PEDIATRIC BOARD CERTIFICATION AND RECERTIFICATION MULTIPLE CHOICE QUESTIONS AND ANSWERS

Volume 3

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PEDIATRIC BOARD

CERTIFICATION AND RECERTIFICATION

MULTIPLE CHOICE QUESTIONS AND ANSWERS

Volume 3

AN EXCELLENT GUIDE

AN ESSENTIAL TOOL FOR BOARD CERTIFICATION

by

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for

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DEDICATION

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INTRODUCTION

This is the first edition of Pediatric Board Certification and Recertification Multiple Choice Questions and Answers. A total of 1012 questions and answers are presented here.

This book will help candidates to prepare for the examination. You are well aware that reading only multiple choice questions and answers is not enough to pass the Board Examination.

First, try to answer these questions by yourself; then evaluate your knowledge. If you have answered more than 85% correctly, you will probably do well in the examination. I have written this book after repeated requests from candidates and residents for a practice book that replicates the exam format.

My sincere thanks go to Josh Furman for his continued support, Preeti Agarwal and Atul Kumar (atul_kumar@apyl.com) for their first-rate desktop publishing expertise, Dr. Azfar Shabbir, M.D., Dr. Marion Tamesis, M.D., Dr. Mahmood Benham, M.D., Dr. Roland Tayaba, M.D., Dr. Maria Macapagal, M.D., Nivedita Kanjilal, Anirban Kanjilal for their support.

Good luck to all of you.

D. Kanjilal, M.D.

1. The most common site of pulmonary atelactasis in children is:
   a) Right upper lobe
   b) Right middle lobe
   c) Right lower lobe
   d) Left upper lobe
   e) Left lower lobe

2. A routine newborn physical examination of a newborn reveals a grade 2/6, short, harsh systolic murmur at the apex. The newborn is completely asymptomatic. The most likely diagnosis is:
   a) Atrial septal defect
   b) Ventricular septal defect
   c) Mitral stenosis
   d) Mitral regurgitation
   e) Patent ductus arteriosus

3. All of the following conditions can present with spherocytosis in a peripheral blood smear **except**:
   a) ABO incompatibility
   b) Thermal injury
   c) Wilson disease
   d) Autoimmune hemolytic anemia
   e) Pneumococcal sepsis

4. A 7-day-old newborn girl appears for a routine physical check-up. Her mother noticed a grapelike mass protruding through the child's vagina. The girl is asymptomatic. The most likely diagnosis is:
   a) Vaginal prolapse
   b) Rectovaginal fistula
   c) Urethral prolapse
   d) Uterine prolapse
   e) Sarcoma botryoides

5. A VCUG study in a male newborn reveals massive bilateral ureteral dilatations due to a severe vesicoureteral reflux. The urinary bladder is very distended. There is no urethral obstruction. There is absence of neuropathic dysfunction. The newborn is receiving prophylactic antibiotic. The preferred therapy is:
   a) Resection of posterior urethral valve
   b) Dilatation of urethra
   c) Removal of prostate
   d) Permanent vesicostomy
   e) Reimplantation of ureters into an urinary bladder

6. The most important hormone responsible for the onset and progression of puberty is:
   a) Estrogen
   b) ACTH
   c) TSH
   d) Progesterone
   e) GnRH

7. A 2½ years boy appears with intermittent loose stools for the past 1 month. Stools typically occur during the day and not overnight. The boy is otherwise healthy. The growth and development are normal. The most likely diagnosis is:
   a) Chronic enteritis
   b) Rotavirus enteritis
   c) Salmonella enteritis
   d) Food allergy
   e) Toddler's diarrhea

8. The best diagnostic antibody titer in patients with a streptococcal skin infection is:
   a) Antistreptolysin O titer is elevated.
   b) Serum C3 level is decreased.
   c) Serum C3 level is increased

d) Antistreptolysin O titer is decreased
e) Deoxyribonuclease (DNase) B antigen is present.

9. A 5-year-old boy appears with an abrupt onset of an increased urinary frequency for the last 3 days. He has been voiding every 10-15 minutes during the day. The mother denies history of fever, abdominal pain, dysuria, nocturia, or daytime incontinence. An urinalysis result is normal. The next step in management is:
a) Trimethoprim-sulfamethoxazole
b) Restriction of fluid intake
c) Renal ultrasonography
d) A 24-hour urine sample for calcium
e) Reassurance

10. The following statement is **not** true about Klinefelter syndrome:
a) Maternal age is advanced in most cases.
b) An extra X chromosome is maternal origin in majority of cases.
c) This syndrome is mot commonly due to meiotic nondisjunction of a X chromosome.
d) About 3% of infertile males have a Klinefelter syndrome.
e) About 1% of mentally retarded males have this syndrome.

11. Wolfram syndrome includes all of the following **except**:
a) Deafness
b) Optic atrophy
c) Diabetes insipidus
d) Diabetes mellitus
e) Chromosome 5 involvement

12. An infant appears with an inverted V-shaped upper lip, thin cheeks, concave temporalis muscles, marrow head, and high-arched palate. The most likely diagnosis is:
a) Myotonic muscular dystrophy
b) Myotonic chondrodystrophy
c) Landouzy-Dejerine disease
d) Thomsen disease
e) Emery-Dreifuss muscular dystrophy

13. All of the following conditions can cause optic neuritis **except**:
a) Devic disease
b) Lead poisoning
c) Vincristine therapy
d) Corticosteroids
e) Bacterial meningitis

14. Alopecia areata is associated with all of the following conditions **except**:
a) Cataract
b) Atopy
c) Hashimoto thyroiditis
d) Nail dystrophy
e) Hyperadrenalism

15. A 15-year-old boy appears with swelling, tenderness, and increased prominence of the right tibial tubercle. He participated in high school sports. The following therapy is **not** beneficial in this condition:
a) NSAIDs
b) Rest
c) Restriction of activities
d) Knee immobilizer
e) Isometric exercise program

16. The following statement is **not** true about a poisoning in children:
a) The most common site of poisoning is home.
b) Most commonly occurs under 5 years of age.

c) Ingestion is the most common route of poisoning.
d) Majority of cases involve nondrug products.
e) Education regarding prevention of poisoning should be discussed in well-child visits, after a child is mobile.

17. The preferred oral therapy for an infection in human bite wounds is:
a) Penicillin
b) Doxycycline
c) Ciprofloxacin
d) Erythromycin
e) Amoxicillin-clavulanate

18. The preferred intravenous therapy for an infection in animal bite wounds is:
a) Cefotaxime
b) Ceftriaxone
c) Ciprofloxacin
d) Penicillin
e) Ampicillin and sulbactum

19. Normal glomerular filtration rate (GFR) in a full-term newborn **at birth** is:
a) 1-2 mL/min
b) 2-4 mL/min
c) 4-6 mL/min
d) 6-8 mL/min
e) 8-20 mL/min

20. Normal GFR in a full-term newborn by **2 to 3 days** of life is:
a) 4-6 mL/min
b) 6-8 mL/min
c) 8-20 mL/min
d) 20-30 mL/min
e) 30-50 mL/min

21. The GFR in a normal full-term infant reaches an adult value by:
a) 1-2 months of age
b) 3-5 months of age
c) 6-9 months of age
d) 9-12 months of age
e) 12-24 months of age

22. Pulmonary hypoplasia in newborns is most likely due to all of the following conditions **except**:
a) Potter syndrome
b) Oligohydramnios
c) Diaphragmatic hernia
d) Spinal cord lesions
e) Pneumothorax

23. The preferred therapy for patients with a chronic cholestasis without biliary obstruction is:
a) Kasai operation
b) Phenytoin
c) Discontinue fatty foods
d) Ursodeoxycholic acid
e) Gentamicin

24. A complication of using a hydrogen pump inhibitor (e.g., omeprazole, lansoprazole) is:
a) Acquired pyloric stenosis
b) Diarrhea
c) Vomiting
d) Gastroesophageal narrowing
e) Bacterial overgrowth

25. The usual site of obstruction in infants with an upper airway obstruction is:
    a) Larynx
    b) Trachea
    c) Nasopharynx
    d) Oropharynx
    e) Enlarged tongue

26. Tonsillectomy is indicated in all of the following conditions **except**:
    a) A patient who experienced six tonsillar infections that were treated with antibiotics in the preceding year.
    b) A patient who experienced five tonsillar infections that were treated with antibiotics in each of the preceding two years.
    c) A patient who experienced three tonsillar infections that were treated with antibiotics in each of the preceding three years.
    d) A patient who experienced four tonsillar infections that were treated with antibiotics in each of the preceding three years.
    e) A patient who experienced seven tonsillar infections that were treated with antibiotics in the preceding year.

27. The most common organism in patients with a empyema (purulent pleurisy) is:
    a) Staphylococcus aureus
    b) Group A Streptococcus
    c) Tuberculosis
    d) E. coli
    e) Streptococcus pneumoniae

28. The most common organism in patients with a post-traumatic empyema is:
    a) S. pneumoniae
    b) S. aureus
    c) E. coli
    d) Pseudomonas
    e) S. epidermidis

29. The most common cause of gross hematuria is:
    a) Urinary tract infections
    b) Meatal stenosis
    c) Trauma
    d) IgA nephropathy
    e) Glomerulonephritis

30. The most common cause of chronic glomerular disease is:
    a) IgA nephropathy
    b) SLE
    c) Glomerulonephritis
    d) Henoch-Schonlein purpura
    e) Reiter syndrome

31. The renal sonogram in a preterm infant reveals nephrocalcinosis. The most likely cause is:
    a) Intravenous calcium therapy
    b) Furosemide
    c) Gentamicin
    d) Vancomycin
    e) Hydrochlorthiazide

32. A child appears with a flank pain and microscopic hematuria. A diagnosis of urinary lithiasis is made. Suddenly, the child becomes asymptomatic. The most likely location of the stone is:
    a) Upper ureter
    b) Renal pelvis
    c) Lower ureter
    d) Urethra
    e) Urinary bladder

33. The most common presentation in patients with congenital hypothyroidism is:
    a) Umbilical hernia
    b) Constipation
    c) Jaundice
    d) Poor feeding
    e) Asymptomatic

34. The most newborn screening programs in USA measure the following parameter to rule out congenital hypothyroidism is:
    a) T_3
    b) T_4
    c) TSH
    d) TRH
    e) Free-T_4

35. The most common cause in newborns with 46, XX intersex and ambiguious genitalia is:
    a) Maternal use of testosterone during pregnancy.
    b) Aromatase deficiency
    c) Glucocorticoid receptor gene mutation
    d) Maternal ovarian androblastomas
    e) Congenital adrenal hyperplasias

36. The most common site of the vanishing testes in patients with XY gonadal agenesis syndrome is:
    a) Abdomen
    b) Scrotum
    c) Superficial inguinal ring
    d) Deep inguinal ring
    e) Inguinal canal

37. The cause of undescended testes in patients with a generalized myopathy is:
    a) Decreased dehydrotestosterone level
    b) Decreased testosterone level
    c) Weakness of the gubernaculum
    d) Absence of Y chromosome
    e) Weakness of the Y chromosome

38. The most frequent cause of toxic neuropathies in children is:
    a) Lead poisoning
    b) Organophosphates
    c) Vincristine
    d) Cisplatin
    e) Idiopathic

39. The most important risk factor in patients with a retinopathy of prematurity is:
    a) Hyperoxia
    b) Apnea
    c) Infection
    d) Hypoxia
    e) Prematurity

40. The first retinal sign in patients with a hypertensive retinopathy is:
    a) Edema
    b) Cotton-wool spots
    c) Flame-shaped hemorrhages
    d) Papilledema
    e) Generalized constrictions of retinal arterioles.

41. The most common organism in neonates with an acute otitis media is:
    a) S. aureus
    b) Streptococcus pneumoniae

c) Group B Streptococcus
d) Pseudomonas aeruginosa
e) Haemophilus influenzae

42. The most common organism in children with an acute otitis media is:
a) H. influenzae
b) S. aureus
c) P. aeruginosa
d) Moraxella catarrhalis
e) S. pneumoniae

43. Risk factors for otitis media include all of the following **except**:
a) Submucous cleft palate
b) Down syndrome
c) Low birthweight
d) Craniofacial anomalies
e) Unrepaired cleft palate

44. In a patient with ataxia-telangiectasia, telangiectasias first appear on:
a) Nasal bridge
b) Bulbar conjunctivae
c) External ears
d) Malar areas
e) Hard palate

45. The preferred therapy for patients with a pediculosis capitis is:
a) 1% of lindane shampoo (Kwell) for 10 minutes with a repeat application in 7-10 days.
b) Natural pyrethrin shampoo (RID) for 10 minutes with a repeat application in 7-10 days
c) A-200 Pyrinate liquid shampoo for 10 minutes with a repeat application in 7-10 days
d) 'Triple X' shampoo for 10 minutes with a repeat application in 7-10 days.
e) 0.5% malathione oris permethrin 1% cream rinse (Nix) applied for 10 minutes with a repeat application in 7-10 days.

46. The nail-patella syndrome includes all of the following **except**:
a) Dysplasia of nails
b) Absence of patella
c) Hypoplasia of quadriceps muscles
d) Spurs extending from iliac bones
e) Abnormalities of the elbow

47. A child appears with generalized pain, paraesthesias, and acral rashes. Rashes are pink, papular, and pruritic. Subsequently, rashes spread over the face. The child also has anorexia, diaphoresis, apathy, insomnia, and irritability. A physical examination reveals tachycardia, hypertension, tremors, and hypotonia of pectoral and pelvic girdles. The mother denies ingestion of a medication. The most likely diagnosis is:
a) Arsenic poisoning
b) Lead poisoning
c) Pink disease
d) Copper poisoning
e) Selenium poisoning

48. The preferred antidote in patients with a methanol poisoning is:
a) Ethanol
b) BAL
c) Deferoxamine
d) Lidocaine
e) N-acetylcysteine

49. The most common injury in daycare centers in USA is:
a) Rat bites
b) Traction hair loss

c) Human bites
d) Nursemaid's elbow
e) Slapped cheek redness

50. The American Academy of Pediatrics guidelines to reduce the risk of sudden infant death syndrome (SIDS) include all of the following **except**:
a) All infants should sleep in the supine position.
b) Infants should not sleep on the soft position.
c) Parents should not share a bed with the infant regardless of their smoking or drinking habit.
d) Infants should not be overbundled and overheated.
e) Home respiratory, cardiac, and oxygen saturation, monitoring are not recommended for all children.

51. The most common cardiovascular anomaly in patients with Alagille syndrome is:
a) Transposition of great vessels
b) VSD
c) ASD
d) Tetralogy of Fallot
e) Peripheral pulmonic stenosis

52. An initial therapy in infants with cholestatic jaundice is:
a) Phenobarbital
b) Gentamicin
c) Vitamin K
d) Vitamin A
e) Ursodeoxycholic acid

53. The most common foreign body in patients with aspiration is:
a) Popcorn
b) Dried beans
c) Sunflower seeds
d) Watermelon seeds
e) Nuts

54. A child appears with hemoptysis. A screening method includes all of the following tests except:
a) Complete blood counts
b) Chest x-ray
c) Prothrombin time
d) Chest CT scan
e) Partial thromboplastin time

55. The risk of recurrence of DiGeorge syndrome if a mother has 22q11 deletion is:
a) 4%
b) 10%
c) 25%
d) 50%
e) 66%

56. A 22q11 deletion is noted in the following syndrome:
a) Shprintzen syndrome
b) William syndrome
c) Alagille syndrome
d) Noonan syndrome
e) Holt-Oram syndrome

57. CATCH 22 acronym includes all of the following features **except**:
a) CNS defects
b) Abnormal facies
c) Thymic aplasia

d) Cleft palate
e) hypocalcemia

58. A newborn is diagnosed with a Shone complex. The following features are present in this newborn:
a) Right heart obstructive lesions
b) Left-sided cardiac obstructive lesions
c) Right-sided cardiac nonobstructive lesions
d) Left-sided nonobstructive lesions
e) Coarctation of the aorta

59. In a patient with hemoglobin H disease in alpha-thalassemia, the number of alpha-globin genes deletion is:
a) None
b) One
c) two
d) three
e) Four

60. The most common general adverse effect of radiotherapy is:
a) Alopecia
b) Nausea
c) Vomiting
d) Diarrhea
e) Dermatitis

61. The side effect of long-term use of corticosteroids is:
a) Infertility
b) Cataracts
c) Hepatoxicity
d) Scoliosis
e) Cardiomyopathy

62. A child appears with a raccoon eye. His mother denies history of trauma. The most likely diagnosis is:
a) Hepatoblastoma
b) Rhabdomyosarcoma
c) Non-Hodgkin lymphoma
d) Wilms tumor
e) Neuroblastoma

63. The following condition is **not** true about Dent disease:
a) Nephrolithiasis
b) Hypophosphatemia
c) Rickets
d) Autosomal dominant
e) X-linked

64. A therapy in patients with idiopathic hypercalcuria may include all of the following **except**:
a) Potassium citrate
b) Restriction of sodium
c) Hydrochlorthiazide
d) No restriction of dietary calcium
e) Dietary restriction of calcium

65. A 16-year-old boy appears in an ER with a painful, severe swelling of the penile shaft that he noticed after the sexual intercourse. The next step in management is:
a) Surgical exploration
b) Cold compress
c) Corticosteroids
d) Acetaminophen
e) Indomethacin

66. The conservative therapy for patients with a prolactinoma is:
    a) ACTH
    b) Radiotherapy
    c) Bromocriptine
    d) Transfrontal surgical resection
    e) Transsphenoidal surgical resection

67. The median age of sperm production is:
    a) 12 years
    b) 13 years
    c) 14 years
    d) 15 years
    e) 16 years

68. The average age at menarche in American girls is:
    a) 10-11 years
    b) 11-12 years
    c) 12.5-13 years
    d) 13.5-14 years
    e) 14.5-15 years

69. The most common karyotype in patients with a true gonadal intersex is:
    a) 46, XY
    b) 46, XX
    c) 46, XX / 46, XY
    d) 45, X
    e) Chi 46, XX / 46, XY

70. A child appears with diabetic ketoacidosis (DKA). Her weight is 40 kg. A therapy in first hour after admission may include all of the following **except**:
    a) A bolus of 400 mL of 0.9% sodium chloride solution
    b) Insulin drip 2 U/hour
    c) Intravenous mannitol 40 grams for cerebral edema
    d) Monitor input and output
    e) High-protein diet

71. A child is diagnosed with diabetic ketoacidosis. His weight is 40 kg. Initially, he received intravenous 400 mL of 0.9% Nacl in the first hour. The fluid requirement per hour for the next 23 hours is:
    a) 177 mL/hour
    b) 200 mL/hour
    c) 217 mL/hour
    d) 232 mL/hour
    e) 250 mL/hour

72. A surgical repair was performed in a newborn with the lumbosacral meningomyelocele. The newborn is receiving prophylactic antibiotics. The child is clinically stable. The most likely procedure needed for this child is:
    a) Surgical correction for the club foot
    b) Vesicostomy
    c) Ventriculoperitoneal shunt
    d) Pyelostomy
    e) Appendectomy

73. All of the following conditions may appear with a sensorineural hearing loss (SNHL) later in life **except**:
    a) Down syndrome
    b) Alstrom syndrome
    c) Turner syndrome
    d) von Recklinghausen disease
    e) Alport syndrome

74. The hallmark of all types of pediculosis is:
    a) Redness
    b) Scratch marks
    c) Papules
    d) Dark pimentations
    e) Pruritus

75. The most common type of ankle injury is:
    a) Foot planted with the medial malleolus of tibia moving toward the ground.
    b) Foot dorsiflexed with the elevation of the medial malleolus of tibia
    c) Foot dorsiflexed with the elevation of the lateral malleolus of fibula
    d) Foot planted with the lateral fibula moving toward the ground
    e) Foot planted with the medial malleolus of tibia and the lateral malleolus of fibula moving away from the ground

76. A 10-year-old boy appears with a pain in the right foot at the insertion of the Achilles tendon on the calcaneus. The pain is increased with walking and running. Management of this condition does **not** include:
    a) Massage
    b) heel lifts
    c) Hot compress
    d) Orthotics
    e) Stretching and strengthening of Achilles' tendon

77. A 16-year-old girl is brought to the ER by an ambulance. She is lethargic, drowsy, and unresponsive. She required intubation and mechanical ventilation. An empty bottle of amitriptyline was found in her room. She developed tachycardia, hypotension, and seizure activities. Management includes all of the following **except**:
    a) Physostigmine
    b) Sodium bicarbonate
    c) Activated charcoal
    d) Intravenous fluids
    e) Benzodiazepine

78. A 10-month-old appears with coughing, rhinorrhea, sneezing, mild respiratory distress, and fever (up to 102° F). A physical examination reveals wheezes, fine crackles, and prolonged expiratory phase of breathing. Management may include all of the following **except**:
    a) Humidified oxygen
    b) Ribavirin
    c) NPO
    d) Nebulized epinephrine
    e) RSV immune globulin

79. A surgical repair of the coarctation of aorta was performed in an infant. The next day after surgery, the infant developed vomiting, abdominal distension, bloody stools, hypertension, and leukocytosis. The most likely etiology is:
    a) Gastric ulcers
    b) Duodenal ulcers
    c) Intestinal perforations
    d) Gram-negative sepsis
    e) Mesenteric arteritis

80. A high-output cardiac failure occurs in the following condition:
    a) Myocarditis
    b) Constrictive pericarditis
    c) Large systemic arteriovenous fistulas
    d) Aortic stenosis
    e) Hypoplastic left heart syndrome

81. All of the following are complications of recombinant human erythropoietin therapy **except**:
    a) Seizures
    b) Hypotension
    c) Iron deficiency

d) Pure red cell aplasia
e) Clotting of vascular access

82. A 10-year-old boy appears with a gradual onset of pain in the left scrotum. A physical examination reveals a 'blue dot sign' on the left scrotum and a tender 4 mm mass on the upper pole of the left testis. The most likely diagnosis is:
a) Varicocele
b) Testicular torsion
c) Epididymitis
d) Testicular tumor
e) Torsion of the appendix testis

83. A 16-year-old girl appears with a recurrent multiple vulvar lesions for the last 3 days. All lesions are tender, each 1-10 mm in diameter, and have a grayish-yellow base. She denies sexual activities. The next step in management is:
a) Amoxicillin
b) Acyclovir
c) Nystatin
d) Erythromycin
e) Corticosteroids

84. A 3-year-old girl appears with menstruation and bilateral enlargement of breasts. A physical examination reveals hyperpigmentation, normal height, normal weight, and normal osseous age. The x-ray of face and skull usually reveals:
a) Prominent nasal bones
b) Thickening of the orbital bones
c) Premature eruption of teeth
d) Narrowing of the sinuses
e) Enlarged maxillary sinuses

85. The following statement is **not** true about autoimmune hypoparathyroidism:
a) Autosomal recessive
b) The gene is located on chromosome 21q22.
c) Hypoparathyroidism occurs after candidiasis
d) Addison disease occurs after hypoparathyroidism
e) Candidiasis occurs after Addison disease

86. A nutritional requirement for patients with type 1 diabetes mellitus include all of the following **except**:
a) About 30% of energy should come from proteins.
b) Less than 30% of energy should come from fats.
c) The percentage of energy derived from carbohydrate varies.
d) Less than 10% should be saturated fats.
e) The amount of fiber is more than 20 grams per day.

87. The most common associated abnormality in Dandy-Walker malformation is:
a) Cerebellar ataxia
b) Delayed motor developments
c) Agenesis of posterior cerebellar vermis
d) Agenesis of corpus callosum
e) Hydrocephalus

88. The initial preferred therapy for patients with mild migraine is:
a) Acetaminophen
b) Chlorpromazine
c) Ergotamine tartrate
d) Dimenhydrinate
e) Sumatriptan

89. A 4-year-old boy appears clumsy, falls easily, and trips over his own feet. A physical examination reveals stork like contour of the legs, wasted muscles of the anterior compartment of the legs, weakness in dorsiflexion of the lets, increased threshold for pain and temperature sensations. The preferred diagnostic study is:
a) Serum creatine kinase

b) CSF
c) Nerve conduction velocities
d) Electromyography
e) Sural nerve biopsy

90. The most common cause of hearing loss in children is:
a) Otitis externa
b) Otitis interna
c) Otitis media
d) Eighth cranial nerve defects
e) Rudimentary external ear

91. The most common cause of morbidity in patients with Marfan syndrome is:
a) Progressive aortic root dilatation
b) Scoliosis
c) Dislocated lens
d) Funnel chest
e) Progressive mitral valve prolapse

92. The most common cardiac defect in patients with Marfan syndrome is:
a) Aortic root dilatation
b) Aortic stenosis
c) Mitral valve prolapse
d) Mitral stenosis
e) Coarctation of aorta

93. A routine physical examination of a newborn reveals a sacral dimple. All of the following conditions increase the possibility of spinal dysraphism **except**:
a) The size is more than 5 mm
b) Associated with a mass
c) Associated with hair
d) Associated with a nevus flammeus
e) The distance from the anus is 2 cm

94. A 1-year-old boy appears with scarlatiniform erythematous rash over the face, trunk, and extremities. He also has conjunctivitis, crusting and fissuring around mouth, nose, and eyes. An epidermis is easily separated in response to gentle force. The management includes all of the following **except**:
a) Topical antibiotics
b) Burow solution
c) Lubrication with emollient
d) Nafcillin
e) Correct electrolyte imbalance

95. A 2-year-old girl appears with a sudden onset of nausea, vomiting, diarrhea, and abdominal pain for the last 2 hours. Mother denies ingestion of medications. A physical examination reveals epigastric tenderness. An abdominal x-ray reveals radiopaque shadows in the left upper abdominal area. The preferred therapy is:
a) Sodium bicarbonate
b) N-acetylcysteine
c) EDTA
d) Fomepizole
e) Deferoxamine

96. A routine newborn physical examination reveals ‘blueberry muffin’ lesions on the skin. The most likely diagnosis is:
a) Pseudomonas sepsis
b) Leukemia
c) Neuroblastoma
d) Pheochromocytoma
e) Benign pustular melanosis

97. In full-term infants, iron-deficiency anemia solely due to an inadequate dietary iron intake occurs between:
    a) 1-3 months of age
    b) 3-6 months of age
    c) 6-9 months of age
    d) 9-24 months of age
    e) 24-30 months of age

98. A megaloblastic anemia due to folic acid deficiency occurs most commonly between:
    a) 1-3 months of age
    b) 4-7 months of age
    c) 8-11 months of age
    d) 12-15 months of age
    e) 16-20 months of age

99. In full-term infants, physiologic anemia usually develops after:
    a) 4 weeks of age
    b) 5 weeks of age
    c) 6 weeks of age
    d) 7 weeks of age
    e) 8 weeks of age

100. In preterm infants, physiologic anemia usually develops as early as:
    a) 2 weeks of age
    b) 3 weeks of age
    c) 4 weeks of age
    d) 5 weeks of age
    e) 6 weeks of age

101. A patient with bronchial asthma develops persistent atelactasis of the left lung. A combined therapy with bronchodilators and corticosteroids fails to improve an atelactasis. The preferred therapy is:
    a) Prone position
    b) Vigorous chest physiotherapy
    c) Vigorous suctioning
    d) N-acetylcysteine
    e) Recombinant human DNase (rhDNase)

102. A child is intubated for respiratory failure. An objective of mechanical ventilation is the following:
    a) Not to normalize arterial blood gas tension
    b) Not to maintain an adequate gas exchange
    c) Oxygen saturation should be maintained between 95-100%.
    d) Arterial PCO_2 should be maintained between 35-45 mm Hg.
    e) Arterial pH should be maintained between 7.35-7.45.

103. All of the following organisms cause acute pharyngitis in children **except**:
    a) Virus
    b) Group A beta-hemolytic Streptococcus
    c) Group C Streptococcus
    d) Haemophilus influenzae
    e) Arcanobacterium hemolyticum

104. The type of streptococcal pyrogenic exotoxins (SPE) strongly associated with scarlet fever is:
    a) SPE-A
    b) SPE-B
    c) SPE-C
    d) SPE-D
    e) SPE-E

105. The most common mode of inheritance in patients with Romano-Ward syndrome is:
    a) Autosomal recessive

b) Autosomal dominant
c) X-linked recessive
d) X-linked dominant
e) Multifactorial

106. The sudden death in children is most commonly involved the following organ system:
a) CNS
b) Pulmonary
c) Cardiac
d) Gastrointestinal
e) Hepatic

107. The following factor reduces a risk of SIDS (sudden infant death syndrome):
a) Breast feeding
b) Prone (and side) sleep position
c) Pacifier (dummy) use
d) Male gender
e) Recent febrile illness

108. Risk of SIDS is highest between:
a) 0-1 month of age
b) 1-2 months of age
c) 2-4 months of age
d) 4-6 months of age
e) 6-9 months of age

109. Posteroanterior x-ray of a neck reveals a "steeple sign". The most likely diagnosis is:
a) Fracture clavicle
b) Fracture cervical vertebra
c) Croup
d) Laryngeal polyps
e) Tracheoesophageal fistula

110. Lateral x-ray of the upper airway in a 2-year-old boy reveals a "thumb sign". The most likely diagnosis is:
a) Laryngeal polyps
b) Epiglottitis
c) Subglottic hemangioma
d) Laryngeal edema
e) Subglottic stenosis

111. All of the following stool findings represent secretory diarrhea in a patient **except**:
a) pH is less than 5
b) Absence of reducing substance
c) Sodium contents are more than 70 mEq/L
d) Volume is more than 200 mL/day
e) Diarrhea continues despite fasting

112. All of the following stool findings represent osmotic diarrhea in a patient **except**:
a) pH is less than 5
b) Presence of reducing substance
c) Sodium contents are less than 70 mEq/L
d) Volume is more than 200 mL/day
e) Diarrhea stops in response to fasting

113. A child was diagnosed with an incarcerated inguinal hernia. The emergency surgery was performed. The following complication noted after incarceration of inguinal hernia is:
a) Scrotal necrosis
b) Cutaneous fistulas
c) Testicular hypertrophy

d) Hydrocele
e) Testicular atrophy

114. A preterm male infant is diagnosed with a right inguinal hernia. His present weight is 1400 grams. The hernia should be repaired when the infant weighs between:
a) 1400-1600 grams
b) 1600-1800 grams
c) 1800-2000 grams
d) 2000-2500 grams
e) 2500-3500 grams

115. The following statement is **not** true in patients with Aagenaes syndrome:
a) The chromosome 14 is involved.
b) Lymphedema of the lower extremities is present.
c) The patients are asymptomatic between episodes.
d) The patients have an intrahepatic cholestasis.
e) The patients have elevated liver enzymes, alkaline phosphatase, and bile acids during an episode.

