advise patient on diet, exercise program, and stress reduction
D. Identify patients who are at highest risk
A. EKG interpretation
B. Chest X-ray--recognize classical findings in congestive heart failure, pericardial effusion, chamber enlargement
C. Echocardiography--Be able to order when appropriate in evaluation of valvular heart disease, LVH, cardiomyopathy endocarditis, pericardial effusion
E. Know all antibiotic regimens for prophylaxis of endocarditis in at-risk patients

Clinical Pharmacology

I. Knowledge

A. Principles of drug therapy
1. Loading and maintenance dosing
2. Calculate creatinin clearance
3. Drug interaction lists (particularly coumadin, theophylline, dilantin, digoxin)

B. Adverse reactions
1. Endocrine, metabolic, dermatologic, hematologic, renal, cardiovascular, neurologic and psychiatric, GI
2. Polypharmacy and the elderly

C. Action and side effects of nonsteroidals (NSAIDs)
D. Indications and physiologic effects of autonomic drugs (adrenergic, dopaminergic, alpha and beta blocking agents)

II. History Skills

A. Ability to take careful drug history
B. Assess compliance
C. History of herbal use

III. Physical Exam

A. Recognize drug rashes
B. Recognize Stevens Johnson syndrome
C. Recognize angioedema, gingival hyperplasia, dental discoloration
D. Evaluate and categorize mental status changes associated with drug effects

IV. Diagnostic Tests

A. Interpret peak and trough levels of aminoglycoside and vancomycin
B. Appropriate use of digoxin levels
C. Drug screens – indications

V. Therapeutic Interventions

A. Treatment of drug toxicities and overdose

1. Fundamentals
2. Management of specific poisons - acetaminophen, acids and alkali, salicylate, carbon monoxide, digoxin, theophylline, methemoglobinemia, lithium

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 including acute GN, rapidly progressive GN, GN associated with nephrotic syndrome, and glomerulopathies associated with multisystem disease

D. Tubulointerstitial disease

E. Vascular injury

F. Causes of renal stones--associated underlying diseases

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. Family history of renal disease or stones

E. Past history of stones or urinary tract infection

F. Flank or groin pain

G. History of nephrotoxic drugs or drugs that effect bladder emptying or urine color

H. Recognize 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

E. Recognize any signs of multisystem disease as might be seen in SLE and scleroderma, Schonlein-Henoch purpura, PAN

IV. Diagnostic Tests

A. The student should be able to:

B. Calculate fractional excretion of sodium as a measure of prerenal vs post renal azotemia

C. Evaluate the patient with glomerulonephritis for multisystem disease

D. 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 and perform urethral catheterization using sterile technique

C. Recognize the indications for consultation for performance of peritoneal and hemodialysis, lithotripsy or stone surgery, nephrostomy tube, renal vascular surgery, suprapubic cystotomy, renal transplantation

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. Mycotic lung diseases
4. 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
G. Obtain reports of prior pulmonary tests such as CXRs, PFTs, ABGs, and PPD

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, HPO, and Horner's syndrome

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 including mixed acid base abnormalities
2. Use the A-a gradient to determine the causes of hypoxemia
3. Use the a/A ratio as an expression of patient's ability for gas exchange
4. Understand the use and limitations of the pulse oxymeter
5. Interpret spirometry including Flow-Volume loops
6. Interpret the chemical profile of pleural effusions
7. Utilize the Gram stain, AFB stains, and Wright stain
8. Interpret the standard PA and lateral chest radiograph

B. The student should understand the indications for:
1. Pulmonary function tests
2. Sleep studies
3. Serology and special immunofluorescent stains
4. Thoracentesis
5. Pleural biopsy
6. Chest tube insertion
7. Bronchoscopy
8. Transthoracic needle biopsy
9. Open lung biopsy
10. Mediastinoscopy

V. Therapeutic Skills

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

B. The student should be able to:
1. Properly clear and maintain an airway
2. Perform therapeutic and diagnostic thoracentesis
3. Teach incentive spirometry
4. Correctly select antimicrobial agents for respiratory infection
5. Recognize a significant reaction to PPD
6. Know the indications and side effects for the commonly used medications in pulmonary medicine

