In the name of Allah
The most gracious, The most merciful

PRE-EXAM PREPERATORY MANUAL ON

MEDICINE VIVA

With ECG and X-ray

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RESPIRATORY SYSTEM

Name some respiratory diseases that you have seen in ward?

1. Bronchial asthma
2. COPD
3. Pleural effusion
4. Pneumonia
5. Pulmonary TB
6. Pneumothorax
7. Bronchial carcinoma

Name some respiratory emergencies.

1. Tension pneumothorax
2. Acute severe asthma
3. Acute exacerbation of COPD

What are the common presentation respiratory diseases?

1. Cough
2. Breathlessness
3. Wheeze
4. Hemoptysis
5. Chest pain

BREATHLESSNESS

Define breathlessness/dyspnoea.

Breathlessness or dyspnoea can be defined as the feeling of an uncomfortable need to breathe.

[Davidson's-23rd -557]

What are the common causes of acute dyspnoea/breathlessness?

A. **CVS:** Acute pulmonary oedema
B. **Respiratory:**
    1. Acute severe asthma
    2. Acute exacerbation of COPD
    3. Pneumothorax
    4. Pneumonia
    5. Laryngeal oedema (e.g. anaphylaxis)
    6. Diabetic ketoacidosis
C. **Others:** Psychogenic hyperventilation

[Davidson's-23rd -557]

PNEUMOTHORAX

A young male patient comes to ward with sudden severe respiratory distress with chest pain? What is your diagnosis?
Sir, I have DDs

1. **Tension pneumothorax**
2. **Acute LVF**

What are the definite signs of tension pneumothorax?

1. Diminished/absent breath sound
2. Hyper resonant percussion node

How will tension pneumothorax present?

1. Rapidly progressive breathlessness
2. Marked tachycardia
3. Hypotension
4. Cyanosis
5. Tracheal displacement to opposite side
6. Silent hemithorax

In which position tension pneumothorax patient come?

In sitting position

How will you treat tension pneumothorax?

1. O_2 inhalation
2. Insertion of a blunt cannula into 2nd intercostal space in midclavicular line
3. Chest drain insertion with water seal drainage

[Davidson's-23rd-626-627+ Other sources]

How intercostal drain is given?

- ✓ Inserted in the fourth, fifth or sixth intercostal space in the mid-axillary line
- ✓ Connected to an underwater seal or one-way Heimlich valve, and secured firmly to the chest wall.

[Davidson's-23rd-628]

How will you manage a patient with IT tube?

1. Observe if bubbling present or not
2. If bubbling ceased: Perform CXR PA view 24 hours later
3. If lung is fully expanded: Remove IT tube
4. If bubbling persist after 5-7 days: Thoracotomy
5. If bubbling had ceased before lung fully inflated: Check the tube for any obstruction, kingking or displacement.

When to remove the drain tube?

The morning after (e.g. 24 hours after) the lung has fully re-inflated and bubbling has stopped.

Indication for surgery: Continued bubbling after 5–7 days

GASTRO-OESOPHAGEAL REFLUX DISEASE (GERD)

A 45 years old obese female patient presented to you with the complaints of heart burn and excessive salivation precipitated by bending or lying. What is your Dx?

Gastro-oesophageal reflux disease (GERD)

What are the risk factors/ Causes of GERD?

1. Abnormalities of the lower oesophageal sphincter
2. Hiatus hernia
3. Delayed oesophageal clearance
4. **Gastric contents:** Gastric acid, pepsin and bile
5. Defective gastric emptying
6. Increased intra-abdominal pressure
7. **Dietary and environmental factors:** Dietary fat, chocolate, alcohol, tea and coffee etc.
8. Visceral sensitivity and patient vigilance

[Davidson's-23rd-791]

What are the common presentations of GERD?