116. All of the following findings are present in patients with a Byler disease **except**:
a) Failure to thrive
b) Steatorrhea
c) Pruritus
d) Presence of bile duct paucity
e) Low gamma-glutamyl transpeptidase levels

117. The first symptom noted in patients with a common cold is:
a) Nasal congestion
b) Cough
c) Fever
d) Sore throat
e) Runny nose

118. A 7-year-old boy appears with cough, mild fever, nasal obstruction, and rhinorrhea for the last 5 days. The symptoms began with sore throat about 7 days ago. The mother also noted a change in the color and consistency of the nasal secretions. A physical examination reveals a stuffy nose, swollen, erythematous nasal turbinates, and mildly injected throat. The next step in management is:
a) Amoxicillin
b) Erythromycin
c) Cefuroxime
d) Amoxicillin-clavulanate
e) Symptomatic therapy

119. A nasal secretion of a child reveals predominant polymorphonuclear leukocytes. The most likely diagnosis is:
a) Rhinovirus infection
b) Haemophilus influenzae infection
c) Allergic rhinitis
d) Moraxella catarrhalis infection
e) Group A beta-hemolytic Streptococcus infection

120. A nasal secretion of a child reveals predominant eosinophils. The most likely diagnosis is:
a) Rhinovirus infection
b) Streptococcus pneumoniae infection
c) Influenza virus infection
d) Respiratory syncitial virus
e) Allergic rhinitis

121. A 5 year-old-boy appears with a loss of language skills for the last 1 month. His mother also noted focal jerky movements of the upper and lower extremities. The child is irritable and has a poor attention span. He was developmentally normal prior to this episode. EEG studies are normal. EEG studies during sleep are also normal. He has a normal hearing. Head MRI and CT scans are normal. The position emission tomography (PET) scan result reveals a unilateral hypometabolism. The preferred therapy is:
a) Phenobarbital
b) Clobazam
c) Phenytoin
d) Carbamazepine
e) Valproic acid

122. The preferred surgical therapy for patients with Landan-Kleffner syndrome is:
a) Frontal lobectomy
b) Thalamectomy
c) Subpial transection
d) Partial removal of the temporal lobe
e) Partial removal of the parietal lobe

123. A newborn failed otoacoustic emissions (OAEs) testing. The next step in management is:
a) CT scan of the internal ear
b) MRI of the middle ear
c) Myringotomy
d) X-ray of the mastoid bone
e) Auditory brainstem evoked responses (ABR)

124. The most common cause of orbital cellulitis in children is:
a) Conjunctivitis
b) Paranasal sinusitis
c) Trauma
d) Eyelid infections
e) Nasolacrimal duct infections

125. A fundus examination of the child reveals a refractile, yellowish, multinodular cystic lesions arising from the optic disc. The most likely diagnosis is:
a) Toxoplasmosis
b) CMV
c) Sturge-Weber syndrome
d) Tuberous sclerosis
e) von Recklinghausen disease

126. A measurement of hemoglobin A_{1C} in a diabetic patient usually represents the blood glucose concentration:
a) Preceding 1-2 months
b) Preceding 2-3 months
c) Preceding 3-6 months
d) Preceding 6-9 months
e) Preceding 9-12 months

127. A value of hemoglobin A_{1C} is falsely elevated in the following condition:
a) Sickle cell disease
b) Iron deficiency anemia
c) Polycythemia
d) Chronic renal failure
e) Thalassemia

128. A value of hemoglobin A_{1C} is falsely reduced in the following condition:
a) Physiologic anemia
b) Iron deficiency anemia
c) Folate deficiency
d) Sickle cell disease
e) Hereditary spherocytosis

129. The value of hemoglobin A_{1C} in a patient is 5.8%. The most likely diagnosis is:
   a) Normal
   b) Well controlled diabetes
   c) Fair controlled diabetes
   d) Poor controlled diabetes
   e) Diabetes insipidus

130. The most common cardiac lesion in patients with a tuberous sclerosis is:
   a) VSD
   b) Hypopigmented myocardium
   c) Hypopigmented pericardium
   d) Rhabdomyomas
   e) ASD

131. The most common renal lesion in patients with a tuberous sclerosis is:
   a) Renal atrophy
   b) Acute glomerulonephritis
   c) Hamartomas
   d) Renal vein thrombosis
   e) Renal artery stenosis

132. A child is diagnosed to have a tuberous sclerosis. Suddenly, he appears with a pain in the right chest. A chest x-ray reveals right pneumothorax. The most likely associated underlying pulmonary finding is:
   a) Staphylococcal pneumonia
   b) Angiomyolipomas
   c) Pneumococcal pneumonia
   d) Tuberculosis
   e) Pulmonary hemorrhage

133. In a patient with Terson syndrome, retinal, subhyaloid, and vitreous hemorrhages are associated with:
   a) Intraventricular hemorrhages
   b) Subdural hemorrhages
   c) Epidural hemorrhages
   d) Brainstem hemorrhage
   e) Subarachnoid hemorrhages

134. A 12-year-old girl is admitted in PICU after a motor vehicle accident. She suffered from both head and chest injuries. An opthalmologic examination reveals retinal hemorrhages, cotton-wool spots, swollen discs, and decreased vision. The most likely diagnosis is:
   a) Retinitis pigmentosa
   b) Retinal detachment
   c) Pituitary hemorrhages
   d) Increased ADH secretion
   e) Purtscher retinopathy

135. The first laboratory abnormality noted in patients with familial hypophosphatemia is:
   a) Slightly reduced serum calcium levels
   b) Moderate reduced serum phosphate levels
   c) Increased urinary excretions of phosphate
   d) Elevated serum alkaline phosphatase activities
   e) Occasionally, elevated serum parathyroid hormone (PTH) is noted.

136. The clinical manifestation in patients with familial hypophosphatemia is:
   a) Tetany
   b) Pectus deformity
   c) Myopathy
   d) Rachitic rosary
   e) Bowing of lower extremities

137. The therapy in patients with a chronic pharyngotonsillitis and group A beta-hemolytic Streptococcal carrier includes all of the following **except**:
   a) Tonsillectomy
   b) Clindamycin
   c) Erythromycin
   d) Pencillin and rifampin
   e) Amoxicillin-clavulanate

138. A child appears with a drooling, trismus, unilateral throat pain, and ipsilateral referred otalgia. A physical examination reveals the right tonsil displaced medially and downward by the ipsilateral swollen palate and anterior tonsillar pillar. The preferred diagnostic study is:
   a) Throat culture
   b) ASLO titer
   c) CT scan of the affected area
   d) Lateral x-ray of the neck
   e) X-ray of maxillary sinuses

139. The preferred therapy for patients with a retropharyngeal or lateral pharyngeal abscess **without** respiratory distress is:
   a) Surgical drainage and penicillin
   b) Azithromycin and gentamicin
   c) A third-generation cephalosporin and penicillin
   d) Nafcillin and surgical drainage
   e) A third-generation cephalosporin and ampicillin-sulbactum

140. The preferred therapy for patients with a retropharyngeal or lateral pharyngeal abscess **with** respiratory distress is:
   a) Surgical drainage and penicillin
   b) Surgical drainage and ampicillin
   c) Surgical drainage and ampicillin-sulbactum
   d) Surgical drainage and clindamycin
   e) Surgical drainage and a third-generation cephalosporin and clindamycin

141. A child appears with a history of syncopal episode during exercise, fright, or sudden startle response. The preferred diagnostic study is:
   a) EEG
   b) Head CT scan
   c) Head MRI
   d) ECG
   e) Hearing test

142. An ECG finding in a patient reveals a heart-rate corrected Q-T interval is 0.49 second. The most likely diagnosis is:
   a) First-degree heart block
   b) Second-degree heart block
   c) Third-degree heart block
   d) Long Q-T syndrome
   e) Normal

143. A child appears with fainting spells. A physical examination reveals a normal neurological examination and positional (supine vs erect) character of murmur on the left sternal border near mitral area. The preferred therapy is:
   a) Prophylactic antibiotic
   b) Dilatation of the mitral valve
   c) Repair of VSD
   d) Repair of ASD
   e) Removal of myxomas

144. The most common location of cardiac myxomas is:
   a) Right atrium
   b) Left atrium
   c) Right ventricle

d) Left ventricle
e) Interventricular septum

145. All of the following conditions can cause a stress ulcer in infants **except**:
a) Sepsis
b) Respiratory insufficiency
c) Trauma
d) Overhydration
e) Cardiac insufficiency

146. The preferred diagnostic study in patients with an acute appendicitis is:
a) Plain abdominal x-ray
b) Barium enema
c) Upper GI series
d) Ultrasonography
e) CT scan

147. The following statement is **not** true about managing a patient with acute appendicitis:
a) Abdominal pain should not be treated with an intravenous morphine before diagnosis is confirmed.
b) Use of antibiotics in uncomplicated appendicitis can decrease postoperative wound infections.
c) Appendectomy should be performed within a few hours of estabilising diagnosis.
d) Laparoscopic appendectomy is associated with a rapid recovery and lower incidence of wound infection than that of an open appendectomy.
e) Laparoscopic surgery has an advantage over an open surgery in patients with an uncertain diagnosis, especially in adolescent females.

148. Clinical uses of pulmonary function testing (PFT) include all of the following **except**:
a) PFT usually makes the specific diagnosis.
b) PFT can detect an obstructive lung disease.
c) PFT can detect a restrictive lung disease.
d) PFT can detect a degree of functional impairment.
e) PFT is useful in a preoperative evaluation.

149. All of the following conditions are true in patients with a cystic fibrosis (CF) **except**:
a) Autosomal recessive
b) Chromosome 7
c) Chronic obstructive lung disease
d) Pancreatic insufficiency
e) The most prevalent mutation of the CF transmembrane regulator (CFTR) is the deletion of a single tyrosine residue at amino acid 508.

150. The most common cause of congenital heart disease is:
a) Chromosomal abnormalities
b) Maternal alcohol intake
c) Single gene mutation
d) Maternal drug intake
e) Unknown

151. A congenital heart disease is most common in the following condition:
a) Trisomy 21
b) Trisomy 18
c) Trisomy 13
d) Turner syndrome
e) Trisomy 22

152. All of the following heart diseases are more common in girls than that of boys **except**:
a) ASD
b) VSD
c) PDA

d) Pulmonic stenosis
e) Transposition of great vessels

153. The most common site of congenital lobar emphysema is:
a) Right upper lobe
b) Right middle lobe
c) Right lower lobe
d) Left upper lobe
e) Left lower lobe

154. A 12-year-old boy came for a routine physical examination. The boy is asymptomatic. The blood pressure recorded in the right upper extremity is 140/90. The blood pressure recorded in the left upper extremity is 138/88. The next step in management is:
a) Measure blood pressures in both lower extremities
b) ECG
c) Chest x-ray
d) Serum electrolytes
e) Liver function tests

155. The first sign of puberty in girls is:
a) Menarche
b) Increased height
c) Increased weight
d) Changes in voice
e) Breast bud

156. The first sign of puberty in boys is:
a) Ejaculation
b) Increased height
c) Enlarged penis
d) Enlarged testes
e) Changes in voice

157. In females, pubic hairs appear:
a) 1-6 months before appearance of breast buds
b) 6-12 months before appearance of breast buds
c) 1-6 months after appearance of breast buds
d) 6-12 months after appearance of breast buds
e) At the same time with appearance breast buds

158. In females, the following statement is true about the puberty:
a) At least one sign of puberty is present in approximately 95% of cases by 10 years of age.
b) At least one sign of puberty is present in approximately 95% of cases by 11 years of age.
c) At least one sign of puberty is present in approximately 95% of cases by 12 years of age.
d) At least one sign of puberty is present in approximately 97% of cases by 13 years of age.
e) At least one sign of puberty is present in approximately 98% of cases by 13 years of age.

159. All of the following conditions can occur secondary to overtreatment with L-thyroxine in patients with hypothyroidism **except**:
a) Hypoactivity
b) Craniosynostosis
c) Pseudotumor cerebri
d) Neurologic deficits
e) Developmental deficits

160. The following statement is **not** true about restrictive lung disease:
a) The duration of inspiration is increased.
b) The duration of expiration is reduced.
c) The chest x-ray reveals a decreased lung volume.
d) The physical examination reveals grunting and crackles.
e) The amplitude of respiratory movements is shallow.

161. All of the following statements are true about extrathoracic obstructive disease **except**:
   a) Duration of inspiration is reduced.
   b) Respiratory rate is decreased.
   c) Duration of expiration is unchanged.
   d) Physical examination reveals a inspiratory stridor.
   e) Chest x-ray findings are normal.

162. The following statement is **not** true about the intrathoracic obstructive lung disease **except**:
   a) Duration of inspiration is prolonged.
   b) Respiratory rate is either normal or increased.
   c) Duration of expiration is prolonged.
   d) A physical examination reveals expiratory wheezes.
   e) A chest x-ray reveals an increased lung volume.

163. The most common presentation in patients with a tracheal foreign body is:
   a) Wheezing
   b) Stridor
   c) Positive chest x-ray
   d) Choking and aspiration
   e) Positive soft tissue x-ray of the neck

164. A 2-month-old infant appears with a brassy cough. The most likely diagnosis is:
   a) Subglottic hemangioma
   b) Bronchiolitis
   c) URI
   d) Chlamydia infection
   e) Vascular ring

165. A child appears with a staccato cough. The most likely diagnosis is:
   a) Habit cough
   b) Subglottic hemangioma
   c) Laryngomalacia
   d) Croup
   e) Chlamydia pneumonitis

166. A 10-year-boy appears with a history of cough only during the daytime for the last 2 months. However, he sleeps well at night without coughing. The boy is coughing during the physical examination. A physical examination reveals a normal throat and clear breath sounds in both lungs. The most likely diagnosis is:
   a) Chlamydia infection
   b) Bronchial asthma
   c) Sinusitis
   d) Habit cough
   e) Carrier of group A Streptococcus

167. A congenital subglottic hemangioma is associated with the following anomaly:
   a) Renal
   b) CNS
   c) Liver
   d) Spleen
   e) Cutaneous

168. The most common complication of patients with a supracrystal VSD is:
   a) Right ventricular failure
   b) Left ventricular failure
   c) Pulmonic stenosis
   d) Aortic insufficiency
   e) Arrythmias

169. Noonan syndrome is associated with a mutation on:
   a) Chromosome 21
   b) Chromosome 12
   c) Chromosome X
   d) Chromosome Y
   e) Chromosome 15

170. The most common clinical presentation in patients with a mild or moderate Pulmonic stenosis is:
   a) Right ventricular failure
   b) Hepatic failure
   c) Tachypnea
   d) Tachycardia
   e) Asymptomatic

171. The most common cardiac lesion in patients with a rheumatic heart disease is:
   a) Mitral stenosis
   b) Aortic stenosis
   c) Aortic insufficiency
   d) Tricuspid stenosis
   e) Mitral insufficiency

172. The following medication does **not** cause folic acid deficiency:
   a) Methotrexate
   b) Pyrimethamine
   c) Phenytoin
   d) Phenobarbital
   e) Metronidazole

173. A child developed a hemolytic anemia. The blood smear reveals large number of spherocytes. However, Coombs test result is negative. A few years later, the child will develop clinical manifestations of the following disease:
   a) Sickle cell disease
   b) Wilson disease
   c) Thalassemia major
   d) Cystic fibrosis
   e) Asplenia

174. The most common primary malignant bone tumor in both children and adolescents is:
   a) Ewing sarcoma
   b) Chondrosarcoma
   c) Fibrosarcoma
   d) Rhabdomyosarcoma
   e) Osteosarcoma

175. The most common primary malignant bone tumor in children younger than 10 years of age is:
   a) Osteosarcoma
   b) Ewing sarcoma
   c) Chondrosarcoma
   d) Fibrosarcoma
   e) Rhabdomyosarcoma

176. The most common organism that causes peritonitis in patients with an idiopathic nephrotic syndrome is:
   a) E. coli
   b) Staphylococcus areus
   c) Pseudomonas aeruginosa
   d) Staphylococcus epidermidis
   e) Streptococcus pneumoniae

177. Lowe syndrome appears with all of the following clinical manifestations in infancy **except**:
   a) Retinoblastoma
   b) Hypotonia

c) Fanconi syndrome
d) Renal insufficiency
e) Progressive growth failure

178. The most common tumor of ovary is:
a) Dysgerminoma
b) Teratoma
c) Fibroma
d) Gonadoblastoma
e) Endodermal sinus tumor

179. The most common malignant tumor of ovary is:
a) Dysgerminoma
b) Malignant teratoma
c) Endodermal sinus tumor
d) Gonadoblastoma
e) Embryonal carcinoma

180. The preferred therapy in patients with a vaginal sarcoma botryoides is:
a) Radiotherapy
b) Chemotherapy
c) Radiotherapy and chemotherapy
d) Surgery
e) Repeat examination after 3 months

181. The most common gynecologic problem in female athletes is:
a) Vaginal discharge
b) Vulvar excoriation
c) Vulvar trauma
d) Amenorrhea
e) Vaginal trauma

182. A ballet dancer appears with an amenorrhea. Her twin sister started menstruation about 2½ years ago. Her twin sister is always busy with her academic activities. Their mother is worried. The next step in management is:
a) Serum LH levels
b) Serum FSH levels
c) Pelvic ultrasonography
d) MRI of the head
e) Follow-up visit after 6 months

183. The most common cause of gonadotropin-dependent precocious puberty is:
a) Hypothyroidism
b) Severe head trauma
c) Hydrocephalus
d) Hypothalamic hamartoma
e) Idiopathic

184. A 6-month-old boy appears with a virilization of the external genitalia for the last 2 weeks. His mother also appears with a virilization for the last 3 weeks. The boy is otherwise healthy. His birth weight was 7 lbs 6 ounces. He was born by NSVD with Apgar scores of 9 and 9 at 1 and 5 minutes respectively. His father has been using a gel for hypogonadism. The most likely diagnosis is:
a) Congenital adrenal hyperplasia
b) Craniopharyngioma
c) McCune-Albright syndrome
d) Hypothalamic hamartoma
e) Medicational precocity

185. An increased risk of premature adrenarche can occur in patients with:
a) Premature appropriate for gestational age

b) Premature large for gestational age
c) Full-term large for gestational age
d) Postmature appropriate for gestational age
e) Full-term small for gestational age

186. A 7-year-old girl appears with hairs on the mons and labia majora. She has no axillary hairs. She is slightly advanced in height and osseous maturation. The most likely diagnosis is:
a) McCune Albright syndrome
b) Idiopathic precocious puberty
c) Hypothalamic hamartoma
d) Premature pubarche
e) Congenital adrenal hyperplasia

187. A 10-year-old boy is diagnosed with type 1 diabetes mellitus. He injects his own insulin. He noticed that he experienced less pain when injections are introduced at the same site. The most likely complication is:
a) Hypoglycemia
b) Localized erythema
c) Lipohypertrophy
d) Lipoatrophy
e) Vascular necrosis

188. A 4-year-old girl is diagnosed with **type 1** diabetes mellitus. She has no visual difficulties. The following statement is true about referral to an opthalmologist:
a) Opthalmologist should examine her immediately
b) Opthalmologist should examine her after 6 months.
c) Opthalmologist should examine her after 1 year.
d) Opthalmologist should examine her after 3 years.
e) Opthalmologist should examine her after 6 years.

189. A child is diagnosed with **type 2** diabetes mellitus. He has no visual difficulties. The following statement is true about referral to an opthalmologist:
a) Opthalmologist should examine him shortly after the diagnosis of diabetes.
b) Opthalmologist should examine him after 6 months.
c) Opthalmologist should examine him after 1 year.
d) Opthalmologist should examine him after 3 years.
e) Opthalmologist should examine him after 5 years.

190. A 6-year-old girl is diagnosed with type 1 diabetes mellitus. She has visual symptoms. The next step in management is:
a) Refer to an optometrist immediately.
b) Opthalmologist should examine her as soon as possible.
c) Opthalmologist should examine her after 6 months.
d) Opthalmologist should examine her after 1 year.
e) Opthalmologist should examine her after 4 years.

191. The child's neurological examination reveals a vertical nystagmus. The most likely diagnosis is:
a) Cerebellar dysfunctions
b) Optic nerve defects
c) Temporal lobe abnormalities
d) Brainstem dysfunctions
e) Occipital lobe tumors

192. All of the following conditions can cause horizontal nystagmus **except**:
a) Phenytoin
b) Cerebellar lesions
c) Phenobarbital
d) Peripheral labyrinth defects
e) A lesion of the vestibular system in brain stem

193. All of the following injuries can cause hypotonia **except**:
   a) Brainstem
   b) Cerebellum
   c) Cerebral hemispheres
   d) Spinal cord
   e) Anterior horn cells

194. A routine newborn physical examination reveals 5-10 beats of symmetric clonus in the lower extremities by sudden dorsiflexion of the foot when the knee is partially flexed. The next step in management is:
   a) MRI of the brain
   b) CT scan of the head
   c) EEG
   d) Electromyography
   e) Reassurance

195. The following primitive reflex persists throughout life:
   a) Moro
   b) Tonic neck
   c) Rooting
   d) Palmer grasp
   e) Parachutte

196. The first step in management of epilepsy is:
   a) EEG should be performed immediately.
   b) Head MRI should be performed when the child is stable.
   c) Head CT scan should be arranged as soon as possible.
   d) Spinal tap should be performed when the child is stable.
   e) To make sure that the child has a seizure disorder.

197. The patients with a Tay-Sachs disease have the following biochemical defect:
   a) Hexosaminidase A and B
   b) Neuraminidase
   c) Beta-galactosidase
   d) Galactocerebrosidase
   e) Hexosaminidase A

198. The mode of inheritance in all of the following neurodegenerative disorders is an autosomal recessive **except**:
   a) GM_1 gangliosidosis
   b) Tay-Sachs disease
   c) Krabbe disease
   d) Sialidosis
   e) Adrenoleukodystrophy

199. A routine physical examination of the newborn reveals aniridia. The following investigation indicated in this patient is:
   a) Renal ultrasonography
   b) Head MRI
   c) VCUG
   d) ECG
   e) Bone scan

200. The chromosomal defect in patients with aniridia is:
   a) Trisomy 21
   b) Trisomy 18
   c) Chromosome 15
   d) Partial deletion of the short arm of chromosome 11
   e) Partial deletion of the long arm of chromosome 11

201. A 2-month-old child came for a routine physical examination. The syrup of ipecac and a telephone number of a local poison control center should be given at:
   a) 3 months of age
   b) 6 months of age
   c) 9 months of age
   d) 12 months of age
   e) 15 months of age

202. An infant can sit without support. The most likely age of this infant is:
   a) 5 months
   b) 6 months
   c) 7 months
   d) 8 months
   e) 9 months

203. A child can build a tower of two cubes. The most likely age of this child is:
   a) 12 months
   b) 15 months
   c) 18 months
   d) 20 months
   e) 24 months

204. A child can speak 10-15 words. The most likely age of this child is:
   a) 12 months
   b) 15 months
   c) 18 months
   d) 20 months
   e) 24 months

205. A child pretends a play with doll. The most likely age of this child is:
   a) 12 months
   b) 15 months
   c) 17 months
   d) 20 months
   e) 24 months

206. All of the following statements are true about Brazelton Neonatal Behavioral Assessment scale (NBAS) **except**:
   a) NBAS is a good predictor of future developments.
   b) NBAS estimates neurologic intactness.
   c) NBAS estimates adaptation to a extrauterine life.
   d) NBAS estimates interactive capacities.
   e) NBAS estimates primitive reflexes.

207. A 12-year-old girl appears with a sudden onset of blindness in both eyes for the last 12 hours. She attended a party in her friend's house in the previous night. In the following morning, she could not see anything. A physical examination reveals a normal pupillary reflex and fundus examination. Her mother became blind secondary to a glaucoma about 6 months ago. The most likely diagnosis is:
   a) Acquired glaucoma
   b) Conversion disorder
   c) Retinal hemorrhages
   d) Retinitis pigmentosa
   e) Retrobulbar neuritis

208. A 4-year-old boy appears with a history of enuresis for the last 2 months. He has been voiding twice a week. The boy was asymptomatic prior to this episode. His growth and development are normal. The preferred therapy is:
   a) Imipramine
   b) DDAVP
   c) Bed and pad alarm systems

d) Psychotherapy
e) Reassurance

209. The side effect of imipramine is:
a) Arrythmias
b) Hypertension
c) Excessive salivation
d) UTI
e) Alertness

210. The hours per night sleep necessary for adolescents are:
a) 6 hours
b) 7 hours
c) 8 hours
d) 9 hours
e) 10 hours

211. Munchausen syndrome by proxy (MSBP) may include all of the following **except**:
a) A mother is very concerned about a child's condition.
b) A mother fabricates a medical history.
c) A mother may have a background in health care.
d) A mother may alter laboratory samples.
e) A child may be exposed to physical abuse, toxin, medication, or infectious agents.

212. The most common clinical manifestation in neonates with early onset group B Streptococcus (GBS) infections is:
a) Pneumonia
b) Meningitis
c) Sepsis
d) UTI
e) Asymptomatic bacteremia

213. The most common clinical manifestation in infants with late onset group B Streptococcus (GBS) infections is:
a) Meningitis
b) Bacteremia
c) Pneumonia
d) Osteomyelitis
e) UTI

214. The most common type of group B Streptococcus (GBS) responsible for early or late-onset meningitis is:
a) Ia
b) Ib
c) II
d) III
e) V

215. All of the following serotypes are most commonly associated with neonatal GBS diseases **except**:
a) Ia
b) Ib
c) II
d) III
e) IV

216. The most common sexually transmitted disease noted in sexually abused children is:
a) Chlamydia
b) Syphilis
c) Gonorrhea
d) HIV
e) Herpes simplex virus

217. The most common site of primary genital gonorrhea in males is:
   a) Epidydimis
   b) Seminal vesicle
   c) Prostate
   d) Urethra
   e) Glans penis

218. The most common site of primary genital gonorrhea in postpubertal females is:
   a) Vulva
   b) Vagina
   c) Cervix
   d) Uterus
   e) Fallopian tube

219. The most common site of primary genital gonorrhea in prepubertal females is:
   a) Vulva-vagina
   b) Cervix
   c) Uterus
   d) Fallopian tube
   e) Anus

220. The preferred therapy in neonates with a gonococcal opthalmia is:
   a) Penicillin
   b) Ampicillin
   c) Gentamicin
   d) Cefotaxime
   e) Ceftriaxone

221. A purulent urethral discharge like gonococcus infections is usually produced by all of the following organisms except:
   a) Human herpes virus type 2
   b) Chlamydia trachomatis
   c) Mycoplasma hominis
   d) Trichomonas vaginalis
   e) Candida albicans

222. A group of adolescents appear with multiple skin lesions of folliculitis for the last 24 hours. They used a community swimming pool. Skin lesions are erythematous, macular, papular, and pustular. Skin lesions are noted predominantly over the truncal areas. The most likely cause of infection is:
   a) Candida albicans
   b) Staphylococcus aureus
   c) Staphylococcus epidermidis
   d) Human herpes virus
   e) Pseudomonas aeruginosa

223. A 24-week-gestational are preterm infant is placed on a mechanical ventilator. The infant is receiving a TPN (total parenteral nutrition) and intralipid through a central catheter. The most common organism associated with intravenous lipid infusions is:
   a) Pityrosporum ovale
   b) Pityrosporum orbiculare
   c) Staphylococcus epidermidis
   d) Malassezia furfur
   e) Group B Streptococcus

224. A group of children appears with a flulike symptoms such as cough, chest pain, headache, and fever. They usually play in the park that are contaminated with bird droppings. A physical examination reveals a hepatosplenomegaly. Majority of chest x-rays are normal but a few of them reveals a patchy bronchopneumonia. The most likely diagnosis is:
   a) Histoplasmosis infections
   b) Haemophilus influenzae infections
   c) RSV infections

d) Pseudomonas infections
e) Coccidioidomycosis infections

225. Medical personnel are more prone to acquire the following herpes infection:
a) Herpetic whitlow
b) Herpes gladiatorum
c) Genital herpes
d) Eczema herpeticum
e) Acute herpetic gingivostomatitis

226. Newborns acquire a herpes infection from their mothers. The most common time to acquire an herpes infection is:
a) First trimester
b) Second trimester
c) Third trimester
d) During delivery
e) During breast-feeding

227. Negri body is a characteristic of the following disease:
a) Herpes zoster infections
b) Herpes simplex virus infections
c) Rabies
d) CMV infections
e) Toxoplasmosis

228. A child is receiving an active immunization for a postexposure prophylaxis for rabies. The following therapy may suppress the response of an active immunization is:
a) Antibiotic therapy
b) Antiviral therapy
c) Antifungal therapy
d) Antimalarial therapy
e) Antiepileptic therapy

229. The most common fungal infection in HIV-infected children is:
a) Fungal genital infections
b) Oral candidiasis
c) Fungal scalp infections
d) Fungal bacteremia
e) Fungal UTI

230. The most common cause of bacterial pneumonia in HIV-infected children is:
a) H. influenzae
b) Moraxella catarrhalis
c) P. aeruginosa
d) E. coli
e) Streptococcus pneumoniae

231. The most common MRI finding in HIV-infected children with neurologic symptoms is:
a) Cerebellar atrophy
b) Cerebral atrophy
c) Leukomalacia
d) Periventricular calcifications
e) Diffuse calcifications

232. AIDS enteropathy is most likely due to the following reason:
a) Salmonella infections
b) Cryptosporidium infections
c) CMV infections
d) Candida infections
e) Direct HIV-infections

233. The most common renal manifestation in HIV-infected children is:
   a) Microscopic hematuria
   b) Gross hematuria
   c) E. coli UTI
   d) Fungal UTI
   e) Nephrotic syndrome

234. The following infection can produce a typical Reye syndrome:
   a) CMV
   b) Herpes simplex virus
   c) Rotavirus
   d) RSV
   e) Adenovirus

235. The most common clinical presentation in newborns with a rotavirus infection is:
   a) Necrotizing enterocolitis
   b) Intussuception
   c) Vomiting
   d) Diarrhea
   e) Asymptomatic

236. The following statement is **not** true in patients with a laryngeal papillomatosis:
   a) Lesions can turn into malignancy.
   b) Infants appear with an altered cry.
   c) Children appear with a hoarseness.
   d) A rapid growth can obstruct an upper airway.
   e) Lesions may require frequent surgeries.

