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Rapid Review

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# Anatomy

1. Parts of superficial perineal pouch includes Posterior scrotal artery, Bulbospongiosus and Ducts of Bulbourethral glands.
2. Femoral vein is lateral to sac of Femoral hernia.
3. IOC in Zenker's diverticulum is Barium swallow.
4. Structures passing through esophageal hiatus includes Left gastric artery and Right and left vagus.

# Physiology

1. Excessive load in Tidal volume is prevented by bronchial stretch receptors.
2. Anticoagulant of choice for anticoagulant assay is 3.2% trisodium citrate.
3. Primary action of gut flora includes Vitamin K formation, control of epithelial proliferation and conversion of undigested fat to short fatty acids.
4. Prothrombin time is done within 2 hours of blood collection.
5. Features of 3rd nerve palsy includes Ptosis, Diplopia and outward deviation of eye.
6. Dilator pupillae is supplied by postganglionic sympathetic nerves from cervical sympathetic chain.
7. Glucose concentration of glomerular filtrate is same as plasma, constriction of afferent arteriole decreases the capillary pressure and hematocrit increases as blood travels through glomerulus.
8. In hypothermia there is cardiac arrhythmia, renal failure and reversible coagulopathy.
9. LDL receptors mediates endocytosis of cholesterol rich LDL, it has clathrin coated pits and LDL receptors are down regulated on increase in cholesterol in tissues.
10. Mean arterial pressure is calculated as  $(SBP + 2 DBP)/3$ .

# Biochemistry

1. CPT1 is inhibited by Malonyl CoA.
2. In well fed state, gluconeogenesis in liver is inhibited by ADP level.
3. Insulin amino acid sequence and molecular structure discovery for which he got a nobel prize was done by Sanger.
4. For commercial preparation of insulin by recombinant technology, 1st step is isolation of mRNA from beta cells.
5. Deoxyribonucleotide, DNA template and thermostable polymerase are needed in PCR. (Dideoxyribonucleoside is not needed).
6. Subtelomeric rearrangements can be diagnosed by FISH, MAPH and CGH.
7. Oxygenases can cause incorporation of 1 or 2 oxygen atoms and are involved in carboxylation of steroids.
8. CAP in Lac operon is a positive regulator.
9. Ribosomal, Peptidyl transferase and Aminoacyl tRNA synthetase are required for translation or protein synthesis in eukaryotes. RNA polymerase is required for transcription not for translation.
10. 30 year old man has LDL - 600 mg/dL and TGL - 140 mg/dL. He is likely to have Tendon xanthomas. (Familial hypercholesterolemia).
11. If 4 nucleotides code for an amino acid, then theoretically  $4^3$  (4\*4\*4) amino acids codons are possible.
12. Isoenzymes have same nomenclature and number.

13. Poly A tail codes for Poly lysine chain as AAA is codon for lysine.
14. In PTH regulation, magnesium has similar actions as that of  $\text{Ca}^{++}$ , parathormone related protein is responsible for hypercalcemia in cancer and CaSR in parathyroid is responsible for calcium regulation.
15. Lysozymes are chemical barriers which prevents bacterial colonization in all microbial exposed areas.
16. Alanine is increased in blood in starvation because of increase in muscle breakdown.
17. On prolonged starvation, Alanine pool in liver maintains rate of gluconeogenesis in liver.
18. Chymotrypsin is a Zymogen.
19. More than 1 codon coding for a single amino acid is Degeneracy.
20. Potassium oxalate + NaF are preservatives for estimation of blood glucose.
21. Chromosomal mutational can be identified from single stranded conformation polymorphism, dideoxy nucleotide trail sequencing and denaturing gradient gel electrophoresis (DGGE).

