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# Mastering NEET Series

Volume 2

## Clinical Subjects

*(Illustrated and concise guide to 'NEET' pattern question bank)*

**ENT, Ophthalmology, General Medicine, General Surgery, Orthopedics, Pediatrics, Obstetrics, Gynecology, Dermatology, Anesthesia, Psychiatry, Radiodiagnosis, Radiotherapy**

**Kamal KV**

2nd Edition

JAYPEE

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CHAPTER

3

# GENERAL MEDICINE

## KEY POINTS

### ECG Changes in Hyper- and Hypokalemia

| Hypokalemia | Hyperkalemia |
|---|---|
| ST segment depressed | Peaked tall T waves |
| Flat or inverted T waves | Sine- wave, P wave decreased |
| U waves | Widening of QRs complex |
| PR prolonged | PR interval prolonged<br>Ventricular asystole/ventricular fibrillation |

### Classic Triad of Myeloma

- Marrow plasmacytosis > 10 Per cent
- Lytic bone lesions
- Serum and /or urine M component

### Remember

- Thiazides are used for treating hypercalciuria
- Tumour lysis causes hypocalcemia (NOT hypercalcemia)

### Acute Respiratory Failure

- Type 1:
  - Severe hypoxemia refractory to oxygen
  - Due to airspace filling: Intrapulmonary shunting
- Type 2:
  - Alveolar hypoventilation
  - Increased $PaCO_2$
- Type 3: Perioperative
- Type 4:
  - Circulatory shock,
  - Acute respiratory failure

### Pneumocystis Carinii Pneumoniae

- Prophylaxis is given in HIV positive patients with CD4 count of less than 200
- Single double: Strength tablet of sulphamethoxazole-trimethoprim is given daily.

### Mycobacterium Avium Intracellulare

- Treatment of choice: Clarithromycin + ethambutol + rifabutin

### Bronchial Asthma

Creola boides Desquamated epithelial cells
Curschman's spirals Bronchial mucous casts

### Sarcoidosis

- Pseudo tuberculosis/Osteitis tuberculosa/Multiplex cystoids/Jungling disease/Schaumann's disease
- Biopsy evidence of mononuclear cell granulomatous inflammatory process is mandatory for definitive diagnosis of sarcoidosis
- Lung is the most common site to biopsied

### Shrinking Lung Syndrome

- Seen in SLE
- Diaphragmatic dysfunction with loss of lung volume

### Paraneoplastic Syndromes in Lung Cancer

| Small cell Ca | Adenocarcinoma | Squamous cell Ca |
|---|---|---|
| Eaton-Lambert | Clubbing | Hypercalcemia |
| Syndrome | | |
| Cushing's syndrome | | |
| Acromegaly | | |
| SIADH | | |

### Management of Lung Carcinoma

- Treatment of small cell carcinoma: Chemotherapy
- Treatment of squamous cell Carcinoma and adenocarcinoma: Radiotherapy and surgery
- Best response to chemotherapy and radiotherapy is shown by small cell carcinoma, but it has worst prognosis.

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## Bronchial Carcinoids

- No known relationship to cigarette smoking
- Neuroendocrine differentiation of Kulchitsky cells of bronchial mucosa
- Carcinoid syndrome:
  - Episodic flushing, diarrhea, bonchospasm, cyanosis
  - Due to release of vasoactive amines like serotonin, from carcinoid tumors
- Pancoast tumor is a type of squamous cell carcinoma.
- Clara cell are seen in broncho-alveolar carcinoma.
- Most common site of metastasis from lung carcinoma is adrenal glands

| Pulse | Description | Seen in | |
|---|---|---|---|
| Anacrotic | Slow rising, twice | AS | |
| | Beating, both in systole | | |
| Pulsus bisferiens | Rapid rising, twice | Idiopathic Beating, both in systole subaortic stenosis with mild AR | Hypertrophic |
| Dicrotic pulse | Twice beating, 1in Systoe, 1 in diastole | Decreased peripheral resistance and diastolic pressure like typhoid CCF, cardiac tamponade, open heart surgery | |
| Pulsus parvus et tardus | Slow rising | AS | |
| Pulsus alternans | Strong and weak Beats alternately | Left ventricular failure, toxic myocarditis, Paroxysmal tachycardia, Following a premature beat | |
| Pulsus paradoxus | Systemic blood Pressure falls more Pericarditis | Superior vena cava obstruction, than 10 mm Hg effusion, severe on inspiration | COPD, pericardial CCF, constrictive |
| Pulsus bigeminus | Coupling of pulses | Alternate premature beat, AV block, SA node block with ventricular escape | |
| Water hammer Pulse | Increased stroke volume | Fever, pregnancy, alcoholism, anemia, Beriberi, Cor-pulmonale, cirrhosis, Paget's disease, AV fistula, thyrotoxicosis, AR, PDA, rupture sinus of Valsalva , bradycardia, systolic hypertension | |

## Jugular Venous Pulsation

Normal waves with their causes

| Waves | Causes |
|---|---|
| A | **A**trial contraction |
| C | Ventricular **C**ontraction |
| V | Inflow from **V**enacavae |
| X | Atrial rela**X**ation |
| Y | Atrial empt**X**ing |