1. **Heartburn and regurgitation:** Often provoked by bending, straining or lying down.
2. **Waterbrash** (Salivation due to reflex salivary gland stimulation as acid enters the gullet)
3. Choking
4. Odynophagia or dysphagia
5. Atypical chest pain
6. **Others:** Hoarseness ('acid laryngitis'), recurrent chest infections, chronic cough and asthma.

[Davidson's-23rd-791-92]

When will you need to investigate? What investigations will you do?

If patients present over 50–55 years, symptoms are atypical or complication is suspected.

1. **Endoscopy:** Investigation of choice.
2. **Twenty-four-hour pH monitoring** (pH<4)

[Davidson's-23rd-793]

ACUTE VIRAL HEPATITIS

A 20 years old man presented to you with the complaints of yellow colouration of and urine with anorexia, nausea and right upper abdominal discomfort. What is the most likely diagnosis?

Acute viral hepatitis

What are the common causes of viral hepatitis?

1. Hepatitis A
2. Hepatitis B with/without hepatitis D
3. Hepatitis C
4. Hepatitis E
5. **Less common:** Cytomegalovirus, Epstein–Barr virus

[Davidson-23rd-871]

What is the Pathogenesis of acute viral hepatitis?

- ✓ Virus is not directly cytotoxic to cells
- ✓ An immune response to viral antigens displayed on infected hepatocytes initiates liver injury.

[Davidson-23rd-871]

Which hepatotropic virus causes acute hepatitis?

1. Hepatitis A
2. Hepatitis B with/without hepatitis D
3. Hepatitis E

Which hepatotropic virus causes chronic hepatitis?

1. Hepatitis B with/without hepatitis D
2. Hepatitis C

What are the usual routes of transfusion?

1. Oro-faecal route: Hepatitis A & E
2. Parental route: Hepatitis B & C
3. **Which virus is more common to spread via IV drug abuse?**
4. HCV
5. **Which one is DNA virus?**
6. Hepatitis B

What are the common presentations of acute viral hepatitis?

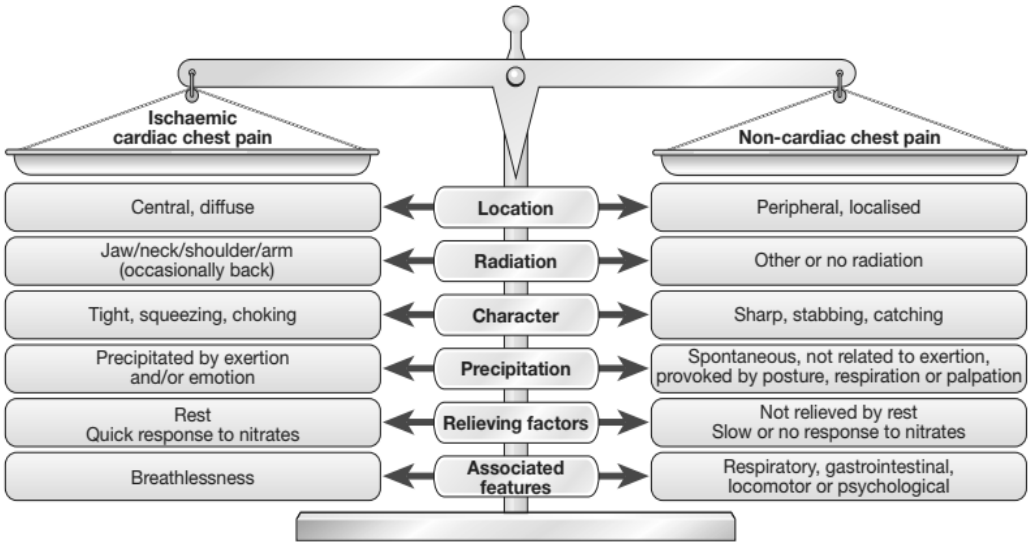
Symptoms:

1. Headache, Myalgia, Arthralgia
2. Nausea, Anorexia,Vomiting, Diarrhea, Abdominal discomfort
3. Dark urine and pale stools

Sign:

1. Jaundice
2. Tender hepatomegaly

How will differentiate ischemic cardiac chest pain and non-cardiac chest pain?