## Pharmacology

1. Drugs used in Multiple sclerosis includes Glatiramer, IFN beta 1a and IFN beta 1b.
2. Efavirenz is a Reverse transcriptase inhibitor.
3. Brinzolamide is a highly selective noncompetitive antagonist and reversible inhibitor of carbonic anhydrase.
4. Octreotide prevents secretory diarrhea.
5. Bremelanotide is used in Erectile dysfunction.
6. 1% pilocarpine was given to a person with dilated pupil, but pupil did not constrict. Reason could be pharmacological blockade by other drug (mydriatic).
7. After giving Thiazide diuretics for hypertension, findings seen in 24 hours urine is increased  $\text{Na}^+$  and  $\text{K}^+$  and decreased  $\text{Ca}^{++}$ .
8. Most recent oral direct thrombin inhibitor is Dabigatran etexilate.
9. Peripheral conversion of T4 to T3 is inhibited by Propylthiouracil, Propranolol and Amiodarone.
10. Lid retraction is caused by Apraclonidine.
11. Ozurdex is Dexamethasone 0.7% intravitreal implant.
12. In MRSA cefaclor should not be used due to resistance to cephalosporins.
13. Chloroquine toxicity is predisposed by cumulative dose of 460 gm, renal failure and if given for more than 2 years.
14. Adrenaline, noradrenaline and dopamine acts through seven pass receptors.

## Microbiology

1. 5 year old boy with pustular lesion in the leg. Isolate shows gram positive cocci in chains and colony shows beta haemolysis. Test which will help to identify the organism is Bacitracin sensitivity.
2. Most bacterial resistance is due to production of penicillin degrading enzymes, most enterococcal species produce resistance by target receptor (PBP) and complete elimination of target by pneumococcus species.
3. 22 year old male with burning micturition and on urine examination, abundant pus cells were found but no organisms. Best method for culture in this patient is McCoy cell line.
4. 70 year old man with fever and dry cough has gram gram negative organisms which shows growth only in charcoal yeast agar. Likely organism is Legionella.

5. For bacteria coated with complement and Ig, phagocytosis is enhanced by C3b Fc mediated destruction.
6. *Bacillus stearothermophilus* is used as an indicator in autoclave.
7. Patient in ICU on CV line since 1 week is on ceftazidime and amikacin. After 7 days of fever he develops a spike of fever, blood culture shows gram positive cocci in chains which are catalase negative. He was started on vancomycin but culture remained positive for same organism even after 2 weeks of therapy. Most likely organism is *Enterococcus faecalis*.
8. LPS from bacteroides is structurally and functionally different from conventional endotoxin, bacteroides are most common organism isolated in culture and they are not uniformly sensitive to metronidazole.
9. Mother to child transmission of HIV is prevented by Nevirapine.

## Pathology

1. Endothelial retraction due to cytoskeletal rearrangements in acute inflammation is immediate and transient increased permeability.
2. 40 nm gap in between the tropocollagen molecule in collagen which serve as the site of bone formation is occupied by Calcium.
3. In Alzheimer's disease no. of neural plaques increases with age, neural tangles and severity are directly proportional and there is presence of tau proteins.

## Forensic Medicine

1. Patient with delirium tremens assaulted his neighbour after 4 days of abstinence from alcohol. This offence is not punishable under section 84 IPC and he is not responsible for his act.
2. Punishment for medical negligence is upto 2 years of imprisonment.
3. Hostile witness comes under section 191 of IPC.
4. According to human organ transplantation act (1994), the eering doctor can be punished with up to 2-5 years of imprisonment.
5. Issue of false medical certificate is punishable under section 197 of IPC.
6. Stacks formula of teeth is used for infants.
7. Flaying is a feature of avulsion type of laceration.
8. 1st ossification center formation in intrauterine life is at end of 2 months.
9. Murder, Culpable homicide not amounting to murder and Attempt to murder comes under section 300, 304 and 307 of IPC respectively.
10. Best specimen for DNA testing in autopsy is Spleen.
11. In palato printing, most common site for taking prints is Anterior part of palate.