## Abnormal Waves with Causes

| Waves | Causes |
|---|---|
| Large 'a' | Tricuspid stenosis/Pulmonay stenosis/pulmonary hypertension |
| Absent 'a' | Atrial fibrillation |
| Cannon 'a' | Complete heart block |
| c-v waves | Tricuspid regurgitation |
| Deep y descent | Chronic constrictive pericarditis |
| Raised JVP | Right ventricular failure |
| Kussmaul's sign | Constrictive pericarditis, Constrictive Cardiomyopathy, Pericardial effusion, Severe right heartfailure. |
| Deep x descent | Acute cardiac tamponade |
| Prominent v ware | Tricuspid regurgitation |
| Accentuated x descent | Constrictive pericarditis |
| Reversed x descent | Tricuspid regurgitation |

## Heart Sounds

| | |
|---|---|
| Loud S1 | Mitral stenosis |
| Soft S1 | Mitral regurgitation, mitral stenosis |
| Reversed splitting of S2 | LBBB |

## A-V Block

- 1st degree: PR interval > 200 msec, every P is followed by QRS
- 2nd degree: Progressive increase in PR till P is not
- Mobitz's type I: Transmitted. Block is usually in the His-Purkinje system
- 3rd degree: Atria and ventricles beat independently.

| Arrhythmias | Drug of choice |
|---|---|
| Atrial extrasystole | Quinidine |
| PSVT | Adenosine/Verapamil |
| Atrial flutter | Cardioversion/Verapamil |
| Ventricular extrasystole | Lidocaine |
| Ventricular tachycardia | Lidocaine/cardioversion |
| Ventricular fibrillation | Defibrillation, Lidocaine |
| Wolff-Parkinson: White syndrome | Cardioversion/Amiodarone |

Key Points

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## Torsades De Pointes

- Ventricular tachycardia characterized by polymorphic QRS complexes that change in amplitude and cycle length
- Magnesium sulfate is the drug of choice.

## Jone's Criteria for Rheumatic Fever

| Major criteria | Minor criteria |
|---|---|
| Carditis | Fever |
| Sydenham's | Arthralgia |
| Subcutaneous nodules | Prolonged PR interval |
| Erythema marginatum | Elevated acute phase reactants |
| Migratory polyarthritis | |

## Essential Criteria

- Evidence of recent group A streptococcal infection
- Positive throat culture of rapid antigen detection test
- Elevated or increasing streptococcal antibody test.

## Gamna-Gandy bodies

- Are foci of fibrosis containing iron and calcium
- Seen in sickle cell anemia, CML, cirrhosis with portal hypertension.

## Signs in Aortic Regurgitation

| Sign | Explanation |
|---|---|
| Watson's sign | Bounding peripheral pulses |
| Waterhammer pulse | |
| Corrigan's pulse | Rapid upstroke and collapse of the carotid artery pulse |
| de Musset's sign | Head nodding in time with the heart beat |
| Quincke's sign | Pulsation of the capillary bed in the nail |
| Duroziez's sign | Systolic and diastolic murmurs described as 'pistol shots' heard over the femoral artery when it is gradually compressed |
| Traube's sign | A double sound heard over the femoral artery when it is compressed distally |
| Lighthouse sign | Blanching and flushing of forehead |
| Landolfi's sign | Alternating constriction and dilatation of pupil |
| Becker's sign | Pulsations of retinal vessels |
| Muller's sign | Pulsations of uvula |
| Mayen's sign | Diastolic drop of BP > mm Hg with arm raised |
| Rosenbach's sign | Pulsatile liver |
| Gerhardt's sign | Enlarged spleen |
| Hill'sign | A ≥ 20 mm Hg difference in popliteal and brachial systolic cuff pressures, seen in chronic severe AI |
| Lincoln sign | Pulsatile popliteal |
| Sherman sigh | Dorsalis pedis pulse is quickly located and unexpectedly prominent in age > 75 year |

## Mitral Valve Prolapse/Barlow's Syndrome/ Floppy Valve Syndrome

- Commoner in females
- Mostly asymptomatic
- Non-ejection systolic click
- Echocardiography is the investigation of choice

| Murmur | Characteristics |
|---|---|
| Murmur of AR | High pitched, blowing, decrescendo, diastolic, best heard in third intercostals space along left sternal border. |
| Austin Flint murmur | Soft, low pitched ejection murmur (seen in AR) |
| Mill wheel murmur | Air embolism |
| Lerman scratch | Grating systolic sound, heard over sternum in second space seen in thyrotoxicosis |
| Graham Steel murmur | Pulmonary regurgitation |
| Seagull murmur | Seen in rheumatic fever, due to turbulence of low around swollen valves. |

## Continuous Murmurs

- Patent ductus arteriosus
- Coronary fistula
- Ruptured aneurysm of sinus of Valsalva
- Aortic septal defect
- Anomalous left coronary artery
- Mammary soufflé
- Intercostal arteriovenous fistula
- Cervical venous hum
- Bronchial collateral circulation

## Conditions and their Effects on Murmur

- Standing increases murmur of MVP, HOCM
- Sustained handgrip accentuates murmur of MR, AR, HOCM

## Lesion Seen in Infective Endocarditis

- Osler's nodes: Painful tender pea-sized erythomatous nodules in the pulp of fingers and soles in patients of infective endocarditis
- Janeway lesions: Small maculopapular erythematous or hemorrhagic emboli to distal digital arteries, commonly seen in palm and soles
- Roth's spots: Oval, retinal hemorrhages with a clear pale center
- Splinter hemorrhages: Linear, subungual dark red streaks commonly seen in fingers.

