Answers to Nextillo Quiz of the Month – Part-4

1. False statement about Ulcerative Colitis (UC):
A. Affects only the colon
B. Presence of skip lesions
C. Associated with primary sclerosing cholangitis
D. Increased risk of colorectal carcinoma
Answer: B
Explanation: The false statement is "Presence of skip lesions." UC is a continuous inflammatory disease affecting only the colon, unlike Crohn's disease, which has skip lesions. UC is associated with primary sclerosing cholangitis and increases the risk of colorectal carcinoma due to chronic inflammation.

2. All of the following are features of Tetralogy of Fallot (TOF) EXCEPT:
A. Overriding aorta
B. Ventricular septal defect
C. Pulmonary stenosis
D. Left ventricular hypertrophy
Answer: D
Explanation: Tetralogy of Fallot includes four key features: overriding aorta, ventricular septal defect (VSD), pulmonary stenosis, and right ventricular hypertrophy (RVH). Left ventricular hypertrophy is not a feature of TOF.

3. True about Hypokalemia:
A. Causes prolonged QT interval
B. Associated with metabolic acidosis
C. Leads to muscle weakness
D. Hyperpolarizes neuronal membranes
Answer: C
Explanation: Hypokalemia leads to muscle weakness due to decreased excitability of muscle membranes. It shortens the QT interval (not prolongs it) and is associated with metabolic alkalosis, not acidosis. Hypokalemia causes hyperpolarization, which decreases neuronal excitability.

4. False about Congenital Adrenal Hyperplasia (CAH):
A. 21-hydroxylase deficiency is the most common form
B. Salt-wasting form causes hyponatremia and hyperkalemia
C. Increased 17-hydroxyprogesterone levels
D. Decreased androgen production
Answer: D
Explanation: The false statement is "Decreased androgen production." In CAH, due to enzyme deficiency (commonly 21-hydroxylase), there is a shunting of precursors towards androgen synthesis, leading to increased androgen levels.

5. Most common cause of pancreatitis in India:
A. Alcohol
B. Gallstones
C. Hypertriglyceridemia
D. Idiopathic
Answer: B
Explanation: In India, gallstones are the most common cause of acute pancreatitis, while alcohol is the leading cause in Western countries. Hypertriglyceridemia and idiopathic causes are less common.

6. False about Alzheimer's disease:
A. Neurofibrillary tangles are made of tau protein
B. Amyloid plaques are extracellular
C. Early-onset Alzheimer's is associated with APOE ε4 gene
D. Memory loss is the most common initial symptom
Answer: C
Explanation: The false statement is "Early-onset Alzheimer's is associated with APOE ε4 gene." Early-onset Alzheimer's is associated with mutations in APP, PSEN1, and PSEN2 genes. The APOE ε4 allele is linked to late-onset Alzheimer's.

7. Most sensitive test for diagnosis of Hepatitis B in acute infection:
A. Anti-HBc IgM
B. HBsAg
C. Anti-HBs
D. HBV DNA
Answer: A
Explanation: Anti-HBc IgM is the most sensitive marker for acute Hepatitis B infection as it appears early during the infection. HBsAg is also present but may not be as specific in certain cases. Anti-HBs indicates recovery or immunity, not acute infection.

8. Cushing's syndrome is NOT associated with:
A. Osteoporosis
B. Hyperglycemia
C. Hypotension
D. Muscle wasting
Answer: C
Explanation: Cushing's syndrome is associated with hypertension, not hypotension. This is due to increased cortisol levels, which enhance vascular sensitivity to catecholamines. Other features include osteoporosis, hyperglycemia, and muscle wasting.

9. Feature of Rheumatic fever according to modified Jones criteria:
A. Arthritis involving small joints
B. Sydenham's chorea
C. Subcutaneous nodules at pressure points
D. Mitral stenosis
Answer: B
Explanation: Sydenham's chorea is a major criterion in the modified Jones criteria. Arthritis is migratory and involves large joints, not small joints. Subcutaneous nodules are major criteria, but mitral stenosis is a long-term sequela, not an acute feature.

10. First-line drug for Generalized Tonic-Clonic Seizures:
A. Phenytoin
B. Sodium valproate
C. Carbamazepine
D. Lamotrigine
Answer: B
Explanation: Sodium valproate is considered the first-line drug for generalized tonic-clonic seizures due to its broad-spectrum activity. Phenytoin and carbamazepine are also effective but are not preferred for generalized epilepsy due to narrower spectrums. Lamotrigine is an alternative.

11. A 45-year-old male presents with a 3-month history of progressive dyspnea and dry cough. Chest X-ray shows bilateral hilar lymphadenopathy. Which of the following is true about the most likely diagnosis?
A. Caused by Mycobacterium tuberculosis
B. Associated with hypercalcemia
C. Treated with antifungal agents
D. Requires lung biopsy for diagnosis
Answer: B

Explanation: The clinical features suggest sarcoidosis, which often presents with bilateral hilar lymphadenopathy. Sarcoidosis is associated with hypercalcemia due to increased 1,25-dihydroxyvitamin D production by activated macrophages. It is not caused by Mycobacterium tuberculosis, though tuberculosis is a differential. Diagnosis is often supported by imaging and biopsy but does not always require lung biopsy. Antifungal therapy is not used in sarcoidosis.