How will you differentiate between pain of MI and angina?

Pain of MI	Pain of angina
Sudden, more severe	Less severe
Duration long, usually >30 mins	Short, usually <10 mins
Not relieved by rest or nitrate	Relieved by rest or nitrate
Associated with ✓ Sweating ✓ Vomiting ✓ Cold calmy skin ✓ Hypotension	Not so

What do you mean by Acute coronary syndrome (ACS)?

Is a term that encompasses both unstable angina and myocardial infarction.

What is Unstable angina (UA)?

New-onset or rapidly worsening angina (crescendo angina), angina on minimal exertion or angina at rest in the absence of myocardial damage.

What is Myocardial infarction (MI)?

When there is evidence of myocardial necrosis in a clinical setting consistent with acute myocardial ischaemia.

MI differs from unstable angina, since there is evidence of myocardial necrosis.

[Davidson's-23rd-493]

ACUTE MYOCARDIAL INFARCTION (AMI)

A 50 years old male came to you with sudden severe chest pain radiating to neck and vomiting. What is your diagnosis?

Acute myocardial infarction

What will you do then?

1. Firstly, I will give high flow oxygen
2. Then, will do an ECG

What findings do you expect on ECG?

ST elevation →Pathological Q wave → T inversion

How will you manage this case now?

1. Short history and examination: Pulse, BP, crepitation
2. Complete bed rest
3. High flow O_2
4. Tab. Aspirin 75 mg- 4 tablet after crushing
5. Tab. Clopidogrel 75mg- 4 tablet
6. Spray. Glycerin tinitrate 2 puffs sublingually
7. Anti-emetic
8. Statin: Atorvastatin
9. Anti ulcerant
10. Counseling the attendant and Refer the patient to CCU

What further Rx will be given in CCU?

1. Inj. Morphine (Cannot be given in bronchial asthma and COPD)
2. Inj. Metoclopramide
3. Inj. Streptokinase
4. Beta blocker
5. ACE inhibitor: Ramipril
6. Inj. Anoxaparin

What are the common presentations of acute MI?

1. Prolonged cardiac pain: Central chest pain radiating to neck, throat, arm, lasting >30 minutes
2. Breathlessness
3. Anxiety and fear of impending death
4. Nausea and vomiting
5. Collapse/syncope

[Davidson's-23rd-495]

HYPONATREMIA

A 25 years old man becomes unconscious after several episodes of vomiting (or passage of loose stool). What is the most likely underlying electrolyte imbalance for his unconsciousness?

Hyponatremia

What is the normal plasma sodium level?

135-145 mmol/L

Which electrolyte imbalance causes unconsciousness?

Sodium: Both hypo and hypernatremia

What are the common causes of hyponatremia?

1. Diarrhoea
2. Vomiting
3. Diuretics: e.g. frusemide

How will you classify hyponatremia according to duration of time?

1. Acute: <48 hours
2. Chronic: >48 hours

[Davidson's-23rd-358]

How will you classify hyponatremia according to severity?

1. Mild: 130–135 mmol/L
2. Moderate: 125–129 mmol/L
3. Severe: <124 mmol/L

[Davidson's-23rd-358]

What are the clinical features of hyponatremia?

1. Asymptomatic
2. Nausea
3. Vomiting
4. Delirium
5. Headache
6. Somnolence
7. Seizures
8. Coma
9. Cardiorespiratory arrest

[Davidson's-23rd-358]

How will you treat a case of hyponatremia?

A. **If hyponatraemia has developed rapidly (<48 hours) and there are signs of cerebral oedema, such as obtundation or convulsions:** 3% sodium chloride: Initial bolus of 150 mL over 20 minutes
B. **Chronic asymptomatic hyponatraemia:** Normal saline and sodium chloride tablet
C. **Treatment of underlying cause**

What is maximum rate of correction of the plasma Na concentration in chronic asymptomatic hyponatraemia?