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## CK

- Rises at 4-8 hours,
- Peaks at 16-24 hours
- Returns to normal at 3-4 days

## Troponin T

- Begins to rise at 4-6 hours
- Peaks at 12-24 hours
- Returns to normal at 7-10 days

## Contraindication to Thrombolytic Therapy

| Absolute | Relative |
|---|---|
| Past history of cerebrovascular hemorrhage | Current use of anticoagulants |
| Any cerebrovascular event in the past one year | Recent invasive or surgical procedure or prolonged cardiopulmonary resuscitation |
| Suspicion of aortic dissection | Active peptic ulcer disease |
| Active internal bleeding | Adequately controlled severe hypertension. |
| | Known bleeding diasthesis |
| | Pregnancy |
| | A hemorrhagic ophthalmic condition |

## Enzyme Markers in MI

| | | |
|---|---|---|
| Creatinine phosphokinase | Appears within 2-4 hours, peaks by 24 hours, returns to normal by 3 days. | Very sensitive, less specific |
| Lactate dehydrogenase | Seen within 24 hours, peaks by 4-5 days, returns to normal in days. | Not specific |
| Troponin T/ I | Rises within 4-8 hours, Peaks in 10 days | MC used Very sensitive and specific |

## Troponin is Elevated in

- Myocardial infarction
- Pulmonary embolism
- Congestive heart failure

## Principle Features of Cardiac Tamponade

- Elevation of intracardiac pressure
- Limitation of ventricular
- Limitation of ventricular filling
- Reduction of cardiac output

## Conditions Associated with Hypochromic Microcytic Anemia/HcMcA are:

- Thalassemia (normal level of free erythrocyte protoporphyrin)
- Iron deficiency anemia
  - Increased TIBC
  - Increased red cell distribution width
  - Decreased ferritin
  - Decreased MCV
  - Decreased MCH
- Sideroblastic anemia
- Lead toxicity
- Anemia of chronic diseases
  - HcMcA may or may not be seen
  - Increased serum ferritin
  - Decreased serum iron levels
  - Decreased total iron binding capacity/ TIBC
- HcMcA with decreased serum iron and increased TIBC suggests: Iron deficiency anemia
- HcMcA with decreased serum iron and decreased TIBC suggests: Anemia of chronic diseases
- Conditions associated with normocytic, normochromic anemia are:
  - Sickle cell anemia
  - Fanconi anemia
  - Hereditary spherocytosis
- Haemochromatosis: Elevated serum ferritin, elevated serum iron and elevated percent tarnsferrin saturation

## Hyperbaric Oxygen is Used in the Treatment of

- CO poisoning
- Gas gangrene
- Radiation induced tissue injury
- Diabetic leg ulcers
- Very severe blood loss, anemia
- Decompression sickness.

## Hemolytic Transfusion Reactions

- Most common symptom is sensation of heat and pain along the vein into which the blood is being transfused, flushing on face, lumbar pain
- Oliguria and hemoglobinuria is seen
- In anesthetized patients: Abnormal bleeding and continued hypertension despite adequate replacement are seen

## Concentrations of Abnormal Hemoglobin Complexes Producing Cyanosis

- Sulph Hb: 0.5 per cent
- Meth Hb: 1.5 per cent
- Deoxy Hb: 5 per cent

## Age at Diagnosis is the Most Important Prognostic Factor in AML

- ALL: Peak incidence is before 10 years
- AML: After 65 years



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## Bernard-Soulier Syndrome

- Platelet function disorder characterized by deficiency of glycoprotein Ib (von Willebrand's factor receptor)
- Thromobocytopenia with giant platelets

## Glanzmann's Thrombasthenia

- Deficiency of glycoprotein IIb and III a (fibrinogen receptor Platelet count is nomals

## Hodgkin's Disease

| | |
|---|---|
| Most common type | Nodular sclerosis |
| Best prognosis | Lymphocytic predominance |
| Popcorn cells are seen in | Lymphocytic predominance |
| Lacunar cells seen in | Noddlar sclerosis |
| Reed-Sternberg cells | Seen in all varieties, maximum in mixed cellularity |

## Order of Involvement Nodes in Hodgkin's Disease

Cervical, mediastinal, para-aortic

## Epstein-Barr Virus (Associated with)

- Infectious mononucleosis
- Thymoma
- Burkitt's lymphoma
- CNS lymphoma
- Hodgkin's disease
- NHL
- B cell lymphoma
- T cell lymphoma
- Oral hairy leukoplakia
- Tonsillar carcinoma
- Angioimmunoblastic lymphoma

| Cold AIHA | Warm AIHA |
|---|---|
| IgM | IgG |
| Mycoplasma infection | Lymphomas |
| Mononucleosis | SLE |
| Idiopathic Paroxysmal | Methyldopa |
| cold hemoglobinuria (IgG) | |