237. The most prevalent viral sexually transmitted infection in USA is:
   a) Human herpes virus type 1
   b) Human papillomavirus
   c) Human herpes virus type 2
   d) CMV
   e) Rubella virus

238. The most common clinical presentation of human papillomavirus infection is:
   a) Laryngeal papillomatosis
   b) Skin warts
   c) Anal warts
   d) Vaginal warts
   e) Latent infections

239. The preferred therapy for patients with constipation in a first few months of life is:
   a) Milk of magnesia
   b) Prune juice
   c) Glycerine suppository
   d) Fruit juice
   e) Increased the amount of fluids

240. Most infants require 3 meals a day and one to two snacks by the end of:
   a) 6 months of age
   b) 1 year of age
   c) 15 months of age
   d) 18 months of age
   e) 24 months of age

241. A child can hold a bottle by:
   a) 5 months of age
   b) 6 months of age

c) 7 months of age
d) 8 months of age
e) 9 months of age

242. A child can hold a cup by:
a) 6-7 months of age
b) 7-8 months of age
c) 8-9 months of age
d) 9-10 months of age
e) 11-12 months of age

243. Children can feed themselves by the end of:
a) 18 months of age
b) 24 months of age
c) 30 months of age
d) 36 months of age
e) 48 months of age

244. Moderately active 4-6 years old children need:
a) 1,200 Kcal/day
b) 1,400 Kcal/day
c) 1,600 Kcal/day
d) 2,000 Kcal/day
e) 2,400 Kcal/day

245. Moderately active 6-10 years old children need:
a) 2,000 Kcal/day
b) 2,200 Kcal/day
c) 2,400 Kcal/day
d) 2,600 Kcal/day
e) 2,800 Kcal/day

246. Active teenage boys need:
a) 2,400 Kcal/day
b) 2,600 Kcal/day
c) 2,800 Kcal/day
d) 3,000 Kcal/day
e) 3,200 Kcal/day

247. A child appears with nausea, diarrhea, polyuria, weight loss, and nocturia. The most likely diagnosis is:
a) Vit A toxicity
b) Vitamin A deficiency
c) Vit D toxicity
d) Vit K deficiency
e) Niacin toxicity

248. A child appears with alopecia, drying skin, slow growth, hepatosplenomegaly, increased intracranial pressure, painful and swollen long bones. The most likely diagnosis is:
a) Vitamin B_{12} toxicity
b) Vitamin B_6 toxicity
c) Niacin deficiency
d) Vitamin E toxicity
e) Vitamin A toxicity

249. Breast-fed infants should receive iron supplementation by:
a) 1-2 months of age
b) 2-4 months of age
c) 4-6 months of age
d) 6-9 months of age
e) 9-12 months of age

250. The following component in breast milk can inhibit the synthesis of E. coli in intestine:
   a) Secretory IgA
   b) Complement
   c) Lysozyme
   d) Lactoferrin
   e) Viral antibodies

251. A breast milk can be stored in the refrigerator for up to:
   a) 6 hours
   b) 12 hours
   c) 24 hours
   d) 36 hours
   e) 48 hours

252. A breast milk can be stored in the freezer for up to:
   a) 7 days
   b) 14 days
   c) 21 days
   d) 30 days
   e) 45 days

253. In newborn infants, gas should normally be present in the rectum on x-ray by:
   a) At birth
   b) 6 hours of age
   c) 12 hours of age
   d) 24 hours of age
   e) 48 hours of age

254. In newborn infants with a congenital heart disease, the chance that a murmur heard at birth is:
   a) 1/2
   b) 1/4
   c) 1/8
   d) 1/12
   e) 1/25

255. Omphaloceles are associated with all of the following **except**:
   a) Conjoined twins
   b) Trisomy 18
   c) Meningomyelocele
   d) Imperforate anus
   e) Down syndrome

256. A routine newborn physical examination reveals an erection of the penis. His central venous hematocrit is 58. The most likely cause is:
   a) Polycythemia
   b) Overhydration
   c) Pituitary adenoma
   d) Penile trauma
   e) Nothing significant

257. A newborn female appears with a redundant skin in neck. The most likely diagnosis is:
   a) Down syndrome
   b) Hemangioma
   c) Turner syndrome
   d) William syndrome
   e) Pradder-Wille syndrome

258. A 2-day-old newborn female appears with a clusters of white and yellow follicles, and ulcers on an erythematous base noted on the anterior tonsillar pillars. The baby was not suctioned after the delivery. The most likely cause is:
a) Trauma during suctioning
b) Bacterial infections
c) Viral infections
d) Fungal infections
e) Unknown

259. A newborn routine physical examination reveals leukokoria. The next step in management is:
a) Repeat eye examination after 24 hours.
b) Immediate opthalmologic consultation
c) MRI of eye
d) CT scan of eye
e) Opthalmologic examination after 7 days

260. All of the following conditions can manifest with a white pupillary reflex **except**:
a) Infantile glaucoma
b) Cataract
c) Chorioretinitis
d) Tumor
e) Retinopathy of prematurity

261. The breathing sound of a normal newborn is:
a) Bronchiolar
b) Alveolar
c) Bronchoalveolar
d) Mildly transmitted nasal sounds
e) Mildly transmitted nasopharyngeal sounds

262. All of the following conditions can cause metabolic acidosis **except**:
a) Vomiting
b) Diarrhea
c) Hypoxia
d) Diabetic ketoacidosis
e) Secondary renal insufficiency

263. Most firearm related deaths occur in:
a) Schools
b) Streets
c) Homes
d) Trains
e) Airports

264. Most common means of suicide in males of all ages is:
a) Knives
b) Firearms
c) Motor vehicle accidents
d) Drugs
e) Alcohols

265. Most common means of suicide in females of all ages is:
a) Knives
b) Alcohols
c) Drugs
d) Firearms
e) Motor vehicle accidents

266. The most common cause of homicide in males is:
a) Sticks

b) Knives
c) Baseball bats
d) Chains
e) Handguns

267. Immediate complications of central venous catheters include all of the following **except**:
a) Pneumothorax
b) Dysrythmias
c) Hemothorax
d) Hydrothorax
e) Infection

268. The most serious acute or delayed complication of central venous catheter is:
a) Hemothorax
b) Pneumothorax
c) Hydrothorax
d) Cardiac tamponade
e) Pulmonary embolism

269. A 8-year-old boy is admitted with a severe asthma attack. He did not respond to conventional therapies. Physicians are preparing to intubate the child. The appropriate size of Endotracheal tube (ETT) is:
a) 16 mm
b) 17 mm
c) 18 mm
d) 19 mm
e) 20 mm

270. A child is admitted in a pediatric intensive care unit (PICU) with a shock. A central venous catheter (CVP) is placed. His cardiac output (CO) is increased, systemic vascular resistance (SVR) is decreased, mean arterial pressure (MAP) is normal, wedge pressure (WP) is decreased, and central venous pressure (CVP) is decreased. The most likely diagnosis is:
a) Hypovolemic shock
b) Cardiogenic shock
c) Distributive shock
d) Early septic shock
e) Obstructive shock

271. All of the following conditions decrease cardiac output (CO) **except**:
a) Hypovolemic shock
b) Late septic shock
c) Distributive shock
d) Systolic cardiogenic shock
e) Obstructive shock

272. All of the following conditions increase systemic vascular resistance (SVR) **except**:
a) Hypovolemic shock
b) Obstructive shock
c) Septic shock
d) Systolic cardiogenic shock
e) Diastolic cardiogenic shock

273. All of the following conditions increase central venous pressure (CVP) **except**:
a) Early septic shock
b) Late septic shock
c) Obstructive shock
d) Systolic cardiogenic shock
e) Diastolic cardiogenic shock

274. Mean arterial pressure (MAP) is always decreased in the following condition:
a) Late septic shock
b) Hypovolemic shock

c) Cardiogenic shock
d) Obstructive shock
e) Early septic shock

275. The most common cause of acute respiratory distress syndrome (ARD'S) is:
a) Infectious pneumonia
b) Acute chest syndrome
c) Fat emboli
d) Inhalation injuries
e) Aspiration of gastric contents

276. In USA, drowing is the most common in the following age group:
a) Less than 1 year of age
b) 1-4 years of age
c) 5-9 years of age
d) 10-14 years of age
e) 15-19 years of age

277. Bathtub drowning is the most common in the following age group:
a) 1-6 months of age
b) 7-15 months of age
c) 16-24 months of age
d) 25-36 months of age
e) 37-48 months of age

278. The most common cause of bathtub drowning is:
a) Bathtub water is very cold.
b) Bathtub water is very hot.
c) Children with a chronic lung disease
d) Inadequate supervision
e) Children who were born premature and required mechanical ventilation in NICU.

279. The most common site of drowning in children under 1 year of age is:
a) Bathtub
b) Swimming pool
c) Pond
d) Lake
e) Ocean

280. The most common site of drowning in children who are 1-4 years of age is:
a) Bathtub
b) Pond
c) Ocean
d) Lake
e) Swimming pool

281. The most common site of drowning in children (5-9 years of age), young adolescents (10-14 years of age), and older teenagers (15-19) of age) is:
a) Freshwater
b) Ocean
c) Spa
d) Private swimming pool
e) Community swimming pool

282. All of the following statements are true about residential pool submersion events except:
a) Most submersion events occur when there is a lack of supervision over 15 minutes.
b) Most submersion events occur at the child's own home.
c) Most submersion events occur within the first 6 months of pool exposure.

d) In warmer climate, majority (50-90% of cases) of drowning deaths occur in residential swimming pools.
e) Majority of children are hospitalized for at least 24 hours.

283. A child is brought to a ER with a moderate to severe burn injury. A physical examination reveals wheezing and 40% burn over the body and face. He is unresponsive. All of the following therapies are indicated **except**:
a) Endotracheal intubation and 100% oxygen therapy
b) Beta-agonist aerosols therapy
c) Pulmonary toileting and chest physiotherapy
d) Tracheostomy is indicated if the child required a mechanical ventilation over one month.
e) Nitric oxide therapy (5-30 ppm) may be useful in severe cases.

284. EMLA is used locally for a circumcision in a neonate. The following complication may occur:
a) Tachycardias
b) Sedations
c) Bradycardias
d) Arrythmias
e) Blisters

285. The advantages of FISH (fluorescence in situ hybridization) include all of the following **except**:
a) FISH is used as a screening tool.
b) FISH can analyze a large number of cells rapidly.
c) FISH can analyze uncultured and nondividing cells.
d) FISH has a high sensitivity.
e) FISH has a high specificity.

286. All of the following are characteristics of autosomal dominant inheritance **except**:
a) Affected individuals are present in every generation.
b) Males and females are equally affected.
c) Phenotypically normal family members can transmit the disease to their children.
d) A child of an affected parent has a 50% chance of inheriting the disease.
e) A significant proportion of cases are due to a new mutation.

287. All of the following are features of Klinfelter syndrome **except**:
a) Gynecomastia
b) Short stature
c) Small testes
d) Azoospermia
e) Infertility

288. All of the following are features of Chediak-Higashi syndrome **except**:
a) Autosomal dominant
b) Partial albinism
c) Mutation the long arm of chromosome 1
d) Susceptibility to infections
e) Lymphoproliferative cancers

289. A 5-day-old male appears with a poor feeding and vomiting for the last 24 hours. He was born by a NSVD with Apgar scores of 9 and 9 at 1 and 5 minutes respectively. He went home 2 days after the delivery. A physical examination reveals lethargy, hypertonicity, muscular rigidity, and opisthotonos. A full sepsis work up administered. The boy reveals a flaccidity between hypertonicities. The CBC and SMA6 are normal. The boy has a mild metabolic acidosis. The most likely diagnosis is:
a) Maple syrup urine disease
b) Phenylketonuria
c) Mathylmalonic acidemia
d) Hyperglycinemia
e) Hyperammonemia

290. The enzyme deficiency in Tay-Sachs disease is:
a) Lysosomal hydrolase
b) Alpha-galactosidase A

c) Beta-galactosidase
d) Beta-hexosaminidase A isozyme
e) Beta-hexosaminidase A and B isozymes

291. The enzyme deficiency in Sandhoff disease is:
a) Glucose-6-phosphatase
b) Acid maltase
c) Liver phosphorylase
d) Pyruvate dehydrogenase
e) Beta-hexosaminidase A and B isozymes

292. All of the following are major causes of mortality in full term infants **except**:
a) Congenital anomalies
b) Birth asphyxia
c) Meconium aspiration pneumonia
d) Persistent pulmonary hypertension
e) Necrotizing enterocolitis

293. A newborn physical examination reveals a third fontanel. The most likely diagnosis is:
a) Turner syndrome
b) Birth trauma
c) Noonan syndrome
d) Down syndrome
e) Craniosynostosis

294. All of the following conditions cause a small anterior fontanel except:
a) Achodroplasia
b) Microcephaly
c) Craniosynostosis
d) Wormian bones
e) Congenital hyperthyroidism

295. All of the following conditions cause a large anterior fontanel **except**:
a) Congenital rubella syndrome
b) Apert syndrome
c) Russell-Silver syndrome
d) Kenny syndrome
e) Klinefelter syndrome

296. A routine fetal monitoring reveals an early deceleration. The most likely diagnosis is:
a) Cord compression
b) Head compression
c) Intrauterine infection
d) Hypoxemia
e) Maternal hypotension

297. A routine fetal monitoring reveals a variable deceleration. The most likely diagnosis is:
a) Hypoxia
b) Excessive uterine activity
c) Intrauterine infection
d) Maternal hypotension
e) Cord compression

298. A routine fetal monitoring reveals a late deceleration. The most likely diagnosis is:
a) Hypoxemia
b) Bacterial infection
c) CMV
d) Herpes simplex virus infection
e) Lupus

299. A routine newborn physical examination reveals cleft palate. The following medication can cause this anomaly:
   a) Carbamazepine
   b) Thalidomide
   c) Lithium
   d) Phenytoin
   e) Prednisone

300. A routine newborn physical examination reveals a cutis laxa syndrome. The following medication ca cause this anomaly:
   a) Penicillamine
   b) Valproate
   c) Warfarin
   d) Accutane
   e) Trimethadione

301. A newborn appears with a limb reduction. The most likely cause is:
   a) Maternal alcohol intake
   b) Chorionic villus sampling
   c) Streptomycin
   d) Maternal toluene intake
   e) Maternal cocaine use

302. The lecithin: sphingomyelin (L : S) ratio is 2 :1 by:
   a) 34 weeks of gestational age
   b) 35 weeks of gestational age
   c) 36 weeks of gestational age
   d) 37 weeks of gestational age
   e) 38 weeks of gestational age

303. A pregnant mother has a monochorionic twin. The vascular anomaly noted that is called TRAP (twin reversed arterial perfusion) sequence. The preferred therapy is:
   a) Intrauterine transfusions
   b) Termination of both twin
   c) Intrauterine embolization
   d) Intrauterine use of a sclerosing agent
   e) Nd:YAG laser ablation

304. A full term, LGA (large for gestational age) infant was born by NSVD with a shoulder dystocia. The chills is not moving the left arm. The most likely position of the left arm is:
   a) Adduction and external rotation of the arm with supination of the forearm
   b) Abduction and external rotation of the arm with pronation of the forearm
   c) Adduction of the arm and pronation of the forearm
   d) Abduction of the arm and supination of the forearm
   e) Adduction and internal rotation of the arm with pronation of the forearm

305. A newborn is diagnosed with a congenital rubella syndrome. All of the following clinical features are present **except**:
   a) Mental retardation
   b) Hydrocephalus
   c) Cataracts
   d) Deafness
   e) Cardiovascular anomalies

306. A preterm infant is diagnosed to have a NEC (necrotizing enterocolitis). The infant appears with an abdominal distension and guiac-positive stools. The abdominal x-ray reveals a pneumatosis intestinalis. In most cases of NEC, the pathogen most commonly identified is:
   a) E. coli
   b) Klebsiella
   c) Clostridium perfringens
   d) S. epidermidis
   e) No organism

307. Maternal alcohol intake reduces the transfer of the following compotent through placenta to the fetus:
   a) Copper
   b) Iron
   c) Selenium
   d) Calcium
   e) Zinc

308. In Beckwith-Wiedemann syndrome, kidneys are enlarged along with liver. The most common cause of enlarged kidneys is:
   a) Unilateral polycystic kidney
   b) Multicystic kidneys
   c) Bilateral polycystic kidneys
   d) Bilateral UPJ obstructions
   e) Noncystic hyperplasia

309. Fetal alcohol syndrome (FAS) includes all of the following features **except**:
   a) Hypoactive behavior
   b) Microcephaly
   c) Developmental delay
   d) Facial abnormalities
   e) Optic nerve hypoplasia

310. Homologs of Drosophila developmental control genes cause all of the following conditions **except**:
   a) Townes-Brock syndrome
   b) Saethre-Chotzen syndrome
   c) Greig syndrome
   d) Prader-Willi syndrome
   e) Nevoid basal cell carcinoma syndrome

311. The most common organism associated with the first episode of late-onset sepsis in VLBW (very-low-birth-weight) infants is:
   a) S. aureus
   b) E. coli
   c) S. epidermidis
   d) Candida albicans
   e) Group B Streptococcus

312. All of the following statements are true about adolescents who attempt suicide **except**:
   a) Increased risk of morbidity in adolescents
   b) Increased risk of mortality in adolescents
   c) Increased risk of depression in adolescents
   d) Impaired academic skills in adolescents
   e) Most suicidal attempts are successful in adolescents.

313. A 14-year-old girl has a suicidal ideation. She told that to a close fried in the school. About 6 months ago, she attempted suicide but failed. At that time, she took a large number of acetaminophen tablets. She was admitted in the hospital at that time. She denies any substance abuse. She has problems with her boyfriend. The next step in management is:
   a) Notify to a school nurse
   b) Notify her parents
   c) Talk to her separately
   d) Talk to her boyfriend in a group meeting
   e) Refer to a psychiatrist immediately

314. A 16-year-old boy has a history of substance abuse. He has a suicidal ideation. His parents are divorced. His lives with his mother. He was previously seen by a psychiatrist for mood disorders. At present, he is not taking any medication. All of the following statements are true about treatments of a suicide attempt in adolescents **except**:
   a) A hospitalization always prevents a suicidal event in adolescents who attempted a suicide before.
   b) A hospitalization can help in an existing conflict.
   c) A hospitalization can provide a secure setting in which a patient can express his problem.
   d) A family should be educated about an adolescent suicidal behavior, therapy, and follow-up outpatient compliance.
   e) A crisis therapist should handle the case and communicate between the family and psychiatrist.

315. Which of the following substance is most commonly used in a lifetime by teenagers?
   a) Anabolic steroids
   b) MDMA (Ecstasy)
   c) Marijuana
   d) Alcohol
   e) Cigarettes

316. A 17-year-old boy appear in an ER with an euphoria, ataxia, hallucination, bizarre distortions of body image, and panic reaction. A physical examination reveals a nystagmus, hypersalivation, and normal respiration. During the physical examination, the boy experienced one episode of generalized convulsion. The ECG reveals cardiac arrythmias. The most likely diagnosis is:
   a) Cocaine use
   b) Amphetamine overdose
   c) Opiate overdose syndrome
   d) Volatile substance use
   e) Phencycline overdose

317. The therapy for a patients with phencycline (PCP) overdose may include all of the following **except**:
   a) Emesis
   b) Gastric lavage
   c) Diazepam
   d) Alkalization of the urine
   e) Hydration

318. A 16-year-old girl appears in an ER with an euphoria, increased motor activity, and decreased fatigabily. A physical examination reveals a hypertension, hyperthermia, tachycardia, and pupillary dilatation. The most likely diagnosis is:
   a) LSD overdose
   b) Alcohol intoxication
   c) Cocaine use
   d) Toluene intoxication
   e) Opiates withdrawal symptoms

319. A 15-year-old boy appears with yawning followed by insomnia, lacrimation, diarrhea, 'goose flesh', and cramping of the voluntary muscles. A physical examination reveals pupillary dilatations, tachycardia, and hyperactive bowel sounds. The next step in management is:
   a) Methadone
   b) Haloperidol
   c) Diazepam
   d) Naloxone
   e) Antidiarrheal medication

320. A 18-year-old girl appears with seizure activities, respiratory depressions, and cyanosis. A physical examination reveals miotic pupils, bilateral rales, and stupor. The chest x-ray reveals a pulmonary edema. The next step in management in addition to oxygen is:
   a) Diazepam
   b) Haloperidol
   c) Naloxone
   d) Methadone
   e) Phenothiazine

321. A 17-year-old boy appears in the early morning with a nausea, blurred vision, jaw clenching, and teeth grinding. He is very anxious, and experienced panic attacks and psychosis. He attended on all night dance party. The most likely diagnosis is:
   a) Cocaine use
   b) Toluene overdose
   c) Phencyclidine overdose
   d) Amphetamine overdose
   e) Methylenedioxymethamphetamine overdose

322. A 15-year-old girl appears a discharge from the left nipple for the last 7 days. The discharge is a thick, milky, and sticky. Her menstrual periods are normal. The next step in management is:
   a) Mammogram
   b) Ultrasonograph of the breast
   c) Biopsy
   d) Culture of the discharge
   e) Reassurance

323. A 18-year-old girl appears with a smooth and well-defined mass in her right breast for the last 2 months. She noticed that during a shower. The mass did not change in size during a menstrual cycle. The most likely diagnosis is:
   a) Lipoma
   b) Fibroadenoma
   c) Teratoma
   d) Papilloma
   e) Cyst

324. The most common organism in patients with a breast infection is:
   a) S. aureus
   b) S. epidermidis
   c) E. coli
   d) P. aeruginoma
   e) S. pneumoniae

325. The following component is an important factor in the onset of menstruation and maintenance of ovulatory cycles:
   a) Proteins
   b) Carbohydrates
   c) Fats
   d) Vitamins
   e) Minerals

326. All of the following medications can cause gynecomastia **except**:
   a) Isoniazid
   b) Ketoconazole
   c) Metronidazole
   d) Cyclophosphamide
   e) Phenytoin

327. A 17-year-old girl is infected with a human papillomavirus in the genitalia. She is asymptomatic. The long-term complication of this infection is:
   a) Uterine cancer
   b) Cervical cancer
   c) HIV infection
   d) Herpes infection
   e) Vaginal cancer

328. A 6-month-old boy appears with a diarrhea and skin infections for the last 1 month. He had 3 episodes of otitis media and was treated with antibiotics. He was admitted in a hospital twice for pneumonias. He was born full term, NSVD with a Apgar scores of 9 and 10 at 1 and 5 minutes respectively. The physical examination reveals a chronically ill child with a generalized skin infections. CBC reveals a WBC count is 9,800, hemoglobin is 10 g/dL, hematocrit is 30%, platelet count is 210,000, and absolute lymphocyte count is 1,900. The serum immunoglobulin levels are decreased and T-cells are severely reduced. The preferred therapy is:
   a) INH
   b) Acyclovir
   c) Bone marrow transplantation
   d) AZT
   e) Amphotericin

329. A child appears with a rib cage abnormalities similar to a rachitic rosary, chondro-osseous dysplasia at the costochondral junctions, iliac bones, and vertebral bodies. CBC reveals an absolute lymphocyte count is $450/mm^3$. The preferred therapy is:
   a) High protein diet

b) Ceftriaxone
c) Ibuprofen
d) High calcium diet
e) Bone marrow transplantation

330. The most common organism causing recurrent skin and pulmonary infections in patients with a hyper IgE syndrome is:
a) Pseudomonas aeruginosa
b) S. aureus
c) S. epidermidis
d) E. coli
e) S. pneumoniae

331. The most common organism causing skin, mucous membranes, and respiratory tract infections in patients with a Chediak-Higashi syndrome is:
a) P. aeruginosa
b) S. epidermidis
c) E. coli
d) S. aureus
e) Candida albicans

332. The most common organism causing recurrent lymphadenitis, hepatic abscesses, and osteomyelitis at multiple sites in patients with a chronic granulomatous disease is:
a) S. aureus
b) Serratia marcescens
c) Burkholderia cepacia
d) Candida albicans
e) Salmonella

333. The following condition appears with a pancreatic insufficiency with fatty replacement, anemia, thrombocytopenia, and metaphyseal dysostosis:
a) Kostman syndrome
b) Chediak-Higashi syndrome
c) Hyper IgM syndrome
d) Cartilage-hair hypoplasia
e) Shwachman-Diamond syndrome

334. The best method for detection of allergen-specific IgE is:
a) Serum IgE levels
b) Blood eosinophilia
c) Eosinophils in nasal smear
d) Total serum immunoglobulin levels
e) Epicutaneous skin tests

335. A good asthma management means that almost all children with asthma can experience all of the following **except**:
a) Sleep well without disturbance due to a chronic cough
b) Attend school regularly
c) Participate fully in sports activities
d) Avoid severe exacerbations of asthma
e) Little or no adverse effects from asthma medications

336. The most common cause of childhood emergency department visits, hospitalizations, and missed school days is:
a) Gastroenteritis
b) Pneumonias
c) Asthma
d) Child abuse
e) Motor vehicle accidents

337. The following statement is **not** true about patients with an asthma:
a) All young children who experienced wheezing, a majority of them will develop asthma in later childhood.

b) Monozygotic twins have a higher incidence of asthma than that of dizygotic twins.
c) Majority of asthmatics have an onset of asthma before 6 years of age.
d) A recurrent wheezing in early childhood is primarily due to a viral infection of the respiratory tract.
e) A chronic asthma associated with an allergy that persists into later childhood and often adulthood.

338. The gold standard to measure airflow in asthma patients is:
a) Peak expiratory flow monitoring
b) Peak inspiratory flow monitoring
c) End-expiratory chest x-ray
d) Spirometry
e) Bronchoprovocation challenges

339. The specific antigen for patients with a drug-induced lupus is:
a) Histone
b) Ro/SSA
c) La/SSB
d) Pm-Sci
e) Sm

340. The specific antigen for patients with a SLE is:
a) Sm
b) Ribonucleoprotein
c) Pm-Sci
d) Scl
e) La/SSB

341. Erythema nodosum is associated with all of the following diseases **except**:
a) Sarcoidosis
b) Tuberculosis
c) Yersinia
d) Coccidioidomycosis
e) Group B Streptococcus infection

342. All of the following conditions cause erythema nodosum **except**:
a) Phenytoin
b) Sulfonamides
c) Oral contraceptives
d) Ulcerative pharyngitis
e) Histoplasmosis

343. Sjogren syndrome is diagnosed by all of the following **except**:
a) Antibodies to Sm antigen
b) Antibodies to Ro/SSA antigen
c) Antibodies to La/SSB antigen
d) Biopsy of the lips
e) Anti-alpha-fodrin autoantibodies

344. The following organ most frequently affected in children with sarcoidosis is:
a) Kidneys
b) Lungs
c) Bones
d) Liver
e) Eye

345. The preferred diagnostic study in patients with a sarcoidosis:
a) Kveim test
b) Tissue biopsy
c) Opthalmologic examination

d) MRI of lungs
e) Elevated angiotensin-converting enzyme levels

346. The most common cardiac involvement in Kawasaki disease is:
a) Coronary artery aneurysms
b) Mitral regurgitation
c) Tricuspid regurgitation
d) Pericarditis
e) Myocarditis

347. The preferred therapy for patients with an acute stage of Kawasaki disease is:
a) Only aspirin
b) Only IVIG
c) Aspirin and IVIG
d) Warfarin and aspirin
e) Aspirin and dipyridamole

348. The preferred therapy for patients with a convalescent stage of Kawasaki disease is:
a) IVIG
b) Aspirin
c) Tissue plasminogen activator
d) Warfarin
e) Dipyridamole

349. The preferred therapy for patients with an acute coronary thrombosis secondary to a Kawasaki disease is:
a) Repeat IVIG (2 grams/Kg)
b) Aspirin (80-100 mg/Kg/day)
c) Aspirin and dipyridamole
d) Corticosteroids
e) Tissue plasminogen activator

350. The preferred long-term therapy for patients with coronary artery abnormalities secondary to a Kawasaki disease is:
a) Aspirin and warfarin
b) Dipyridamole
c) Streptokinase
d) IVIG
e) Aspirin and dipyridamole

351. A child is diagnosed with a Kawasaki disease. He received one dose of IVIG and several doses of aspirin. The child did not improve clinically. The next step in management is:
a) Aspirin (100 mg/kg/day)
b) Repeat IVIG (2 grams/kg)
c) Urokinase
d) Dipyridamole
e) Warfarin

352. A child with a Kawasaki disease did not respond to two doses of IVIG (2 grams/kg, each time) and several doses of aspirin therapy. The next step in management is:
a) Third dose IVIG (4 grams/kg)
b) Double of dose of aspirin
c) Tissue plasminogen activator
d) High dose of dipyridamole
e) Corticosteroids

353. A child is recovered from a Kawasaki disease. He is receiving a low-dose of aspirin therapy. The following vaccination can reduce the risk of Reye syndrome:
a) MMR
b) DtaP
c) IPV

d) Influenza vaccine
e) Varicella

354. A child is recovered from a Kawasaki disease after IVIG and aspirin therapies. The following vaccination should be delayed:
a) IPV
b) MMR
c) DTaP
d) Pneumococcal
e) Hepatitis B vaccine

355. Churg-Strauss syndrome includes all of the following except:
a) Destructive upper airway disease
b) Chronic sinusitis
c) History of asthma
d) Blood eosinophilia
e) Eosinophilic cutaneous vasculitis

356. The most common site of intussuception in patients with a Henoch-Schonlein purpura is:
a) Ileocolic
b) Colocolic
c) Jejunoileal
d) Duodenojejunal
e) Ileoileal

357. The definitive diagnostic study in patients with a Henoch-Schonlein purpura is:
a) Elevated serum IgA levels
b) Elevated serum IgM levels
c) Positive anticardiolipin antibodies
d) Positive antiphospholipid antibodies
e) Biopsy of skin lesions

358. A pulse rate can be low in the presence of fever in all of the following conditions **except**:
a) Drug fever
b) Typhoid
c) Brucellosis
d) Leptospirosis
e) S. aureus

359. A preterm infant is receiving total Parenteral nutrition and intralipid through a central line. Suddenly, the infant develops apnea, bradycardia, and mild abdominal distension. CBC and blood culture are performed. CBC reveals a normal WBC count (12,000) and low platelet count (75,000). A peripheral blood culture is positive for Candida albicans. The next step in management is:
a) Amphotericin
b) Fluocytosine
c) Remove the central line only
d) Repeat the blood culture
e) Amphotericin and removal of the central line

360. A preterm infant's peripheral blood culture is positive for S. epidermidis. She is NPO and receiving TPN and intralipid through a central line. She is in a stable condition. The next step in management is:
a) Nafcillin and remove the central line
b) Vancomycin and remove the central line
c) Remove the central line and give ampicillin
d) Repeat the blood culture and keep the central line
e) Vancomycin, repeat the blood culture, and keep the central line

361. All of the following conditions can occur due to a colonization of VA (ventriculoatrial) shunt **except**:
a) Shunt nephritis
b) Pulmonary hypertension
c) Septic pulmonary emboli

d) Infective endocarditis
e) CSF obtained from ventricular puncture is positive.

362. A full term newborn has a right ventriculoperitoneal (VP) shunt secondary to aqueductal stenosis. The infant developed bacterial meningitis. The organism is S. epidermidis. The preferred therapy is:
a) Nafcillin and remove the shunt
b) Vancomycin and keep the shunt
c) Removal of the shunt and vancomycin
d) Gentamicin and removal of the shunt
e) Cefotaxime and keep the shunt

363. The preferred therapy for patients with a VP shunt and wound infections (S. aureus) in the shunt area is:
a) Vancomycin and keep the shunt
b) Nafcillin and keep the shunt
c) Gentamicin and remove the shunt
d) Ampicillin and remove the shunt
e) Vancomycin and remove the shunt

364. All of the following 'skin' strains of group A Streptococcus are nephritogenic **except**:
a) M type 49
b) M type 52
c) M type 55
d) M type 57
e) M type 60

365. The following 'phayngeal strain of group A Streptococcus are nephritogenic:
a) My type 4
b) M type 9
c) M type 10
d) M type 12
e) M type 15

366. The most common organism in nonbullous or bullous impetigo in USA is:
a) S. aureus
b) Group A Streptococcus
c) S. pneumoniae
d) P. aeruginosa
e) S. epidermidis

367. A 9-year-old boy appears with a skin lesion over the pretibial area of the right leg. The lesion is swollen, red, tender, sharply defined, and slightly elevated border. He also has a fever and malaise. The most likely diagnosis is:
a) Impetigo
b) Cellulitis
c) Cutaneous TB
d) Insect bite
e) Erysipelas

368. The most common organism in patients with an erysipelas is:
a) S. aureus
b) S. pneumoniae
c) S. epidermidis
d) E. coli
e) Group A Streptococcus

369. The specific organism can be isolated in patients with an erysipelas by:
a) Skin culture
b) Blood culture
c) Throat culture

d) A rapid strep test
e) Culture obtained by needle aspirate of an affected area

370. The preferred therapy for patients with a vancomycin-resistent Enterococcus infection (e.g., E. faecium, E. faecalis) is:
a) Linezolid
b) Ceftriaxone
c) Ciprofloxacin
d) Ticarcillin
e) Quinupristin-dalfopristin

371. The most common organism in patients with a Gullain-Barre syndrome is:
a) Yersinia enterocolitica
b) Shigella
c) Salmonella
d) E. coli
e) Campylobacter jejuni

372. A child is diagnosed to have a bubonic plague. The child should be placed on isolation until:
a) 1 day after the onset of antibiotic therapy
b) 2 days after the onset of antibiotic therapy
c) 3 days after the onset of antibiotic therapy
d) 5 days after the onset of antibiotic therapy
e) 7 days after the onset of antibiotic therapy

373. The preferred therapy for patients with a bubonic plague is:
a) Intramuscular streptomycin
b) Intravenous streptomycin
c) Penicillin
d) Chloramphenicol
e) Tetracycline

374. The preferred therapy for patients with a septicemia or meningitis secondary to plague is:
a) Intravenous chloramphenicol
b) Intramuscular chloramphenicol
c) Intravenous streptomycin
d) Doxycycline
e) Trimethoprim-sulfamethoxazole

375. The preferred therapy for children over 9 years of age with a mild bubonic plague is:
a) Penicillin
b) Ampicillin
c) Chloramphenicol
d) Erythromycin
e) Trimethoprim-sulfamethoxazole

376. A 9-year-old boy is admitted for a pneumonic plague. He has an older brother and sister at home. The recommended prophylactic therapy for close contacts of patients with a pneumonic plague is:
a) 2-day course of tetracycline
b) 3-day course of doxycycline
c) 5-day course of trimethoprim-sulfamethoxazole
d) 7-day course of doxycycline
e) 10-day course of Ciprofloxacin

377. A 12-year-old girl appears with a bubonic plague. She has three younger siblings at home. The girl has an uncomplicated disease. The recommended prophylactic therapy for all siblings is:
a) 9-year-old sibling should receive doxycycline
b) 7-year-old sibling should receive penicillin
c) 4-year-old sibling should receive erythromycin

d) All of them should receive trimethoprim-sulfamethoxazole
e) No therapy is indicated.