VI. Preventive Measures

A. The student must recognize the value of:
1. Immunization with the Pneumovax
2. Immunization with the influenza vaccine
3. Prophylactic use of amantadine in influenza outbreaks
4. Immunization with the BCG vaccine
5. Measures to prevent the spread of tuberculosis
6. High risk screening for tuberculosis infection
7. INH prophylaxis

8. Low flow oxygen

Endocrinology And Metabolism
I. Knowledge/Mix of Diseases/Patients
A. Diseases of the pituitary
1. Diabetes insipidus
a. Central b. Nephrogenic
2. Pituitary tumors
a. Acromegaly b. Cushing Disease
c. Prolactinoma
3. Hypopituitarism
4. Empty Sella Syndrome
B. Thyroid Disease
1. Hypothyroidism causes
a. Primary hypothyroidism b. Secondary hypothyroidism
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
a. Primary hyperaldosteronism b. Secondary hyperaldosteronism

3. Addison's Disease
4. Hypoaldosteronism
5. Incidental adrenal mass
6. Congenital adrenal hyperplasia (classical and non-classical)

D. Pheochromocytoma

E. Diabetes mellitus
1. Diagnosis
2. Classification and pathogenesis
3. Clinical features
4. Complications
a. DKA b. Hyperosmolar coma
c. Vascular disease d. Ocular
e. Nephropathy f. Neuropathy (somatic and autonomic)
g. Foot ulcers h. Other infections
5. Treatment
a. Diet b. Insulin
c. Oral agents d. HTN Rx

F. Hypoglycemia
1. Fasting
a. Insulinoma vs. factitious
2. Reactive

G. Testicular function
1. Primary hypogonadism
a. Klinefelter's
2. Secondary hypogonadism
a. Pituitary tumor b. Hyperprolactinemia
3. Pubertal development
a. Delayed puberty b. Cryptorchidism

H. Disorders of ovary and female genital tract
1. Hirsutism and virilization
2. Amenorrhea/galactorrhea (hyperprolactinemia)
3. Estrogen replacement

I. Multiple endocrine disorders

J. Disorders of the parathyroid gland and of calcium metabolism (hyperparathyroidism differential of hypercalcemia, hypocalcemia)

K. 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. This might include the special significance of:
1. Growth and development
2. Sexual precocity
3. Menstrual function
4. History of thyroid or other endocrine disorders
5. Family history of diabetes mellitus
6. Obesity

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. The history should include history of coma, neuropathy, nephropathy, foot problems, and infections.

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, lesions, such as acne, pretibial myxedema, diabetic dermopathy, and necrobiosis
E. Evaluate quality of voice
F. Evaluate texture and pattern of hair
G. Recognize gynecomastia and its differential
H. Recognize diabetic retinopathy

IV. Diagnostic Skills

A. Understand the use of thyroid function tests in the diagnosis of thyroid disease and thyroid abnormalities in non-thyroidal diseases
   1. TSH
   2. I^{123} uptake
   3. Thyroid scan
B. Clinical circumstances for the use of the following tests:
   1. Water deprivation
   2. Growth hormone suppression by glucose
   3. Dexamethasone suppression
   4. ACTH stimulation
   5. PRA, aldosterone
   6. Prolactin, LH, FSH, ACTH
   7. Vitamin D and related metabolites
   8. Serum catecholamines (clonidine stimulatix)
   9. Cortisol
   10. DHEA - sulfate
   11. Testosterone
   12. 17 0H progesterone
C. Urinary
   1. Hydroxysteroids/urine free corticoid
   2. Pregnancy test
   3. Metanephrine, VMA
   4. 5-hydroxy indoleacetic acid
D. Describe the tests necessary to diagnose diseases listed in I.