## Therapeutic Nuclear Magnetic Resonance

- I 131: Thyroid cancer, Graves disease
- I 131MIBI: Pheochromocytomas, Neuroblastomas
- Yttrium-90 – Octreotide: Carcinoma with Somatostatin receptors
- P- 32, Sr- 87: Bone metastasis, pain palliation, Rheumatoid arthritis
- I 131, I 125 lipoidol: Hepatic carcinoma
- Au-198: Pleural/Pericardial effusion

## HLA Association of Diseases

- HLA A3: Hemochromatosis
- HLA B5/ B51: Behcets's syndrome
- HLA B27: Ankylosing spondylitis, Reiter's syndrome, Reactive arthritis, Psoriatic arthritis, JRA.
- HLA DR2: Narcolepsy, Multiple Sclerosis
- HLA DR3: Celiac disease, Sjogren's syndrome, Dermatitis herpetiformis, Chronic active hepatitis, Adrenal insufficiency.
- HLA B8/HLA DR3: Grave's disease , Myasthenia gravis.
- HLA DR4/ DW4: Rheumatoid arthritis
- HLA DR2/DR3/DR4: IDDM
- HLA DQ2/ HLA B8: Gluten sensitive enteropathy.
- HLA BW47: Inherited error of metabolism

## Immune Thrombocytopenic Purpura

- Therapy includes steroids, intravenous immunoglobulins, anti D immunoglobulin and splenectomy.

## Polymyositis

- Ocular muscles are not involved

## Dermatomyositis

- Classical rash: Helkiotreope rash in butterfly distribution
- Gottron rash
- Erythema of the knuckles with a rasied violaceous scaly eruption seen in dermatomyositis

## Pyrexia of Unknown Origin

- In 1961, Petersdorf and Beeson suggested the following criteria
- Fever higher than 38.3°C (101°F ) on several occasions, persisting without diagnosis for at least 3 weeks.
- At least 1 week's investigation in hospital
- Tuberculosis is the commonest cause of PUO

## Hereditary Angioedema

- Deficiency of C1 inhibitor
- Autosomal dominant

## Myasthenia Gravis

- Extraocular muscles are most commonly affected first
- Pupils are never affected
- Associated with thymoma
- Edrophomium, a quick and short acting anticholinerstarase is used for diagnosis.

## Lambert-Eaton Neuromuscular Syndrome

- Associated with malignancy in only 50 per cent
- Most commonly associated with small cell carcinoma

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- Neoplasm induced IgG antibody against the voltage gated calcium channels in the terminus of the motor neuron

| Ulcerative colitis | Crohn's disease |
|---|---|
| Cigarette smoking is protective | Cigarette smoking causes disease |
| Commonest symptom is bloody | Commonest symptom is non |
| Diarrhea and abdominal pain | Bloody diarrhea, abdominal pain |
| No cobblestoning of mucosa | Cobblestoning of mucosa + |
| Rectum is always involved | Rectum is spared |
| Continuous lesions | Skip lesions |
| No recurrence after surgery | Recurs after surgery |
| Antibiotics not effective | Antibiotics are effective |
| Toxic megacolon is seen | Not seen |
| Lead pipe appearance on barium meal | String sign on barium meal |
| pANCA present | ASCA present |

## Causes of Pseudomembranous Colitis

- Clostridium difficile
- Ischemic colitis
- Volvulus
- Staphylococcus
- Shigella
- Candida

## Liver

- 5′ nucleotidase-determines whether rasied alkaline phosphatese is hepatic in origin.
- Gamma glutary1 transpeptidase/GGT: Increased in cholestasis, Increased in patients of alcohol abuse.
- Auxilliary liver transplant: Transplanted liver provides temporary support till the native liver recovers.

## Purtscher's Retinopathy

- Complication of acute pancreatitis
- Sudden and severe loss of vision
- Due to occlusion of posterior retinal artery with aggregated granulocytes
- Fundoscopic appearance of cotton wool spots and hemorrhages confined to an area of optic disc and macula.

## Grading of Hepatic Encephalopathy

| Grade | Clinical features |
|---|---|
| Subclinic | Impaired psychomotor testing |
| 1 | Asterixis |
| 2 | Disorientation |
| 3 | Stupor |
| 4 | Deep coma |

## Terms

- Somogyi effect: Overnight hyperglycemia after hypoglycemia due to counter regulatory hormones. Management – decrease insulin dose
- Dawn phenomenon: Early morning hyperglycemia. Management – increase dose or delay it
- Honeymoon period: Seen in type I diabetes, Drastic decrease in insulin requirement followed by rise due to temporary recovery of beta cells
- Brittle diabetes: Seen in type I diabetes, Rapid changes in blood glucose level, from hypoglycemia to ketoacidosis

## Classical Triad of Pyonephrosis

- Anemia
- Fever
- Loin swelling

## Causes of Papillary Necrosis

- Analgesic abuse
- Diabetes mellitus
- Infant in shock
- Pyelonephritis
- Obstruction
- Sickle cell disease
- Ethanol

## Dietl's Crisis

- Intermittent unilateral hydronephrosis after an attack of renal colic,
- Followed hours later by passage of urine,
- Disappearance of swelling and relief of pain.