10 mmol/L/24 hours, and an even slower rate is generally safer.

[Davidson's-23rd-358]

ACUTE LEUKAEMIA

A 20 years old male was admitted to medicine ward with the complaints of fever and bruise. On examination, he has anaemia, bony tenderness and generalized lymphadenopathy. What is the likeliest Dx?

Acute leukaemia (Most probably ALL)

What is leukaemia?

Leukaemias are malignant disorders of the haematopoietic stem cell compartment, characteristically associated with increased numbers of white cells in the bone marrow and/or peripheral blood.

[Davidson's-23rd- 954]

What are the common risk factors of leukaemia?

1. **Ionising radiation:** Atomic bombing, radiotherapy, X-ray
2. Cytotoxic drugs
3. **Retroviruses:** e.g. HTLV-1, HIV, *H.pylori*
4. **Genetic:** e.g. Down's syndrome
5. Immune deficiency states (e.g. hypogammaglobulinaemia)

[Davidson's-23rd- 955]

What are the types of leukaemia?

1. Acute lymphoblastic leukaemia (ALL) ***[Common in children]***
2. Acute myeloid leukaemia (AML) ***[Common in adults]***
3. Chronic lymphocytic leukaemia (CLL)
4. Chronic myeloid leukaemia (CML)

[Davidson's-23rd- 955]

STATUS EPILECTICUS

What do you mean by status epilepticus?

Status epilepticus is seizure activity not resolving spontaneously, or recurrent seizure with no recovery of consciousness in between.

[Davidson's-23rd-1080]

What are the common clinical presentations of status epilecticus?

1. Prolonged rigidity and/or clonic movements with loss of awareness: As seizure activity becomes prolonged, movements may become more subtle.
2. Cyanosis
3. Pyrexia
4. Acidosis
5. Sweating

[Davidson's-23rd-1080]

How will you manage this case?

1. **Ensure airway is patent; give oxygen**
2. **Check pulse, BP, BM stix and respiratory rate**
3. **Secure IV access**
4. **Send blood for:**
   - ✓ Glucose, urea and electrolytes, calcium and magnesium, liver function, antiepileptic drug levels
   - ✓ Full blood count and coagulation screen
   - ✓ Storing a sample for future analysis (e.g. drug misuse)
5. **If seizures continue for >5 mins: Diazepam 10 mg rectally or IV if necessary**
   - ✓ **Repeat *once only* after 15 mins**
6. **Correct any metabolic trigger:** e.g. Hypoglycaemia

[Davidson's-23rd-1081]

What are alternative to diazepam?

Lorazepam and midazolam

[Davidson's-23rd-1081]

What will you do further if not controlled?

1. **If seizures continue after 30 mins:** IV infusion of Phenytoin
2. **If seizures still continue after 30–60 mins:** Transfer to ICU
   - ✓ Intubation, ventilation and general anaesthesia using propofol or thiopental

[Davidson's-23rd-1081]

What are the complications of status epilepticus?

1. Aspiration
2. Hypotension
3. Cardiac arrhythmias
4. Renal failure
5. Hepatic failure

[Davidson's-23rd-1080]

RHEUMATOLOGY

What are the common rheumatological cased you have seen in ward?

1. Rhematoid arthritis (RA)
2. Systemic Lupus Erythematosus (SLE)
3. Septic arthritis
4. Ankylosing spondylitis
5. Reactive arthritis

What is arthralgia and arthritis?

Arthralgia: Only pain in the joints

Arthritis: Pain + swelling in the joints

What is monoarthritis? What are the common causes of monoarthritis?

Pain and swelling affecting one joint or joint group.

Common causes:

1. Gout
2. Pseudogout
3. Septic arthritis
4. Tubercular arthritis
5. Trauma
6. Haemophila

What is oligoarthritis? What are the common causes?

Pain and swelling affecting 2-4 joints or joint groups.