V. Therapeutic Interventions

A. Understand the indications, side effects, adverse reactions and approach to follow-up for each of the following:
   1. ACTH
   2. L-thyroxine
   3. Cortisones
   4. Testosterone
   5. Vasopressin
   6. Antithyroid drugs
   7. Oral hypoglycemics
   8. Insulin (all forms)
   9. Glucagon
   10. Bromocriptine
   11. Hypolipidemic agents
B. Recognize the need for consultation for the following:
   1. Transsphenoidal hypophysectomy

2. Partial thyroidectomy
3. Adrenalectomy
4. Parathyroid exploration and resection

Gastroenterology

I. Knowledge/Mix of Diseases/Patients

A. Diseases of the esophagus: anatomic and motor causes of esophagitis
B. Peptic ulcer and gastritis role of Helicobacter, Zollinger Ellison syndrome
C. Neoplasms of the esophagus and stomach
D. Disorders of absorption
E. Inflammatory bowel disease
F. Diseases of the large and small bowel
G. Liver and biliary tract disease
   1. Acute and chronic hepatitis
   2. Cirrhosis and alcoholic liver disease
   3. Infiltrative disease of the liver
   4. Diseases of the gallbladder
H. 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 (CA, polyposis, etc.), 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. In inflammatory bowel disease, determine length of illness and risk of cancer
F. In alcoholic patient, determine length and quantity of alcohol. Include all aspects of potential impact of alcohol on health
G. In both GI patients and liver disease patients, obtain careful drug history, including over counter drugs and careful history of exposure and toxins
H. Precise history taking in GERD and dysphagia

III. Physical Exam Skills

A. Students must do complete exam of abdomen and rectal exam including:
   1. General observation including abdominal contour, nodules, scars, striae, venous pattern
   2. Auscultation for bowel sounds and bruits
   3. Light and deep palpation
   4. Percussion for liver size
   5. Percussion in Traube's space to evaluate for splenomegaly
   6. 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. Liver scratch test when percussion is equivocal or cannot be done
   4. Eliciting signs of peritonitis

5. Check inguinal area for masses and hernia
6. Perform rectal digital exam and check for fecal blood

IV. Diagnostic Studies

A. Know indications for and properly perform paracentesis and placement of nasogastric tube

B. Properly interpret the following laboratory tests:

1. Serologic studies for hepatitis
2. Liver function tests
3. Stool electrolytes and osmolality
4. Serum B_{12}

C. The student should know sensitivity and specificity of imaging modalities for diseases in I. including:

1. Radionucleotide scan of liver
2. Abdominal ultrasound & CT scan
3. Upper, lower GI barium studies
4. Esophagoscopy, gastroscopy and colonoscopy
5. Small bowel biopsy
6. Endoscopic retrograde cannulation of pancreas and bile duct (ERCP)

V. Therapeutic Skills

A. Places nasogastric tube for pancreatitis or other GI symptoms

B. Performs therapeutic paracentesis

C. Requests appropriate consultation for consideration of the following:

1. Surgical abdomen
2. Sclerotherapy or banding for esophageal varices
3. Control of GI bleed
4. Bowel resection for inflammatory bowel disease
5. Esophageal dilatation
6. Portacaval shunt
7. GI cases where surgical intervention is indicated

D. The student knows indications, mechanism of action, side effects, interactions and follow-up for the following medications:

1. Laxatives
2. Anti-emetics
3. Bile sequestrants
4. Anti-diarrheals
5. Antacids
6. Pancreatic enzymes
7. Corticosteroids
8. H_2 antagonists
9. Anti-helminthics
10. PPI's
11. Prokinetic agents

VI. Preventive Measures

A. Knows indications for occult blood screening and for periodic colonoscopy in high-risk patients

B. Knows approach to follow up of the patient with history of polyp disease

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. Iron overload states
G. Bone marrow failure
H. Myeloproliferative disorders
I. Leukemias (acute and chronic)
J. Myelodysplastic syndromes
K. Lymphoma (Hodgkins, non-Hodgkins and plasma cell myeloma)
L. Clotting disorders
    1. Platelet and vessel wall
    2. Coagulation and Thrombosis
    3. Hypercoagulable state

II. History Skills

A. Knowing presenting signs of anemia recognizing these to be variable and dependent on severity, chronicity and underlying disease
B. Recognize dizziness, shortness of breath, headache, exercise tolerance, sensitivity to cold, may be presenting symptoms
C. Recognize 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
C. Check vital signs for tachycardia, postural hypotension, pulse pressure, hyperdynamic precordium, and systolic "flow" murmur
D. Evaluate tongue, bones and joints
E. Perform rectal exam with stool for occult blood