## Bartter's Syndrome

- Hypertrophy and hyperplasia of Juxtaglomerular cell
- Hypokalemic alkalosis and hyperaldosteronism

## Diagnostic Nuclear Magnetic Resonance

- I-131, I-123: Thyroid
- Tc- 99m DTPA: Kidney glomerular function. Mucociliary clearance of lungs in pneumocystis carinii pneumoniae infection in AIDS
- HIDA: Liver function and biliary clearance
- Tc- 99m MAA: Lung perfusion
- Tc- 99m DMSA: Kidney cortical scarring
- Tc- 99m MIBI: Thyroid carcinoma
- Cr-51: RBC scan
- Thallium: Myocardial infarction
- Tc- 99m pertechnate: Hot spots
- I 131 hippuran: Kidney
- Xe- 133: Lung ventilation scan



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- Tc 99 m MDP: Bone tumors and infections
- Gallium- 67, Iridium – 111: Leucocyte scan Strontium: Fracture neck femur
- Gallium 67: Sarcoidosis

## MEA/MEN

| | |
|---|---|
| MEA I | Parathyroid gland- chief cell hyperplasia |
| (Werner's) | hyperparathyroidism, Pancreas – islet cell tumour, Zollinger- Ellison syndrome, Pituitary- anterior acromegaly, Cushing's syndrome |
| MEA II a | Parathyroid gland- pheochromocytoma |
| | Thyroid- medullar carcinoma |
| MEA II b | Parathyroid gland – chief cell hyperplasia – Hyperparathyroidism, Adernal gland-Pheochromocytoma, Neurofibromatosis Thyroid – Medullary carcinoma |

## Thyroid

- Jod Basedow thyrotoxicosis: Large doses of iodine given to hyperplastic endemic goiter which is iodine-avid may produce temporary hyperthyroidism and occasionally persistent hyperthyroidism
- Wolf- Chaikoff effect: In normal individuals large doses of iodine act directly on the thyroid to produce a mild and transient inhibition of organic binding of iodide and hence of hormone synthesis

## Primary Hyperparathyroidism

- Bones, groans, stones and psychic moans.

## Landry-Guillain-Barre Syndrome

- Acute inflammartory demyelinating polyradiculopathy
- History of preceding viral infection
- Ascending weakness
- Albumino-cytological dissociation present
- Treatment includes steroids, plasma exchange, intravenous immunoglobulin.

## Miller-Fisher Variant of Guillain-Barre Syndrome

- External ophthalmoplegia
- Ataxia
- Areflexia

## Wallenberg's Syndrome/Lateral Medullary Syndrome

- Due to PICA infarct
- Ipsilateral loss of pain and temperature over the face
- Ipsilateral 9th, 10th, and 11th cranial nerve palsy
- Ipsilateral Horner's syndrome
- Ipsilateral cerebellar signs
- Ipsilateral vestibular signs
- Contralateral loss of pain and temperature over the limbs

## Jackson's Syndrome/Medial Medullary Syndrome

- Ipsilateral twelfth nerve palsy
- Contralateral hemiplegic
- Contralateral loss of joint position sense and vibration

## Millard-Gubler Syndrome/Ventral Pontine Syndrome

- Ipsilateral seventh nerve palsy
- Contralateral hemiplegia

## Raymond-Foville Syndrome

- Ipsilateral facial palsy
- Ipsilateral abducens palsy
- Contralateral hemiparesis

## Weber's Syndrome

- Ipsilateral third nerve palsy
- Contralateral hemiplegia

## Benedikt's Syndrome

- Ipsilateral rubral tumor
- Contralateral hemiparesis

## CNS Causes of Hemiplegia

- Thrombosis of unpaired anterior cerebral artery
- Superior sagittal sinus
- Parasagittal meningioma
- Cortical venous sinus thrombosis

## Similar Sounding Terms

- Tabes dorsalis: Neurosyphilis affecting posterior column of spinal cord
- Tabes mesenterica: Tuberculous affection of mesenteric lymph nodes
- Tabes ergotica: A condition similar to Tabes dorsalis due to ergotism
- Friedrich's tabes: Friedrich's ataxia
- Lupus vulgaris: Skin TB
- Lupus pernio: A form of Sarcoidosis.

## Syphilitic Aneurysm

- Most common ste of syphilitic aneurysm is ascending and transverse portion of the arch of aorta
- It also leads to ventricular dilatation (Cor bovinum)

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## Brown-Sequard Syndrome

- Ipsilateral lower motor neuron paralysis in the segment.
- Ipsilateral spastic paralysis below the level
- Ipsilateral band of cutaneous anesthesia at the level
- Ipsilateral band of posterior column sensation loss below the level
- Contralateral loss of pain and temperature sensation below the level
- Contralateral impaired tactile sensation below the level.

## Thalamic Pain Syndrome (Dejerine-Roussy Syndrome)

- Affects contralateral side of the body
- Due to thalamic infarct in ventral posterolateral nucleus

## Frontal Disinhibition Syndrome

- Loss of initiative, creativity and curiosity
- Pervasive emotional apathy
- Anomic aphasia is the single most common language disturbance seen in head trauma, metabolic encephalopathy and Alzheimer's disease
- Prolactin is increased after an episode of seizures.

## Déjà vu

- Déjà vu and Jamais vu phenomenon are seen in partial seizures
- Déjà vu is seen in temporal lobe epilepsy, normal people, psychosis, hysteria
- Déjà vu feeling of familiarity with unfamiliar situations
- Jamais vu: Felling of unfamiliarity with familiar situations.

