# FCPS MEDICINE

## PAPER 3

## SUGGESTION & DISCUSSION

**Dr. Sharif Raihan**
FCPS MEDICINE (FINAL PART)
MRCP (PACES CANDIDATE)

## Topics

- Infectious diseases 15 QSN. ( 7+8)
- Respiratory 10 QSN (5+5)
- Rheumatology 8 QSN (4+4)
- Nephrology 8 QSN ( 5+5)
- Immunology 5 QSN ( 3+2)
- Electrolytes & acid base 3 QSN (1+2)

## *INFECTOUS DISEASE(15 QSN)*

1. **Principal of infectious diseases** – 4 QSN ( 2 SBA + 2 MCQ )
2. **HIV** – 2 QSN (1 SBA + 1 MCQ)
3. **STI** – 2 QSN (1 SBA + 1 MCQ)
4. **SYSTEMIC DISEASES** – 7 QSN ( 3 SBA + 4 MCQ )

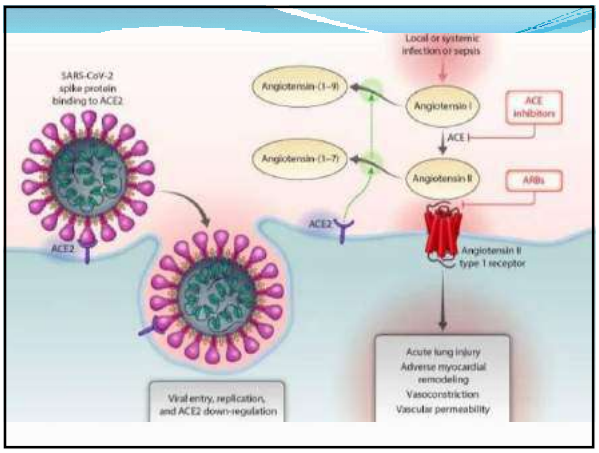
## Infectious

- Infectious agent
- Bacterial classification
- Health care infection
- Vaccines
- Antibacterial agents & indication, S/E
- M/A of drugs - TB, Fungal,
- Fever
- Diarrhoea
- Viral - Measles, Mumps, HSV, Dengue.
- Bacterial - Staphy/ Strep
- Brucellosis
- Leptospirosis
- Enteric fever
- Melioidiosis
- E.coli
- Cholera
- Dysentery
- TB
- Leprosy
- Protozoa- Malaria, Kala azar, Amoebiasis,
- Helminth - Nema/tram/Cestodes

- Fungal - Candidiasis, Histoplasmosis,
- HIV- Primary HIV, Opportunistic infection, Diarrhoea, Cognitive impairment, Meningitis, Retinopathy, HAART.
- STIs- Ulcer, Vaginal / urethral discharge, warts.

1. **SERS CoV- 2 enters into cell by which receptor ?**

a) ACE type -1 receptor
b) ACE type -2 receptor
c) Angiotensin type -1 receptor
d) Angiotensin type -2 receptor
e) Toll like receptor




2. A 50 years old male patient ,normotensive ,non diabetic devolved chronic persistence diarrhoea , H/O travelling to abroad, with gradual falling of GCS . On **MRI showed *'single enhanced periventricular lesion with moderate oedema.*** Which may be the most accurate diagnosis for this patient?

- a) Cerebral toxoplasmosis
- b) Tuberculous
- c) Primary CNS lymphoma
- d) Progressive multi focal leucoencephalopathy
- e) Cryptococcal meningitis

## MRI OF BRAIN

- Single enhancing lesion - Primary CNS Lymphoma
- Multiple enhancing lesion - Toxoplasmosis
- Periventricular Lesion:

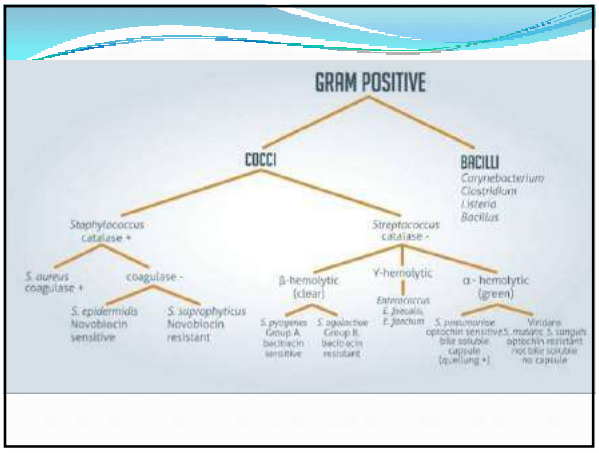
1. MS
2. CMV
3. Primary CNS lymphoma
4. Tuborous sclerosis