378. A 12-year-old boy appears with a persistent cough, fever, and sore throat for the last 2 weeks. Initially, cough was nonproductive. For the last few days, he developed a frothy, white sputum. A physical examination reveals a fine crackles or rales. The chest x-ray reveals a bilateral lower lobes infiltrate. The preferred therapy is:
a) Ceftriaxone
b) Cefotaxime
c) Clindamycin
d) Clarithromycin
e) Ciprofloxacin

379. A child appears with several skin lesions over the boy. The lesions are erythema multiforme. The most likely diagnosis is:
a) Candida infections
b) Chlamydia infections
c) Herpes simplex virus infections
d) Stevens-Johnson syndrome
e) Histoplasmosis infections

380. A child appears with scattered vesicular lesion on the tongue, buccal mucosal, gum, palate, and posterior pharynx. Some ulcerative lesions surrounded by erythema are also noted. She also has maculopapular, vesicular, and pustular lesions over he hands, fingers, and feet. The most likely organism is:
a) Human herpes virus type 1
b) Coxsackievirus A 16
c) Candida albicans
d) Group A Streptococcus
e) Enterovirus 70

381. The most common organism in patients with a **severe form** of hand-foot-and-mouth disease is:
a) Coxsackievirus A 16
b) Coxsackievirus B 5
c) Coxsackievirus A 5
d) Coxsackievirus B 2
e) Enterovirus 71

382. The most common cause of viral meningitis in mumps-immunized patients is:
a) Enteroviruses
b) Human herpes virus type 1
c) Human herpes virus type 2
d) Measles virus
e) CMV

383. A child appears with fever, sore throat, and abdominal pain. A physical examination reveals generalized lymphadenopathies and splenomegaly. The child was treated with an antibiotic and developed rashes all over the body. The most likely antibiotic that was used for this patient is:
a) Azithromycin
b) Erythromycin
c) Chloramphenicol
d) Ampicillin
e) Trimethoprim-sulfamethoxazole

384. Alice in Wonderland syndrome may be a complication of the following infection:
a) CMV
b) Toxoplasma gondii
c) HIV
d) Hepatitis B virus
e) Epstein-Barr virus

385. The most serious complication in patients with a EBV infectious mononucleosis is:
   a) Myocarditis
   b) Hemolytic anemia
   c) Pancreatitis
   d) Ataxia
   e) Subcapsular Splenic hemorrhage

386. All of the following are complications of EBV infectious mononucleosis **except**:
   a) Guillain-Barre syndrome
   b) Reye syndrome
   c) Upper airway obstruction
   d) Orchitis
   e) Subcapsular hepatic hemorrhage

387. All of the following problems are higher in children who are poor **except**:
   a) Suicide
   b) Deaths due to disease
   c) Lead poisoning
   d) Delayed immunization
   e) Severely impaired vision

388. The growth of infants during the 1st year of life is:
   a) Two-fold increase in weight and two-fold increase in length
   b) Two-fold increase in weight and three-fold increase in length
   c) Four-fold increase in weight and one-fold increase in length
   d) One-fold increase in weight and one-fold increase in length
   e) Three-fold increase in weight and two-fold increase in length

389. By the end of the 1st week of life, most infants need:
   a) 0-3 feedings/day
   b) 3-6 feedings/day
   c) 6-9 feedings/day
   d) 9-12 feedings/day
   e) 12-15 feedings/day

390. By the end of the 1st week of life, most infants tolerate:
   a) 40-50 mL/feeding
   b) 50-60 mL/feeding
   c) 60-70 mL/feeding
   d) 70-80 mL/feeding
   e) 80-90 mL/feeding

391. Serving sizes of 2-3 year old children should be about:
   a) One-third of 4-6 years old children and milk is included.
   b) Two-third of 4-6 years old children except for milk.
   c) Three-fourth of 4-6 years old children except for milk.
   d) One-half of 4-6 years old children except for milk.
   e) One-quarter of 4-6 years old children except for milk.

392. A 2-month-old infant appears with loose stools and discomfort for the last 2 days. His mother noticed that the infant develops loose stools when she infests spices and improves when she ingests spices and improves when does not ingest spices. The infant has no other symptoms. The infant is receiving breast milk only. The next step in management is:
   Stop breast feeding and switch to a formula feeding
   Give more spices in foods and make a definitive diagnosis.
   Mother should not ingest spices rest of her life.
   Mother should continue to ingest spices despite loose stools and the infant should get used to spices.
   Mother should stop ingesting spices when there is a strong correlation between spices and diarrheal symptoms.

393. In children, obesity is most commonly associated with:
   a) Delayed puberty
   b) Childish behavior
   c) Tall stature
   d) Gynecomastia
   e) Decreased academic performance in school

394. A routine physical examination of an obese child reveals a hypertrophic hyperpigmentation of the skin on the posterior neck and in skin creases. The child has a higher risk of developing the following disease.
   a) Eczema
   b) Asthma
   c) Type 1 diabetes
   d) Type 2 diabetes
   e) Malignancy

395. Obesity is diagnosed in most children by:
   a) Hemoglobin A 1C
   b) Serum leptin levels
   c) Inspection
   d) Body mass index (BMI)
   e) Family history

396. In obese children, all other following laboratory tests are indicated **except**:
   a) Plasma lipid profiles
   b) Fasting glucose levels
   c) Fasting insulin levels
   d) Hemoglobin A 1C
   e) Serum electrolytes

397. All of the following are potential complications of obesity **except**:
   a) Cardiovascular disease
   b) Diabetes
   c) Asthma
   d) Sleep apnea
   e) Hyperthyroidism

398. All of the following therapies are indicated in obesity **except**:
   a) Increased computer games
   b) Decreased dietary calories
   c) Decreased dietary carbohydrates
   d) Decreased dietary fats
   e) Increased physical activities

399. The preferred method to manage the obesity epidemic in children is:
   a) Reduce foods intake
   b) Reduce TV viewing
   c) Aerobic exercise
   d) Education and prevention
   e) Reduce computer games playing

400. A child developed a sensory neuropathy. The most likely cause is:
   a) Vitamin A toxicity
   b) Vitamin C toxicity
   c) Vitamin C deficiency
   d) Vitamin B_6 toxicity
   e) Vitamin B_2 toxicity

401. A preterm (35 weeks gestational age) newborn appears with a severe respiratory distress. A physical examination reveals a long narrow thorax, short neck, very short extremities, large head, and cloverleaf skull. The mother has a history of Polyhydramnios. The infant is intubated and placed on a mechanical ventilator. The most likely diagnosis is:
    a) Respiratory distress syndrome
    b) Achondroplasia
    c) Thanatophoric dysplasia
    d) Hypochondroplasia
    e) Jansen metaphyseal dysplasia

402. A full term newborn appears with a large head, prominent forehead, long narrow trunk, short extremities especially proximal segments, trident fingers, and hyperextensible joints except elbows. The most likely diagnosis is:
    a) Achondroplasia
    b) Hypochondroplasia
    c) Jansen metaphyseal dysplasia
    d) Noonan syndrome
    e) Conradi-Hunnermann syndrome

403. The mode of inheritance in patients with a Marfan syndrome is:
    a) Autosomal recessive
    b) Autosomal dominant
    c) X-linked recessive
    d) X-linked dominant
    e) Multifactorial

404. The chromosome involved in Marfa syndrome is:
    a) Chromosome 1
    b) Chromosome 5
    c) Chromosome 13
    d) Chromosome 15
    e) Chromosome 22

405. All of the following ocular findings are noted in patients with a Marfan syndrome **except**:
    a) Dislocated lens
    b) Blue sclera
    c) Myopia
    d) Iriodonesis
    e) Corneal opacity

406. A 15-year-old girl is admitted for acetaminophen poisoning. She vomited a few times in the ER. The plasma acetaminophen level should be obtained:
    a) 30 minutes after ingestion
    b) 1 hour after ingestion
    c) 2 hours after ingestion
    d) 3 hours after ingestion
    e) 4 hours after ingestion

407. A 17-year-old girl appears with an abdominal pain for the last 6 hours. Her mother stated that she took unknown quantities of acetaminophen tablets about 30 hours prior to the onset of an abdominal pain. She has problems in school and with her boyfriend. She vomited several times at home yesterday. Subsequently, vomiting stopped and she became asymptomatic except mild abdominal pain. A physical examination reveals a mild right upper quadrant tenderness. The next step in management is:
    a) Follow-up visit in a clinic after 24 hours.
    b) Notify her private MD and make an early appointment.
    c) No investigation is indicated a this time but notify the social worker to talk to the patient.
    d) Give a specific instruction to the patient and her mother that she should return to the emergency if she becomes ill.
    e) A plasma acetaminophen level, LFTs, and prothrombin time should be obtained.

408. A child appears wit hypertension and female pseudohermaphroditism. The most likely diagnosis:
    a) 21-hydroxylase deficiency
    b) 11 beta-hydroxylase deficiency

c) 3 beta-hydroxysteroid dehydrogenase deficiency
d) Lipoid adrenal hyperplasia
e) 17 alpha-hydroxy / 17, 20 lyase deficiency

409. The most common site of origin in patients with a pheochromocytoma is:
a) Adrenal medulla
b) Near the bifurcation of aorta
c) Near the superior mesentericartery
d) Urinary bladder
e) Thoracic cavity

410. The following chromosome is associated in patients with a Noonan syndrome:
a) Chromosome 11
b) Chromosome 13
c) Chromosome 15
d) Chromosome 17
e) Chromosome 19

411. In patients with a Klinefelter syndrome, MRI studies usually reveal:
a) Increased temporal lobes volumes
b) Reduced left temporal lobe gray matter volumes
c) Reduced parietal lobe volumes
d) Reduced frontal lobe volumes
e) Reduced right temporal lobe gray matter volumes

412. The mode of inheritance in patients with a Kallmann syndrome is:
a) Autosomal recessive
b) Autosomal dominant
c) X-linked short arm
d) X-linked long arm
e) Multifactorial

413. A 15-year-old boy appear with a pain and enlargement of the right breast for the last 2 weeks. A physical examination reveals a tender and enlarged right breast. The next step in management is:
a) Danazol
b) Anastrozole
c) Testolactone
d) Surgical removal of the breast
e) Reassurance

414. The following medication can cause polycystic ovarian syndrome (PCOS):
a) Valproate
b) Phenytoin
c) INH
d) Rifampin
e) Ketoconazole

415. Stein-Leventhal syndrome includes all of the following except:
a) Hirsutism
b) Bilateral polycystic ovaries
c) Obesity
d) Secondary amenorrhea
e) Fertility

416. An adolescents girl appears with a primary amenorrhea. Her height is normal. She appears as a female. A physical examination reveals absence of breasts development but normal external genitalia. Pelvic ultrasonography reveals a normal vagina, uterus, and fallopian tubes. The most likely diagnosis is:
a) XY gonadal agenesis syndrome
b) Denys-Drash syndrome

c) XY pure gonadal dysgenesis
d) WAGR syndrome
e) Camptomelic syndrome

417. Rabson-Mendenhall syndrome includes all of the following features **except**:
a) Extreme insulin resistance
b) Pineal hypoplasia
c) Acanthosis nigricans
d) Defects in insulin receptor gene
e) Abnormalities of the teeth and nails

418. Leprechaunism includes all of the following features **except**:
a) Fasting hypoglycemia
b) Postprandial hyperglycemia
c) Severe resistance to insulin
d) Defects in insulin receptor
e) Large for gestational age

419. A routine physical examination of the newborn reveals a prominent bony ridge on the skull, long and narrow head. The preferred diagnostic method for this condition is:
a) Head ultrasonography
b) Head MRI
c) Head CT scan
d) Skull x-ray
e) Bone scan

420. Scaphocephaly is associated with all of the following conditions **except**:
a) Increased intracranial pressure
b) Prominent occiput
c) Broad forehead
d) Small anterior fontanel
e) Absent anterior fontanel

421. A 2-day-old healthy newborn appears wit a seizure-like activities. All of the following statements can differentiate a seizure from nonepileptiform activities **except**:
a) Seizure activities are associated with tachycardia.
b) Seizure activities are not associated with an elevation of the blood pressure.
c) Seizure are not supported by gentle restraint.
d) Seizures are not enhanced by a sensory stimulation.
e) Seizures can be diagnosed by using a polygraphic EEG recording with video monitoring.

422. A newborn female appears with refractory seizure activities. A physical examination reveals a crusted vesicular lesions on the skin, coloboma of the iris, and retinal lacunae. The head CT scan reveals an absence of corpus callosum. The most likely diagnosis is:
a) Herpes encephalitis
b) Metastatic Wilms tumor
c) Metastatic retinoblastoma
d) Methadone withdrawal
e) Aicardi syndrome

423. Aicardi syndrome patients usually have the following type seizure activities:
a) Generalized myoclonic seizures
b) Focal myoclonic seizure
c) Multifocal clonic seizures
d) Tonic seizures
e) Subtle seizures

424. A full term newborn develops irritability, jitteriness, and brief focal jerky movements of the extremities that involves distal muscle groups. The mother denies taking drugs. The serum glucose and electrolytes are normal. She was born by a NSVD with Apgar scores of 7 and 8 at 1 and 5 minutes respectively. The most likely diagnosis is:
a) Perinatal asphyxia
b) Subdural hemorrhage
c) Intraventricular hemorrhage
d) Drug withdrawal seizures
e) Phenylketonuria

425. A child appears with history of a fever, headache, severe malaise, rigors, and vomiting. About 3 days later, he developed rashes over the face and extremities. The rashes were initially macular followed by papular and pustular. On the 10th day, the rashes begin to crust. The rashes have a centrifugal distribution. The most likely diagnosis is:
a) Measles
b) Rubella
c) Chickenpox
d) Smallpox
e) Exposure to lewisite

426. A child appears with a snake bite in the left lower extremity about an hour ago. The dead snake has a rounded head and round pupil. The next step in management is:
a) Apply a tourniquet proximal to the site of injury
b) Give antivenin prophylaxis
c) Apply ice to the site of injury
d) Excision and suction of the site of injury
e) Reassurance and local wound care if indicated.

427. A child appears with a coral snake bite in the right lower extremity about an hour ago. He has a mild pain and little swelling in the affected area. The child has no other symptoms. The management includes all of the following **except**:
a) Prophylactic antivenin
b) Applying a tourniquet proximal to the site of injury
c) A large bore intravenous line should be started.
d) Local wound care
e) Applying ice to the site of injury

428. A patient did **not** receive an antivenin therapy after a coral snake bite. The most likely complication is:
a) Gangrene of the extremity
b) Thrombosis of leg veins
c) Arrythmias
d) Hepatic failure
e) Paralysis

429. Transposition of great vessels are most commonly associated with:
a) ASD
b) VSD
c) Pulmonic stenosis
d) Aortic stenosis
e) Tricuspid regurgitation

430. A 9-month-old appears with a respiratory distress. He was previously admitted for recurrent pneumonia. A physical examination reveals wheezing, intercostals retractions, mild cyanosis, hyperdynamic precordium, and a loud to-and-fro murmur over theleft upper sternal border. The most likely diagnosis is:
a) Pulmonic stenosis
b) Aortic stenosis
c) Aortic regurgitation
d) Truncus arteriosus
e) Congenital absence of the pulmonary valve

431. The following chromosome is involved in patients with a William syndrome:
a) Chromosome 5

b) Chromosome 7
c) Chromosome 11
d) Chromosome 13
e) Chromosome 17

432. The preferred therapy for children with a moderate to severe aortic valvular stenosis is:
a) Balloon valvuloplasty
b) Konno procedure
c) Surgical valve replacement
d) Aortopulmonary anastomosis
e) Rashkind procedure

433. A child was diagnosed with a coarctation of aorta. The operative repair was performed. Several months after surgery, the child developed a systolic ejection murmur along the left sternal border. The most likely condition that becomes apparent after a surgical procedure for coarctation of aorta is:
a) Aortic insufficiency
b) Recurrence of aortic coarctation
c) Mitral stenosis
d) Mitral insufficiency
e) Subvalvular aortic stenosis

434. A child appears with symptoms of shortness of breathe and fatigue with a mild exertion. The private MD appreciated a systolic ejection murmur at the sternal border. The patient was referred to a pediatric cardiologist. The echocardiogram reveals an aortic stenosis and severe tunnel-like subaortic obstruction. The preferred therapy is:
a) Kenno procedure
b) Balloon valvuloplasty
c) Aortopulmonary anastomosis
d) Put a stent in the obstructed area
e) Create an artificial VSD

435. A child who is a known asthmatic appears with a sudden onset of cough, dyspnea, tachypnea, shallow respiration, and tachycardia. The child has no fever. A physical examination reveals a mild cyanosis, decreased breath sounds and crackles over the right upper thoracic cavity. The most likely diagnosis is:
a) Right pneumothorax
b) Left pneumothorax
c) Right upper lobe pneumonia
d) Right upper lobe atelactasis
e) Right lower lobe bronchiectasis

436. A child appears with a moderate amount of bleeding through the mouth. All of the following findings indicate a hemoptysis **except**:
a) Bright red color
b) Frothy
c) Nausea
d) Accompanied by cough
e) Alkaline pH

437. A child appears with a massive bleeding through the mouth and nose. The following finding does **not** indicate a hematemesis:
a) Dark red blood
b) Acidic pH
c) Nausea
d) Frothy
e) Presence of food particles

438. A child appears with a fever, cough, sputum production, tachypnea, dyspnea, hemoptysis, and weight loss. A physical examination reveals intercostals retractions, crackles, decreased breath sounds, and dullness to percussion in the right upper chest area. The chest x-ray reveals parenchymal inflammations with a cavity containing air-fluid level in the right upper lobe. The most likely diagnosis is:
a) Right upper lobe TB

b) Right upper lobe pneumonia
c) Right upper lobe abscess
d) Right upper lobe cyst
e) Right upper lobe obstruction

439. The preferred diagnostic study in patients with a pulmonary abscess is:
a) Chest x-ray
b) Lung scan
c) Lung CT scan
d) Bronchoscopy
e) Sputum culture

440. The following statement is not true about pulmonary aspirations and abscesses:
a) A secondary lung abscess is more common in the right side, particularly in immunocompromised children.
b) A primary lung abscess is more common in the right side.
c) If the child is upright, the posterior segments of upper lobes are affected.
d) If the child is in recumbent position, left and right upper lobes are affected.
e) In a recumbant position, apical segment of the right upper lobe is affected.

441. Heterotaxy syndromes are associated with all of the following cardiac conditions **except**:
a) Dextrocardia
b) Transposition of great arteries
c) Common atrioventricular valve
d) Single atrium
e) Total anomalous pulmonary venous return

442. A child is diagnosed to have a congenital heart disease. The oxygen saturation in superior vena cava is 74%. The oxygen saturation and pressure in the right atrium are 74% and 0-3 mm Hg respectively. The oxygen saturation and pressure in the right ventricle are 74% and 40/6 mm Hg. The oxygen saturation and pressure in the pulmonary artery are 74% and 5 mm Hg. The oxygen saturation in the pulmonary veins are 98%. The oxygen saturation and pressure in the left atrium are 98% and 4-8 mm Hg. The oxygen saturation and pressure in the left ventricle are 80% and 105/10 mm Hg. The oxygen saturation and pressure in the aorta are 80% and 100/60 mm Hg. The preferred surgical procedure is:
a) Arterial switch (Jatene) operation
b) Norwood operation
c) Starnes procedure
d) Fontan procedure
e) Blalock-Taussig shunt

443. A child is diagnosed to have a congenital heart disease. The oxygen saturation in superior vena cava is 74%. The oxygen saturation and pressure in the right atrium are 74% and 0-3 mm Hg. The oxygen saturation and pressure in the right ventricle are 74% and 100/8 mm Hg. The oxygen saturation and pressure in the pulmonary artery are 98% and 40/2 mm Hg. The oxygen saturation in the pulmonary veins are 98%. The oxygen saturation and pressure in the left atrium are 98% and 4-8 mm Hg. The oxygen saturation and pressure in the left ventricle are 98% and 40/2 mm Hg. The oxygen saturation and pressure in the aorta are 74% and 100/60 mm Hg. The preferred surgical procedure is:
a) Blalock-Taussig shunt
b) Arterial switch (Jatene) operation
c) Glenn shunt
d) Fontan procedure
e) Norwood operation

444. A child is diagnosed to have a congenital heart disease. The oxygen saturation in superior vena cava is 74%. The oxygen saturation and pressure in the right atrium are 74% and 0-3 mm Hg. The oxygen saturation and pressure in the right ventricle are 80% and 35/5 mm Hg. The oxygen saturation and pressure in the pulmonary artery are 80% and 25/10 mm Hg. The oxygen saturation in the pulmonary veins are 98%. The oxygen saturation and pressure in the left atrium are 98% and 4-8 mm Hg. The oxygen saturation and pressure in the left ventricle are 98% and 100/8 mm Hg. The oxygen saturation and pressure in the aorta are 98% and 100/60 mm Hg. The preferred surgical procedure is:
a) Repair of VSD
b) Repair of ASD
c) Surgical closure of PDA

d) Surgical repair of truncus arteriosus
e) Total repair of anomalous pulmonary venous return

445. A child appears with a history of vomiting and diarrhea for the last 5 days. The serum electrolyte results reveal Na 120, Cl 84, K 5.0, glucose 80, BUN 20, creatinine 1.0, and urine specific gravity is 1022. The next step in management is:
a) Give DDAVP
b) Slow correction of sodium over 48 hours
c) Fluid restrictions
d) Repeat the test
e) Correct hyponatremic dehydration

446. A child appears with a history of vomiting and diarrhea for the last 3 days. The serum electrolyte results reveal Na 157, cl 119, K 4.0, glucose 70, BUN 22, creatinine 1.2, and urine specific gravity is 1020. The next step in management is:
a) Give maintenance sodium chloride infusions
b) DDAVP
c) Correct hypernatremia over 12 hours
d) Correct hypernatremia over 48 hours
e) Give excessive fluids

447. A child appears with a history of diarrhea with vomiting for the last 7 days. The mother could not afford oral electrolyte solutions. A solution was made at home with an added salt and sugar. The serum electrolyte results reveal Na 160, Cl 126, K 4.0, glucose 88, BUN 6, creatinine 0.6, and urine specific gravity is 1008. The next step in management is:
a) Give excessive fluids
b) DDAVP
c) Admit the patient
d) Restrict the fluids
e) Repeat the blood test

448. A child appears with a persistent headache and polyuria for the last 2 weeks. The serum electrolyte results reveal Na 160, Cl 118, K 4.0, glucose 90, BUN 25, creatinine 1.7, and urine specific gravity is 1002. The next step in management is:
a) Give excessive fluids, then DDAVP
b) Fluid restriction therapy
c) Give subcutaneous insulin therapy
d) Slow correction of sodium over 48 hours
e) Repeat the blood test

449. The side effect of following medication is hypokalemia:
a) Hydralazine
b) Minoxidil
c) Propranolol
d) Furosemide
e) Enalaprilat

450. The side effect of following medication is facial flushing:
a) Clonidine
b) Diazoxide
c) Enalapril
d) Hydrochlorthiazide
e) Nifedipine

451. The side effect of following medication is hypotension:
a) Enalapril
b) Bumetanide
c) Labetalol
d) Nitroprusside
e) Captopril

452. The side effect of following medication is hypertension:
a) Clonidine

b) Phentolamine
c) Enalaprilat
d) Nifedipine
e) Hydralazine

453. A breast-fed infant appears pale in a routine physical examination. Her mother is a vegan. The infant is not receiving any milk formula or baby foods. The infant has a sickle cell trait. The most likely diagnosis is:
a) Iron deficiency anemia
b) Vitamin B_{12} deficiency
c) Folic acid deficiency
d) Sickle cell disease
e) Thallasemia major

454. Pearson's syndrome has all of the following characteristics **except**:
a) Microcytic anemia
b) Neutropenia
c) Thrombocytopenia
d) Vacuolization of RBC
e) Vacuolization of myeloid precursors.

455. The normal reticulocyte index is:
a) 0.1
b) 0.5
c) 1.0
d) 1.5
e) 2.0

456. The usual reticulocyte index in a chronic hemolytic anemia is between:
a) 0-1
b) 1-2
c) 2-3
d) 3-4
e) 6-8

457. A 5-year-old boy appears with a sudden onset of jaundice and right upper abdominal pain for the last 2 days. He was asymptomatic prior to this episode. His mother had history of splenectomy during childhood. A physical examination reveals jaundice, splenomegaly, and right upper quadrant tenderness. Ultrasonography reveals multiple gallstones. The most likely diagnosis is:
a) Acute cholecystitis
b) Gallstone of the bile duct
c) Biliary atresia
d) Hereditary spherocytosis
e) Acute hepatitis A infection

458. A routine newborn physical examination revealed heart rate 170 beats per minute. The newborn was crying at that time. The rest of the physical examination was unremarkable. The next step in management is:
a) EKG
b) Chest x-ray
c) ABG
d) Echocardiogram
e) Reassurance

459. A routine newborn physical examination revealed heart rate 70 beats per minute. The newborn was sleeping at that time. The rest of the physical examination was unremarkable. The next step in management is:
a) ABG
b) EKG
c) Chest x-ray
d) Cardiology consult
e) Reassurance

460. A 15-year-old boy came for a routine physical examination. He is a good athlete. A physical examination reveals heart rate 40 beats per minute. The rest o the physical examination is unremarkable. The next step in management is:
   a) EKG
   b) Stress test
   c) Cardiology consult
   d) Pace maker
   e) Reassurance

461. All of the following statements indicate pathologic conditions **except**:
   a) A newborn's heart rate is more than 200 beats per minute persistently.
   b) An infant's heart rate is more than 150 beats per minute persistently.
   c) An older child's heart rate is more than 120 beats per minute persistently.
   d) A full term infant's heart rate is 68 beats per minute during sleep.
   e) A 16-year-old athlete's heart rate is 40 beats per minute.

462. A newborn appears wit a pink right arm and blue lower extremities. The most likely diagnosis is:
   a) Tetralogy of Fallot
   b) Transposition of great arteries
   c) Truncus arteriosus
   d) Coarctation of aorta
   e) Total anomalous pulmonary venous return

463. A newborn appears wit a blue upper arm and less blue lower extremities. The most likely diagnosis is:
   a) Transposition of great arteries
   b) Tetralogy of Fallot
   c) Truncus arteriosus
   d) Tricuspid atresia
   e) Total anomalous pulmonary venous return

464. A newborn appears with a circumoral cyanosis. The mucous membranes (i.e., lips and tongue) are pink. The most likely diagnosis is:
   a) Cold lips
   b) VSD
   c) ASD
   d) PDA
   e) Prominent venous plexus in lips

465. A new born appears with a blueness around the forehead. The rest of the physical examination is unremarkable. The most likely diagnosis is:
   a) Cold forehead
   b) Meningocele
   c) Hydrocephalus
   d) Encephalocele
   e) Prominent venous plexus on the forehead

466. A newborn appears with a cyanosis of both hands and feet. The rest of the physical examination is unremarkable. The most likely diagnosis is:
   a) Transposition of great vessels
   b) Gram-negative septic shock
   c) Patent foramen ovale
   d) Unwrapped and cold extremities
   e) Persistent pulmonary hypertension

467. The common organisms in patients with **a native valve** and infective endocarditis are all of the following **except**:
   a) Staphylococcus epidermidis
   b) Staphylococcus aureus
   c) Streptococcus mutans
   d) Streptococcus sanguis
   e) Streptococcus bovis

468. The most common organism in patients with an infective endocarditis **without an underlying heart disease** is:
   a) S. aureus
   b) Pseudomonas aeruginosa
   c) Serratia marcescens
   d) Streptococcus mitis
   e) Streptococcus faecalis

469. The most common organism in patients with an infective endocarditis after a **dental procedure** is:
   a) Streptococcus mutans
   b) S. aureus
   c) Streptococcus bovis
   d) Streptococcus pneumoniae
   e) Streptococcus faecalis

470. The most common organism in patients with an infective endocarditis after a **lower bowel surgery** is:
   a) Streptococcus bovis
   b) Streptococcus mutans
   c) Streptococcus sunguis
   d) E. coli
   e) Serratia marcescens

471. The most common organism in patients with an infective endocarditis after a **genitourinary intervention** is:
   a) Streptococcus pneumoniae
   b) E. coli
   c) Pseudomonas aeruginosa
   d) Campylobacter fetus
   e) Streptococcus faecalis

472. The most common organism in patients with an infective endocarditis and **intravenous drug abusers** is:
   a) Streptococcus aureus
   b) Pseudomonas aeruginosa
   c) Streptococcus epidermidis
   d) Streptococcus mitis
   e) Candida albicans

473. The most common organism in patients with an infective endocarditis and **indwelling central venous catheter** is:
   a) S. aureus
   b) Serratia marcescens
   c) S. epidermidis
   d) Candida albicans
   e) Haemophilus influenzae

474. The following condition is an important risk factor for developing an infective endocarditis in children with a **cyanotic heart disease**:
   a) Diarrhea
   b) RSV infection
   c) MMR vaccination
   d) Poor dental hygiene
   e) Arrythmias

475. All of the following **postoperative cardiac conditions** are risk factors for developing infective endocarditis **except**:
   a) Replaced aortic valve
   b) Norwood aortopulmonary anastomosis
   c) Blalock-Taussig shunt
   d) Repair a mitral valve
   e) Repair of a simple atrial septal defect

476. All of the following **preoperative cardiac conditions** are risk factors for developing infective endocarditis **except**:
   a) VSD
   b) Tetralogy of Fallot
   c) Aortic stenosis
   d) Tricuspid regurgitation in newborns
   e) Transposition of great arteries

477. A 3-month-old boy appears with macrocytic anemia and reticulocytopenia. The bone marrow examination reveals a deficiency of RBC precursors in an otherwise normally cellular marrow. A physical examination reveals triphalangeal thumbs. The most likely diagnosis is:
   a) Folic acid deficiency
   b) Vitamin B_{12} deficiency
   c) Parvovirus B19
   d) Diamond-Blackfan anemia
   e) Transient erythroblastopenia of childhood

478. All of the following laboratory findings are suggestive of Diamond-Blackfan anemia (or congenital Hypoplastic anemia) **except**:
   a) Increased erythrocyte adenosine deaminase activities
   b) Normal fetal hemoglobin levels
   c) Increased expression of 'i' antigen
   d) Elevated serum iron levels
   e) Macrocytic anemia with reticulocytopenia

479. The preferred therapy in patients with a Diamond-Blackfan anemia is:
   a) Cyclosporine
   b) Corticosteroids
   c) Cyclophosphamide
   d) Antithymosite globulin (ATG)
   e) Intravenous immunoglobulin

480. All of the following tumors most commonly occur during the 1st year of life **except**:
   a) Neuroblastomas
   b) Retinoblastomas
   c) Wilms tumor
   d) Gliomas
   e) Rhabdomyosarcomas

481. All of the following tumors most commonly occur between 6-18 years of age, especially during puberty **except**:
   a) Osteosarcomas
   b) Ewing sarcomas
   c) Soft tissue sarcomas
   d) Hodgkin disease
   e) Non-Hodgkin lymphomas

482. A patient is exposed to an ionizing radiation therapy. The patient may develop:
   a) Ewing sarcomas
   b) Rhabdomyosarcomas
   c) Non-Hodgkin lymphomas
   d) Osteosarcomas
   e) Neuroblastomas

483. A 4-year-old boy is diagnosed to have an Epstein-Barr virus infection. He has an increased risk of the following disease:
   a) Non-Hodgkin lymphoma
   b) Hodgkin disease
   c) Wilms tumor
   d) Acute lymphoid leukemia
   e) Acute myeloid leukemia

484. Neurofibromatosis type 1 is strongly associated with the following disease:
   a) Optic gliomas
   b) Hepatoblastomas
   c) Retinoblastomas
   d) Neuroblastomas
   e) Osteosarcomas

485. All of the following conditions have an increased risk of acute lymphoid leukemias **except**:
   a) Li-Fraumeni syndrome
   b) Bloom's syndrome
   c) Down syndrome
   d) Neurofibromatosis type 1
   e) Ataxia-telangiectasia

486. Beckwith-Wiedemann syndrome is associated with the following condition:
   a) Wilms tumor
   b) Neuroblastoma
   c) Retinoblastoma
   d) Ewing sarcoma
   e) Rhabdomyosarcoma

487. A newborn is diagnosed to have a hereditary retinoblastoma. The infant is at risk of developing the following tumor:
   a) Hepatoblastoma
   b) Ewing sarcoma
   c) Rhabdomyosarcoma
   d) Osteosarcoma
   e) Wilms tumor

488. A 6-year-old boy appears with a bleeding from the urethra and dysuria. He had similar episodes 6 months and 12 months ago. The mother denies any history trauma. In each episode, he experienced 1-2 times bleeding that stopped spontaneously without any intervention. The next step in management is:
   a) Renal ultrasonography
   b) Urethrogram
   c) Urine culture
   d) Bladder ultrasonography
   e) Reassurance

489. All of the following conditions cause gross hematuria **except**:
   a) IgA nephropathy
   b) Alport syndrome
   c) SLE nephritis
   d) Posterior urethral valve
   e) Henoch-Schonlein purpura nephritis

490. The most common tumor site of teratomas is:
   a) Lumbar
   b) Thoracic
   c) Cervical
   d) Lumbosacral
   e) Sacrococcygeal

491. Albright syndrome is characterized by a triad of:
   a) Osteoporosis, blue sclera, and glaucoma
   b) Osteoporosis, Wilms tumor, aniridia
   c) Retinoblastoma, osteosarcoma, and broad thumbs
   d) Ewing sarcoma, cataract, and hydronephrosis
   e) Polyostotic disease, precious puberty and skin pigmentation.