12. A patient with chronic renal failure develops anemia. Which of the following is the primary cause of anemia in this condition?
A. Iron deficiency
B. Bone marrow suppression
C. Erythropoietin deficiency
D. Hemolysis
Answer: C
Explanation: Anemia in chronic renal failure is primarily due to erythropoietin deficiency. The kidneys produce erythropoietin, which stimulates red blood cell production. In renal failure, its production decreases, leading to normocytic, normochromic anemia. Iron deficiency and hemolysis may contribute, but they are secondary causes.

13. A 30-year-old woman presents with complaints of fatigue, weight loss, and pigmentation of the skin. Blood pressure is 90/60 mmHg. Laboratory findings reveal hyponatremia and hyperkalemia. What is the most likely diagnosis?
A. Cushing's syndrome
B. Conn's syndrome
C. Addison's disease
D. Pheochromocytoma
Answer: C
Explanation: Addison's disease (primary adrenal insufficiency) is characterized by fatigue, weight loss, hyperpigmentation (due to increased ACTH and melanocyte-stimulating hormone), hypotension, hyponatremia, and hyperkalemia. These findings result from adrenal gland failure, causing decreased cortisol and aldosterone production.

14. A 28-year-old woman presents with a painless neck swelling that moves with deglutition. Her thyroid function tests are normal. What is the next best step in management?
A. Thyroid scintigraphy
B. Fine-needle aspiration cytology (FNAC)
C. Serum calcitonin levels
D. Observation
Answer: B
Explanation: The clinical presentation suggests a thyroid nodule. FNAC is the investigation of choice to evaluate the nodule for malignancy. Thyroid scintigraphy is reserved for assessing hyperfunctioning ("hot") nodules, which are rarely malignant. Serum calcitonin is used to screen for medullary thyroid carcinoma in high-risk cases.

15. A newborn is brought with vomiting, lethargy, and abdominal distension on the second day of life. An X-ray shows multiple air-fluid levels. What is the most likely diagnosis?
A. Hirschsprung's disease
B. Duodenal atresia
C. Midgut volvulus
D. Meconium ileus
Answer: C
Explanation: The symptoms and radiographic findings suggest midgut volvulus, a surgical emergency caused by intestinal malrotation. It typically presents with bilious vomiting, abdominal distension, and air-fluid levels on imaging. Duodenal atresia shows a "double bubble" sign, while Hirschsprung's disease and meconium ileus present differently.

16. A 65-year-old man presents with hematuria, left flank pain, and a palpable abdominal mass. What is the most likely diagnosis?
A. Polycystic kidney disease
B. Renal cell carcinoma
C. Hydronephrosis
D. Transitional cell carcinoma
Answer: B
Explanation: Renal cell carcinoma (RCC) classically presents with the triad of hematuria, flank pain, and a palpable mass. This triad occurs in only 10% of cases but is highly suggestive. Hydronephrosis is typically due to obstruction, while transitional cell carcinoma primarily affects the urinary bladder or renal pelvis.

17. A patient presents with severe abdominal pain radiating to the back, hypotension, and a pulsatile abdominal mass. What is the most appropriate next step in management?
A. CT abdomen with contrast
B. Ultrasound abdomen
C. Immediate surgical exploration
D. MRI abdomen
Answer: C
Explanation: The patient likely has a ruptured abdominal aortic aneurysm (AAA), a surgical emergency. Immediate surgical exploration is life-saving. Imaging like CT or ultrasound can confirm the diagnosis if the patient is stable, but delaying surgery in unstable cases is fatal.

18. A 35-year-old woman complains of excessive menstrual bleeding for 6 months. She is pale on examination. Laboratory findings show hemoglobin of 8 g/dL and a normal platelet count. What is the most likely cause?
A. Von Willebrand disease
B. Idiopathic thrombocytopenic purpura
C. Hypothyroidism
D. Fibroids
Answer: D
Explanation: Excessive menstrual bleeding with anemia is most commonly due to fibroids, benign uterine growths that can cause menorrhagia. Normal platelet count excludes thrombocytopenic conditions. Von Willebrand disease is a bleeding disorder but is less common.

19. A 60-year-old male with a history of smoking presents with hemoptysis, weight loss, and a chest X-ray showing a hilar mass. What is the most likely diagnosis?
A. Squamous cell carcinoma
B. Adenocarcinoma
C. Small cell lung cancer
D. Tuberculosis
Answer: A
Explanation: Squamous cell carcinoma is strongly associated with smoking and frequently presents as a hilar mass with hemoptysis due to central airway involvement. Adenocarcinoma is more peripheral, and small cell carcinoma is associated with paraneoplastic syndromes. Tuberculosis is a differential but less likely given the history.

20. A 22-year-old man presents with sudden-onset palpitations, chest pain, and shortness of breath. ECG shows narrow QRS complex tachycardia at 180 bpm. What is the first-line management?
A. IV adenosine
B. IV amiodarone
C. Synchronized cardioversion
D. Carotid sinus massage
Answer: D
Explanation: The presentation suggests supraventricular tachycardia (SVT). Carotid sinus massage is a non-invasive vagal maneuver that can terminate SVT by increasing parasympathetic tone. If unsuccessful, IV adenosine is the drug of choice. Cardioversion is reserved for unstable patients.