## PSM

1. Socialization of medicine includes elimination of competition between doctors, free of cost health provisions by state and ensuring universal coverage of health services.
2. Direct standardization is used for comparing mortality rates between 2 countries. This is done because of difference in Age distribution.
3. In a study in UK, an association was found between increase in sales of antiarrhythmic drugs and deaths related to asthma over 11 years. This is an example of Ecological study.

4. For diagnosis of SLE, 6 tests are employed in that 4 are positive and 2 are negative. To know probability of SLE, sensitivity and specificity of each test/ prior probability of SLE in that area should be known.
5. Hardy-Weinberg equilibrium is affected by mutation, migration and small population.
6. Hardy-Weinberg law is violated in small population.
7. Meta-analysis gives the most accurate results.
8. For a blood sample, Hb values were 9.1, 9.2, 10.1, 10.2, 9.3, 9.6, 9.7 and 9.8. For the same blood sample calorimetric study values are 10.1 gm/dL. Then test has low validity and low reliability.
9. Syndromic management for genital disease in Indian includes Chancroid, Primary chancre and herpes genitalis.
10. Best method to compare a new test and a gold standard test is Bland and altman analysis.
11. 50 year old woman presents with complaints of inability to flex thumb, index finger and middle finger. Tests which should be done to make diagnosis includes Phalen test, Tinel sign and Tourniquet test.
12. A diabetic patient presents with flexion deformity of 15 degrees of right little finger. TOC is to observe.
13. Cricketer got injured while catching ball and complains of pain at base of thumb. Muscle which is likely to be injured is Ulnar collateral ligament.
14. Gallow's traction is used for fracture of femur.
15. In osteoarthritis the wasting occurs 1st and is most pronounced in the Quadriceps.
16. Patient with anterior dislocation of shoulder. Possible mechanism involved is abduction and external rotation.
17. Spondylolisthesis can be diagnosed by CT, MRI and X-ray spine lateral view.
18. Patient has pain in lower back, is unable to extend great toe right and no sensory involvement seen. Probable disc prolapse is at L4-L5.
19. CV junction malformation is caused by Rheumatoid arthritis, Odontoid dysgenesis and Basilar invagination.
20. Markers of bone formation are alkaline phosphatase, osteocalcin and peptide of procollagen.

## Ophthalmology

1. Mizuo phenomenon is seen in Oguchi's disease.
2. Drug used in LUMINATE programme for noninfectious uveitis is Voclosporin.
3. Azithromycin is given for mass prophylaxis, if prevalence of trachoma in children of 1-9 years is more than 10%.
4. Young man after RTA had proptosis, pain in right eye after 4 days and bruise on forehead and right eye. Most likely cause is carotico cavernous fistula.
5. Young woman with severe sudden bilateral visual loss more on right side with no perception of light, fundus, pupillary response and optokinetic nystagmus is normal. Likely cause is functional visual loss.
6. Endothelial cell loss in descemet membrane stripping is seen in 30-40% keratoplasties.
7. In herpes zoster there is pseudo dendritic keratitis, anterior stromal keratitis and endothelial.
8. Founders of Vision 2020 includes WHO, ORBIS international and international agency for control of blindness.