492. A child appears with a history of tibial bone pain in night and the pain is relieved by aspirin. The most likely diagnosis is:
a) Osteosarcoma
b) Ewing sarcoma
c) Osteoid osteoma
d) Osteochondroma
e) Enchondroma

493. A child appears with a pain in the lone bone that is not relieved by aspirin. The pain awakens the child at night. The most likely diagnosis is:
a) Fibroma
b) Aneurysmal bone cyst
c) Osteochondroma
d) Unicameral bone cyst
e) Osteosarcoma

494. A routine screening urinalysis should be obtained initially at:
a) 1 year of age
b) 2 years of age
c) 3 years of age
d) 4 years of age
e) 5 years of age

495. A 14-year-old girl noticed blood in the urine. Her menstrual periods are irregular. She is constipated. The routine urinalysis reveals blood. She denies suprapubic tenderness and flank pain. The most likely diagnosis is:
a) Asymptomatic UTI
b) Hemorrhoidal bleeding
c) Glomerular disease
d) Ureteral bleeding
e) Urine contaminated with menstrual bleeding

496. A 10-year-old healthy boy appears for a routine physical examination. The urinalysis reveals more than 100,000 RBCs per 12 hours period. The next step in management is:
a) Urine culture
b) Renal ultrasonography
c) Intravenous pyelography
d) Voiding cystourethrogram
e) Reassurance

497. A fair skinned and blond child appears with polyuria, polydipsia, growth failure, rickets, and photophobia. This condition is usually associated with all of the following **except**:
a) Hyperthyroidism
b) Retinopathy
c) Impaired visual acuity
d) Delayed sexual maturation
e) Hepatosplenomegaly

498. The preferred diagnostic study in patients with a cystinosis is:
a) RBC cystine content
b) WBC cystine content
c) Plasma cystine level
d) Urine cystine content
e) Presence of cystine crystals in the cornea

499. The following statement is **not** true about immunizations in patients with a chronic renal failure (CRF):
a) CRF patients respond to immunizations optimally.
b) All children with CRF should receive a yearly influenza vaccine.
c) Live virus vaccines (MMR, Varicella) should not be given during immunosuppressive therapies.
d) Live virus vaccines should be given before a renal transplantation.
e) All children with CRF should receive all standard immunizations like healthy children

500. The most common cause of graft failure in patients with a renal transplantation is:
   a) Thrombosis of renal veins
   b) Thrombosis of renal arteries
   c) Acute tubular necrosis
   d) Rejection
   e) Disseminated intravascular coagulation

501. The most common cause of end-stage renal disease (ESRD) in children is:
   a) Metabolic disease
   b) Glomerulonephritides
   c) Congenital renal disease
   d) IgA nephropathies
   e) Focal segmental glomerular sclerosis

502. The one of the most serious problems occur in patients with a spina bifida is:
   a) Latex allergy
   b) Microcephaly
   c) Spinal cord tumor
   d) Brain tumor
   e) Mental retardation

503. Latex allergy is due to the following:
   a) IgA-mediated
   b) IgG-mediated
   c) IgM-mediated
   d) IgE-mediated
   e) IgD-mediated

504. A child appears with watery eyes, sneezing, itching, and hives. He has a neurogenic bladder and required clean intermittent catheterizations. The most likely diagnosis is:
   a) Rhinovirus infection
   b) Drug allergy
   c) Latex allergy
   d) Adenovirus infection
   e) Allergic to dust

505. A routine newborn physical examination reveals a penile length of 1.9 cm. The rest of the physical examination is normal. The serum glucose level is normal. The next step in management is:
   a) Endocrine consultation
   b) Genetic consultation
   c) Neurology consultation
   d) Head MRI study
   e) Reassurance

506. The most common cause of micropenis (less than 1.9 cm in length) is:
   a) Decreased amount of gonadotropin-releasing hormone
   b) Decreased amount of growth hormone
   c) Decreased amount of testosterone
   d) Decreased amount of dehydrotestosterone
   e) Increased amount of estrogen

507. The children with a micropenis should all of the following evaluations **except**:
   a) Endocrinology consultation
   b) Urology consultation
   c) Karyotype study
   d) MRI of the brain
   e) Assessment of posterior pituitary function

508. A 3-day-old newborn appears with lesions in the periumbilical areas. The lesions were vesicular initially, crusted subsequently. The most likely diagnosis is:
   a) S. aureus infection
   b) S. epidermidis infection
   c) Herpes simplex virus infection
   d) Herpes zoster infection
   e) Candida albicans infections

509. A 4-year-old girl appears with a chronic atrophic skin lesions over the vulva for the last 6 weeks. The lesions are small, pink to ivory, flat-topped papules that coalesce into plaques that become wrinkled and atrophic. The anogenital lsion has a figure 8 or hour-glass appearance. The most likely diagnosis is:
   a) Lichen planus
   b) Lichen sclerosus
   c) Lichen simplex chronicus
   d) Vulvar psorias
   e) Atopic dermatitis

510. A 3-year-old girl appears with a lesion in the anogenital area. Human papillomavirus (HPV) is identified. The following condition should be ruled out:
   a) Malignancy
   b) Sexual abuse
   c) Associated bacterial infection
   d) Associated candida infection
   e) Foreign body in the vagina

511. A couple appears in a clinic. They both have an inflammatory bowel disease (IBD). They have a 4-year-old girl and 2-year-old boy. The incidence of IBD in a child whose parents both have a the IBD is:
   a) 1%
   b) 5%
   c) 10%
   d) 25%
   e) More than 35%

512. The risk of an inflammatory bowel disease (IBD) in family members of an affected individual is:
   a) 1-6%
   b) 7-22%
   c) 23-35%
   d) 35-50%
   e) 50-66%

513. A 17-year-old boy appears with an abdominal pain, bloody diarrhea, and low-grade fever. He had a surgery for ulcerative colitis. The distal ileum was pulled down and sutured at the internal anus with a 'J' pouch created from ileum immediately above the rectal cuff. The preferred therapy is:
   a) Metronidazole
   b) Loperamide
   c) Sulfasalazine
   d) Ceftriaxone
   e) Vancomycin

514. All of the following side effects are due to a prolonged use of oral corticosteroids therapy **except**:
   a) Adrenal suppression
   b) Cataracts
   c) Growth retardation
   d) Glucose intolerance
   e) Aseptic necrosis of the neck of the femur

515. The preferred therapy for patients with a proctitis secondary to ulcerative colitis is:
   a) Metronidazole orally
   b) Sulfasalazine orally

c) Hydrocortisone intravenously
d) Prednisone orally
e) Aminosalicylate enemas

516. Classically ulcerative colitis usually begins:
a) Rectum
b) Ascending colon
c) Transverse colon
d) Descending colon
e) Sigmoid colon

517. The preferred diagnostic study in patients with an ulcerative colitis is:
a) Plain abdominal x-ray
b) Barium enema
c) Abdominal CT scan study
d) Abdominal MRI study
e) Endoscopy and biopsy

518. The gross appearance of a rectum in patients with an ulcerative colitis includes all of the following **except**:
a) Edema
b) Erythema
c) Segmented lesions
d) Granular appearance
e) Loss of vascular pattern

519. The most common site of Crohn disease is:
a) Terminal ileum
b) Proximal ileum
c) Jejunum
d) Duodenum
e) Esophagus

520. The most characteristic histologic finding in patients with a Crohn disease is:
a) Increased fibrous tissues
b) Increased lymphocytes counts
c) Increased smooth muscles mass
d) Increased eosinophil counts
e) Noncaseating granulomas

521. The following statement is **not** true about clinical manifestations of a Crohn disease:
a) Children with ileocolitis usually have cramping, abdominal pain, diarrhea, sometimes associated with blood.
b) Children with Crohn colitis may have blood diarrhea, tenesmus, and urgency.
c) Children with growth retardation have a decreased lean body mass but body fat is preserved.
d) Children usually develop perianal tags, fistulas, or abscesses.
e) Children have abdominal symptoms prior to a growth failure.

522. The preferred therapy for patients with an extensive small bowel or colonic Crohn disease is:
a) Oral mescalamine
b) Oral Sulfasalazine
c) Oral corticosteroids
d) Azathioprine
e) 6-mercaptopurine

523. A 15-year-old girl appears with perirectal fistulas secondary to Crohn disease. She has been receiving Metronidazole for a long period of time. The side effect of long-term Metronidazole therapy is:
a) Leukopenia
b) Thrombocytopenia
c) Hepatic failure

d) Bone marrow suppression
e) Neuropathy with paresthesias

524. All of the following conditions are IgE-mediated food hypersensitivity reactions **except**:
a) Food-induced enterocolitis
b) Oral allergy syndrome
c) Urticaria
d) Asthma
e) Gastrointestinal anaphylaxis

525. All of the following conditions are non-IgE mediated disorders **except**:
a) Allergic proctocolitis
b) Oropharyngeal itching
c) Food-induced enteropathy
d) Celiac disease
e) Pulmonary hemosiderosis

526. A routine physical examination of a child reveals a palpable liver 2 cm below the right costal margin. The next step in management is:
a) Liver function tests
b) Hepatic ultrasonography
c) Plain abdominal x-ray
d) Hepatobiliary scan
e) Reassurance

527. A routine newborn physical examination reveals a palpable liver 3.5 cm below the right costal margin. The next step in management is:
a) Total and direct bilirubins
b) Liver function tests
c) Hepatic ultrasonography
d) Chest x-ray
e) Reassurance

528. A 15-year-old boy appears with a mass in the right upper quadrant. The mass is broad, smooth, and has a well-defined lower margin. The boy is completely asymptomatic. He denies history of trauma. The most likely diagnosis is:
a) Hepatoma
b) Hepatoblastoma
c) Metastatic tumor in the liver
d) Hepatic cyst
e) Riedel lobe

529. The jaundice appears clinically in children when the serum concentration of bilirubin reaches:
a) 1-2 mg/dL
b) 2-3 mg/dL
c) 3-4 mg/dL
d) 4-5 mg/dL
e) 5-6 mg/dL

530. The jaundice may not appear clinically in neonates until the bilirubin level is over:
a) 1 mg/dL
b) 2 mg/dL
c) 3 mg/dL
d) 4 mg/dL
e) 5 mg/dL

531. A routine physical examination of a child reveals blotchy erythema over the thenar and hypothenar eminences and on the tip of the fingers. The most likely diagnosis is:
a) SLE
b) Dermatomyositis

c) Chronic renal disease
d) Allergic reaction
e) Chronic liver disease

532. A 13-year-old rapidly growing boy has an elevated alkaline phosphatase level. The rest of the LFTs are normal. The most likely diagnosis is:
a) Obstructive liver disease
b) Acute hepatitis A
c) Acute hepatitis B
d) Hepatoblastoma
e) Normal

533. An ultrasonographic examination of an infant with Biliary atresia reveals all of the following **except**:
a) Small gallbladder
b) 'Triangular cord sign'
c) Absent gallbladder
d) Increased echogenicity of the liver
e) Nonvisualization of the common bile duct

534. The mode of inheritance in patients with a Wilson disease is:
a) Autosomal recessive
b) Autosomal dominant
c) X-linked recessive
d) X-linked dominant
e) Multifactorial

535. An opthalmologic examination of a child with a Wilson disease reveals:
a) Brush field spots in the iris
b) Cataracts
c) Glaucoma
d) Retinitis pigmentosa
e) Kayser-Fleischer ring in the cornea

536. In patients with a Wilson disease, the abnormal gene is located on the:
a) Chromosome 1
b) Chromosome 7
c) Chromosome 13
d) Chromosome 18
e) Chromosome 21

537. The predominant clinical manifestation in younger patients with a Wilson disease is:
a) Hemolysis
b) Neurologic manifestations
c) Behavioral changes
d) Hepatic manifestations
e) Kayser-Fleischer rings in the cornea

538. All of the following hepatic conditions can occur in patients with a Wilson disease **except**:
a) Asymptomatic hepatomegaly
b) Subacute hepatitis
c) Chronic hepatitis
d) Hepatoblastoma
e) Fulminant hepatic failure

539. Kayser-Fleische rings in the cornea are always present in patients with Wilson disease and have the following symptoms:
a) Hepatic
b) Behavioral
c) Hematologic

d) Psychiatric
e) Neurologic

540. The patients with a Wilson disease may be associated with the following syndrome:
a) Down syndrome
b) Fanconi syndrome
c) Marfan syndrome
d) Klinefelter syndrome
e) Williams syndrome

541. A 2-year-old boy appears in the ER with a history of foreign body inside the nose. A physical examination reveals a small perforation of the nasal septum. The foreign body is removed. The most likely foreign body is:
a) Bead
b) Bean
c) Crayon
d) Stones
e) Disk battery

542. A child had a nasal operation that required nasal packing. A follow-up appointment is given in ENT clinic. The mother missed the appointment. Subsequently, the child became ill, developed fever and a bad smell from the nasal packing area. The most serious complication is:
a) Dislodgement of the packing
b) Excessive bleeding
c) Apnea
d) Brain abscess
e) Toxic shock syndrome

543. A 5-year-old girl appears with a purulent unilateral nasal discharge for the last 3 days. A physical examination reveals unilateral purulent secretions but no foreign body is visualized. The next step in management is:
a) Amoxicillin-clavulanate
b) Cefuroxime
c) Azithromycin
d) Reassurance
e) Suctioning the secretions

544. A routine newborn physical examination at birth reveals a nasal septal deviated to the right. The most common cause is:
a) Choanal stenosis
b) Choanal atresia
c) Congenital syphilis
d) Frontal encephalocele
e) Trauma from delivery

545. The preferred management for newborns with a deviated nasal septum secondary to trauma during delivery is:
a) Reassurance
b) ENT outpatient appointment after 7 days
c) ENT outpatient appointment after 1 month
d) CT scan of the nose
e) Immediate realignment using blunt probes cotton applicators, and topical anesthesia

546. The following statement is **not** true in patients with a pulmonary sequestration:
a) The majority of sequestrations are intrapulmonary.
b) Extrapulmonary sequestrations are almost always involve the left lung
c) Extrapulmonary sequestrations are strongly associated with a diaphragmatic hernia.
d) Surgical removal is indicated.
e) The arterial supply in sequestration comes from a pulmonary artery and venous drainage returns to the left atrium through pulmonary veins.

547. The most common presentations in patients with a primary ciliary dyskinesia are:
   a) Situs inversus, otitis media, and chronic sinusitis
   b) Chronic sinusitis, otitis media, and wheezing
   c) Bronchiectasis, chronic sinusitis, and asthma
   d) Asthma, pneumonia, and bronchiectasis
   e) Productive cough, sinusitis and otitis media

548. The mode of inheritance in patients with a primary ciliary dyskinesia is:
   a) Autosomal recessive
   b) Autosomal dominant
   c) X-linked recessive
   d) X-linked dominant
   e) Unknown

549. The gold standard to make the diagnosis of primary ciliary dyskinesia is:
   a) CT scan of paranasal sinuses
   b) Pulmonary function tests
   c) CT scan of lungs
   d) Ultrasonography of sinuses
   e) Nasal biopsy

550. A pulmonary function test in older children with a primary ciliary dyskinesia reveals:
   a) Normal
   b) Restrictive lung disease
   c) Obstructive lung disease
   d) Both restrictive and obstructive lung diseases with an equal frequency
   e) More restrictive than an obstructive lung disease

551. The cardiac output in a normal healthy newborn is about:
   a) 75 mL/kg/minute
   b) 150 mL/kg/min
   c) 200 mL/kg/minute
   d) 300 mL/kg/min
   e) 350 mL/kg/minute

552. The foramen ovale is functionally closed in a normal healthy newborn by:
   a) 12 hours of life
   b) 24 hours of life
   c) 7 days of life
   d) 1 month of life
   e) 3 months of life

553. The ductus arteriosus is functionally closed in a normal healthy newborn by
   a) 0-5 hours of life
   b) 5-10 hours of life
   c) 10-15 hours of life
   d) 15-20 hours of life
   e) 20-25 hours of life

554. The ductus arteriosus closes when the PO_2 of the blood at the ductus is about:
   a) 45 mm Hg
   b) 50 mm Hg
   c) 55 mm Hg
   d) 60 mm Hg
   e) 65 mm Hg

555. The most common cardiac anomaly in patients with an autosomal dominant polycystic kidney disease is:
   a) ASD
   b) VSD

c) Mitral valve prolapse
d) Peripheral pulmonic stenosis
e) Tricuspid atresia

556. Facio-auriculo-vertebral spectum (FAVS) is associated with the following cardiac anomaly:
a) ASD
b) Tetralogy of Fallot
c) Tricuspid stenosis
d) Truncus arteriosus
e) Transposition of great arteries

557. Cat-eye syndrome has the following chromosomal abnormality:
a) Trisomy 9
b) Trisomy 21
c) Trisomy 21_p
d) Trisomy 13
e) Trisomy 5_p

558. The most common cause of death in pediatric patients with a heart transplantation is:
a) CMV infection
b) Candida albicans infection
c) Protozoal infection
d) Toxoplasma infection
e) S. aureus infection

559. All of the following suggestions are useful as a prevention of high blood pressure in pediatric population **except**:
a) Control obesity
b) Reduce dietary sodium intake
c) Physical exercise
d) Reduce serum cholesterol levels
e) Consume a small amount of red-wine

560. A 9-month-old child is treated with an iron for the iron deficiency anemia. The iron therapy has failed to improve the child's condition. Failure of iron therapy may be due to all of the following **except**:
a) Wrong diagnosis
b) The child does not receive iron therapy
c) Iron is given in a form that is poorly absorbed.
d) Unrecognized intestinal blood loss
e) Unrecognized 'ABO' hemolytic disease

561. A child is diagnosed to have a hereditary spherocytosis. He has a positive family history. A physical examination reveals splenomegaly. The peripheral smear reveals spherocytes. The presence of spherocytes in the blood can be confirmed by:
a) Positive Coombs test
b) RBC membrane protein analysis
c) Presence of anti-RBC antibodies
d) Osmotic fragility test
e) Measurement of RBC sizes

562. A patient with a paroxysmal nocturnal hemoglobinurea can be treated with all of the following **except**:
a) Prednisone
b) Fluoxymesterone
c) Erythropoietin
d) Splenectomy
e) Bone marrow transplantation

563. A pregnant mother has a normal platelet count. She is carrying a fetus with alloimmune thrombocytopenia. All of the following therapies are indicated **except**:
a) Monitoring of fetal platelet counts by PUBS (percutaneous umbilical blood sampling)
b) Give IVIG to the mother beginning in the second trimester.

c) IVIG should **not** be continued throughout the pregnancy.
d) If the newborn develops thrombocytopenia, one unit of washed maternal platelets should be given.
e) Genetic counseling is indicated to inform parents about the high risk of thrombocytopenia in future pregnancies.

564. The diagnosis of neonatal alloimmune thrombocytopenic purpura is made by:
a) Presence of maternal autoantibodies directed against the father's platelet
b) Presence of maternal autoantibodies directed against the baby's platelet
c) Presence of maternal autoantibodies directed against the mother's platelet
d) Presence of maternal autoantibodies directed against the baby's platelet that are shared with the mother.
e) Presence of maternal autoantibodies directed against antigens present on fetal platelets that are shared with the father.

565. The most common tissues involved in cancers of children are:
a) Nervous system
b) Embryonal
c) Connective tissue
d) Cardiac
e) Lymphohematopoietic

566. A mother noticed an abdominal mass while bathing the infant. The mass is smooth and firm. The infant is asymptomatic. Hypertension is noted in this patient. The most likely cause of hypertension in patients with a Wilms tumor is:
a) Renal artery thrombosis
b) Renal vein thrombosis
c) Renal ischemia
d) Obstructive uropathy
e) Tumor causing pressure on the aorta

567. All of the following conditions have an increased risk of Wilms tumor **except**:
a) Cataracts
b) Hemihypertrophy
c) Genitourinary anomalies
d) Pearlman syndrome
e) Sotos syndrome

568. The mode of inheritance in patients with a Gitelman syndrome is:
a) Unknown
b) Autosomal recessive
c) Autosomal dominant
d) X-linked recessive
e) X-linked dominant

569. Gitelman syndrome includes all of the following **except**:
a) Muscle spasms
b) Low serum magnesium levels
c) Hyperkalemia
d) Metabolic alkalosis
e) Very low urinary calcium levels

570. A 9-month-old boy started to crawl. The boy uses arms in a normal reciprocal fashion but drags the legs behind more as a rudder. The most likely diagnosis is:
a) Normal
b) Spastic monoplegia
c) Spastic diplegia
d) Spastic hemiplegia
e) Athetoid cerebral palsy

571. Seizure disorders are common in the following condition:
a) Spastic monoplegia
b) Spastic hemiplegia
c) Spastic diplegia

d) Spastic quadriplegia
e) Choreoathetoid cerebral palsy

572. Intellectual developments are usually normal in the following condition:
a) Spastic monoplegia
b) Spastic hemiplegia
c) Spastic diplegia
d) Spastic quadriplegia
e) Extrapyramidal cerebral palsy

573. The most common MRI finding in patients with a spastic diplegia is:
a) Bilateral lesions in globus pallidus
b) Lesions in the basal ganglia
c) Atrophic cerebral hemispheres
d) Periventricular Leukomalacia
e) Multicystic cortical encephalomalacia

574. A 3-year-old girl appears for a routine physical examination. Pediatrician is performing a basic examination of both eyes. The basic eye examination includes all of the following **except**:
a) Visual acuity
b) Tonometry
c) Visual fields
d) Assessment of the pupils
e) Ocular motility

575. All of the following vision screening tests are performed in children between 6-12 months of age **except**:
a) Red reflex test
b) Corneal light reflex test
c) Fixation and following
d) Visual acuity test
e) Occlusion of each eye separately

576. The most infants born to hepatitis B infected mothers become antigenemic by:
a) 01- month of age
b) 2-5 months of age
c) 6-9 months of age
d) 10-12 months of age
e) 13-15 months of age

577. The most important risk factor for acquisition of hepatitis B virus in children born to HBsAg-positive mother is:
a) Breast feeding
b) Kissing the infant
c) Perinatal exposure
d) Exposure to contaminated stool
e) Exposure to contaminated urine

578. Breast feeding is absolutely contraindicated in all of the following conditions **except**:
a) CMV
b) HIV
c) Active TB
d) Herpetic lesion in the breast
e) Hepatitis B infection

579. A mother wants to breast feed her newborn infant. She is HBsAg-positive. The next step in management is:
a) Give HBIG and resume breast feeding
b) Give hepatitis B vaccine and resume breast feeding
c) Resume breast feeding without HBIG
d) Resume breast feeding without hepatitis B vaccine
e) Give HBIG and hepatitis B vaccine, and resume breast feeding

580. An infant received 1 dose of HBIG and hepatitis B vaccine at birth, subsequently received 2 more doses of hepatitis B vaccine at 2 months and 6 months of age. His mother is HBsAg-positive. Postvaccination testing for HBsAg and anti-HBs should be performed at:
   a) 1 month of age
   b) 3 months of age
   c) 7 months of age
   d) 9-15 months of age
   e) 15-16 months of age

581. A 9-month-old infant's hepatitis profile reveals anti-HBs positive and HBsAg-negative. The most likely interpretation is:
   a) The infant should receive HBIG
   b) The infant should receive one more dose of hepatitis B vaccine.
   c) The infant should receive two more dose of hepatitis B vaccines.
   d) The infant should receive three more dose of hepatitis B vaccines.
   e) The infant is protected and does not require hepatitis B vaccines.

582. A 12-month-old infant's hepatitis profile reveals anti-HBs negative and HBsAg-positive. The most likely interpretation is:
   a) Refer to a pediatric hepatologist.
   b) The infant is protected
   c) The infant should receive HBIG
   d) The infant should receive one dose of hepatitis B vaccine.
   e) The infant should receive three doses of hepatitis B vaccines.

583. Delayed presentation of right diaphragmatic hernia is associated with an infection due to the following organism:
   a) Streptococcus pneumoniae
   b) Group A Streptococcus
   c) Group B Streptococcus
   d) S. aureus
   e) Pseudomonas aeruginosa

584. All of the following conditions are associated anomalies in patients with a diaphragmatic hernia **except**:
   a) Malrotation of the intestine
   b) Omphalocele
   c) Esophageal atresia
   d) CNS lesions
   e) Cardiovascular lesions

585. A full term newborn appears with a severe respiratory distress and cyanosis at birth. The newborn is intubated in the delivery room. A physical examination reveals a scaphoid abdomen, decreased breath sounds in the left chest cavity, and heart sounds are audible in the right side of the chest. The most likely diagnosis is:
   a) Dextrocardia
   b) Left tension pneumothorax
   c) Meconium aspiration
   d) Diaphragmatic hernia
   e) Left sided pneumonia

586. A full term newborn appears with a scaphoid abdomen. He has no respiratory distress. The rest of the physical examination is unremarkable. The most likely diagnosis is:
   a) Diaphragmatic hernia
   b) Hypoplastic left colon
   c) Malrotation of the intestine
   d) Duodenal atresia
   e) The newborn has passed a large amount of Meconium at birth

587. A full term infant is admitted in NICU for a large left diaphragmatic hernia. She is placed on a mechanical ventilator. The treatment may include all of the following **except**:
   a) Immediate surgical repair
   b) Placement of an orogastric tube
   c) Sedation

d) Paralysis
e) Modest hyperventilation

588. The most common gastrointestinal complication in patients with a diaphragmatic hernia required ECMO therapy is:
a) Decreased esophageal motility
b) Increased esophageal perforation
c) Increased gastric perforation
d) Increased jejunal perforation
e) Increased gastroesophageal reflux

589. A newborn with diaphragmatic hernia required ECMO therapy. Now, the infant is requiring 25% oxygen through a nasal canula. All of the following abnormalities can occur in this newborn due to ECMO therapy **except**:
a) Hearing loss
b) Vision difficulties
c) Seizure activities
d) Abnormal CT scan results
e) Severe perinatal asphyxia

590. An adolescent boy appears with a recurrent, severe nose bleeds for the last 6 months. He experienced several bleeding episodes more frequently for the last 1 month. He denies history of a major trauma. However, he has a long nose and often experienced minor injuries. A physical examination reveals a nasal mass. He experienced a major laceration in the right leg but the bleeding sopped spontaneously. The most likely diagnosis is:
a) Hemophilia A
b) Nasal septal hematoma
c) von Willebrand disease
d) Kiesselbach plexus bleeding
e) Juvenile nasopharyngeal angiofibroma

591. The preferred initial diagnostic study in patients with a juvenile nasopharyngeal angiofibroma is:
a) AP x-ray of the nose
b) Lateral x-ray of the nose
c) Excisional biopsy
d) Examination under anesthesia
e) CT scan with contrast

592. The preferred therapy to eradicate streptococcal carriage is:
a) Penicillin
b) Amoxicillin
c) Erythromycin
d) Clindamycin
e) Azithromycin

593. A 2-year-old boy appears with fever, sore throat, neck pain, drooling, and decreased oral intake for the last 48 hours. A physical examination reveals neck stiffness, torticollis, muffled voice, and bulging of the posterior pharyngeal wall. The most likely diagnosis is:
a) Laternal pharyngeal abscess
b) Peritonsillar abscess
c) Acute epiglotittis
d) Meningitis
e) Retropharyngeal abscess

594. A 2½-year-old girl appears with a fever, dysphagia, and enlarged cervical lymph nodes. A physical examination reveals a bulging of the left lateral pharyngeal wall and medial displacement of the left tonsil. The most likely diagnosis is:
a) Acute adenoiditis
b) Peritonsillar abscess
c) Acute pharyngitis
d) Acute left tonsillitis
e) Left lateral pharyngeal abscess

595. A 12-year-old boy appears with a fever, sore throat, dysphagia, and trismus for the last 2 days. He was diagnosed with a viral acute tonsillopharyngitis 5 days ago. A physical examination reveals a right tonsillar bulging with displacement of the uvula to the left. The most likely diagnosis is:
a) Right peritonsillar abscess
b) Left peritonsillar abscess
c) Retropharyngeal abscess
d) Acute right tonsillitis
e) Acute uvulitis

596. A 3-year-old girl appears in the ER with a history of sudden development of fever and sore throat for the last 6 hours. She developed dysphagia, drooling, and dyspnea for the last 1 hour. The child is sitting upright, learning forward with the chin up, and opening mouth while bracing on the arms. She was completely asymptomatic prior to this episode. Her immunization status in unknown. Recently, her parents immigrated from a developing country. The most likely diagnosis is:
a) Acute tonsillar abscess
b) Acute epiglottitis
c) Acute retropharyngeal abscess
d) Acute adenoiditis
e) Acute peritonsillar abscess

597. A 2-year-old girl appears in the ER at night with a sudden onset of barking, metallic cough, and respiratory distress for the last 2 hours. She experienced a mild coryza and hoarseness for the last 24 hours. The child is asymptomatic during the day except for the cough and hoarseness. She experienced a similar episode about 2 weeks ago. Mother denies history of fever. The child appears anxious and frightened. A physical examination reveals bilateral noisy inspiratory sounds and mild intercostal retractions. The most likely diagnosis is:
a) Spasmodic croup
b) Acute infections laryngitis
c) Bacterial tracheitis
d) Laryngomalacia
e) Acute infectious laryngotracheobronchitis

598. The most common organism in patients with a bacterial tracheitis is:
a) Nontypable H. influenzae
b) Moraxella catarrhalis
c) Streptococcus pneumoniae
d) Pseudomonas aeruginosa
e) Staphylococcus aureus

599. The most common organism in patients with an infectious upper airway obstruction is:
a) Mycoplasma pneumoniae
b) H. influenzae type b
c) Streptococcus pyogenes
d) Influenza viruses
e) Parainfluenza viruses

600. The most common organism in patients with an epiglottitis and underimmunized or unimmunized is:
a) Streptococcus pyogenes
b) Streptococcus pneumoniae
c) Mycoplasma pneumoniae
d) Parainfluenza viruses
e) Haemophilus influenzae type b

601. The most common organism in patients with an epiglottis and immunized is:
a) Haemophilus influenzae type b
b) Staphylococcus epidermidis
c) Streptococcus pyogenes
d) Pseudomonas aeruginosa
e) Parainfluenza viruses

602. The most common organism in patients with a croup (laryngotracheobronchitis) is:
a) Influenza type A
b) Adenovirus
c) Respiratory syncitial virus
d) Mycoplasma pneumoniae
e) Parainfluenzae viruses

603. A 3-year-old boy appears with a barking cough, hoarseness, low-grade fever, and dyspnea for the last 6 hours. The child has been suffering from rhinorrhea, mild cough, pharyngitis, and fever for the last 3 days. His condition worsens with agitation and crying. A physical examination reveals tachypnea, mild retractions, inflamed pharynx, coryza, and hoarse voice. The most likely diagnosis is:
a) Acute epiglottitis
b) Spasmodic croup
c) Croup
d) Acute pharyngitis
e) Acute infectious laryngitis

604. All of the following statements are true about mental retardation **except**:
a) More common in boys than in girls
b) Prenatal causes are predominant in children with a severe mental retardation.
c) The patients with a fragile x-syndrome appears with mental retardation.
d) An expected mental retardation is lower than an observed mental retardation.
e) A mild mental retardation is four times more likely to be noted in the offspring of women who did not complete the high school than in women who have graduated.