IV. Diagnostic Skills

A. Perform peripheral blood smear on all patients with suspicion of blood disorders
B. Evaluate:
    1. Red blood cell size and shape. Determine if there is variation in red blood cell size
    2. Determine platelet count on smear
    3. Leucocyte morphology
C. Identify:
    1. Burr cells
    2. Helmet cells

3. Target cells
4. Spherocytes
5. Rouleaux formation
6. Hypersegmented polys
7. Reactive lymphocytes
8. Leukemic cells
9. Schistocytes and fragmented RBC's
10. Platelet clumps
11. Nucleated red blood cells
12. Howell-Jolly bodies
13. Basophilic stippling

D. 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

E. In the evaluation of leukemia recognize the importance of:
1. Leukocyte alkaline phosphatase
2. Auer rods
3. Ph chromosome
4. Flow cytometry: Principles of immunophenotyping

F. Recognize need to obtain consultation for:
1. Bone marrow examination
2. Lymph node biopsy/fine needle biopsy

G. Know the proper evaluation for bleeding disorder and to diagnosis disseminated intravascular coagulation

H. Know the principles of:
1. Bleeding time
2. Prothrombin time (PT)
3. Partial Thromboplastin Time (PTT)

V. Therapeutic Interventions

A. Know the appropriate indications for transfusion of erythrocytes and platelets

B. Write note to document need in all patients receiving these treatments

C. Know indications for fresh frozen plasma, cryoprecipitate, and purified factor concentrates

D. Know mechanism of action, indication side effects, and method of follow-up for each of the following drugs:
1. Glucocorticoids
2. Oral and parenteral iron
3. Folic acid
4. Vitamin B_{12}

E. Recognize necessity for consultation with hematologist for the following surgical procedures:
1. Splenectomy
2. Staging laparotomy
3. Bone marrow transplant

VI. Prevention

A. Diet importance in nutritional anemias
B. Recognize the need to obtain consultation for genetic counseling in some patients with hemoglobinopathies and hemophilia

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. Infectious arthritis and osteomyelitis
6. Sexually transmitted disease
7. Soft tissue infection
8. Tuberculosis
9. Syphilis and other spirochetal diseases
10. Rocky Mountain spotted fever and other rickettsial diseases
11. Mycoplasma pneumoniae pneumonia
12. Infections caused by drug-resistant organisms

B. Viral infection
1. Influenza and prevention
2. Herpes infection, Hepatitis A, B and C
3. Infectious mononucleosis and cytomegalovirus
C. Fungal infection
1. Deep seated mycoses
2. Clinical syndromes of aspergillus
3. Cryptococcal infection
4. Mucormycoses
D. Protozoal infection
E. Helminthic infection
F. Leishmaniasis
G. Antibiotic, antifungal, antiviral therapy
H. AIDS and its opportunistic infections
a. 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
1. Review slides of photos of:
a. ECM in Lyme disease
b. Palms and soles rash of RMSF
c. Ecthyma gangrenosum in pseudomonas infection
d. Erysipelas and impetigo
e. Dermatomal rash of herpes Zoster

2. Superficial dermatophytes
3. Skin lesions of bacterial endocarditis - Osler nodes, Janeway lesions, and splinter hemorrhages
4. Toxic shock syndrome (staphylococcal/streptococcal)
C. Recognize fever patterns and their possible diagnostic indications
D. Use physical diagnosis skills to recognize potentially infected joint effusion, pleural effusion, ascitic fluid
E. Recognize the clinical picture of candida pharyngitis, otitis media, malignant otitis externa, sinusitis including mucor infection
F. Perform Kernig and Brudzinski tests in evaluating for meningitis