# Obstetrics and Gynaecology

1. Changes during normal pregnancy includes increase in stroke volume, increased cardiac output and increased intravascular volume.
2. Fetal karyotyping can be done by Cordocentesis, Amniocentesis and Chorionic villous sampling.
3. Glucose tolerance test is indicated in women with previous congenital anomaly in fetus, polyhydramnios and previous unexpected fetal death.
4. During forceps delivery, anteroposterior diameter of head should not be more than 15° to axis, presenting part should be at zero station and caput succedaneum is not a contraindication to it.
5. 17 year old girl has primary amenorrhea, bilateral inguinal hernia, normal secondary sexual characters but absence of pubic hair and on USG uterus and ovary are absent. Most likely diagnosis is Androgen insensitivity syndrome.
6. 16 year old girl with 6 ×6 cm right ovarian mass with absent AFP, negative CA125 and increased ALP. Most likely diagnosis is Dysgerminoma.
7. In postmenopausal women, HRT helps in vaginal dryness, hot flashes and coronary artery disease.
8. Normal ovarian function is seen in MRKH.
9. Gestational hypertension causes HELLP syndrome, acute renal failure and Eclampsia.
10. Treatment for prenatal CAH Dexamethasone.
11. An infertile woman with bilateral tubal block at cornua is diagnosed on HSG. Next step in management is laparoscopy and hysteroscopy.
12. Inhibin is a tumor marker for granulosa cell tumor.
13. Difficult labour for after coming head in breech presentation is seen in extension of head, hydrocephalus and incomplete dilatation of cervix.

# Pediatrics

1. Obstructed TAPVC (total anomalous pulmonary venous connection) worsens on PGE1 administration.
2. 1st choice of investigation of a 7 days old baby with leaking meningomyelocele is blood culture.
3. Steroid resistant nephrotic syndrome is due to NPHS2 gene.
4. 7 year old child with fever, sore throat, TLC 60,000, platelet count 20,000, MPO positive, CD33 negative, CD19 positive, CD117 positive and CD10 positive. Most probable diagnosis is Acute biphenotypic leukemia.
5. CO<sub>2</sub> is effectively cleared by placenta.
6. 5 year old child with episodic anemia and jaundice from birth. Possible diagnosis includes Sickle cell disease, G6PD deficiency and Hereditary spherocytosis. (PNH is excluded because it is rare in children).
7. Nestroft test is used to detect Beta thalassemia.
8. A young short statured girls has raised TSH, decreased T<sub>4</sub> and a mass in pituitary on MRI. Most likely diagnosis is Primary hypothyroidism.
9. Down's syndrome is associated with Trisomy 21, Mosaic 21 and Robertsonian translocation t(21:13).
10. A child with recurrent sinusitis and rhinitis has dextrocardia on CXR. Most probable diagnosis is Kartagener's syndrome.
11. In Vitamin D metabolism, 25 alpha hydroxylation takes place in liver, 1 alpha hydroxylation takes place in kidney and daily requirement of Vitamin D in the absence of sunlight is 450-600 IU/day.

12. 15 year old girl presents with recurrent pains in knee with appearance of petechial haemorrhage. Diagnosis is Megakaryocytic thrombocytopenia.
13. Mechanism of thermogenesis in neonates includes Brown fat, increase in movements of the baby and cutaneous vasoconstriction.
14. Neonate presents with CHF, bulging Anterior fontanelle and bruit on auscultation. On transfontanellar USG there is hyperechoic midline mass with dilated lateral ventricles. Likely diagnosis is Vein of Galen malformation.
15. Important fatty acid present in breast milk, which is important for growth is Docosahexaenoic acid.