605. All of the following are true about the **daily intake** of nutrients for normal infants between 0-6 months of age **except**:
a) Energy is 550 kcal
b) Protein is 11 grams
c) Carbohydrate is 60 grams
d) Fat is 31 grams
e) Calcium is 210 mg

606. All of the following are true about the daily intake of nutrients for normal infants between 7-12 months of age **except**:
a) Energy is 720 kcal
b) Protein is 11 grams
c) Carbohydrate is 95 grams
d) Fat is 40 grams
e) Calcium is 270 mg

607. The generally better visual and cognitive developments in breast-fed infants than in formula-fed infants are most likely due to the following condition:
a) Increased antibodies in breast milk
b) Increased IgA in breast milk
c) Increased calcium in breast milk
d) Increased vitamins in breast milk
e) Increased LC-PUFA in breast milk

608. A 4-month-old boy appears for a routine physical examination. The boy cries when placed on the examination table. The physician has difficulties to examine the child. The infant stops crying on his mother's lap. The boy started crying again when placed on the examination table for the second time. The next step in management is:
a) Give formula feeding
b) Give breast feeding
c) Give another appointment
d) Quickly examine the child while crying
e) Give the child to the mother

609. A mother started breast feeding her newborn infant. The mother should wash her breasts at least:
a) Every 2 hours
b) Every 3 hours
c) Every 4 hours

d) Every 6 hours
e) Every 24 hours

610. The most important factor for successful breast feeding is:
a) Happy infant
b) Relaxed infant
c) Happy and relaxed mother
d) Happy and relaxed father
e) Lots of breast milk

611. Breast feeding decreases all of the following problems **except**:
a) Colic
b) Spitting up
c) Intestinal bleeding
d) Diarrhea
e) Otitis externa

612. All of the following diseases are decreased during the first year of life when infants receive exclusively breast milk for the first 4 months of life **except**:
a) Meningitis
b) Bacteremia
c) Pneumonia
d) Jaundice
e) Otitis media

613. All of the following maternal diseases are contraindications to breast-feeding **except**:
a) Breast cancer
b) Malaria
c) Septicemia
d) Substance abuse
e) Genital culture positive for herpes

614. The most common complication in patients with a rapid correction of hyponatremia is:
a) Cerebral edema
b) Increased ADH secretion
c) Diabetes insipidus
d) Hypernatremia
e) Central pontine myelinolysis

615. The principal hormone that controls the potassium secretion is:
a) Glucocorticoids
b) ADH
c) Aldosterone
d) Insulin
e) Prolactin

616. The first electrocardiographic (ECG) changes noted in hyperkalemia is:
a) Increased PR intervals
b) Flattening of the P waves
c) Widening of the QRS complex
d) Peaking of the T waves
e) Ventricular fibrillation

617. The first manifestation in patients with a hyperkalemia is:
a) Tingling
b) Numbness
c) Weakness
d) Cardiac toxicity
e) Syncope

618. All of the following conditions can prevent a serious poisoning in children **except**:
   a) Child-resistant packaging
   b) Dose limits per container
   c) "Mr. Yuk" stickers
   d) Phone numbers of poison control centers
   e) Syrup of ipecac stored at home

619. The most important cause of poisoning in children younger than 5 years of age is:
   a) Child-resistant packaging closure did not work properly.
   b) Drugs owned by grandparents are not placed in a safety bottle.
   c) "Mr. Yuk" stickers are attracted to children.
   d) Failure of pharmacists to put the labels properly on the bottles.
   e) Child-resistant packaging is replaced by a regular packaging.

620. All of the following conditions can prevent bicycle injuries **except**:
   a) Community education programs promoting the use of helmets.
   b) Education and promotion of helmets use should extend beyond doctors office.
   c) Bicycle paths should be separated from the motor vehicle paths.
   d) Parents should buy larger helmets to prevent serious injuries.
   e) Safe bicycling training programs for children in the schools and communities are useful.

621. All of the following statements are true about teenage drivers and driving **except**:
   a) Formal driver education courses are effective in decreasing collisions.
   b) The risk of a crash is directly proportional to the number of passengers inside the car.
   c) Most of the crashes occur 4 hours before and after midnight.
   d) Graduated licensing laws decreases the fatal crashes.
   e) Impairment in driving is noted at blood alcohol levels as low as 0.05 g/dL.

622. The most common cause of cardiorespiratory arrest in children is:
   a) Cardiac failure
   b) Respiratory failure
   c) Gram-negative septic shock
   d) DIC
   e) Intracranial hemorrhages

623. All of the following medications cause vasoconstriction **except**:
   a) Phenylephrine
   b) Epinephrine
   c) Norepinephrine
   d) Amrinone
   e) High dose of dopamine

624. All of the following medications cause vasodilatation **except**:
   a) Hydralazine
   b) Nitroprusside
   c) Nitroglycerine
   d) Prostaglandin E_1
   e) High dose of dopamine

625. A 2-year-old boy appears with fever, watery diarrhea, shock, encephalopathy, severe DIC, renal dysfunctions, and hepatic abnormalities. The body also developed seizure activities. The most likely diagnosis is:
   a) Hypovolemic shock
   b) Septic shock
   c) Cardiogenic shock
   d) Distributive shock
   e) Hemorrhagic shock encephalopathy syndrome

626. A 2-year-old boy with a mild mental retardatation appears with mild tachypnea and dyspnea in the ER. A physical examination reveals clear breath sounds. The boy requires oxygen therapy due to worsening of the respiratory distress. Arterial blood gas reveals hypoxia and hypercarbia. One hour later, the boy is intubated and placed on a mechanical ventilator in PICU. The respiratory difficulties started after the vomiting of a large amount of food materials. The repeat bilateral crackles and intercostal retractions. The most likely chest x-ray finding is:
a) Pneumomediastinum
b) Pneumothorax
c) Lobar consolidation
d) Cardiomegaly
e) Interstitial and alveolar edema

627. The preferred ventilator therapy for patients with an acute respiratory distress syndrome (ARDS) is:
a) To keep the PEEP above 15 cm H_2O
b) To keep the high tidal volume (10-15 mL/kg)
c) To keep the low tidal volume (6-7 mL/kg)
d) To keep the $PaCO_2$ between 35-45 mm Hg by increasing the tidal volume
e) To keep the PEEP below 2 cm H_2O to avoid hyperoxic injury due to free radicals

628. An air-leak syndrome includes all of the following **except**:
a) Pneumothorax
b) Pneumomediastinum
c) Pneumopericardium
d) Pneumoperitoneum
e) Pneumatosis intestinalis

629. The most common cause of liver transplantation is:
a) Biliary atresia
b) Cirrhosis
c) Wilson disease
d) Hepatitis
e) Liver injury

630. The organ that is most sensitive to hypoxic-ischemic injury:
a) Cardiac
b) Renal
c) CNS
d) Liver
e) Intestine

631. The severity of carbon monoxide poisoning is determined by:
a) PaO_2 levels
b) Oxygen saturations
c) $PacCO_2$ levels
d) pH
e) Carboxyhemoglobin levels

632. The syndrome of hypothermia occurs when the core body temperature is:
a) Below 38° C
b) Below 37° C
c) Below 36° C
d) Below 36.5° C
e) Below 35° C

633. Anesthesia-related cardiac arrest is the most common in the following age group:
a) 0-1 year of age
b) 1-3 years of age
c) 3-6 years of age
d) 6-10 years of age
e) 11-18 years of age

634. The chromosome involved in neurofibromatosis:
   a) Chromosome 7
   b) Chromosome 11
   c) Chromosome 15
   d) Chromosome 17
   e) Chromosome 19

635. The mode of inheritance in patients with a neurofibromatosis is:
   a) Autosomal recessive
   b) Autosomal dominant
   c) X-linked recessive
   d) X-linked dominant
   e) Multifactorial

636. The American Academy of Pediatrics has provided the guidelines for children with neurofibromatosis. The yearly physical examination includes all of the following **except**:
   a) Scoliosis screening
   b) Opthalmology examination
   c) Neurologic examination
   d) Developmental screening
   e) Head MRI study

637. All of the following conditions are due to a Multifactorial inheritance **except**:
   a) Neural tube defects
   b) Club feet
   c) Cleft lip
   d) Incontinentia pigmenti
   e) Cardiac septal defects

638. The mode of inheritance in patients with a hypophosphatemic ricket is:
   a) Autosomal recessive
   b) Autosomal dominant
   c) X-linked recessive
   d) X-linked dominant
   e) Multifactorial

639. The risk of recurrence in all first-degree relatives in patients with a multifactorial inheritance is:
   a) 1-2%
   b) 3-5%
   c) 6-9%
   d) 10-15%
   e) 16-25%

640. The risk of the son of an affected **female** with pyloric stenosis is:
   a) 3%
   b) 5%
   c) 15%
   d) 18%
   e) 25%

641. The risk of the son of an affected **male** with pyloric stenosis is:
   a) 1%
   b) 3%
   c) 5%
   d) 10%
   e) 15%

642. The risk of recurrence for unilateral cleft lip and palate for a couple with **one** affected child is:
   a) 1%
   b) 4%
   c) 9%
   d) 15%
   e) 20%

643. The risk of recurrence for unilateral cleft lip and palate for a couple with **two** affected child is:
   a) 5%
   b) 9%
   c) 15%
   d) 20%
   e) 25%

644. A newborn appears with a mousy or musty odor in the urine. The most likely diagnosis is:
   a) Hawkinsinuria
   b) Tyrosinemia
   c) Phenylketonuria
   d) Glutaric acidemia (type II)
   e) Multiple carboxylase deficiency

645. A newborn appears with a swimming pool odor in the urine. The most likely diagnosis is:
   a) Oasthouse urine disease
   b) Hypermethioninemia
   c) Hawkinsinuria
   d) Isovaleric acidemia
   e) Trimethylaminuria

646. A child appears with a chronic fatigue, recurrent epistaxis, bone pain, and bruise that occurs easily. A physical examination reveals a pale child with hepatosplenomegaly and generalized tenderness over the long bones. The ENT findings are normal. The laboratory studies reveal anemia, thrombocytopenia, and elevated liver function tests. The long bone x-ray reveals an Erlenmeyer flask deformity of the distal femur. The most likely diagnosis is:
   a) Tay-Sachs disease
   b) GM1 gangliosidosis
   c) Fabry disease
   d) Niemann-Pick disease type 1
   e) Gaucher disease type 1

647. The normal serum glucose level in older infants and children should be at least:
   a) 40 mg/dL
   b) 45 mg/dL
   c) 50 mg/dL
   d) 55 mg/dL
   e) 60 mg/dL

648. The glucose is transported to the brain by the following mechanism:
   a) Osmosis
   b) Na-K pump
   c) Glucose binds RBCs
   d) Diffusion
   e) Glucose binds with plasma proteins

649. All of following critical values obtained at a time of fasting hypoglycemia (plasma glucose less than 50 mg/dL) suggest hyperinsulinism **except**:
   a) Plasma insulin level is more than 2 μU/mL
   b) Plasma free fatty acids are more than 1.5 mmol/L
   c) Plasma beta-hydroxybutyrate level is less than 2.0 mmol/L
   d) Inappropriate glycemia response to glucagon, 1 mg intravenous (delta glucose is more than 40 mg/dL)
   e) Plasma insulin level is 4 μU/mL

650. A 3-year-old child has a difficulty to arouse from sleep in the morning. He did not ear properly in the previous evening. A physical examination reveals a lethargy but the rest of examination is unremarkable. The most likely diagnosis is:
a) Meningitis
b) Intracranial hemorrhage
c) Reye syndrome
d) Encephalitis
e) Ketotic hypoglycemia

651. All of the following laboratory findings in a child suggest ketotic hypoglycemia **except**:
a) Ketonuria
b) Ketonemia
c) Hypoglycemia
d) Low plasma insulin levels
e) Elevated plasma alanine levels

652. A newborn appears cyanotic, lethargic, and hypotensive at birth. She was born by a breech delivery with low Apgar scores. Her birth weight is 4.5 kg. A physical examination reveals a mild jaundice, mass in the flank and overlying skin discoloration, and shock. The most likely diagnosis is:
a) Intracranial bleed
b) Transposition of great arteries
c) Galactosemia
d) Adrenal hemorrhage
e) Group B Streptococcus meningitis

653. A 34 weeks preterm infant is admitted in NICU. He has an apneic pause of 5-10 seconds followed by a burst of rapid respirations at a rate of 50-60 per minute for 10-15 seconds. The next step in management is:
a) Oxygen by nasal canula
b) Aminophylline
c) Oxygen by nasal CPAP
d) Endotracheal intubation
e) Reassurance

654. A full-term, infant of a diabetic mother, large for gestational age newborn appears with a sudden onset of hematuria at birth. A physical examination reveals a flank mass. CBC reveals a normal WBC count and low platelet count. The most likely diagnosis is:
a) Renal artery thrombosis
b) Renal vein thrombosis
c) Hydronephrosis
d) Multicystic kidney
e) Polycystic kidney

655. An infant of a diabetic mother appears with an abdominal distension at 12 hours of life. He passed Meconium once. He has no bilious vomiting. The abdominal x-ray reveals a dilated proximal colon. The most likely diagnosis is:
a) Malrotation of the intestine
b) Volvulus
c) Duodenal atresia
d) Jejunal atresia
e) Small left colon syndrome

656. A full-term, LGA newborn appears with a persistent severe hypoglycemia at birth. His mother has no history diabetes. His birth weight is 14 lb 2 ounces. He was born by a cesarean section with Apgar scores 9 and 9 at 1 and 5 minutes respectively. The intravenous glucose infusion rate is increased rapidly up to 15 mg/kg/minute. The umbilical arterial and venous lines were placed. The most likely diagnosis is:
a) Infant of a diabetic mother
b) Group B Streptococcus sepsis
c) Anterior pituitary tumor
d) Galactosemia
e) Familial hyperinsulinemic hypoglycemia

657. A severe form of familial hyperinsulinemic hypoglycemia is most likely due to the defect of the:
   a) Islet alpha cell K_{ATP} channel
   b) Islet beta cell K_{ATP} channel
   c) Islet gamma cell K_{ATP} channel
   d) Islet delta cell K_{ATP} channel
   e) Islet beta cell non-K_{ATP} channel

658. A 17-year-old boy for a routine physical examination. He is asymptomatic but experienced occasional headaches. His recorded blood pressure is **above the 95th percentile** for his age. The most likely diagnosis is:
   a) Aortic coarctation
   b) Renal artery stenosis
   c) Pheochromocytoma
   d) Hyperthyroidism
   e) Suspected hypertension

659. A 16-year-old boy appears for a routine physical examination. He is asymptomatic. His recorded blood pressures are **between 90th and 95th percentiles**. He is obese. In addition to weight loss, the next step in management is:
   a) A follow-up examination after 1 month
   b) A follow-up examination after 3 months
   c) A follow-up examination after 6 months
   d) Furosemide
   e) Aldomet

660. A 13-year-old boy appears for a routine physical examination. He is asymptomatic. His recorded blood pressure is **below the 90th percentile**. The next step in management is:
   a) Echocardiography
   b) Renal ultrasonography
   c) Follow-up after 1 year
   d) Low-salt diet
   e) Blood pressure should be measured on three separate occasions.

661. A 17-year-old girl appears at 2 AM in ER with a violent behavior and psychotic ideation. The girl was asymptomatic prior to this episode. A physical examination reveals hypertension, hyperpyrexia, slowing of cardiac conduction and ventricular irritabilities. The most likely diagnosis is:
   a) Cocaine intoxication
   b) Opiates overdose
   c) Amphetamine overdose
   d) Marijuana overdose
   e) Lysergic acid diethylamide intoxication

662. A 16-year-old girl appears with a white, floccular vaginal discharge and itching for the last 7 days. The pH of the discharge is less than 4.5. The discharge has no WBCs, clue cells, and trichomonads; absence of mycelia. The most likely diagnosis is:
   a) Bacterial vaginosis
   b) Trichomonas infection
   c) Candida infection
   d) Herpes simplex virus infection
   e) Normal vaginal discharge

663. A 17-year-old girl appears with a gray, yellow homogenous vaginal discharge for the last 10 days. The pH of discharge is more than 4.5. The discharge contains clue cells, few white cells, but absence of lactobacilli. The most likely diagnosis is:
   a) Trichomonas infection
   b) Candida infection
   c) Herpes simplex virus infection
   d) Foreign body
   e) Bacterial vaginosis

664. The preferred screening test for patients with complement defects is:
   a) C 3
   b) C 4

c) C 1
d) C 2
e) CH_{50}

665. The most common cause of an abnormal CH_{50} value is:
a) Properdin deficiencies
b) C 1 deficiencies
c) C 3 deficiencies
d) C 4 deficiencies
e) Delay in transporting the specimen to the laboratory

666. The most common B-cell defect is:
a) Selective IgA deficiency
b) IgG deficiency
c) IgM deficiency
d) IgE deficiency
e) IgD deficiency

667. Chediak-Higashi syndrome includes all of the following **except**:
a) Autosomal dominant
b) Bleeding disorders
c) Peripheral neuropathy
d) Partial oculocutaneous albinism
e) Defective degranulation of neutrophils

668. The preferred screening test for patients with a chronic granulomatous disease is:
a) G_6PD qualitative assay
b) RBC G_6PD activity
c) Dihydrorhodamine 123 fluorescence (DHR) test
d) Ability of neutrophils to kill microorganisms
e) Ability of monocytes to kill microorganisms

669. The most common type of reaction to sulfonamide drug is:
a) Macular
b) Papular
c) Maculopapular
d) Pustular
e) Urticarial

670. The insect allergy is mediated by:
a) IgG
b) IgM
c) IgA
d) IgE
e) IgD

671. A child appears with a bilateral itchy eyes, injected conjunctivae, watery discharge, and chemosis of conjunctivae. This condition is most commonly associated with:
a) Allergic rhinitis
b) Gonococcal infection
c) Sinusitis
d) Chlamydia infection
e) Nasolacrimal duct obstruction

672. A 17-year-old girl appears with a severe itching, tearing, and burning of both eyes throughout the year. A physical examination reveals injected and chemotic bulbar conjunctivae, and eyelid eczema that spreads to the periorbital skin and cheeks with an erythematous, thick, dry scaly lesion. This condition is most commonly associated with:
a) Sinusitis
b) Otitis media

c) Allergic food reaction
d) Atopic dermatitis
e) Allergic drug reaction

673. The common complication in patients with an atopic keratoconjunctivitis is:
a) Pseudomonas conjunctivitis
b) Candida infection
c) Subconjunctival hemorrhage
d) Corneal infection
e) Staphylococcal blepharitis

674. The most common cause of pyogenic infection of the skin is:
a) Staphylococcal epidermidis
b) Staphylococcal aureus
c) Staphylococcal hemolyticus
d) Staphylococcal pyogenes
e) Pseudomonas aeruginosa

675. The preferred therapy in patients with a **confirmed** group B Streptococcus infection is:
a) Ampicillin
b) Gentamicin
c) Penicillin G
d) Ampicillin and cefotaxime
e) Ampicillin and gentamicin

676. The preferred initial therapy in patients with a neonatal sepsis is:
a) Penicillin G
b) Ampicillin
c) Penicillin and gentamicin
d) Ampicillin and gentamicin
e) Ampicillin and cefotaxime

677. All of the following are characteristic features of early onset neonatal listeriosis **except**:
a) Term delivery
b) Sepsis
c) Mortality rate is more than 30%
d) Mean age of onset is 1.5 days
e) Positive maternal Listeria culture

678. All of the following are characteristic features of **late onset** of neonatal listeriosis **except**:
a) Meningitis
b) Normal birthweight
c) Mortality rate is more than 25%
d) Mean age of onset is 14.2 days
e) Negative maternal Listeria culture

679. A child appears with fever, pharyngitis, weakness, vomiting, diarrhea, myalgias, and headache for the last 24 hours. A physical examination reveals petechiae, purpura fulminans, and hypotension. The child's clinical condition worsens over the last 2 hours. The blood culture most likely reveals the following organism:
a) Neisseria gonorrhoeae
b) Streptococcus pneumoniae
c) Neisseria meningitidis
d) Staphylococcus aureus
e) Pseudomonas aeruginosa

680. The most common clinical manifestation in patients with an invasive meningococcal disease is:
a) Fever
b) Petechiae
c) Purpura fulminans

d) Hypotension
e) Vomiting

681. The definitive diagnosis of invasive meningococcal disease is established by isolation of the organism from all of the following sites **except**:
a) Blood
b) CSF
c) Synovial fluid
d) Pleural fluid
e) Nasopharynx

682. The preferred therapy for hospitalized patients with a meningococcal disease is:
a) Penicillin G
b) Chloramphenicol
c) Vancomycin
d) Cefuroxime
e) Ticarcillin

683. A 10-year-old girl appears with a severe lethargy, anorexia, abdominal pain, diarrhea with a pea soup consistency followed by constipation, and unremitting high fever that increases in a stepwise fashion. On the 7th day of illness, a maculopapular rash appears on the lower chest and abdomen. The rash is discrete, erythematous, slightly raised, blanch on pressure, and 1-5 mm in diameter. A physical examination reveals relative bradycardia, hepatosplenomegaly, tender and diffusely distended abdomen. The most likely diagnosis is:
a) E. coli sepsis
b) Salmonella Typhi sepsis
c) Shigella dysenteriae infection
d) Campylobacter jejuni infection
e) Nontyphoidal Salmonella infection

684. The preferred diagnostic test in patients with an early in the course of enteric fever is:
a) Blood culture
b) Stool culture
c) Urine culture
d) CSF culture
e) Bone marrow culture

685. The most sensitive culture in patients with a n enteric fever is:
a) Blood
b) Stool
c) Urine
d) CSF
e) Bone marrow

686. The most common type of organism in patients with a bacillary dysentery is:
a) Shigella dysenteriae
b) Shigella flexneri
c) Shigella boydii
d) Shigella sonnei
e) Salmonella ser Typhi

687. A child appears with a severe abdominal pain, vomiting, painful defecation, urgency, and high fever for the last 2 days. She ate a regular food at home. However, she went to the party with a group of children and ate salads. Two other children have the similar symptoms. A physical examination reveals a toxic looking child, abdominal distension, abdominal tenderness, hyperactive intestinal sounds, and tender rectum. The most likely diagnosis is:
a) Shigella sonnei infection
b) E. coli infection
c) Vibrio cholerae infection
d) Campylobacter jejuni infection
e) Yersinia enterocolitica infection

688. The most common extraintestinal manifestation in patients with a bacillary dysentery is:
   a) Cardiac
   b) Hepatic
   c) Pancreatic
   d) Neurologic
   e) Renal

689. The most common cause of neurologic manifestations in patients with a bacillary dysentery is:
   a) Shiga toxin
   b) Hopocalcemia
   c) Hyponatremia
   d) Increased ADH secretion
   e) Unknown

690. The preferred therapy in children with intrathoracic tuberculosis (pulmonary TB and/or hilar lymphadenopathy) is:
   a) A regimen of INH and rifampin for 9 months.
   b) A regimen of INH and ethambutol for 9 months.
   c) A regimen of INH and rifampin for 6 months plus first 2 months of treatment with pyrazinamide.
   d) A regimen of rifampin and pyrazinamide for 6 months.
   e) A regimen of INH and pyrazinamide for 6 months.

691. The preferred therapy in HIV-seropositive children with a drug-susceptible tuberculosis is:
   a) A regimen of INH, rifampin (RIF), pyrazinamide (PZA) for the first 2 months followed by INH and PZA for a total duration of at least 9 months.
   b) A regimen of INH, RIF, PZA for the first 2 months followed by RIF and PZA for a total duration of at least 6 months.
   c) A regimen of INH and RIF for the first 2 months followed by INH and PZA for a total duration of at least 12 months.
   d) A regimen of INH and PZA for the first 3 months followed by INH and RIF for a total duration of at least 9 months.
   e) A regimen of INH, RIF and PZA for the first 2 months followed by INH and RIF for a total duration of at least 9 months.

692. All of the following statements are true about drug-resistant tuberculosis **except**:
   a) The most drug resistance in children is primary.
   b) The major cause of secondary drug resistance is poor compliance with the medication.
   c) A noncompliance with one drug is more common cause of secondary resistance than failure to take all medications.
   d) The major cause of primary drug resistance is an inadequate treatment regimen prescribed by the doctor.
   e) A successful therapy in a drug-resistant tuberculosis should include at least two bactericidal drugs.

693. The preferred therapy in children with INH-resistance tuberculosis is:
   a) A regimen of RIF, PZA, and ethambutol (EMB) for 9 months.
   b) A regimen of RIF and PZA for the first 3 months followed by RIF, PZA, and EBM for at least 9 months.
   c) A regimen of PZA and EMB for the first 2 moths followed by PZA, EMB, and RIF for at least 6 months.
   d) A regimen of RIF, PZA, and EMB for 6 months.
   e) A regiment of streptomycin for the first 1 month followed by RIF, PZA, and EMB for at least 9 months.

694. A child appears with mild fever, cough, and sore throat for the last 7 days. A physical examination reveals pharyngeal redness, bilateral rales, and mild wheezing. His mother denies history of asthma. He was healthy prior to this episode. The chest x-ray reveals bilateral diffuse infiltrates and mild pleural effusions. The complete blood count is normal without a left shift. The most likely diagnosis is:
   a) Newly diagnosed asthma
   b) Streptococcus pneumonia
   c) Staphylococcus aureus pneumonia
   d) HIV-infected pneumonia
   e) Chlamydia pneumonia

695. The most common site of infection in newborns with untreated maternal genital chlamydia infections is:
   a) Rectum
   b) Lungs
   c) Nasopharynx
   d) Oropharynx
   e) Eyes

696. The clinical features in patients with a congenital rubella syndrome include all of the following **except**:
   a) 'Blueberry muffin' skin lesions
   b) Cataracts
   c) Patent ductus venosus
   d) Sensorineural hearing loss
   e) Intrauterine growth retardation

697. The behavioral management in children with enuresis includes all of the following **except**:
   a) An alarm clock can be used to wake the child every 2-3 hours after falling sleep.
   b) A repeatedly waking the child to take him/her to the bathroom is useful.
   c) The child should urinate before goes to bed.
   d) Punishment or humiliation of the child should **not** be accepted.
   e) A reward should be given to the child for being dry at night.

698. A diagnosis of encopresis is made in children after the chronological (or equivalent developmental level) age:
   a) 3 years
   b) 4 years
   c) 5 years
   d) 6 years
   e) 7 years

699. In addition to infant formulas, complementary foods should be started between:
   a) 1-2 months
   b) 2-4 months
   c) 4-6 months
   d) 6-9 months
   e) 9-12 months

700. Solid foods should be started in infants in the following order:
   a) Cereals, eggs, fruits, meats, and vegetables
   b) Cereals, meats, vegetables, fruits, and eggs
   c) Cereals, vegetables, eggs, meats, and fruits
   d) Meats, eggs, cereals, vegetables, and fruits
   e) Cereals, vegetables, fruits, meats, and eggs

701. A 2½ month-old-girl appears with a sudden onset of loud cry for the last 2 hours. The girl has no fever and no URI symptoms. A physical examination reveals cold feet, clenched hands, flushed face, tense abdomen that is also distended, and legs are drawn on the abdomen. The most likely diagnosis is:
   a) Intussuception
   b) Meckel diverticulum
   c) Acute appendicitis
   d) Intestinal obstruction
   e) Colic

702. All of the following therapies and prevention strategies are useful in infants with a colic **except**:
   a) Hold the infant upright
   b) Prone across the lap
   c) Hot water bottle
   d) Suppository
   e) Carminatives are used before feeding.