Common causes:

1. Axial spondyloarthritis
2. Ankylosing spondylitis
3. Reactive arthritis
4. Psoriatic arthritis
5. Arthritis with inflammatory bowel disease (enteropathic, Spondyloarthritis).

What is polyarthritis? What are the common causes?

Pain and swelling affecting five or more joints or joint groups.

[Davidson's-23rd- 993]

Common causes:

1. RA
2. Viral arthritis
3. SLE
4. Osteoarthritis
5. JIA

Which arthritis are common in female?

1. RA
2. SLE

Which arthritis are more common in male?

1. Ankylosing spondylitis
2. Reactive arthritis
3. Gout

RHEUMATOID ARTHRITIS

A 38 years old lady presented with pain and swelling small joint of hands and feet with morning stiffness. What may the Dx?

RA

Any DD?

Yes, SLE

Sate the diagnostic criteria of RA. ***

Criterion	Score
Joints affected	
1 large joint	0
2–10 large joints	1
1–3 small joints	2
4–10 small joints	3
>10 joints (at least 1 small joint)	5
Serology	
Negative RF and ACPA	0
Low positive RF or ACPA	2
High positive RF or ACPA	3
Duration of symptoms	
<6 weeks	0
>6 weeks	1
Acute phase reactants	
Normal CRP and ESR	0
Abnormal CRP or ESR	1
Patients with a score ≥6 are considered to have definite RA	

[Davidson's-23rd-1023]

HEAT STROKE

A patient becomes unconscious during working at field in very hot humid day. What is your diagnosis and what how you manage it?

Heat stroke

What do you mean by heat stroke?

Heat injury (heat stroke) is an acute life-threatening situation occurs when the core body temperature rises above 40 °C.

What are the clinical features of heat stroke?

1. Headache, nausea, vomiting and weakness,
2. Neurological: Coarse muscle tremor, confusion, aggression or loss of consciousness
3. Skin: Very hot
4. Sweating: Absent

How will you treat heat stroke?

1. **Immediate cooling:** By evaporative or convective cooling
2. **IV fluid:**
   - ✓ Crystalloid (Avoid potassium containing fluid)
   - ✓ Dextrose: If hypoglycaemia present

[Davidson's-23rd-167-68]

VITAMIN

Name some fat soluble and water soluble?

Fat soluble: Vitamin A, D, E, K

Water soluble: Vitamin B & C

Name the sources of vitamin & diseases due to deficiency.

Name of vitamin	Sources	Disease due to deficiency
Vitamin A	Liver, milk, butter, cheese, fish oils	Xerophthalmia, night blindness, keratomalacia, follicular hyperkeratosis
Vitamin D	Sunlight	Rickets, osteomalacia
Vitamin E	Vegetables, seed oils	Haemolytic anaemia, ataxia
Vitamin K	Green vegetables, dairy products	Coagulation disorder
Vitamin B		
Thiamin (Vitamin B1)	Cereals, grains, bean, Meat, fish	Beriberi, Wernicke-Korsakoff syndrome
Riboflavin (Vitamin B2)		Glossitis, angular stomatitis and cheilosis
Niacin		Pellagra
Vitamin B_6 (Pyridoxine)		Polyneuropathy
Vitamin B_{12} (Cobalamin)	Animal products	Megaloblastic Anaemia, neurological degeneration
Folate	Vegetables	Megaloblastic anaemia
Vitamin C (Ascorbic acid)	Fresh fruit and vegetables	Scurvy, delayed wound healing

FIRST-DEGREE ATRIOVENTRICULAR BLOCK

Criteria:

1. PR interval: Prolonged >5mm (>0.20 sec)
2. Every P wave is followed by QRS complex
3. Rhythm: Normal
4. QRS complex: Normal