## Medicine

1. PNH, Myelodysplastic syndrome and Aplastic anemia are pre leukemias.
2. Woman with Hb 6 g/dL, MCV 55 fl, TLC 8000 cells/mm<sup>3</sup> and Platelets 2.5 lakhs. Also no h/o transfusion. Most likely diagnosis is Iron deficiency anemia. Features of Primary aldosteronism includes diastolic hypertension without edema, low renin levels and high secretion of aldosterone in spite of reduced volume of fluid.
3. In SIADH, serum na<sup>+</sup> is <125 mEq/L, water loading test is diagnostic and Vaptans are newly recommended drugs for treatment.
4. Most common cause of Addison's disease in India is Adrenal TB.
5. Anti CCP antibody is specific for rheumatoid arthritis.
6. In Brown-Sequard syndrome there is ipsilateral plantar extensor, Ipsilateral corticospinal tract involvement and Contralateral spinothalamic tract involvement.
7. Patient with abdominal pain, yellowish discolouration of raised sclera and clay coloured stools. Enzymes which will be elevated includes 5' nucleotidase, alkaline phosphatase and GGT.
8. Features of myelopathy includes Brisk jaw jerk, brisk knee jerk and bladder incontinence urgency.
9. 35 year old man having excessive sleep during work time attributing to disturbed sleep at night. He also has falls in parties. Most probable other symptom he is having is hallucinations in sleep wake transitions.
10. 62 year old man with focal seizures and good renal clearance. Drug of choice is Oxcarbazepine.
11. If hydrolysis by Hams test is positive, this could be due to GPI anchored protein.
12. According to new world standards, echo test will show regional wall motion abnormalities, sudden death can be due to MI and there is 3 fold increase in Troponin I following post CABG MI.
13. A woman with previous h/o bleeding diathesis has BT 3 min, PT 14/13, aPTT 35/25 and platelet count of 2.5 lakhs. Likely diagnosis is Lupus anticoagulant.
14. Patient with Hb 9 gm%, no previous h/o transfusion and MCV 60, RBC 4.5 million. Most likely diagnosis is Beta 2 microglobulin.
15. In multiple sclerosis, drug used to prevent EDSS (Expanded Disability Status Scale) is IFN beta.
16. Child presents with clinical features suggestive of demyelination. Chance of progression to Multiple sclerosis is least with absent oligoclonal band.
17. Neurological manifestations seen in Alzheimer's disease includes Aphasia, Acalculia, Agnosia and Apraxia.
18. Patient with hematuria and hypercalciuria on urine analysis will show Isomorphic RBCs.
19. Systemic eosinophilia and renal failure can be drug induced, atheroembolic induced and may be due to polyangiitis nodosa.
20. Patient has radiologically proven reflux nephropathy with nephrotic range proteinuria. Probable type of Glomerulonephritis in this patient would be FSGN.
21. In a case of renal papillary necrosis, tests that are needed for establishing the diagnosis includes Urine PCR for TB, Urine culture and Sickling.
22. Transcranial patch for Parkinson's disease is of Rotigotine.

23. Elderly man, known case of AS presents with syncope, he develops fatigue after 11 minutes of exercise while performing TMT as per BRUCE protocol. With ECHO, systolic pressure gradient is found to be 60 mmHg. Most appropriate management is Valve replacement.
24. Sarcoglycan dystrophy, Dysferlin dystrophy and Calpain dystrophy are limb girdle dystrophy.
25. Spinocerebellar ataxia exclusively affects neurons.
26. 25 year old woman presents with fever since 1 month, ataxia, headache and imaging showing dilated ventricles and meningeal enhancements. Likely CSF finding would be lymphocytic pleocytosis, low sugar and high protein. 4 month pregnant lady who is known case of juvenile myoclonic epilepsy is on sodium valproate. Advice would be to continue valproate and monitor serum levels.
27. Diabetes is best diagnosed by FBS >152 and PPBS >199.
28. 25 year old woman on treatment for rheumatoid arthritis has Hb 6 gm, MCV 60 fl, RBC 2.5 lakhs, ferritin 200 ng/ml, transferrin 298 mg/dl and riron 30. Most likely diagnosis is Anemia of chronic disease.