703. The effect of vitamin K deficiency is the following:
   a) Jaundice
   b) Bleeding
   c) Thrombosis
   d) Poor wound healing
   e) Photophobia

704. The effect of vitamin K excess in preterm infants is:
   a) Bleeding
   b) Jaundice
   c) Gluteal hematoma
   d) Anemia
   e) Thrombosis

705. A 7-day-old newborn appears with a Tetany for the last 6 hours. The newborn was born by a NSVD with Apgar scores 9 and 9 at 1 and 5 minutes respectively. He went home at 2 days of life. His serum bilirubin level was 9.5 at 48 hours of life. The mother did not go for a prenatal care. CBC reveals a normal result. The serum calcium level is low. However, the mother's serum calcium level was high. The most likely diagnosis is:
   a) Hyperparathyroidism in the neonate
   b) Hypoparathyroidism in the mother
   c) Hypocalcemic rickets
   d) Nutritional hypocalcemia
   e) Hypoparathyroidism in the neonate

706. The preferred therapy in patients with a metabolic acidosis is:
   a) Sodium bicarbonate
   b) THAM solution
   c) Sodium citrate
   d) Excessive fluid therapy
   e) Treat the underlying cause

707. All of the following conditions require sodium carbonate therapy **except**:
   a) Salicylate poisoning
   b) Acute renal failure
   c) Ethylene glycol poisoning
   d) Diabetic ketoacidosis
   e) Pyruvate carboxylase deficiency

708. The preferred initial therapy in patients with a metabolic acidosis and respiratory acidosis is:
   a) Sodium bicarbonate
   b) Potassium citrate
   c) Hemodialysis
   d) Treat the underlying metabolic cause
   e) Ventilator therapy to correct the respiratory acidosis

709. The **lowest limit** of a normal systolic blood pressure in a full-term newborn is:
   a) 45 mm Hg
   b) 50 mm Hg
   c) 60 mm Hg
   d) 70 mm Hg
   e) 80 mm Hg

710. The **lowest limit** of a normal systolic BP from 1 month to 1 year of age is:
   a) 65 mm Hg
   b) 70 mm Hg
   c) 75 mm Hg
   d) 80 mm Hg
   e) 85 mm Hg

711. The **lowest limit** of a normal systolic BP in a 5-year-old child is:
   a) 75 mm Hg
   b) 80 mm Hg
   c) 85 mm Hg
   d) 90 mm Hg
   e) 95 mm Hg

712. The **lowest limit** of a normal systolic BP in a child older than 10 years of age is:
   a) 80 mm Hg
   b) 85 mm Hg
   c) 90 mm Hg
   d) 95 mm Hg
   e) 100 mm Hg

713. A routine physical examination in a 12-year-old boy reveals hart rate 85 per minute, systolic BP 135 mm Hg, diastolic BP 85 mm Hg, respiratory rate 18 per minute, and the rest of the examination is unremarkable. Occasionally, he complains of headaches. The next step in management is:
   a) Exercise
   b) Weight loss
   c) Low-salt diet
   d) Furosemide
   e) Reassurance

714. A full-term newborn is born by a NSVD with Apgar scores are 9 and 9 at 1 and 5 minutes respectively. Both the baby and the mother are asymptomatic. The mother wanted to breast feed the baby. Breast feeding should begin preferabl.y.
   a) Within 1 hour
   b) Within 2 hour
   c) Within 3 hour
   d) Within 4 hour
   e) Within 6 hour

715. A 7-day-old girl passes a stool every 48 hours. She is receiving infant formulas. She is taking 2 ounces every 4 hours. Stools have a normal consistency. She was born full-term and the birth weight was 7 lb 6 oz. The next step in management is:
   a) Sugar water
   b) Glycerine suppository
   c) Barium enema study
   d) Reassurance
   e) Rectal stimulation with a finger

716. A full-term newborn infant did not pass a stool for the last 72 hours. His abdomen is mildly distended. The infant was kept NP and receiving intravenous fluids. A physical examination should include the following:
   a) Neurologic examination
   b) Cardiac examination
   c) Hepatic examination
   d) Verterbral examination
   e) Rectal examination

717. All of the following laboratory findings are noted in rickets **except**:
   a) Normal serum calcium levels
   b) Elevated serum phosphorus level
   c) Elevated serum alkaline phosphatase levels
   d) Elevated urinary cyclic AMP levels
   e) Reduced serum 25-hydroxycholecalciferol levels

718. A child appears with a history of vomiting and diarrhea for the last 24 hours. He has a **mild** dehydration. The following findings is noted during the physical examination:
   a) Lethargy
   b) Sunken eyes
   c) Dry mucous membranes
   d) Normal
   e) Delayed capillary refill

719. A child appears with a history of vomiting and diarrhea for the last 3 days. He has a **moderate** dehydration. All of the following findings are present **except**:
   a) Decreased tears
   b) Mild tenting of the skin

c) Pale
d) Irritable
e) Hypotension

720. A child appears with a history of severe vomiting and diarrhea for the last 5 days. She was able to tolerate a small amount of oral rehydrating solutions. The condition worsens for the last 24 hours. She has a **severe** dehydration. All of the following findings are noted **except**:
a) Mottled skin
b) Hypotension
c) Little urine output
d) Weak pulses
e) Parched mucous membranes

721. The pedestrian injuries predominantly occur in the following age group:
a) 1-4 years of age
b) 5-9 years of age
c) 10-12 years of age
d) 13-15 years of age
e) 16-18 years of age

722. An infant weighing **less than 20 lbs** should be placed inside a motor vehicle:
a) In the front seat with an infant seat
b) In the front seat on the mother's lap with a seat belt
c) In the rear seat facing backward
d) In the rear seat facing forward
e) In the rear seat on the mother's lap

723. Children and older toddlers weighing **more than 20 lbs** should be placed in a motor vehicle:
a) In the front seat with a seat belt
b) In the front seat on a mother's lap and seat belt
c) In the rear seat facing backward
d) In the rear seat facing forward
e) In the rear seat on the mother's lap

724. The youngest age in which a child is allowed to seat in the front seat of a motor vehicle is:
a) 10 years of age
b) 11 years of age
c) 12 years of age
d) 13 years of age
e) 14 years of age

725. A child appears in the ER with a shock and decreased urinary output. A physical examination reveals cool extremities, tachypnea, increasing obtundation, delayed (more than 2-3 seconds) capillary filling time, absence of tachycardia, and decreased cardiac output. The most likely diagnosis is:
a) Hypovolemic shock
b) Cardiogenic shock
c) Early septic shock
d) Obstructive shock
e) Distributive shock

726. A child appears in the ER with a shock but adequate reveals warm extremities, tachycardia, bounding peripheral pulses and tachypnea. ABG reveals a mild metabolic acidosis. The most likely diagnosis is:
a) Hypovolemic shock
b) Septic shock
c) Cardiogenic shock
d) Obstructive shock
e) Distributive shock

727. A child appears in the ER with a shock, decreased urinary output, and altered mental status. A physical examination reveals tachycardia, tachypnea, cool extremities, dry mucous membranes, poor skin turgor, and hypotension. The most likely diagnosis is:
   a) Hypovolemic shock
   b) Obstructive shock
   c) Distributive shock
   d) Cardiogenic shock
   e) Late septic shock

728. The most common complication occurs in patients **during induction of anesthesia** is:
   a) Vomiting
   b) Bronchospasms
   c) Laryngospasms
   d) Aspiration pneumonia
   e) Aspiration of gastric contents

729. The most common postoperative complication **after anesthesia** is:
   a) Apnea
   b) Hypothermia
   c) Malignant hyperthermia
   d) Atelactasis
   e) Nausea and vomiting

730. All of the following are clinical features of neurologic malignant syndrome **except**:
   a) Muscle rigidity
   b) High fever
   c) Hypercarbia
   d) Metabolic alkalosis
   e) Hemodynamic collapse

731. A 7-year-old boy has appendicitis. He is going for appendectomy. His mother died during anesthesia that was introduced for hysterectomy. The boy developed high fever, metabolic acidosis, hypercarbia, muscle rigidity, and cardiovascular collapse, during anesthesia. The management includes all of the following **except**:
   a) Discontinue inhalation anesthesia
   b) Give succinylcholine
   c) Sodium bicarbonate
   d) Sodium dantrolene
   e) Mechanical ventilation

732. All of the following clinical features are diagnostic of neurofibromatosis 1 **except**:
   a) Optic glioma and iris hamartomas
   b) Freckling in the axillary regions and the child's father has neurofibromatosis 1.
   c) Six cafe au lait macules more than 5 mm in greatest diameter in a prepubertal child and sphenoid dysplasia.
   d) Six cafe au lait macules more than 5 mm in greatest diameter in a postpubertal adolescent and his/her mother has neurofibromatosis 1.

733. The following syndrome is due to deletion of **paternally** derived chromosome 15:
   a) Angelman syndrome
   b) Down syndrome
   c) Prader-Willi syndrome
   d) Turner syndrome
   e) Noonan syndrome

734. The following syndrome is due to deletion of **maternally** derived chromosome 15:
   a) William syndrome
   b) Rubinstein-Taybi syndrome
   c) Angelman syndrome
   d) Klinefelter syndrome
   e) Velocardiofacial syndrome

735. A low birthweight newborn appears with a prominent occiput, small chin, low-set ears, rocker-bottom feet, closed fists with index finger overlapping the 3rd digit and the 5th digit overlapping the 4th. The most likely diagnosis is:
   a) Trisomy 8
   b) Trisomy 13
   c) Trisomy 15
   d) Trisomy 18
   e) Trisomy 21

736. A newborn appears pale in a routine physical examination. All of the following conditions can produce a pale appearance **except**:
   a) Anemia
   b) Edema
   c) Shock
   d) Asphyxia
   e) Premature infants

737. A routine newborn physical examination reveals retinal hemorrhages. The newborn is most commonly delivered by a:
   a) Low-forcep delivery
   b) NSVD
   c) Vacuum-assisted
   d) Cesarean section
   e) Mid-forcep delivery

738. All retinal hemorrhage cases in newborns resolve by:
   a) 2 weeks of age
   b) 3 weeks of age
   c) 4 weeks of age
   d) 6 weeks of age
   e) 8 weeks of age

739. A normal pupillary reflex first appear:
   a) After 24-25 weeks of gestation
   b) After 26-27 weeks of gestation
   c) After 28-30 weeks of gestation
   d) After 31-32 weeks of gestation
   e) After 32-34 weeks of gestation

740. The most common site of connections in conjoined twins is:
   a) Craniopagus
   b) Omphalopagus
   c) Thoracopagus
   d) Incomplete duplication
   e) Thoraco-omphalopagus

741. The most of the liquid in the lungs in newborn is removed by:
   a) Lymphatics
   b) Thoracic compression
   c) Swallowed
   d) Aspirated from the Oropharynx
   e) Pulmonary circulation

742. The usual opening pressures needed to inflate the airless lungs at birth are from:
   a) 1-4 cm H_2O
   b) 5-9 cm H_2O
   c) 10-20 cm H_2O
   d) 21-60 cm H_2O
   e) 61-75 cm H_2O

743. A full-term infant did not pass Meconium by 36 hours of age. All of the following conditions can cause this **except**:
   a) Intestinal atresia
   b) Intestinal stenosis
   c) Meconium ileus
   d) Meconium plugs
   e) Strictures after necrotizing enterocolitis

744. A newborn was not constipated at birth. He developed constipation during the 1st month of life. All of the following conditions can manifest that **except**:
   a) Hypothyroidism
   b) Anal stenosis
   c) Atretic colon
   d) Strictures after NEC
   e) Short-segment congenital aganglionic megacolon

745. The preferred therapy for patients with a Listeria monocytogenes infection is:
   a) Penicillin
   b) Ampicillin
   c) Cefotaxime
   d) Nafcillin
   e) Gentamicin

746. Maternal therapies or vaccinations can prevent or reduce all of the following neonatal infections **except**:
   a) Hepatitis B
   b) Rubella
   c) Varicella zoster
   d) CMV
   e) Toxoplasmosis

747. A 14-year-old boy appears with a history of behavioral changes for the last 1 year. His mother is worried. His mother was divorced about 1year ago. The boy is engaged in more physical fights resulting in injuries. He has been drinking heavily, using drugs, and carrying weapons. A physical examination reveals a decreased testicular volume and an increased muscle mass. His height is between 10th and 25th percentile than is decreased from a previous 25th and 50th percentile. His weight is above 90 th percentile that is increased from a previous 25th and 50th percentile. The most likely diagnosis is:
   a) He is injecting heroin routinely.
   b) He has been exercising heavily for the last 1 year.
   c) He has growth hormone deficiency.
   d) He has a cerebral gigantism.
   e) He has been taking anabolic steroids.

748. A 16-year-old girl appears with a fever, lower abdominal pain, dysmenorrhea, and abnormal vaginal discharge for the last 7 day. She denies sexual activities. A physical examination reveals a lower abdominal tenderness, adnexal tenderness, and cervical motion tenderness. The most likely diagnosis is:
   a) Twisted ovarian cysts
   b) Ectopic pregnancy
   c) Urinary tract infection
   d) Genital ulcer syndromes
   e) Pelvic inflammatory disease

749. The most common organism in younger adolescents with a pelvic inflammatory disease is:
   a) Mycoplasma hominis
   b) Group B Streptococci
   c) Gardnerella vaginalis
   d) E. coli
   e) Neisseria gonorrhoeae

750. The peripheral blood smear in a child with sore throat large, vacuolated lymphocytes. The most likely diagnosis is:
   a) Thyrotoxicosis
   b) Addison disease

c) Tuberculosis
d) Brucellosis
e) Infectious mononucleosis

751. A male child has properdin deficiency. The child is susceptible to develop:
a) Glomerulonephritis
b) Familial Mediterranean fever
c) Hereditary angioedema
d) B-cell malignancy
e) Meningococcal meningitis

752. The mode of inheritance in patients with a hereditary angioedema is:
a) Autosomal recessive
b) Autosomal dominant
c) X-linked recessive
d) X-linked dominant
e) Multifactorial

753. The most common skin abnormality in children with an allergy is:
a) Urticaria
b) Atopic dermatitis
c) Angioedema
d) Keratosis pilaris
e) Xerosis

754. The preferred diagnostic study in patients with a sinus disease is:
a) AP x-ray of the sinuses
b) Lateral x-ray of the sinuses
c) PA x-ray of the sinuses
d) CT-scan of the sinuses
e) Ultrasonography of the sinuses

755. The following medical condition is commonly noted in patients with an asthma:
a) Gastroesophageal reflux
b) RSV pneumonia
c) Streptococcus pneumonia
d) Cardiomyopathy
e) Thoracic cage deformities

756. A child appears with a sudden onset of flushing, urticaria, dry staccato cough, dyspnea, wheezing, tightness in the throat, oral pruritus, sneezing, and nasal congestion. The treatment includes all of the following **except**:
a) Corticosteroids
b) Oxygen
c) H_1 antihistamine antagonist
d) Oral hydration therapy
e) Intramuscular epinephrine

757. The most cases of anaphylaxis is due to:
a) IgG-mediated
b) IgA-mediated
c) IgM-mediated
d) IgD-mediated
e) IgE-mediated

758. The plasma beta-tryptase level remains elevated in anaphylactic reactions due to all of the following conditions **except**:
a) Foods
b) Latex
c) IVIG

d) Fire ants
e) Penicillins

759. An adolescent boy appears with a pain in the flower back. His lower spine remains straight when he bends forward. The x-ray of both sacroiliac joint reveals a severe sclerosis, erosion of joint margins, and apparent widening of the joint space. The most likely diagnosis is:
a) Reactive arthritis
b) Post traumatic arthritis
c) Ankylosing spondylitis
d) Reactive arthritis
e) Psoriatic arthritis

760. A 7-year-old appears with URI syndrome and pain in the right hip joint for the last 5 days. He denies history of a trauma. A physical examination reveals a tenderness in the right hip joint. CBC and ESR values are normal. X-ray of the right hip reveals a widening of the joint space. The next step in management is:
a) Orthopedic consultation
b) Hip spica casting
c) Azithromycin
d) Ampicillin
e) Cefuroxime

761. A child appears with rashes and multiple joints arthritis that resembles serum sickness. The girl is not immunized properly. The most likely diagnosis is:
a) Rubella-associated arthropathy
b) Poststreptococcal arthritis
c) Shigella-associated arthritis
d) Salmonella-associated arthritis
e) Arthritis-dermatitis syndrome

762. A child developed arthralgias of the knees and hands after the rubella vaccination. The Postvaccination arthritis due to rubella usually occurs:
a) 1-3 days after vaccination
b) 4-9 days after vaccination
c) 10-28 days after vaccination
d) 29-60 days after vaccination
e) 61-90 days after vaccination

763. All of the following statements are true in patients with a rubella-associated arthropathy **except**:
a) More common after natural rubella infections than after rubella vaccinations.
b) Arthralgias commonly occurs in knees and hands.
c) Common in preadolescent children
d) Arthralgias usually begin within 7 days of onset of the rash due to a natural infections.
e) Typically occurs in young women.

764. A 14-year-old girl is diagnosed with SLE (systemic lupus erythematosus). She is receiving corticosteroids therapy. All of the following are side effects of corticosteroids therapy **except**:
a) Gastritis
b) Cataracts
c) Hypertension
d) Osteopetrosis
e) Cushingoid features

765. The most specific diagnostic laboratory test in patients with a SLE is:
a) Positive LE cell preparation
b) Elevated ANA titers
c) Decreased CH_{50}
d) Anti-DNA antibody to native DNA in abnormal titer
e) Anti-Sm-presence of antibody to Sm nuclear antigen

766. All of the following hematologic findings are noted in patients with a SLE **except**:
   a) Anemia of chronic disease
   b) Leukopenia
   c) Lymphopenia
   d) Thrombocytosis
   e) Coombs-positive hemolytic anemia

767. All of the following clinical features are characteristics of SLE except:
   a) Erosive arthritis
   b) Malar rash
   c) Photosensitivity
   d) Oral ulcers
   e) Serositis

768. Rheumatic fever is commonly associated with the following infection:
   a) Group A Streptococcus lower respiratory tract infection.
   b) Streptococcus pneumoniae upper respiratory infection.
   c) Adenovirus lower respiratory tract infection
   d) Staphylococcus aureus upper respiratory tract infection
   e) Group A Streptococcus upper respiratory tract infection

769. The following type of group A Streptococcus does not cause a recurrent rheumatic fever:
   a) M type 1
   b) M type 3
   c) M type 4
   d) M type 5
   e) M type 6

770. The following serotypes of group A Streptococcus more frequently cause rheumatic fever **except**:
   a) M type 24
   b) M type 18
   c) M type 6
   d) M type 5
   e) M type 2

771. The **major** manifestations of Jones criteria to diagnose rheumatic fever include all of the following **except**:
   a) Carditis
   b) Polyarthritis
   c) Erythema marginatum
   d) Subcutaneous nodules
   e) Fever

772. The **minor** manifestations of Jones criteria to diagnose rheumatic fever include all of the following **except**:
   a) Fever
   b) Arthralgia
   c) Prolonged PR intervals
   d) Elevated ESR
   e) Positive rapid streptococcal antigen test

773. Type III GBS (group B Streptococcus) is the most virulent type among all other types. The virulent factor is most likely due to:
   a) Sialic acid (N-acetylneuraminic acid) component of capsular polysaccharide.
   b) N-acetylneuraminic component of capsular polysaccharide
   c) Galactose component of capsular polysaccharide
   d) Glucose component of capsular polysaccharide
   e) Rhamnose component of capsular polysaccharide

774. The most common type of organism in patients with an Enterococcus infection is:
   a) Enterococcus faecium
   b) Enterococcus faecalis

c) Enterococcus gallinarium
d) Enterococcus cassiliflavus
e) Nontypable enterococcus

775. The preferred therapy in patients with an invasive (e.g., sepsis, meningitis, or endocarditis) enterococcus disease that is resistant to penicillin:
a) Gentamicin and ampicillin
b) Vancomycin and doxycycline
c) Ticarcillin and gentamicin
d) Azithromycin
e) Vancomycin and gentamicin

776. A child developed painless, soft mass in the neck a dental procedure. The mass fluctuates and ultimately develops fistula. The discharge contains sulfur granules. The most likely organism is:
a) Staphylococcus aureus
b) Staphylococcus epidermidis
c) Pseudomonas aeruginosa
d) Candida albicans
e) Actinomyces israelii

777. The preferred therapy in patients with an actinomyces is:
a) Actinomyces israelii
b) Propionibacterium propionicum
c) Actinomyces odontolyticus
d) Actinomyces meyeri
e) Actinomyces naeslundii

778. The preferred therapy in patients with an actinomyces is:
a) Penicillin
b) Tetracycline
c) Clindamycin
d) Chloramphenicol
e) Carbapenems

779. The child appears during the spring season with a fever, vomiting, diarrhea, and abdominal pain for the last 5 days. He also developed rash 2 days ago. The rashes are pale, discrete, rose-red blanching macules and maculopapules. They appears on ankles, wrists, and lower extremities. His mother denied tick bites. A physical examination reveals hepatosplenomegaly. The child is admitted in a hospital. The following day, the rash becomes more Petechial and hemorrhagic. The most likely diagnosis is:
a) Pseudomonas sepsis
b) Staphylococcus aureus infection
c) E. coli sepsis
d) Rickettsia rickettsii infection
e) Herpes simplex virus infection

780. A fulminant Rocky Mountain spotted fever resulting in death can occur in patients with the following condition:
a) Unimmunized children
b) Hepatitis B infection
c) Sickle cell trait
d) Thalassemia trait
e) Glucose-6-phosphate dehydrogenase deficiency

781. The preferred therapy in patients with a RMSF (Rocky Mountain spotted fever) is:
a) Doxycycline
b) Tetracycline
c) Chloramphenicol
d) Erythromycin
e) Cephalosporins

782. A child appears with a photophobia, dry cough, coryza, conjunctivitis, and mild fever for the last 2 days. A physical examination reveals a transve line of conjunctival inflammation and the line is sharply demarcated along the eyelid margin. The most likely diagnosis is:
   a) Rubella
   b) Glaucoma
   c) Bacteria conjunctivitis
   d) Measles
   e) Chlamydia conjunctivitis

783. A Koplik spot is a pathognomonic sign of measles. Koplik spots usually appear as follows:
   a) Grayish white dots appear opposite the lower molars.
   b) Bluish white dots appear opposite the upper molars.
   c) Pinkish white dots appear opposite the lower molars.
   d) Grayish yellow dots appear opposite the lower molars.
   e) Yellowish white dots appear opposite the lower molars.

784. Koplik spots consist of the following:
   a) Polymorphonuclear leukocytes and pus cells
   b) Lymphocytes and pus cells
   c) Eosinophils and pus cells
   d) Serous exudates and endothelial cells
   e) Mucous exudates and lymphocytes

785. The preferred diagnostic study in patients with a herpes simplex virus encephalitis beyond the neonatal period is:
   a) MRI of the brain
   b) CT scan of the brain
   c) PCR analysis of CSF
   d) Brain biopsy
   e) Analysis of CSF cells

786. The patients with a sarcoidosis usually develop the following condition:
   a) Hypocalciuria
   b) Hypermagnesemia
   c) Hypercalciuria
   d) Hyperkalemia
   e) Hypocalcemia

787. The most common cause of neonatal hyperparathyroidism is:
   a) Maternal hypercalcemia
   b) Maternal hyperparathyroidism
   c) Parathyroid adenoma
   d) Pituitary tumor
   e) Absence of functional calcium-sensing receptors in the parathyroid glands

788. The mode of inheritance in patients with a neonatal hyperparathyroidism is:
   a) Autosomal recessive
   b) Autosomal dominant
   c) X-linked recessive
   d) X-linked dominant
   e) Multifactorial

789. A 2-year-old girl has a history of persistent thumb sucking. Her mother is worried. The next step in management:
   a) Put a bandage in the thumb
   b) Put a gloves in the hand
   c) Use a noxious agent
   d) Don’t give food until she stops thumb sucking
   e) Reassurance

790. A 4-year-old boy appears with a history of thumb sucking during the day time. The most common problem due to thumb sucking is:
   a) Thumb ulcers
   b) Thumb atrophy
   c) Thumb infections
   d) Hypoplastic thumb nails
   e) Malalignment of the teeth

791. The preferred therapy in patients with a thumb sucking is:
   a) Use of noxious agent (e.g., bitter salves)
   b) Praise for substitute behaviors
   c) A mild physical punishment is useful.
   d) Scolding is better than physical punishment.
   e) Expose the child to other children who do not appreciate thumb sucking.

792. A 3-year-old boy has difficulty in playing rhyming games and learning the names for numbers and letters. He does not like to read. However, he enjoys when his mother reads to him. He refuses to read aloud to his parents. The most likely associated with this disorder is:
   a) Myopia
   b) Hypermetropia
   c) Cataracts
   d) Optic glioma
   e) Attention-deficit/hyperactivity disorder

793. The most common neurobehavioral disorder in children is:
   a) Dyslexia
   b) Depression due to brain tumor
   c) Attention-deficit/hyperactivity disorder
   d) Agitation after lead poisoning
   e) Rage attacks after brain injury

794. The preferred therapy in patients with dyslexia that is **diagnosed early in life** is:
   a) Accomodation
   b) Remediation
   c) Ignore
   d) Use force consistently
   e) Reassurance

795. The preferred therapy in patients with dyslexia that is diagnosed late (i.e., high school, college, and graduate school) is:
   a) Ignore
   b) Encouragement
   c) Remediation
   d) Accomodation
   e) Reassurance

796. A 17-year-old boy is taking SAT examination. He has dyslexia. All of the following accomodations during examination are useful **except**:
   a) Recorded questions
   b) Recorded answers
   c) Multiple choice tests
   d) Two choice tests
   e) A separate quiet room for taking test

797. A 6-year-old girl appears in the ER with a history of sexual abuse. All of the following physical findings are suggestive of sexual abuse **except**:
   a) Vaginal pain
   b) Vaginal bleeding
   c) Vaginal discharge

d) Rectal pain
e) Lightly pigmented hair along the medial border of the labia

798. All of the following pertinent history suggests sexual abuse in children **except**:
a) Constipation
b) Dysuria
c) Enuresis
d) Encopresis
e) Diarrhea

799. A 7-year-old girl appears in the ER with a history of sexual abuse. All of the physical findings have diagnostic values **except**:
a) A moderately enlarged opening size of the hymen
b) Redness in the urethra
c) Bruise on the labia minora
d) Redness and abrasion inside the mouth
e) Bite marks on the neck

800. A 4-year-old girl appears in the ER with history of a sexual abuse. The initial examination is performed in a supine position that reveals erythema on the labia minora. The next step in management is:
a) The child should be re-examined in the prone belly position.
b) The child should be re-examined in the left lateral position.
c) The child should be re-examined in the right lateral position.
d) The child should be re-examined in the supine position under general anesthesia.
e) The child should be re-examined in the prone knee-chest position.

801. A routine physical examination of the child reveals pulsation of the aorta. He is thin and asymptomatic. The next step in management is:
a) Ultrasonography of the aorta
b) Measure four extremities BP
c) Aortic angiography
d) Abdominal x-ray
e) Reassurance

802. A routine physical examination of the child reveals a thin projection of the right lobe of the liver in the right lateral abdomen. The child is active and asymptomatic. The next step in management is:
a) Liver function tests
b) Ultrasonography of the liver
c) Hepatobiliary scan
d) MRI of the liver
e) Reassurance

803. A 3½ week-old breast-fed infant appears with history no stool for the last 10 days. She was passing stools normally prior to this episode. Her birth weight was 8 lbs 10 ounces. Her present weight is 9 lbs 2 ounces. She has been receiving breast milk only. She has a strong suck. She was born by NSVD with Apgar scores were 9 and 9 at 1 and 5 minutes respectively. She was discharged home on 2nd day of life. A physical examination reveals a normal, soft abdomen, and stools are palpable in the descending colon. The next step in management is:
a) Abdominal x-ray
b) Barium enema
c) Upper GI series
d) Ultrasonography of the colon
e) Reassurance

804. A 5-month-old girl appears with a history of vomiting after each feeding for the last 2 months. She has been drinking infant formulas since birth. Her birth weight was 6 lbs 6 ounces. Her present weight is 14 lbs. She drinks infant formulas 5-6 ounces every 4 hours. She vomits 15-30 ml after each feeding. She has been eating rice cereal for the last 1 month. A physical examination reveals a normal, soft abdomen, and the rest of the physical examination is unremarkable. The following statement is true about infants with similar problems:
a) 40% of cases are resolved by 6 months of age.
b) 60% of cases are resolved by 8 months of age.

c) 70% of cases are resolved by 10 months of age.
d) 80% of cases are resolved by 11 months of age.
e) 90% of cases are resolved by 12 months of age.

805. The most common congenital laryngeal anomaly in infant is:
a) Laryngomalacia
b) Subglottic stenosis
c) Subglottic hemangioma
d) Laryngeal web
e) Vocal cord paralysis

806. A full term newborn appears with **low pitched**, inspiratory stridor at birth. The stridor worsens with crying, agitation, and feeding. The newborn is NPO and receiving intravenous fluids. He was born by an elective cesarean section with Apgar scores are 8 and 9 at 1 and 5 minutes respectively. The most likely diagnosis is:
a) Vocal cord paralysis
b) Laryngeal web
c) Laryngeal atresia
d) Laryngeal nodule
e) Laryngomalacia

807. The preferred diagnostic study in infants with laryngomalacia is:
a) AP x-ray of the neck
b) Lateral x-ray of the neck
c) Flexible laryngoscopy
d) Barium swallow of the esophagus
e) Flexible bronchoscopy

808. A 2-day-old newborn male appears with cyanosis and tachypnea for the last 2 hours. He was born by NSVD with Apgar scores are 8 and 9 at 1 and 5 minutes respectively. The physical examination reveals a grade 2/6 systolic murmur at the left sternal border. The arterial PO_2 is 80 in hyperoxia test. The oxygen saturation values are as follows: RA 58%, RV 58%, LA 100%, LV 94%, pulmonary artery 58%, and ascending aorta 80%. The volume of blood passes through different structures are as follows: RA 3 L/min/m^2, RV 3 L/min/m^2, LA 2 L/min/m^2, LV 2 L/min/m^2, pulmonary artery 2 L/min/m^2, and ascending aorta 3 L/min/m^2. The newborn is receiving PGE1 infusions. The preferred surgical therapy is:
a) Switch operation (Jatene)
b) Modified Blalock-Taussig shunt
c) Starnes procedure
d) Norwood operation
e) Fontan procedure

809. A newborn appears with cyanosis and respiratory distress within the 1st hour of life. She was born by NSVD with Apgar score of 7 and 8 at 1 and 5 minutes respectively. The physical examination reveals a soft systolic ejection murmur at the midleft sternal border and single, loud 2nd heart sound. The arterial PO_2 is 60 in hyperoxia test. The oxygen saturation values are as follows: both vena cava 58%, RA 73%, RV 73%, LA 90%, LV 90%, pulmonary artery 90%, right and left pulmonary arteries 80%, pulmonary veins 100%, and ascending aorta 73%. The newborn is placed on a mechanical ventilator and PGE_1 infusions have started. The preferred initial surgical therapy is:
a) Norwood operation
b) Glenn operation
c) Fontan procedure
d) Aortic valvuloplasty
e) Rashkind procedure

810. The pulmonary arteriovenous fistulas are most commonly present is:
a) Williams syndrome
b) Down syndrome
c) Turner syndrome
d) Prader-Willi syndrome
e) Osler-Weber-Rendu syndrome

811. A newborn appears with bradyarrythmias. ECG reveals that the P-P intervals are constant, the P-R intervals increase progressively until a P wave is not conducted; following a dropped beat, the P-R interval is shorter. The most likely diagnosis is:
   a) Long Q-T syndrome
   b) 1st-degree heart block
   c) Mobitz type I
   d) Mobitz type II
   e) 3rd-degree heart block

812. A child appears with history of syncope. He is otherwise healthy. ECG reveals that occasional atrial beats are not conducted to the ventricles. The most likely diagnosis is:
   a) 1st-degree heart block
   b) Wenckebach type heart block
   c) Mobitz type II heart block
   d) 3rd-degree heart block
   e) Normal variant

813. All of the following are manifestations of Fanconi anemia **except**:
   a) Hypopigmentation
   b) Absent thumb
   c) Short stature
   d) Pancytopenia
   e) Aplastic bone marrow

814. The mode of inheritance in patients with Fanconi anemia is:
   a) Autosomal recessive
   b) Autosomal dominant
   c) X-linked recessive
   d) X-linked dominant
   e) Multifactorial

815. Aplastic anemia can occur in all of the following conditions **except**:
   a) Down syndrome
   b) Seckel syndrome
   c) Dubowitz syndrome
   d) Dyskeratosis congenita
   e) Turner syndrome

816. The most common mode of inheritance in patients with nephrogenic diabetes insipidus is:
   a) Autosomal recessive
   b) Autosomal dominant
   c) X-linked recessive
   d) X-linked dominant
   e) Multifactorial

817. A 14-day-old male newborn appears with fever, irritability, crying, poor weight gain, and polyuria. A physical examination reveals mild dehydration. SMA 6 reveals hypernatremia, high BUN, and elevated creatinine. The serum osmolality values is 300 mOsm/kg and the urine osmolality value is 280 mOsm/kg. The most likely diagnosis is:
   a) Renal tubular acidosis
   b) Nephrogenic diabetic insipidus
   c) Bartter syndrome
   d) Gitelman syndrome
   e) Hypernatremia dehydration

818. All of the following are clinical manifestations of Potter syndrome **except**:
   a) Unilateral renal agenesis
   b) Low set ears
   c) Broad and flat nose
   d) Widely separated eyes
   e) Limb abnormalities

819. The rate of urine production at term is about:
   a) 40 mL/hour
   b) 45 mL/hour
   c) 51 mL/hour
   d) 60 mL/hour
   e) 70 mL/hour

820. The glomerular filtration rate at term is about:
   a) 15 mL/min/1.73 m^2
   b) 20 mL/min/1.73 m^2
   c) 25 mL/min/1.73 m^2
   d) 30 mL/min/1.73 m^2
   e) 35 mL/min/1.73 m^2

821. The glomerular filtration rate triples since birth in full term infants by:
   a) 1 month of age
   b) 3 months of age
   c) 6 months of age
   d) 9 months of age
   e) 12 months of age

822. All of the following are manifestations of septo-optic dysplasia **except**:
   a) Nystagmus
   b) Visual impairments
   c) Optic nerve dysplasia
   d) Large anterior pituitary gland
   e) Incomplete development of septum pellucidum

823. In girls, McCune-Albright syndrome appears with all of the following clinical and laboratory features **except**:
   a) Early vaginal bleeding
   b) Precocious puberty
   c) Decreased level of estradiol
   d) Decreased levels of LH
   e) Does not respond to GnRH stimulation

824. In boys, McCune-Albright syndrome, all of the following statements are true **except**:
   a) Precious puberty is more common.
   b) Testicular enlargements are fairly symmetric.
   c) Phallic enlargement occurs after testicular enlargement.
   d) During puberty, the response to GnRH becomes pubertal.
   e)

825. The preferred therapy in patients with McCune-Albright syndrome whose puberty has shifted from a pseudo (gonadotropin-independent) to true (gonadotropin-dependent) mechanism is:
   a) Estrogen
   b) Progesterone
   c) FSH
   d) Short-acting analogs of GnRH
   e) Long-acting analogs of GnRH

826. A 3-week-old girl appears wit sudden onset of tetany and seizure activities. She was born by NSVD with Apgar score of 8 and 9 at 1 and 5 minutes respectively. She is receiving breast milk since birth. She was completely asymptomatic prior to this episode. The serum calcium level is 5 mg/dL and ionized calcium level is markedly reduced. The serum magnesium level is 1.2 mg/dL. The next step in management is:
   a) Intravenous calcium
   b) Calcium gluconate
   c) PTH
   d) Magnesium
   e) 1, 25-dihydroxycholecalciferol

827. A 9-year-old boy appears with headache, palpitations, and dizziness for the last 2 hours. He experienced similar symptoms periodically for the last 6 months. The symptoms subside spontaneously. He is not taking any medication. He denies URI symptoms and history of trauma. The symptoms occurred more frequently for the last 1 month. A physical examination is unremarkable. His vital signs are as follows: T 98.4° F, HR 130 per minute, RR 20 per minute, and blood pressure 150/95. The boy's symptoms subsided after 1 hour. The repeat vital signs become normal (HR 90/minute, BP 110/65). The most likely diagnosis is:
   a) Pheochromocytoma
   b) Virilizing adrenocortical tumor
   c) Cushing syndrome
   d) Essential hypertension
   e) Pituitary tumor

828. The preferred diagnostic study in patients with pheochromocytomas that are localized and small in sizes is:
   a) CT-scan
   b) Ultrasonography
   c) Total catecholamine levels in urine are elevated.
   d) MBIG (^{131}I-Metaiodobenzylguanidine)
   e) Total vanillylmandelic acid (VMA) levels in urine are elevated.