**3. A 57-year-old female presents with headache and fever to the Emergency Department. On examination neck stiffness is noted along with a positive Kernig's sign. A lumbar puncture is performed and reported as follows:**

- CSF culture - **Gram positive bacilli**

**What is the most likely causative organism?**

a) Cryptococcus
b) Haemophilus influenzae
c) Streptococcus pneumoniae
d) E. coli
e) Listeria monocytogenes




**4. A 24-year-old woman presents due to an itchy vulva. She also mentions a green, offensive vaginal discharge for the past 2 weeks. What is the most likely diagnosis?**

- a) Candidiasis
- b) Bacterial vaginosis
- c) Gonorrhoea
- d) Trichomonas vaginalis
- e) Chlamydia

**Vaginal Discharge :**

**Candidiasis** - Curdy white
**T.vaginalis** - Yellow / Green discharge
**B. vaginosis** - Clear discharge, clue cell, Fishy odour

**( চুলকানি থাকে - Candidiasis + T. vaginalis)**

**Urethral Discharge :**

**Gonorrhoea** - Purulent
**Chlamydia** - Clear

**5. What is the mechanism of action of Caspofungin?**

a) Inhibit synthesis of ergosterol
b) Inhibit beta-1,3-glucagon
c) Damaging fungal cell membrane
d) Damaging fungal cell wal
e) Damaging fungal nucleic acid

# RESPIRATORY SYSTEM

- **10 QSN ( 5 SBA + 5 MCQ)**

- Physiology
- Imaging
- Asthma
- COPD
- Bronchiectasis
- Pneumonia
- TB
- Tumours of lung
- DPLD
- Pulm. Embolism
- Pneumothorax
- Sarcoidosis
- Eosinophilia

**1. You are asked to interpret the post-bronchodilator spirometry results of a 56-year-old woman who has been complaining of progressive shortness-of-breath.**

- FEV1/FVC - 0.60
- FEV1% predicted - 60%

**What is the most appropriate interpretation of these results?**

- a) Poor technique - repeat spirometry
- b) Asthma
- c) COPD (stage 1 - mild)
- d) COPD (stage 2 - moderate)
- e) Pulmonary fibrosis

**i** 17.26 Spirometric classification of COPD severity based on post-bronchodilator $FEV_1$

| | | Severity of airflow obstruction post-bronchodilator | | |
|---|---|---|---|---|
| PD $FEV_1$/ FVC | $FEV_1$% predicted | ATS/ERS (2004) | GOLD (2008) | NICE Clinical Guideline 101 (2010) |
| <0.7 | ≥80% | Mild | Stage I – mild | Stage I – mild[1] |
| <0.7 | 50–79% | Moderate | Stage II – moderate | Stage II – moderate |
| <0.7 | 30–49% | Severe | Stage III – severe | Stage III – severe |
| <0.7 | <30% | Very severe | Stage IV – very severe[2] | Stage IV – very severe[2] |

**2. A 30 yr old man came to you with the complaint of ankle joint pain. He was diagnosed as a case pumonary TB one month back. What is your diagnosis?**

- a) Pseudogout
- b) Gout
- c) Septic arthritis
- d) Charcot joint
- e) Osteoarthritis

i 17.53 Main adverse reactions of first-line antituberculous drugs

| | Isoniazid | Rifampicin | Pyrazinamide | Streptomycin | Ethambutol |
|---|---|---|---|---|---|
| Mode of action | Cell wall synthesis | DNA transcription | Unknown | Protein synthesis | Cell wall synthesis |
| Major adverse reactions | Peripheral neuropathy[1]<br>Hepatitis[2]<br>Rash | Febrile reactions<br>Hepatitis<br>Rash<br>Gastrointestinal disturbance | Hepatitis<br>Gastrointestinal disturbance<br>Hyperuricaemia | 8th nerve damage<br>Rash | Retrobulbar neuritis[3]<br>Arthralgia |
| Less common adverse reactions | Lupoid reactions<br>Seizures<br>Psychoses | Interstitial nephritis<br>Thrombocytopenia<br>Haemolytic anaemia | Rash<br>Photosensitization<br>Gout | Nephrotoxicity<br>Agranulocytosis | Peripheral neuropathy<br>Rash |