## Surgery

1. After RTA patient taken for emergency laparotomy, left kidney is normal and right kidney is pulsatile stable hematoma is seen on contrast study (IVU) contrast is not taken. All vessel are normal. Next step in management should be Separation of Gerota's fascia and exposure of renal vessels.
2. USG findings in Congenital Hypertrophic pyloric stenosis is accurate in >95% times, length of segment >16 mm and thickness >4 mm.
3. Most common site for Cholangiocarcinoma is Perihilar (Klatskin tumor).
4. An inexperienced surgeon while operating for cholecystectomy accidentally found CBD stones. Further best management would be to do an open cholecystectomy with CBD exploration.
5. In post-surgery ileus, maximum manifestations are common in colon.
6. Postoperative complication of ileoanal pouch anastomosis in ulcerative colitis is Pouchitis.
7. Tests used for prognosis of acute pancreatitis includes serum calcium, serum glucose and serum lipase. It doesn't include serum amylase as it doesn't have any significant correlation with severity of pancreatitis.
8. Cranberry juice helps in preventing UTI.
9. Person with RTA had Anaesthesia below level of umbilicus, bladder and bowel disturbances and tenderness over D10-D12 vertebrae. Pulse steroid therapy that should be instituted is 30 mg/kg within 2 hours.
10. Trauma to Inferior mesenteric artery will will produce organs supplied by it.
11. Calcification around foramen of Monro with periventricular infiltrate, raised intracranial tension and mass below 3rd ventricle is seen in Sub-ependymal astrocytoma.
12. In peripheral vascular disease of lower limb, ankle brachial index <0.5 indicates severe ischemia, smoking is more specific for peripheral vascular disease than for cardiovascular disease and ABI changes during exercise than at rest.

## Orthopaedics

1. Patient has heterotopic ossification around knee joint. Laboratory IOC in him is serum ALP.
2. Liver capsule plate is formed by Hilar plate, Umbilical plate and Cystic plate.
3. Lissencephaly, Schizencephaly and Polymicrogyria are associated with a defect in neural migration.

# Radiology

1. Epidermal cyst and arachnoid cyst can be differentiated by decreased flair.
2. Hibernating myocardium can occur in low dose dobutamine scan, after rest thallium scan and Gadolinium scan is not one in it.
3. Characteristic of cavernous sinus hemangioma is Popcorn calcification.
4. IOC for meningeal carcinomatosis is contrast enhanced MRI.
5. Young male 2 months after trauma presents with bilateral proptosis, chemosis, subconjunctival hemorrhage and inability to move eyes (cavernous sinus thrombosis). IOC is MR angiography.
6. Microwave, ultrasonic wave and heat wave diathermy are used in deep wave therapy.
7. Radioresistant layer of retina is Pigment layer.
8. 45 year old woman complains of progressive weakness and spasticity of lower limb with difficulty during micturition. CT scan shows an intradural mid dorsal midline enhancing lesion. Diagnosis is Meningioma.

# Psychiatry

1. Type D personality are at risk of developing Coronary artery disease.
2. Somatic passivity is a feature of paranoid schizophrenia.
3. Bipolar Type II disorder is characterized by Hypomania and depression.
4. Somatisation disorder, irritable bowel syndrome and fibromyalgia are specific somatoform disorder.
5. Counter transference is Doctor's feelings towards the patient.
6. Neurotransmitters associated with panic disorders are Serotonin, GABA and Dopamine.

# Skin

1. Intra-epidermal intercellular IgG deposition is seen in Pemphigus vulgaris.
2. Dermatitis herpetiformis shows deposition of IgA in dermal Papilla.
3. Only indication of systemic steroids is in Impetigo herpetiformis type of Psoriasis.
4. Boy with multiple bullous lesions over trunk and radiological examination showed periostitis. Next IOC is VDRL for mother and child (for Congenital syphilis).
5. 5 year old boy presents with multiple petechial hemorrhages. Lab investigation showed IgA deposits along the blood vessels. Most likely diagnosis is Henoch Schonlein purpura.
6. TOC for Kawasaki's disease is IV immunoglobulin.
7. 20 year old man has recurrent oral ulcer with yellow base, erythematous halo and nodules on skin. Probable diagnosis is Behcet's syndrome.
8. 3 year old child has ichthyotic lesions over scalp, face and extensor extremities. Mother also gives h/o bronchial asthma. Most probable diagnosis is Atopic dermatitis.

# Anaesthesia

1. Hypothermia in anaesthesia will produce decreased EEG activities.
2. Xenon anaesthesia is non explosive, it has minimal cardiovascular side effects and has low blood gas solubility.