## West Syndrome

- Epileptic encephalopathy
- Onset between 4–8 months of age
- Salaam attacks
- Hypoarrhythmia on EEG
- Treatment with ACTH or vigabatrin

| Gait | Condition |
|---|---|
| Circumduction | Hemiplegia |
| Scissoring gait | Spastic paraplegia |
| Festinating gait | Parkinson's disease |
| Wadding gait | Muscular dystrophies |
| Stamping gait | Sensory ataxia |
| Broad based gait | Cerebellar disorders |
| Broad based high stepping gait | Posterior column disorders |
| Charlie Chaplin gait | Tibial torsion, Homocystinuria |
| Lurching gait | Cerebellar ataxia |

## Intracranial Aneurysm

- Most common site is between anterior cerebral and anterior communicating artery
- Intracranial aneurysms: Rupture is likely if >7 mm in diameter
- Progressively enlarging unruptured aneurysm most commonly involve occulomotor nerve
- Most common nerve to be involved with raised intracranial tension is the abducent nerve
- Most common site of hypertensive hemorrhage in brain is putamen
- Marchiafava: Bignami syndrome: Widespread demyelination of cerebral hemispheres due to chronic alcoholism.

## Craniopharyngioma

- It is called 90 per cent tumor
- 90 per cent are calcified
- 90 per cent are cystic
- 90 per cent show enhancement

## Brain Secondaries

- Most common secondaries to brain are from:
- Carcinoma lung
  - Carcinoma breast
  - Carcinoma kidney

## Cluster Headache

- 1-3 short lived daily attacks, of unilateral, orbital or temporal pain of 4-8 weeks interval followed by pain free interval often of 1 year
- Associated with red, tearful eye, nasal stuffiness
- Commonly in males

## Epilepsy

- Twilight sleep is seen in epilepsy
- Twilight sleep is the state of narrowing of field of consciousness for short duration followed by amnesia.
- Jacksonian march: Seen in simple partial seizures, the abnormal motor activity begins in a limited area and then gradually spreads to involve larger areas.
- Todd's paralysis: Type of postictal focal neurological deficit seen in partial motor seizures.
- Absence seizures: Typically, 3 Hz spike and wave pattern discharge is seen.

## Clinical Triad of Tuberous Sclerosis

- Adenoma sebaceum
- Epilepsy
- Mental retardation



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## Wilms' Tumor is Assoiated with

- WAGR syndrome (Wilm's tumor, Aniridia, Genital abnormalities, mental retardation)
- Denys- Drash syndorome
- Beckwith- Weidemann syndrome

## Charcot's Triad (Seen in Ascending Cholangitis)

- Jaundice
- Abdominal pain
- Fever

## Saint's Triad

- Diverticulosis
- Gallstones
- Hiatus hernia

## Reynold's Pentad

- Jaundice
- Abdominal pain
- Fever
- Shock
- Confusion

## Diseases Associated with Massive Splenomegaly

- Chronic myelogenous leukemia
- Lymphomas
- Hairy cell leukemia
- Myelofibrosis with myeloid metaplasia
- Polycythemia vera
- Gaucher's disease
- Chronic lymphocytic leukemia
- Sarcoidosis
- Autoimmune hemolytic anemia
- Splenic hemangiomatosis
- Malaria
- Kala azar

## Strawberry Tongue

- Scarlet fever
- Kawasaki's disease
- Toxic shock syndrome

## Diseases with their Specific Antibodies

- SLE: Anti ds DNA (specific) Anti Sm {Smith}
- Drug induced SLE: Anti Histone
- Systemic sclerosis: Anti DNA Topoisomerase {Scl 70}
- Scleroderma {CREST}: Anticentromere
- Sjogren's syndrome: SSA (Ro) SSB (La)
- Primary biliary cirrhosis: Antimitochondrial
- Inflammatory myopathy : Histidyl t- RNA synthetase
- Mixed connective tissue disorders: Antiribonucleoprotein
- Churg Strauss: Antiribonucleoprotein ANCA
- Multifocal motor neuropathy: Anti GM1
- Wegener's granulmatosis, Henoch-Schonlein purpura: c-ANCA
- Idiopathic crescentric nephritis , Ulcerative colitis, Microspcopic polyangitis, Polyarteritis nodosa: p-ANCA
- Crohn's disease: Anti-saccharomyces crevisiae (ASCA)
- Celiac sprue: Antiendomysial and Antigliadin
- Psychosis/Depression due To CNS SLE: Antiribosomal –P.

## Vaccines Recommended in HIV Positive Patients

- Pneumococcal vaccine: Consider revaccination five years after initial dose.
- Hepatitis B vaccine: Administer to patients without serologic evidence of past or present Hepatitis B infection. Vaccinated patients after the third dose; nonresponders should receive booster injections
- Hemophilus influenzae type B vaccine: Administer to asplenic patients and those with history of recurrent hemophilus infection.
- Influenza vaccine: Administer to patients at high-risk for exposure to or morbidity from influenza. There is evidence that the vaccine may transiently promote HIV replication.
- Tetanus toxoid: Td booster is recommended every 10 years.
- Polio vaccine: IPV is administered.