**3. You are reviewing a 65 year-old man developed hospital acquired pneumonia after 10 days in hospital admission. What organism is most likely to be isolated from his sputum?**

- a) Streptococcus pneumoniae
- b) Legionella
- c) Haemophilus influenzae
- d) Pneumocystis jiroveci
- e) E.coli

**4. A 67 yr old male presents with cough, haemophtysis & chest pain. Associated with fever & nasal crusting. CT chest shows Multiple nodule & cavitaion. What is the most likely diagnosis?**

a) Squamous cell lung carcinoma
b) Small cell lung carcinoma
c) Churg-strauss syndrome
d) Wegener's granulomatosis
e) Goodpasture's disease

## Vasculitis

**Large vessel :**

1. Takayasu arteritis
2. Giant cell arteritis

**Medium vessel :**

1. PAN
2. Kawasaki disease

**Small vessel :**

1. ANCA associated - GPA, EGPA & MPA
2. ANCA (-ve) - HSP, Cryoglobulinaemia

## Cavitary lesion of lung : causes

1. TB
2. Staph. aureus abscess
3. Klebsiella pneumonia
4. Histocytosis X
5. Wegener's granulomatosis
6. Squamous cell lung cancer

5. **Which one of the following paraneoplastic features is LEAST commonly seen in patients with squamous cell lung cancer?**

- a) SIADH
- b) Hyperthyroidism
- c) Hypertrophic pulmonary osteoarthropathy
- d) Hypercalcaemia
- e) Clubbing

# RHEUMATOLOGY

**8 QSN (4 SBA + 4 MCQ )**

- RA
- R. Factor
- SLE
- S.sclerosis
- Seronegative arthritis
- Crystal arthritis
- OA
- Osteoporosis
- Vasculitis
- Dermatomyositis/ Polymyositis
- Back pain
- Drugs M/A & S/E

1. **A 57-year-old female has noticed that the skin on her hands has become very tight and that her fingers sometimes turn blue. She has also had difficulty swallowing both solids and liquids. What autoantibody is most associated with these symptoms?**

- a) Anti-centromere
- b) Anti-topoisomerase (anti-Scl-70)
- c) Anti-double-stranded DNA (anti-dsDNA)
- d) Anti-cyclic citrullinated peptide (anti-CCP)
- e) Anti-mitochondrial (AMA)

2. **A 45-year-old female with a history of rheumatoid arthritis presents to the Emergency Department with a two day history of a hot, painful, swollen right elbow joint. What is the most appropriate management?**

- a) Joint aspiration
- b) Start infliximab
- c) Oral high-dose prednisolone
- d) Short course of methotrexate
- e) Depomederone injection

3. **A 50-year-old man with no past medical history is investigated for ongoing back pain. He is found to have a vertebral collapse secondary to osteoporosis. What is the most appropriate test to determine the cause of his osteoporosis?**

- a) Thyroid function tests
- b) Prostate specific antigen
- c) Oestrogen level
- d) Prolactin level
- e) Testosterone level

## Vertebral body involvement : MMO

**M - Multiple myeloma**
**M - Metastasis**
**O - Osteoporosis**

## Intervertebral disc involvement : TTO

**T - TB**
**T - Trauma**
**O - Osteoarthritis**

**4. A 55-year-old man presents with pain and stiffness in his hands. This has been getting gradually worse over the past few months and is associated with stiffness in the mornings.**

On examination, you note bilateral swelling of the metacarpal phalangeal (**MCP**) and distal interphalangeal (**DIP**). **One of the digits is swollen along the whole length.**

**What is the most likely diagnosis?**

- a) Osteoarthritis
- b) Rheumatoid arthritis
- c) Psoriatic arthritis
- d) Gout
- e) Reactive arthritis

## DIP involvement :

1. **OA**
2. **Gout**
3. **Psoriatic arthritis**

## PIP involvement :

1. **RA**
2. **SLE**
3. **Viral arthritis**
4. **Dermatomyositis**
5. **Vasculitis**

