Pediatric Board Review

50 Scenario-Based Multiple-Choice Questions

Based on Pediatric Board Study Guide: A Last-Minute Review, Third Edition (2024)
The correct option is underlined in each question.

Questions 1-17: Foundational to Intermediate

1. A 2-month-old term infant is brought for a health supervision visit. She is exclusively breastfed, is growing appropriately, and has no medical problems. Which supplement should be recommended?

A. Iron 2 mg/kg/day
B. Vitamin D 400 IU/day
C. Vitamin A 1,500 IU/day
D. Fluoride 1 mg/day

2. A 4-year-old boy has fever, cough, conjunctivitis, coryza, and an erythematous maculopapular rash that began at the hairline and spread downward. Which finding is most specific for the diagnosis?

A. Pastia lines
B. Koplik spots
C. Strawberry tongue
D. Target lesions

3. A 6-week-old infant has progressive nonbilious projectile vomiting after feeds. He remains hungry after vomiting. Examination reveals mild dehydration and a small mobile epigastric mass. Which acid-base disturbance is most likely?

A. High-anion-gap metabolic acidosis
B. Hyperchloremic metabolic acidosis
C. Hypochloremic hypokalemic metabolic alkalosis
D. Respiratory alkalosis with metabolic compensation

4. A 7-year-old child develops periorbital edema and cola-colored urine 2 weeks after impetigo. Blood pressure is elevated and serum C3 is low. What is the most likely diagnosis?

A. IgA nephropathy
B. Poststreptococcal glomerulonephritis
C. Minimal change disease
D. Alport syndrome

5. A 5-year-old child has polyuria, polydipsia, weight loss, glucose 420 mg/dL, venous pH 7.18, and bicarbonate 10 mEq/L. After initial isotonic fluid resuscitation, what is the next essential therapy?

A. Intravenous bicarbonate bolus

B. Subcutaneous long-acting insulin

C. Continuous intravenous regular insulin

D. Fluid restriction

6. A term newborn becomes visibly jaundiced at 10 hours of life. Which statement best describes this finding?

A. It is physiologic and requires routine follow-up only

B. It is pathologic and requires prompt evaluation

C. It is typical breast milk jaundice

D. It is expected after delayed cord clamping

7. A 15-year-old girl has heavy menstrual bleeding since menarche, frequent epistaxis, and easy bruising. Platelet count and PT are normal; aPTT is mildly prolonged. What is the most likely disorder?

A. Hemophilia A

B. Vitamin K deficiency

C. von Willebrand disease

D. Immune thrombocytopenia

8. A 3-year-old boy has a barking cough, hoarseness, inspiratory stridor at rest, and moderate retractions. Which treatment is most appropriate?

A. Oral amoxicillin

B. Dexamethasone plus nebulized epinephrine

C. Nebulized albuterol alone

D. Immediate bronchoscopy

9. A 9-month-old infant has episodic severe crying, draws his knees to his abdomen, vomits, and passes currant-jelly stool. Ultrasound confirms ileocolic intussusception without perforation. What is the preferred initial treatment?

A. Air or contrast enema reduction

B. Immediate bowel resection

C. Oral rehydration and observation

D. Upper gastrointestinal contrast study

10. A 10-year-old has fever, migratory polyarthritis, and a new murmur 3 weeks after untreated streptococcal pharyngitis. Which cardiac lesion is most typical during acute rheumatic fever?

A. Aortic stenosis

B. Mitral regurgitation

C. Pulmonary stenosis

D. Tricuspid stenosis

11. A 12-year-old with asthma has symptoms 4 days per week and awakens with cough 3 nights per month. Spirometry shows reversible obstruction. Which long-term controller strategy is appropriate?

A. No controller therapy

B. An inhaled corticosteroid-containing regimen

C. Daily oral prednisone

D. Ipratropium as sole controller

12. A 2-year-old has a generalized tonic-clonic seizure lasting 3 minutes during a febrile viral illness. He returns rapidly to baseline, has a normal neurologic examination, and has never seized before. What is the best next step?