## CRITERIA FOR AIDS—If Two of the Major with at Least One of the Minor Signs are Present

| Major signs | Minor signs |
|---|---|
| Weight loss of more than 10 per cent of body weight | Persistent cough for more than 1 month |
| Chronic diarrhea for more than 1 month | Generalized pruritic dermatitis |
| Prolonged fever for more than 1 month | History of herpes zoster oropharyngeal candidiasis |
| | Chronic progressive or disseminated herpes simplex infection. Generalized lymphadenopathy |

## POEMS Syndrome

- Polyneuropathy
- Organomegaly
- Endocrinopathy
- M protein band on electrophoresis with less than 5 percent plasma cells in bone marrow
- Skin hyperpigmentation.

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## Glasgow Coma Scale

Remember EVM- 4-5-6

### Eye Opening

4. Spontaneous
3. On verbal stimuli
2. On pain stimuli
1. No response

### Verbal Response

5. Oriented
4. Confused
3. Inappropriate
2. Nonspecific sounds
1. No response

### Motor Activity

6. Follows command
5. Localizes pain
4. Withdraws to pain (pressure on nail bed, words
   If no response supraorbital pressure or suprasternal pressure)
3. Flexion to pain
2. Extension to pain
1. None
   Maximum score – 15
   Minimum score – 3

| Neurological derangement | Score |
|---|---|
| Severe | 8 or less |
| Moderate | 9 – 12 |
| Minor | 13 – more |

### Other Scales Used in ICU

- SOFA-Sequential Organ Failure Assessment Score
- SAPS II- Simplified Acute Physiology Score
- APACHE II/III – Acute Physiology and Chronic Health Evaluation
- Rancho Los Amigos cognitive scale.



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# MCQs WITH REFERENCES

## HEMATOLOGY

**1. Which is NOT true regarding haemochromatosis:**

a. Hepatic cirrhosis
b. CNS manifestations
c. Heart failure
d. Impotence

**Features of Haemochromatosis**

- Cirrhosis of the liver
- Diabetes due to pancreatic islet cell failure
- Cardiomyopathy
- Arthritis (calcium pyrophosphate deposition in joints)
- Testicular failure
- Slate grey discoloration of the skin

**2. Which of the following is NOT a feature of vitamin K deficiency:**

a. Associated thrombocytopenia with prolonged bleeding
b. Deficiency is rarely seen, except in infants
c. Factor X is first to be affected
d. Warfarin causes vitamin K deficiency

Vitamin K is required for the synthesis of clotting factors and hence deficiency leads to prolonged coagulation and bleeding (NOT because of thrombocytopenia)

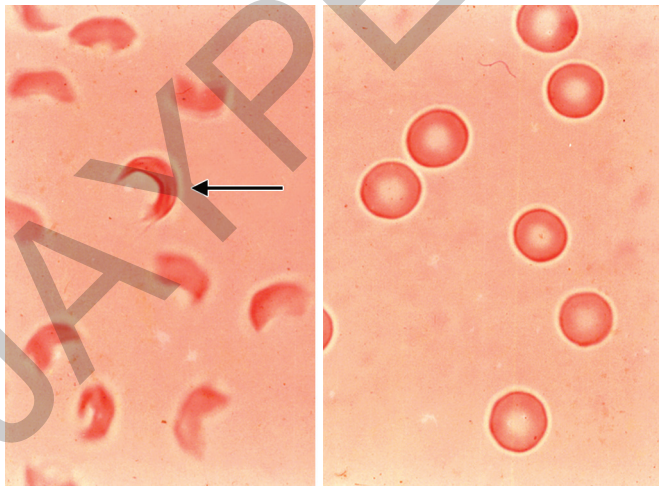
**3. All of the following are true for thalassemia major EXCEPT:**

a. Target cells
b. Hepatosplenomegaly
c. Need of transfusion
d. Macrocytic anemia

Thalassemia major shows microcytic hypochromic anemia

**4. FALSE regarding sickle cell anemia:**

a. Autosomal recessive
b. Painful crisis
c. Raised ESR
d. Increased target cells seen



Sickle cell anemia (HbS)
Note: (A) sickling-arrow (B) oxygenated blood

The ESR is decreased in polycythemia, hyperviscosity, sickle cell anemia, leukemia, low plasma protein (due to liver or kidney disease) and congestive heart failure.

**5. NOT a cause of microcytic hypochromic anemia:**

a. Lead poisoning
b. Thalassemia
c. Iron deficiency anemia
d. Fanconi anemia

Fanconi anemia/ congenital pancytopenia (special form of aplastic anemia) is an autosomal recessive disorder characterized by developmental abnormalities, bone marrow failure and cancer predisposition; especially squamous cell carcinoma and acute myeloid leukemia.



Fanconi's anemia, boy aged 12 years
Note hypoplastic thumb left hand

**6. A patient presents with microcytic hypochromic anemia. Serum iron levels and TIBC are decreased and serum ferritin is increased. Likely diagnosis is:**

a. Iron deficiency anemia
b. Anemia of chronic diseases/ ACD
c. Thalassemia
d. Sideroblastic anemia

Ferritin levels are higher in ACD due to an increase in storage iron in reticuloendothelial/ RE cells and also the acute inflammatory reaction raising ferritin levels.