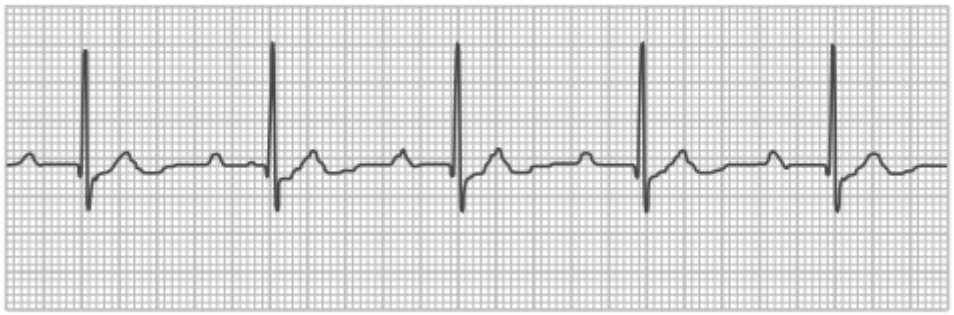


Figure: 1st degree AV block (PR interval is prolonged and measures 0.26 sec.)

THIRD-DEGREE ATRIOVENTRICULAR BLOCK

Criteria:

1. P wave is present, with a relatively regular sinus rate
2. QRS complex are present with a slow ventricular rate
3. PP regular, RR regular and variable PR interval
4. No relationship between P and Q

Figure: Complete heart block

NORMAL CHEST X RAY

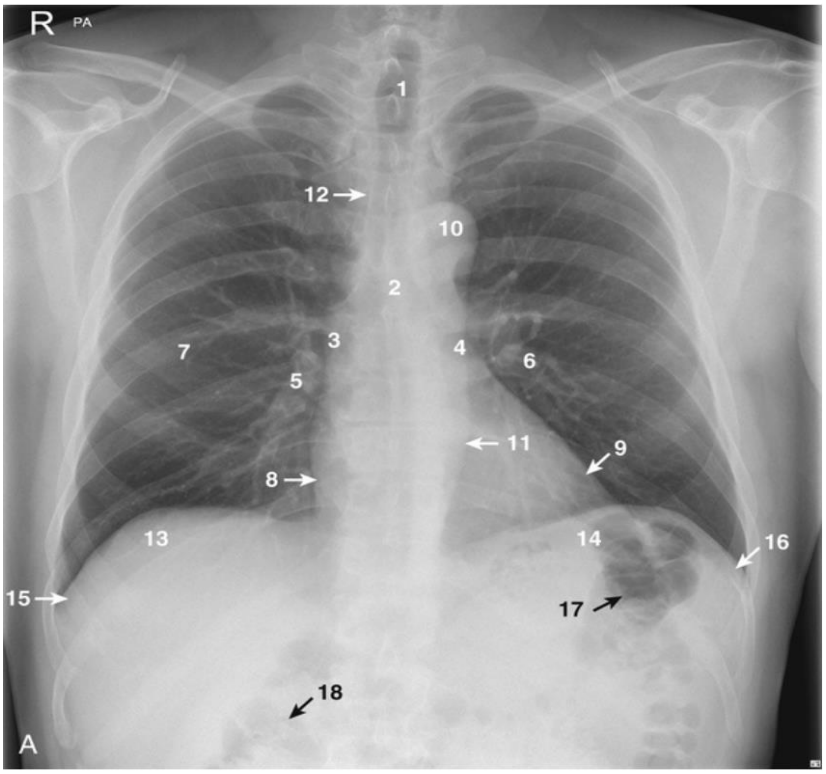


Figure: Normal chest X ray

1. Trachea
2. Carina
3. Right main bronchi
4. Left main bronchi
5. Right hilar structure
6. Left hilar structure
7. Right horizontal fissure
8. Right cardiac border formed by right atrium
9. Left cardiac border formed by left ventricle
10. Aortic knuckle
11. Descending thoracic aorta
12. Right paratracheal line
13. Right hemidiaphragm
14. Left hemidiaphragm
15. Right costophrenic angle
16. Left costophrenic angle
17. Gastric air bubble
18. Gas in colon