A. Routine EEG and brain MRI

B. Lumbar puncture in every case

C. Reassurance and treatment of the underlying illness

D. Begin daily levetiracetam

13. A 6-year-old has pallor and pica. Hemoglobin is 8.5 g/dL, MCV 62 fL, RDW is elevated, and reticulocyte count is low. Which laboratory finding is most likely?

A. High ferritin

B. Low total iron-binding capacity

C. Low ferritin

D. High transferrin saturation

14. A 3-week-old infant has persistent jaundice, dark urine, and pale stools. Total bilirubin is 8 mg/dL and direct bilirubin is 4 mg/dL. What is the most urgent next step?

A. Reassure that this is breast milk jaundice

B. Prompt evaluation for cholestasis and biliary atresia

C. Stop breastfeeding for 48 hours

D. Begin phototherapy alone

15. A 4-year-old has 6 days of fever, bilateral nonexudative conjunctivitis, strawberry tongue, cervical lymphadenopathy, rash, and swelling of the hands. What is the treatment of choice?

A. Intravenous immunoglobulin and aspirin

B. Penicillin V alone

C. Systemic corticosteroid alone for every patient

D. Acyclovir

16. A 16-year-old boy is tall with long extremities, pectus deformity, and upward lens displacement. His father died suddenly at age 35. Which surveillance is most important?

A. Serial echocardiography of the aortic root

B. Annual renal ultrasonography

C. Serial serum alpha-fetoprotein

D. Annual colonoscopy

17. A newborn has ambiguous genitalia, vomiting, dehydration, hyponatremia, hyperkalemia, and hypoglycemia. Which enzyme deficiency is most likely?

A. 11-beta-hydroxylase deficiency

B. 21-hydroxylase deficiency

C. 17-alpha-hydroxylase deficiency

D. 5-alpha-reductase deficiency

Questions 18-34: Intermediate

18. A 7-year-old has pruritic flexural eczema and recurrent wheezing. Which skin-care intervention is foundational for long-term control of atopic dermatitis?

A. Daily topical antibiotics

B. Frequent emollient application

C. Routine systemic corticosteroids

D. Elimination of all dairy products

19. A 2-month-old has poor feeding, diaphoresis with feeds, tachypnea, hepatomegaly, and a harsh holosystolic murmur at the lower left sternal border. What is the most likely lesion?

A. Small atrial septal defect

B. Large ventricular septal defect

C. Tetralogy of Fallot

D. Coarctation of the aorta

20. A 14-year-old runner develops sudden palpitations. ECG shows a regular narrow-complex tachycardia at 210/min. She is alert with normal blood pressure. What is the best initial intervention?

A. Synchronized cardioversion

B. Vagal maneuvers

C. Intravenous amiodarone

D. Chest compressions

21. A 5-year-old with sickle cell disease presents with fever of 39.4 C and appears ill. Which management is most appropriate?

A. Await blood culture results before antibiotics

B. Obtain cultures and promptly give parenteral broad-spectrum antibiotics

C. Give oral iron and discharge

D. Treat only if focal symptoms develop

22. A 9-year-old has morning stiffness, swelling of three joints for 8 weeks, and no systemic symptoms. Which diagnosis is most likely?

A. Oligoarticular juvenile idiopathic arthritis

B. Acute rheumatic fever

C. Septic arthritis

D. Systemic lupus erythematosus

23. A 13-year-old has obesity and acanthosis nigricans. Which test is appropriate to screen for type 2 diabetes?

A. Random insulin level

B. Hemoglobin A1c, fasting plasma glucose, or 2-hour oral glucose tolerance test

C. Urine ketones only

D. C-peptide level only

24. A 3-year-old has chronic diarrhea, abdominal distention, poor weight gain, and iron deficiency anemia after introduction of wheat. Which initial serologic test is preferred?

A. IgG antigliadin antibody alone

B. IgA tissue transglutaminase with total serum IgA

C. Anti-Saccharomyces cerevisiae antibody

D. Fecal calprotectin alone

25. A 5-week-old infant has tachypnea, hepatomegaly, weak femoral pulses, and higher blood pressure in the right arm than in the leg. Which diagnosis is most likely?