**Shows the clinical parameters to distinguish between IDA and ACD**

| *Parameter* | *ACD* | *IDA* | *Combined ACD+IDA* |
|---|---|---|---|
| Iron | Reduced | Reduced | Reduced |
| Transferrin | Reduced | Increased | Reduced |

*Contd...*

**Ans.** **1. b.** CNS mani... **2. a.** Associated... **3. d.** Macrocytic anemia **4. c.** Raised ESR
**5. d.** Fanconi anemia **6. b.** Anemia of chronic diseases/ACD

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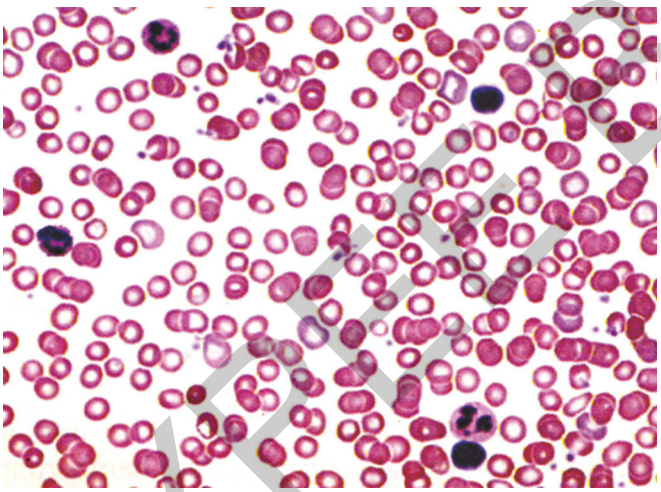
*Contd...*

| *Parameter* | *ACD* | *IDA* | *Combined ACD+IDA* |
|---|---|---|---|
| Transferrin saturation | Reduced | Reduced | Reduced |
| Ferritin | Normal | Reduced | Reduced or normal |
| STR | Normal | Increased | Normal or increased |
| STR/log ferritin | <1 | >2 High | > 2 |
| Cytokine levels | Increased | Normal | Increased |

**7. Which of the findings are consistent with the diagnosis of iron deficiency anemia:**

a. Increased TIBC, decreased serum ferritin
b. Decreased TIBC, decreased serum ferritin
c. Increased TIBC, increased serum ferritin
d. Decreased TIBC, increased serum ferritin

Total Iron Binding Capacity/TIBC in both males and females is 340 mg/dL, with the range of 250-450 mg/dL. Estimation of serum ferritin is helpful to assess the iron stores in the body, and therefore, wherever facilities permit, this should be done. Values below 15 microg/L, suggest depletion of stores.



PB iron deficiency anemia

**8. Most sensitive and specific test to diagnose iron deficiency anemia is:**

a. Serum iron levels
b. Serum ferritin levels
c. Serum transferrin receptor population
d. Transferrin saturation

Ferritin contains two types of monomers – the light (L-monomer) and the heavy (H-monomer). The L-monomer which is basic, binds very readily and tightly to the iron. This property makes it suitable for storing iron.

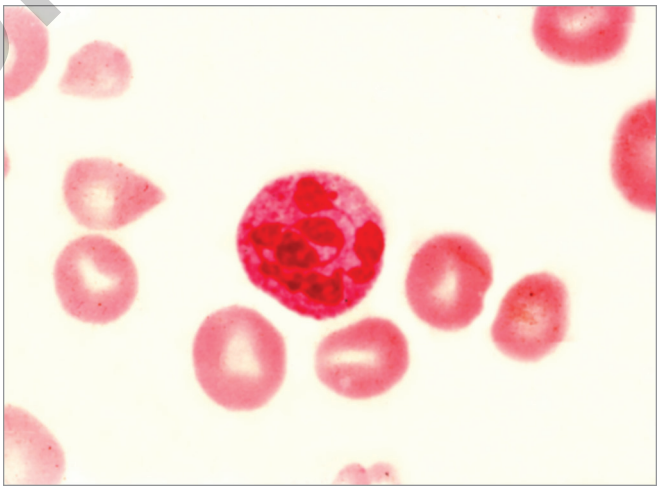


Male iron deficiency anemia. Note: Pallor: small pale tongue

**9. NOT a feature of iron deficiency anemia:**

a. Hypersegmented neutrophils
b. Microcytosis preceeds hypochromia
c. MCHC < 50%
d. MC cause of anemia in India

In megaloblastic anemia, granulocytes are larger than normal, showing increased lobulation with the average lobe count higher than 5 (macropolycytes). This change in leukocytes is very helpful in diagnosis when the morphology of erythrocytes is equivocal.



PB megaloblastic anemia with hypersegmented neutrophil

**10. FALSE regarding Henoch-Schonlein purpura:**

a. IgM antibodies are foundb. Palpable purpura
c. Self limiting
d. Ig antibodies are involved

Although the cause of anaphylactoid purpura/Henoch-Schonlein purpura (HSP)/hypersensitivity angitis/ rheumatic purpura is unknown, IgA has a pivotal role in the pathogenesis of HSP. Among the two subclasses of IgA – (IgA1 and IgA2) only IgA1 is involved in HSP. IgA1 is deposited in blood vessel walls and renal mesangium.

**Ans.** **7. a.** Increased TIBC... **8. b.** Serum ferritin levels **9. a.** Hypersegmented... **10. a.** IgM antibodies are found



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