IV. Diagnostic Tests
A. Obtain sputum on patients with pneumonia
B. Obtain appropriate body fluid (CSF, pleural, peritoneal, joint)
C. Perform and interpret gram stain in patients with UTI, septic arthritis, empyema, meningitis
D. Perform acid fast stain for active pulmonary tuberculosis
E. Order appropriate serologic and imaging tests for all clinical syndromes described in I
F. Interpret antibiotic susceptibility tests including MIC's and serum bactericidal test
G. Recognize need for special tests and procedures such as bronchoscopy, liver biopsy, colonoscopy; special stains for Legionella, chlamydia, pneumocystis

V. Therapeutic Interventions
A. Choose appropriate antibiotic regimens based on the principles of:
1. Spectrum of activity
2. Distribution
3. Toxicity
4. Synergy and antagonism
5. Cost
B. Compare and contrast these principles with respect to penicillins, cephalosporins, aminoglycosides, monobactams, quinolones, macrolides
C. Identify indications for determining MIC's, serum bactericidal test and antibiotic levels
D. Recognize the necessity to stop antibiotic therapy for potentially life threatening side effects such as allergy, antibiotic associated diarrhea, bone marrow suppression
E. Understand indications for amphotericin vs imidazoles in fungal infection. Be able to use amphotericin with respect to dosing and monitoring
F. Recognize need for consultation for surgical intervention (including valve replacement for endocarditis), drainage of abscess, chest tube for empyema, fasciotomy for necrotizing skin infection
G. Initiation of empiric antibiotic treatment in the febrile neutropenic patient

VI. Prevention
A. Know target population for influenza and pneumococcal vaccine.
B. Know all agents useful in the prophylaxis of opportunistic infections in AIDS - i.e., pneumocystis, fungal infection, MAI
C. Know proper sources to gain knowledge about specific prophylactic measures for travelers

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
C. Obtain occupational, athletic history
D. Obtain family history of joint disease
E. Elicit history of neck and back pain
F. Elicit history of surgery and prosthetic joints

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.
F. Recognize characteristic rashes of SLE, heliotropic rash of dermatomyositis, purpuric rash of vasculitis.
G. Identify characteristic exam findings of scleroderma.
H. Recognize the rheumatoid nodule

IV. Diagnostic Tests

The student should be able to:
A. Aspirate effusion of knee
B. Order appropriate X-rays for joint disease and recognize characteristic abnormalities
C. Know relative sensitivity and specificity of the following: rheumatoid factor, anti DNA, anti SM, anti RNP, anti RO (SSA), anti LA (SSB), ANCA

V. Therapeutic Interventions

A. Know standard treatment options for all diseases listed in I
B. Seek orthopedic consultation to assess need for: osteotomy, synovectomy, joint reconstruction or replacement, synovial cyst surgery, unstable joint tendon repair
C. Seek physical therapy consultation for: heat treatment, massage, range of motion exercises, ultrasound

VI. Preventive Measures

Know rheumatic fever prophylaxis – indications

1. On-call duty, from 5 to 10 PM, with active participation to admission of acutely-ill patients

2. Attendance of daily morning reports, with presentation of cases and review of the pertinent literature

COURSE SYLLABUS

Week	Course Topic	Notes
1+2	GI seminars	Esophageal disorders, IBD, viral hepatitis, cirrhosis and portal HTN, chronic liver diseases, malabsorption, functional GI disorders, peptic ulcer disease, GI bleeding
3	Cardiovascular seminars	Acute coronary syndrome, Heartfailure, cardiomyopathy, ECG, Hypertension
4	Respiratory seminars	ABGs, spirometry, pneumonia, asthma, COPD, bronchiectasis, interstitial lung disease
5	Nephrology seminars	Acute kidney injury, chronic kidney disease, glomerulonephritis, Na disorders, K disorders
6	Endocrine seminars	DM, DKA, adrenal disorders, thyroid disorders
7	Hematology seminars	Anemia, blood transfusion, bleeding disorders, VTE, leukemia
8	Infectious disease seminars	TB, HIV, sepsis
	OSCE exam	

List of seminars and their objectives

ECG	1. ECG diagnosis 2. Tachyarrhthmias and their management 3. Bradyarrhthmias and their management
Acute Coronary Syndrome	1.Define ACS 2.Unstable angina 3.Non ST elevation acute MI 4.ST elevation MI 5. Role of cardiac cath
Heart Failure	1. Clinical picture of heart failure 2. Causes of heart failure