A. Coarctation of the aorta

B. Patent ductus arteriosus

C. Pulmonary valve stenosis

D. Total anomalous pulmonary venous return

26. A toddler suddenly coughs and develops unilateral wheezing while eating peanuts. Chest radiograph is normal. What is the best next step?

A. Reassurance because the radiograph is normal

B. Rigid bronchoscopy

C. Two-week trial of inhaled corticosteroid

D. Sweat chloride testing

27. An 8-year-old develops palpable purpura on the legs, ankle pain, and colicky abdominal pain after an upper respiratory infection. Urinalysis shows microscopic hematuria. What is the most likely diagnosis?

A. Immune thrombocytopenia

B. IgA vasculitis

C. Meningococcemia

D. Hemolytic uremic syndrome

28. A 12-day-old infant has fever, poor feeding, and lethargy. Which empiric antimicrobial regimen is most appropriate after cultures are obtained?

A. Ampicillin plus gentamicin

B. Ceftriaxone alone

C. Azithromycin alone

D. Vancomycin plus metronidazole

29. A 6-year-old develops periorbital edema, ascites, 4+ proteinuria, serum albumin 1.8 g/dL, and normal complement. Renal function is normal. What is the most likely diagnosis?

A. Minimal change nephrotic syndrome

B. Poststreptococcal glomerulonephritis

C. Hemolytic uremic syndrome

D. IgA nephropathy

30. A newborn has delayed passage of meconium, abdominal distention, and bilious vomiting. Rectal examination produces explosive stool. Which test confirms the suspected diagnosis?

A. Upper gastrointestinal series

B. Rectal suction biopsy

C. Fecal elastase

D. Meckel scan

31. A 10-year-old has proximal muscle weakness, a violaceous periorbital rash, and scaly papules over the metacarpophalangeal joints. What is the most likely diagnosis?

A. Systemic lupus erythematosus

B. Juvenile dermatomyositis

C. Duchenne muscular dystrophy

D. Henoch-Schonlein purpura

32. A 4-year-old boy has progressive proximal weakness, calf pseudohypertrophy, and a positive Gowers sign. Which test should be obtained first?

A. Serum creatine kinase

B. Muscle biopsy before any other testing

C. Acetylcholine receptor antibodies

D. Lumbar puncture

33. An 18-month-old has recurrent otitis, pneumonia, and persistent thrush. Growth is poor. Lymphocyte count is markedly low. Which disorder is most concerning?

A. Selective IgA deficiency

B. Severe combined immunodeficiency

C. Chronic granulomatous disease

D. Hereditary angioedema

34. A 7-year-old has recurrent deep abscesses caused by catalase-positive organisms. Dihydrorhodamine flow cytometry shows absent oxidative burst. What is the diagnosis?

A. Leukocyte adhesion deficiency

B. Chronic granulomatous disease

C. Chediak-Higashi syndrome

D. X-linked agammaglobulinemia

Questions 35-50: Intermediate to Advanced

35. A 3-year-old ingests an unknown amount of acetaminophen. The time of ingestion is known and the child is asymptomatic. When should the serum acetaminophen concentration be measured for use with the Rumack-Matthew nomogram?

A. Immediately on arrival only

B. At least 4 hours after ingestion

C. At 24 hours after ingestion

D. Only if aminotransferases are elevated

36. A 2-year-old has a button battery visible in the esophagus on radiograph. He is drooling but breathing comfortably. What is the required management?

A. Repeat radiograph in 24 hours

B. Immediate endoscopic removal

C. Give honey and discharge

D. Induce vomiting

37. A 9-year-old with diabetic ketoacidosis develops headache, bradycardia, and declining mental status during treatment. What is the most appropriate immediate therapy?

A. Rapid hypotonic fluid bolus

B. Mannitol or hypertonic saline for suspected cerebral edema

C. Intravenous sodium bicarbonate

D. Stop insulin permanently

38. A 6-year-old has fever, headache, nuchal rigidity, and a petechial rash. Which isolation precaution should be instituted immediately for suspected meningococcal disease?