## Hip joint involvement :

1. OA
2. TB

## SI joint involvement :

1. Axial
2. Axial SpA

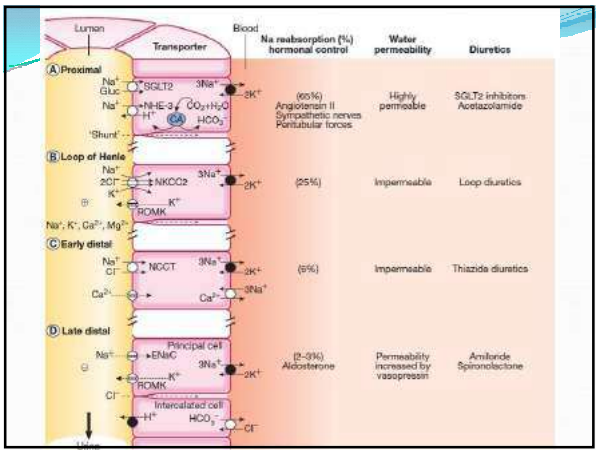
# NEPHROLOGY

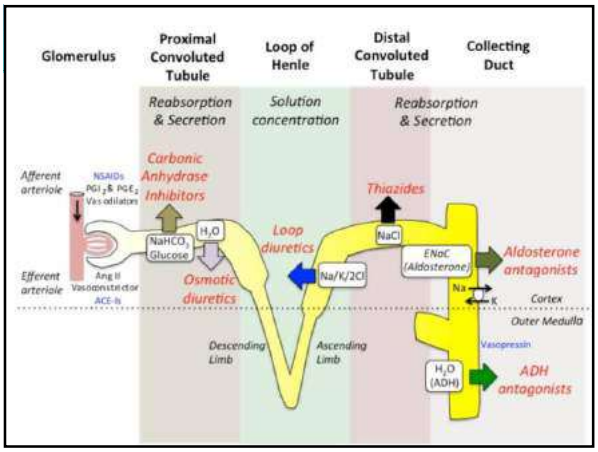
**8 QSN (4 SBA + 4 MCQ)**

- Physiology
- GN
- NS
- Renal vascular disease
- AKI / CKD
- RTA
- ATN /AIN
- Alports syndrome
- ADPKD
- DM nephropathy
- HTN nephropathy
- Lupus nephritis
- UTI
- BEP

**1. Where is the site of action of spironolactone?**

- a) Proximal convoluted tubule
- b) Ascending loop of Henle
- c) Descending loop of Henle
- d) Cortical collecting duct
- e) Macula densa




**2. Erythropoietin is release from which cell?**

a) Mesangial cell
b) Juxtaglomerular apparatus
c) Fibroblast like cell
d) Macula densa cell
e) Distal convulated tubule

1. **Mesangial cell** -Glomerular filtration rate
2. **Juxtaglomerular apparatus** - Release Renin
3. **Fibroblast like cell** - Erythropoietin
4. **Macula densa cell** - DCT - Na sensor

**3. A 38-year-old woman presents for review of her hypertension. She was diagnosed 6 months ago, her blood pressure has been refractory to a combination of amlodipine and ramipril. On examination, heart rate is 80bpm and blood pressure is 170/100mmHg. Investigations:**

Serum potassium - 2.9 mmol/L (3.5-5.0)
Plasma aldosterone (after 30 min supine) - 600 pmol/L (135-400)
Plasma renin activity(after 30 min supine) - 6.8 pmol/mL/hr (1.1-2.7)

**What is the most likely cause of her hypertension?**

- a) Bartter syndrome
- b) Bilateral renal artery stenosis
- c) Phaeochromocytoma
- d) Pregnancy
- e) Primary hyperaldosteronism

4. **A 10-year-old boy is taken to see the GP by his mother. For the past two days he has had a sore throat associated with blood in his urine. There is no significant past medical history. The GP suspects glomerulonephritis and refers the patient to hospital.**

**What would a renal biopsy most likely show?**

- a) Proliferation of endothelial cells
- b) No change
- c) Mesangial hypercellularity
- d) Basement membrane thickening
- e) Capillary wall necrosis

## IMMUNOLOGY

**5 QSN (2 SBA + 3 MCQ)**

- **HYPERSENSITIVITY**
- **AMYLOIDOSIS**
- **PRIMARY IMMUNE DEFICIENCY**
- **Angioedema**
- **Anaphylaxis**

## ACID BASE & ELECTROLYTES

**3 QSN ( 1 SBA + 2 MCQ )**

- **POTASIUM ( HYPO/HYPER)**
- **SODIUM -SIADH**
- **MAGNESIUM**
- **Metabolic acidosis/alkalosis**
- **Respiratory acidosis/alkalosis**