	3. Precipitating factors 4. Diagnostic approach 5. Therapeutic approach
Liver Cirrhosis and chronic liver diseases	1. Clinical and laboratory features of liver cirrhosis 2. Causes of liver cirrhosis 3. Diagnostic approach 4. Therapeutic approach 5. Complications of liver cirrhosis
Viral hepatitis	1.Different types of viral hepatitis and their transmission 2.Clinical presentation 3.Diagnosis 4.Management
Peptic Ulcer Disease	1. clinical feature 2. Role of endoscopy 3. Eradication therapy 4. Acute and long term complications
Upper Gastro-intestinal bleeding	1. Causes 2. Diagnosis 3. Severity assessment 4. Role of endoscopy 5. Treatment
Esophageal disorders	1.Approach to dysphagia 2.Esophageal diseases and their management 3.High resolution manometry 4.Motility disorders and their management
IBD and malabsorption	1.Approach to patient with chronic diarrhea 2.Malabsorptive disorders 3.Management of acute IBD flare 4.Long term management of IBD patients
Functional GI disorders	1.Rome IV criteria 2.Different types of functional disorders 3.Management of different disorders
Interpretation of PFT	1. Physiology of lung function 2. Main ventilatory defects 3. Interpretation of spirometry and flow volume loop curve 4. Clinical use of PFT
Interpretation of ABG's	1. Basics acid base disorders 2. How to interpret ABG 3. Understand physiology of acid base disorders 4. Clinical implications of acid base disorders
Pneumonia	1.CXR interpretation 2.Pneumonia severity scoring 3.Outpatient vs inpatient management
Asthma and COPD	1.Differentiating between them using spirometry 2.Defining asthma severity 3. Approach to management of patient with acute exacerbation 4.Different drug categories used in management
Diabetic & Endocrine disorders	1. Diabetic ketoacidosis 2. Non-ketotic Hyperosmaolar state

	3. Thyrotixicosis crises 4. Hypothyroidism Adrenal insufficiency
Anemia & blood transfusion	1.Classification of anemia 2.Causes of anemia 3.Approach to patient with anemia 4.Role of blood film in anemia 5.Blood transfusion and types of reaction
Leukemia	1.Classification 2.Diagnostic approach 3.Management
VTE	1.Risk factors 2.Diagnosis 3.Management 4.Prevention
Bleeding disorders	1.Causes 2.Diagnosis 3.Management
Acute and chronic kidney injury	1.Definition 2.Pathophysiology 3.Causes 4.Indications for renal replacement therapy 5.Prevention
Na & K disorders	1.Types 2.Causes 3.Approach to diagnosis & management
Sepsis	1.Definition 2.Diagnosis 3.Management
TB & HIV	1.Clinical presentation 2.Diagnostic approach 3.Management
HTN	1.Classification 2.Guidelines for management 3.Different drug classes used in management 4.Hypertensive emergencies and approach to their management

COURSE LEARNING RESOURCES

- Clinical rounds
- Outpatient clinics
- Emergency department on-calls
- Seminars
- E-learning

ASSESSMENT TOOLS

ASSESSMENT TOOLS	%
Participation, seminars & attendance	10
OSCE	25
Oral exam	15
Final written exam	50
TOTAL MARKS	100

THIRD: COURSE RULES

ATTENDANCE RULES

Attendance and participation are extremely important, and the usual University rules will apply. Attendance will be recorded for each class. Absence of 10% will result in a first written warning. Absence of 15% of the course will result in forfeiting the course and the student will not be permitted to attend the final examination. Should a student encounter any special circumstances (i.e. medical or personal), he/she is encouraged to discuss this with the instructor and written proof will be required to delete any absences from his/her attendance records.

GRADING SYSTEM

Points	Grade
	A
	A-
	B+
	B
	B-
	C+
	C
	C-
	D+
	D
	D-
	F

REMARKS

Students are encouraged to participate in research

COURSE COORDINATOR

Course Coordinator:	**Dr. Sara Haj Ali**	**Department Head:**	
Signature:		**Signature:**	
Date:	**17/1/2021**	**Date:**	