A. Airborne precautions

B. Droplet precautions

C. Contact precautions only

D. Protective isolation

39. A 4-year-old has fever for 7 days, splenomegaly, cytopenias, triglycerides 320 mg/dL, ferritin 18,000 ng/mL, and low fibrinogen. Which diagnosis is most likely?

A. Hemophagocytic lymphohistiocytosis

B. Immune thrombocytopenia

C. Kawasaki disease

D. Transient erythroblastopenia of childhood

40. A 13-year-old has fatigue, weight loss, tremor, diffuse goiter, tachycardia, and exophthalmos. Which laboratory pattern is expected?

A. High TSH and low free T4

B. Low TSH and high free T4

C. High TSH and high free T4

D. Normal TSH and low free T4

41. A 15-year-old has primary amenorrhea, normal breast development, sparse pubic hair, a blind-ending vagina, and absent uterus on ultrasonography. Karyotype is 46,XY. What is the diagnosis?

A. Turner syndrome

B. Mullerian agenesis

C. Complete androgen insensitivity syndrome

D. Congenital adrenal hyperplasia

42. A 7-year-old has short stature, webbed neck, shield chest, and widely spaced nipples. Which cardiovascular abnormality is classically associated with this condition?

A. Coarctation of the aorta

B. Truncus arteriosus

C. Ebstein anomaly

D. Tetralogy of Fallot

43. A 2-day-old newborn has cyanosis that does not improve with supplemental oxygen. A single loud S2 is heard. Chest radiograph shows a narrow mediastinum. Which diagnosis is most likely?

A. Transposition of the great arteries

B. Ventricular septal defect

C. Atrial septal defect

D. Mild pulmonary stenosis

44. A 6-month-old has recurrent infections, hypocalcemic seizures, absent thymic shadow, and a conotruncal cardiac defect. Which genetic abnormality is most likely?

A. Trisomy 21

B. 22q11.2 deletion

C. 7q11.23 deletion

D. FMR1 expansion

45. An 11-year-old develops bloody diarrhea followed by pallor, oliguria, thrombocytopenia, and microangiopathic hemolytic anemia. What is the most appropriate initial management?

A. Platelet transfusion routinely

B. Supportive care with careful fluid and renal management

C. Antimotility medication

D. Empiric corticosteroids for all patients

46. A 12-year-old has chronic wet cough, recurrent sinusitis, and neonatal respiratory distress. Nasal nitric oxide is very low. Which diagnosis is most likely?

A. Cystic fibrosis

B. Primary ciliary dyskinesia

C. Alpha-1 antitrypsin deficiency

D. Foreign body aspiration

47. A 3-year-old has recurrent fasting hypoglycemia, hepatomegaly, lactic acidosis, hyperuricemia, and hyperlipidemia. Which disorder is most likely?

A. Glycogen storage disease type I

B. Medium-chain acyl-CoA dehydrogenase deficiency

C. Maple syrup urine disease

D. Phenylketonuria

48. A 5-day-old becomes lethargic and tachypneic after feeds. Ammonia is markedly elevated, glucose is normal, and there is respiratory alkalosis without ketosis. Which category of disorder is most likely?

A. Urea cycle disorder

B. Organic acidemia

C. Fatty acid oxidation defect

D. Congenital hyperinsulinism

49. A 10-year-old has recurrent episodes of gross hematuria within 24 hours of upper respiratory infections. Complement levels are normal. What is the most likely diagnosis?

A. Poststreptococcal glomerulonephritis

B. IgA nephropathy

C. Membranoproliferative glomerulonephritis

D. Minimal change disease

50. An 8-year-old with nephrotic syndrome develops fever and diffuse abdominal pain. Ascitic fluid has a neutrophil count of 600/mm3. Which organism is a classic cause of this complication?

A. Streptococcus pneumoniae

B. Mycoplasma pneumoniae

C. Bordetella pertussis

D. Clostridium tetani