829. The preferred curative therapy in patients with pheochromocytoma is:
   a) Radiation therapy
   b) Chemotherapy
   c) Surgical removal of tumors
   d) Alpha-adrenergic blocker
   e) Beta-adrenergic blocker

830. The most important complication during surgery and within 48 hours postoperatively is:
   a) Intracerebral edema
   b) Pulmonary edema
   c) Cardiac failure
   d) GI bleeding
   e) Acute hypotension

831. The clinical manifestation of Sertoli cell-only syndrome is:
   a) Small testes
   b) Hypothyroidism
   c) Hypoparathyroidism
   d) Hypoadrenalism
   e) Large penis

832. The most common chromosomal abnormality in patients with Klinefelter syndrome is:
   a) 47, XYY
   b) 46, XX / 47, XXY
   c) 46, XY / 48, XXYY
   d) 47, XXY
   e) 45, X / 46, XY / 47, XXY

833. A newborn female appears with edema of the dorsa of the hands and feet, loose skinfolds at the nape of the neck, low birthweight, and decreased length. The most common cardiac anomaly in this patient is:
   a) Aortic coarctation
   b) Pulmonic stenosis
   c) Aortic stenosis
   d) Mitral valve prolapse
   e) Nonstenotic bicuspid aortic valve

834. A girl with a short stature is referred to an endocrinologist. The following investigation should be performed in girls with short statures:
   a) Serum FSH levels
   b) Echocardiography
   c) Ultrasonography of the kidney

d) Ultrasonography of the ovary
e) Chromosome analysis

835. WAGR syndrome includes all of the following **except**:
a) Wilms tumor
b) Aniridia
c) GU malformations
d) Retinoblastoma
e) Deletion of chromosome 11

836. The diagnostic criterion in patients with a diabetes mellitus is:
a) Random plasma glucose level is 190 mg/dL.
b) Fasting plasma glucose level is 125 mg/dL.
c) 2-hour plasma glucose during oral glucose tolerance test is 195 mg/dL.
d) Fasting blood glucose level is 127 mg/dL
e) Random plasma glucose level is 199 mg/dL

837. The diagnostic criterion in patients with an impaired glucose tolerance (IGT) is:
a) Fasting glucose level is 107 mg/dL
b) 2-hour plasma glucose during the oral glucose tolerance test (OGTT) is 135 mg/dL.
c) Fasting glucose level is 105 mg/dL.
d) Fasting glucose level is 109 mg/dL.
e) Fasting glucose level is 110 mg/dL.

838. The palmer grasp begins at:
a) 28 weeks gestational age
b) 30 weeks gestational age
c) 32 weeks gestational age
d) 34 weeks gestational age
e) 36 weeks gestational age

839. The parachute reflex begins at:
a) 5-6 months of age
b) 7-8 months of age
c) 9-10 months of age
d) 11-12 months of age
e) 12-15 months of age

840. The Moro reflex begins at:
a) 24-27 weeks gestational age
b) 28-32 weeks gestational age
c) 33-34 weeks gestational age
d) 35-36 weeks gestational age
e) 37-40 weeks gestational age

841. The tonic neck reflex begins at:
a) 34 weeks gestational age
b) 35 weeks gestational age
c) 36 weeks gestational age
d) 37 weeks gestational age
e) 38 weeks gestational age

842. The rooting reflex begins at:
a) 30 weeks gestational age
b) 32 weeks gestational age
c) 34 weeks gestational age
d) 36 weeks gestational age
e) 38 weeks gestational age

843. The following neonatal seizure has the worst prognosis:
   a) Hypoglycemia seizures
   b) Hypocalcemia seizures
   c) Drug withdrawal seizures
   d) Hypernatremic seizures
   e) Hypoxic-ischemic encephalopathy producing seizures

844. The most common cause of neonatal seizure is:
   a) Pyridoxine dependency
   b) Hypoglycemia
   c) Subarachnoid hemorrhage
   d) Nonketotic hyperglycinemia
   e) Hypoxic-ischemic encephalopathy

845. A 2-hour-old newborn male infant appears with generalized clonic seizures. He was born by a cesarean section due to fetal distress. His Apgar scores are 4 and 8 at 1 and 5 minutes respectively. The intravenous phenobarbital (20 mg/kg) loading doe is given. The boy has episodes of seizure activities every 5 to 10 minutes intervals. The seizure activities could not be stopped despite repeated doses of phenobarbital, phenytoin, and lorazepam therapies. He is receiving intravenous glucose. His serum glucose level is 50 mg/dL. The next step in management:
   a) Intravenous calcium
   b) Boluses of intravenous glucose
   c) Oral morphine
   d) Neurosurgical consult
   e) Intravenous pyridoxine

846. The mode of inheritance in patients with pyridoxine dependency seizures is:
   a) Autosomal recessive
   b) Autosomal dominant
   c) X-linked recessive
   d) X-linked dominant
   e) Multifactorial

847. The following opthalmologic finding is common in patients with neurofibromatosis:
   a) Leukokoria
   b) Heterochromia
   c) Microcornea
   d) Lisch nodules
   e) Cataract

848. The newborn's routine eye examination reveals unilateral leukocoria. The most likely diagnosis is:
   a) Cataract
   b) CMV
   c) Toxoplasmosis
   d) Retinoblastoma
   e) Retinal hemorrhages

849. The newborn's routine eye examination reveals heterochromia. The most likely diagnosis is:
   a) Turner syndrome
   b) Adie syndrome
   c) Block-Sulzberger syndrome
   d) Down syndrome
   e) Waardenburg syndrome

850. The characteristic late manifestation of congenital syphylis is:
   a) Jaundice
   b) Periosteitis
   c) Metaphysitis
   d) Hepatitis
   e) Interstitial keratitis

851. A 14-day-old girl appears for a routine physical examination. She is drinking infant formulas 2 ounces every 4 hours. Her mother stated that she sleeps very well. The loud music does not disturb her sleep. However, when she cries, she does not stop even with her mother's voice. She sleeps most of the time. She passes tools 3-4 times per day and has normal soft stools. The mother is happy. The next step in management is:
a) Increase the feed during crying
b) Thyroid function tests
c) Reduce the feed to keep her awake
d) Hearing test
e) Reassurance

852. Which of the following child needs audiologic evaluation?
a) A 24-month-old girl can point to body parts when asked and is able to play audiometry.
b) A 12-month-old boy can localize to sound presented in the horizontal plane only.
c) An 18-month-old girl can follow simple directions without gestural or other visual cues.
d) A 15-month-old boy can point towards an unexpected sound, to familiar objects, or faces when asked.
e) A 6-month-old girl can begin to imitate sounds in her own speech repertoire.

853. The most common organism in patients with perichondritis and chondritis is:
a) Staphylococcus aureus
b) E. coli
c) Staphylococcus epidermidis
d) Pseudomonas aeruginosa
e) Group A Streptococcus

854. The most common organism in patients with acute cellulitis of the external ear is:
a) Staphylococcus epidermidis
b) Staphylococcus aureus
c) Herpes simplex virus
d) Pseudomonas aeruginosa
e) Group A Staphylococcus

855. The most common organism in patients with bullous myringitis is:
a) Moraxella catarrhalis
b) Group A Staphylococcus
c) Staphylococcus pneumoniae
d) Pseudomonas aeruginosa
e) Nontypable Haemophilus influenzae

856. The most common organism in patients with furunculosis is:
a) Staphylococcus aureus
b) Staphylococcus epidermidis
c) Staphylococcus pneumoniae
d) E. coli
e) Group A Staphylococcus

857. The most common organism in patients with otitis externa is:
a) Pseudomonas aeruginosa
b) Staphylococcus aureus
c) Proteus mirabilis
d) Enterobacter aerogenes
e) Klebsiella pneumoniae

858. The following organism causes Ramsay Hunt syndrome:
a) Candida albicans
b) Staphylococcus aureus
c) Pseudomonas aeruginosa
d) Varicella-zoster virus
e) Herpes simplex virus

859. A 16-year-old boy experienced a puncture wound through the sole of his right sneaker about 7 days ago. A physical examination reveals swollen, red, tender, edematous areas around the puncture wound and greenish pus. The most likely organism is:
   a) Staphylococcus aureus
   b) Staphylococcus epidermidis
   c) Group A Streptococcus
   d) Streptococcus pneumoniae
   e) Pseudomonas aeruginosa

860. The most common cause of in-toeing in children **2 years of age or older** is:
   a) Internal femoral torsion
   b) Internal tibial torsion
   c) External femoral torsion
   d) External tibial torsion
   e) Genu varum

861. The most common cause of in-toeing in children **younger than 2 years of age** is:
   a) Internal tibial torsion
   b) External tibial torsion
   c) Internal femoral torsion
   d) External femoral torsion
   e) Genu valgum

862. A 3-year-old girl appears with history sitting "W" style position. The diagnosis is usually made by:
   a) X-ray of the femur
   b) X-ray of the pelvis
   c) Ultrasonography of the femur
   d) CT-scan of the femur
   e) Clinical measurements

863. The preferred therapy in patients with an internal femoral torsion is:
   a) Nighttime orthoses
   b) Daytime twister cable
   c) Femoral cast
   d) Femoral splint
   e) Observation

864. The preferred therapy in patients with an internal tibial torsion is:
   a) Observation
   b) Orthoses
   c) Cast
   d) Splint
   e) Pinning

865. All of the following features are noted in patients with Williams syndrome **except**:
   a) Large mandible
   b) Prominent maxilla
   c) Small peglike teeth with caries
   d) Upper lip has a Cupid's blow curve
   e) Upturned nose

866. The sudden death in patients with Williams syndrome is due to:
   a) Aortic rupture
   b) Arrythmias
   c) Rupture atrial septum
   d) Rupture ventricular septum
   e) Rupture pulmonary artery

867. All of the following cardiac defects can occur in patients with Williams syndrome **except**:
   a) Supravalvular aortic dilatation
   b) Coronary artery stenosis
   c) Hypoplasia of the aorta
   d) Peripheral pulmonic stenosis
   e) VSD

868. The preferred therapy in patients with persistent idiopathic hypercalcemia is:
   a) High phosphate diet
   b) Low phosphate diet
   c) Magnesium therapy
   d) Biphosphonates
   e) Intravenous fluids and furosemide

869. All of he following therapies are indicated in patients with caustics poisoning **except**:
   a) Activated charcoals
   b) Endoscopy
   c) No emesis
   d) No lavage
   e) Skin and eye should be flushed with water

870. All of the following are characteristic features of Aicardi syndrome **except**:
   a) Coloboma of the optic disc
   b) Seizures
   c) Hemivertebrae
   d) Mental retardation
   e) Mostly occurs in male

871. Aicardi syndrome typically associated with the following feature:
   a) Agenesis of the corpus callosum
   b) Hydronephrosis
   c) Pulmonic stenosis
   d) Hepatoblastoma
   e) Pancreatic pseudocyst

Match the following electrolyte abnormalities and clinical conditions (872-876):

872. Na 122, cl 109, K 4.9, Gl 78, BUN 9, and urine specific gravity 1011
873. Na 121, cl 85, K 4.3, Gl 82, BUN 25, and urine specific gravity 1025
874. Na 124, cl 107, K 3.7, Gl 680, BUN 9, and urine specific gravity 1012
875. Na 160, cl 121, K 3.9, Gl 75, BUN 24, and urine specific gravity 1023
876. Na 120, cl 90, K 4.1, Gl 84, BUN 3, and urine specific gravity 1030

   a) Increased ADH secretion
   b) Laboratory error
   c) Hypernatremic dehydration
   d) Hyponatremic dehydration
   e) Pseudohyponatremia

Match the following electrolyte abnormalities and clinical conditions (877-881):

877. Na 154, cl 120, K 3.8, Gl 92, BUN 26, and urine specific gravity 1001
878. Na 165, cl 132, K 3.6, Gl 81, BUN 8, and urine specific gravity 1009
879. Na 124, cl 95, K 3.5, Gl 76, BUN 9, and urine specific gravity 1011
880. Na 127, cl 96, K 7.9, Gl 82, BUN 29, and urine specific gravity 1025
881. Na 123, cl 93, K 6.9, Gl 87, BUN 16, and urine specific gravity 1010

   a) Salt poisoning
   b) Diabetes insipidus

c) Acute renal failure
d) Congenital adrenal hyperplasia
e) Maintenance salt was not given

Match the following hemoglobin levels and diseases (882-884):

882. Elevated hemoglobin A1
883. Elevated hemoglobin A1C
884. Elevated hemoglobin A2

a) Down syndrome
b) Diabetes mellitus
c) Wilson disease
d) Reye syndrome
e) Renal failure

Match the following audiometric evaluations and different conditions (885-888):

885. Hearing is close to "zero" decibel and air conduction is better than bone conduction.
886. Bone conduction is better (at least 15 decibel) than air conduction, usually less than 20 decibel hearing loss.
887. Bone bone conduction and air conduction have a precipitous drop, usually more than 60 decibel.
888. Initially bone conduction is better than air conduction, followed by precipitous drop in both conductions.

a) CMV
b) Mixed hearing loss
c) Normal
d) Allergic rhinitis
e) Otitis media

Match the following skin lesions and different diseases (889-893):

889. Erythema marginatum
890. Erythema migrans
891. Erythema multiforme like lesion
892. Erythema multiforme
893. Erythema nodosum

a) Cefaclor
b) Kawasaki disease
c) Rheumatic fever
d) Sarcoidosis
e) Lyme disease

Match the following growth parameters and different organs (894-898):

894. Reach adult size at 6 years, continue to grow until adolescence then recedes to adult size.
895. 90% of adult size is achieved by 5 years of age.
896. Rapid growth in first 5 years, average growth from 5 to 10 years, and again rapid growth from 10-18 years.
897. Slow growth in first 12 years, then rapid growth from 12-18 years.
898. Rapid growth in first 5 years (like general) and involutes rapidly in adolescence.

a) Neural tissue
b) Lymphoid tissue
c) Thymus
d) General
e) Genital

Match the following growth findings and different conditions (899-903):

899. A child remains short until puberty, then increases height, and bone age is less than chronological age.
900. A child remains short for rest of life. Both parents are short. Bone age is the same as chronological age.
901. A child suddenly stops growing and then, started to grow again after medication.
902. A child suddenly stops growing and the, started to grow after surgery.
903. A child suddenly stops growing, has electrolyte imbalance, and then, started to grow after medication.

a) Congenital adrenal hyperplasia
b) Craniopharyngioma
c) Constitutional short stature
d) Hypothyroidism
e) Genetic short stature

Match the following arterial blood gases and different conditions (904-908):

904. pH 7.21, PCO_2 62, PO_2 90, bicarbonate 34
905. pH 7.58, PCO_2 17, PO_2 95, bicarbonate 11
906. pH 7.56, PCO_2 36, PO_2 88, bicarbonate 37
907. pH 7.19, PCO_2 18, PO_2 49, bicarbonate 12
908. pH 7.36, PCO_2 61, PO_2 92, bicarbonate 35

a) Respiratory alkalosis
b) Respiratory acidosis
c) Metabolic alkalosis
d) Metabolic acidosis
e) Compensated respiratory acidosis

Match the following visual pathway lesions and findings (909-913):

909. Unilateral vision loss
910. Bitemporal hemianopsia
911. Left homonymous hemianopsia
912. Right homonymous hemianopsia
913. Partial homonymous hemianopsia

a) Left optic tract
b) Lateral geniculate body
c) Optic chiasma
d) Right optic tract
e) Optic nerve

Match the following hematologic findings and different conditions (914-918):

914. Hemoglobin A 95%, hemoglobin A2 3%, hemoglobin F less than 1%, hemoglobin S 0%, normal hemoglobin, and normal MCV
915. Hemoglobin A 0%, hemoglobin A2 normal, hemoglobin F 8%, hemoglobin S 92%, hemoglobin 7, and normal MCV
916. Hemoglobin A 55%, hemoglobin A2 normal, hemoglobin F normal, hemoglobin S 45%, normal hemoglobin, and normal MCV
917. Hemoglobin A 0%, hemoglobin A2 0%, hemoglobin F 1%, hemoglobin S 50%, hemoglobin C 50%, and hemoglobin 9.
918. Hemoglobin A 28%, hemoglobin A2 normal, increased ratio A2/A, hemoglobin F 72%, hemoglobin S 0%, hemoglobin 4, and MCV 45.

a) Sickle cell disease
b) Hemoglobin SC disease
c) Normal
d) Thalassemia major
e) Sickle cell trait

Match the following hematologic findings and different conditions (919-923):

919. Hemoglobin A 90%, hemoglobin A2 5%, hemoglobin F 5%, hemoglobin S 0%, hemoglobin 10, and MCV 60
920. Hemoglobin A 96%, hemoglobin A2 3%, hemoglobin F 0.5%, hemoglobin S 0%, hemoglobin 14, and MCV 65
921. Hemoglobin A 98%, hemoglobin A2 2%, hemoglobin F 0%, hemoglobin S 0%, hemoglobin 9, and MCV 70
922. Hemoglobin A 25%, hemoglobin A2 9%, hemoglobin S 66%, hemoglobin 8, and MCV 72.
923. Hemoglobin A 0%, hemoglobin A2 4%, hemoglobin S 96%, Bart hemoglobin increased, and low MCV.

a) Beta thalassemia minor
b) Sickle alpha thalassemia
c) Iron deficiency anemia
d) Sickle beta thalassemia
e) Alpha thalassemia trait

Match the flow-volume curve in different respiratory conditions (924-928):

924. Bronchopulmonary dysplasia
925. Respiratory distress syndrome
926. Epiglottitis
927. Laryngomalacia
928. Malacia of intrathoracic trachea

a) Reduced inspiratory and expiratory phases looks like a sandwich
b) Reduced inspiratory flow and plateau of inspiratory loop
c) Reduced and flattened expiratory loop
d) Reduced inspiratory and expiratory phases looks like a small normal curve
e) Prolonged expiration phase

Match the following diseases with peripheral blood smears (929-933):

929. Iron deficiency anemia
930. G6PD deficiency
931. Folic acid deficiency
932. Thalassemia major
933. Hemolytic uremic syndrome

a) Target cells
b) Schizocytes
c) Macrocytes
d) Heinz bodies
e) Hypochromic microcytic cells

Match the time and different components of human brain growth (934-936):

934. Brain DNA
935. Brain weight
936. Brain cholesterol

a) Peaks around 4-5 months of age
b) Peaks around 2 years of age
c) Peaks within few months after birth
d) Peaks around 1 year of age
e) Double peaks (prenatal and postnatal)

Match the following CSF findings and different diseases (937-941):

937. Bacterial meningitis
938. Tuberculous meningitis
939. Fungal meningitis
940. Viral meningitis
941. Brain abscess

a) Increased lymphocytes, increased protein, normal glucose
b) Increased polymorphs, increased protein, decreased glucose
c) Increased monocytes, increased protein, decreased glucose
d) Increased lymphocytes, increased protein, decreased glucose
e) First, increased lymphocytes then polymorphs, increased protein, and normal glucose

Match the caloric distribution in different foods (942-944):

942. Human milk
943. Cow's milk
944. Food

a) Protein 15%, fat 35%, carbohydrate 55%
b) Protein 15%, fat 25%, carbohydrate 65%
c) Protein 25%, fat 35%, carbohydrate 40%
d) Protein 6%, fat 50%, carbohydrate 44%
e) Protein 20%, fat 50%, carbohydrate 30%

Match the most common organisms in different diseases (945-949):

945. Bronchiolitis
946. Croup
947. Cold
948. Pharyngitis
949. Bacterial tracheitis

a) Staphylococcus aureus
b) Viruses
c) RSV
d) Parainfluenza viruses
e) Rhinoviruses

Match the different kinds of milk and their characteristic (950-954):

950. Condensed milk
951. Pasteurized milk
952. Homogenized milk
953. Evaporated milk
954. Goat's milk

a) Low in vitamin D, iron, sodium, and folic acid. More in K, chloride, linoleic and arachidonic acids
b) Softer casein and less allergenic lactalbumin
c) Fat broken down and easily digested
d) Bacteria is destroyed; casein broken down
e) High in carbohydrates; low in fat and proteins

Match the characteristic of sinusitis and site of pain/headache (955-959):

955. Frontal
956. Sphenoidal
957. Anterior ethmoidal
958. Posterior ethmoidal
959. Maxillary

a) Suboccipital area
b) Temporal area and eyes
c) Trigeminal area particularly mastoid
d) Over maxilla and teeth
e) Above and medial to eyes

Match the glucose levels and insulin doses in type 1 diabetes mellitus (960-964):

960. Increased glucose level in morning
961. Increased glucose level at noon
962. Increased glucose level in evening
963. Increased glucose level in night
964. Increased glucose level in night

a) Decrease this P.M. dose of regular insulin
b) Increase last P.M. dose of NPH insulin
c) Increase this A.M. dose of regular insulin
d) Increase this A.M. dose of NPH insulin
e) Increase this P.M. dose of regular insulin

Match different types of cough and diseases (965-969):

965. Tracheitis
966. Chlamydia pneumonitis
967. Laryngeal obstruction
968. Habit cough
969. Allergic reaction

a) Cough with stridor
b) Disappears with sleep
c) Brassy
d) Noctural cough
e) Staccato

Match different characteristics of cough and diseases (970-974):

970. Bronchitis
971. Cystic fibrosis
972. Reactive airways
973. Pertussis airway
974. Asthma

a) Most severe on awakening in morning
b) With vigorous exercise
c) Paroxysmal
d) Tight (wheezy)
e) Loose (discontinuous), productive

Match the congenital infections and anatomical defects (975-979):

975. Rubella
976. CMV
977. VZV (Varicella zoster virus)
978. HSV (herpes simplex virus)
979. Parvovirus

a) Limb hypoplasia
b) Hydrops
c) Cataracts
d) Hydrocephalus
e) Periventricular calcifications

Match the congenital infections with the following findings (980-983):

980. Coxsackievirus
981. CMV
982. Plasmodium falciparum
983. Enteroviruses

a) Deafness
b) Carditis
c) Rhinitis
d) Nephrotic syndrome

Match the following items with iron absorptions and utilizations (984-987):

984. Vitamin C
985. Tea
986. Protein
987. Coffee

a) Increased iron absorption from GI tract
b) Decreased iron absorption form GI tract
c) No effects
d) Increased iron utilization in RBCs
e) Decreased iron utilization in RBCs

Match the following findings and different conditions (988-992):

988. Apnea
989. Omphalocele
990. Small intestine fore shortened
991. Bilirubin encephalopathy
992. Glaucoma

a) Gastroschisis
b) Sensorineural hearing loss
c) Prostaglandin
d) Sturge-Weber disease
e) Beckwith-Wiedemann syndrome

Match the following syndromes with different clinical findings (993-997):

993. Rubinstein-Taybi syndrome
994. Turner syndrome
995. Treacher Collins syndrome
996. Cri-du-chat syndrome
997. Wolf-Hirschhorn syndrome

a) Conductive hearing loss
b) Broad thumbs
c) Moonlike face
d) "Greek helmet" facies
e) Cystic hygroma

Match the congenital heart diseases and surgical procedures (998-1002):

998. Transposition of great arteries
999. Hypoplastic left heart syndrome
1000. Tetralogy of Fallot
1001. Ebstein anomaly
1002. Aortic stenosis

a) Blalock-Taussig shunt
b) Norwood procedure
c) Balloon valvuloplasty
d) Starnes procedure
e) Arterial switch (Jatene)

Match the following syndromes with different clinical findings (1003-1007):

1003. Aortic stenosis
1004. Pulmonic stenosis
1005. Mitral valve prolapse
1006. Total anomalous pulmonary venous return
1007. Tricuspid atresia

a) Well-developed, well-nourished child
b) Sudden death
c) "Snowman sign" (figure eight)
d) Scoliosis
e) ECG reveals characteristic left axis deviation

Match the following antituberculous drugs and their toxicities (1008-1012):

1008. Ethambutol
1009. Streptomycin
1010. Rifampin
1011. INH
1012. Pyrazinamide

a) Elevated uric acid levels
b) Peripheral neuritis
c) Body fluid turns orange
d) Vestibular damage
e) Optic neuritis

ANSWERS

No.		**Correct Answer**
1.	a)	Right upper lobe (63% of cases)
2.	b)	VSD
3.	e)	Pneumococcal sepsis does **not** cause spherocytosis. However, clostridial septicemia with exotoxemia can cause spherocytosis.
4.	e)	Sarcoma botryoides is a vaginal adenocarcinoma.
5.	e)	In a patient with megacystis-megaureter syndrome, reimplantation of ureters into a urinary bladder corrects the reflux and resolves the condition.
6	e)	GnRH is a hypothalamic gonadotropin-releasing hormone.
7.	e)	Toddler's diarrhea is common between 1 to 3 years of age. These healthy children eat carbohydrate-containing beverages and eat snacks throughout the day. Therefore, carbohydrate-containing beverages should be reduced, fat containing foods should be increased, and the fluid volume may be reduced.
8.	e)	Deoxyribonuclease (DNase) B antigen
9.	e)	Reassurance; the condition is self-limited and symptoms resolve within 2-3 months. Rarely, anticholinergic therapy is effective. This boy is diagnosed with pollakiuria or daytime frequency syndrome of childhood. This may be due to stress for an unknown reason or before the onset of kindergarten.
10.	a)	Maternal age is **not** advanced in most cases. The Klinefelter syndrome is 47, XXY.
11.	e)	Chromosome 4p involvement. This syndrome is caused by mitochondrial dysfunctions.
12.	a)	The facial features are characteristic of myotonic muscular dystrophy.
13.	d)	Intravenous corticosteroid therapy can improve a visual recovery in young adults but does not alter visual outcome. Oral corticosteroid should not be used because of increased recurrence rate of optic neuritis. Neuromyelitis optica (Devic disease) can cause bilateral optic neuritis.
14.	e)	Addison disease is associated with alopecia areata. Alopecia areata is also associated with pernicious anemia, ulcerative colitis, vitiligo, collagen vascular diseases, and in some cases Down syndrome.
15.	a)	NSAIDs (nonsteroidal anti-inflammatory drugs) and other anti-inflammatory drugs are **not** useful in Osgood-Schlatter disease.
16.	e)	Education regarding prevention of poisoning should be discussed in well-child visits, even before a child is mobile.
17.	e)	Amoxicillin-clavulanate is the preferred oral therapy for an infection in human and animal bite wounds.
18.	e)	Ampicillin and sulbactum are the preferred intravenous therapies for an infection in animal and human bite wounds. Ticarcillin-clavulanate is an alternative therapy.
19.	b)	2-4 mL/min
20.	c)	8-20 mL/min
21.	b)	3-5 months of age
22.	e)	Pneumothorax does **not** cause pulmonary hypoplasia. However, pneumothorax can occur in a patient with hypoplastic lungs resulting in pulmonary collapse.
23.	d)	Ursodeoxycholic acid (15 mg/kg/day) increases a bile flow, interrupts an enterohepatic circulation of bile acids, and reduces a cholestatic jaundice.
24.	e)	Achlorhydria-related bacterial overgrowth
25.	d)	Oropharynx
26.	a)	Tonsillectomy is indicated in a patient with seven or more tonsillar infections that were treated with antibiotics in the preceding year, five or more tonsillar infections that were treated in each of the preceding 2 years, or three or more tonsillar infections that were treated in each of the preceding 3 years.
27.	e)	S. pneumoniae
28.	b)	S. aureus
29.	a)	Documented or suspected UTIs; answers (b), (c), (d), and (e) also cause gross hematuria.
30	a)	IgA nephropathy
31.	b)	Furosemide causes hypercalcuria; nephrocalcinosis is also noted in medullary sponge kidney.

32. e) Urinary bladder
33. e) Asymptomatic
34. b) T_4; when T_4 is low, TSH is measured.
35. e) Congenital adrenal hyperplasia; answers (a), (b), (c), and (d) also cause 46, XX intersex with virilization.
36. e) Inguinal canal (59% of cases)
37. c) Weakness of the gubernaculum; gubernaculum normally actively pulls the testes into the scrotum.
38. e) Idiopathic cause; answers (a), (b), (c), (d), and taxol also cause toxic neuropathies.
39. e) Prematurity and associated retinal immaturity at birth are major factors. Hyperoxia is also a major factor. Hyperoxic damage is mediated by free radicals.
40. e) Generalized constrictions and irregular narrowing of retinal arterioles are the first signs of hypertensive retinopathy. Answers (a), (b), (c), (d), and thickening of the retinal vessels (i.e., silver-or copper-wire appearance) also occur in hypertensive retinopathy.
41. a) S. aureus and Gram-negative organisms are the most common organisms in hospitalized neonates and very young infants.
42. e) S. pneumoniae
43. c) Low birthweight, maternal age, and season of birth are **not** risk factors for otitis media.
44. b) Bulbar conjunctivae; telangiectasias develop about 3 years of age. Answers (a), (c), (d), (e), upper anterior chest, antecubital fossa, and popliteal fossa are also sites of telangiectasias.
45. e) 0.5% malathione oris permethrin 1% cream rinse (Nix); answers (a), (b), (c), and (d) are alternative therapies. Malathione and lindane shampoo are contraindicated for use in neonates and infants.
46. c) Hypoplasia of quadriceps muscles is not a part of nail-patella syndrome. Some patients may develop nephritis.
47. c) Pink disease or acrodynia; it is due to an idiosyncratic hypersensitive reaction to **mercury** and occurs mostly in children. A child should be removed from a source of mercury exposure.
48. a) Ethanol is an antidote for both methanol and ethylene glycol poisoning.
49. c) Human bites
50. c) Parents can share a bed with an infant if they don't smoke cigarettes, drink alcohol, or take drugs. An intake of a drug or alcohol impairs parental arousal. Answers (e) is used for very unstable patients. However, these home monitoring devices do **not** decrease incidence of SIDS.
51. e) Peripheral pulmonic stenosis is usually present; sometimes TOF is present.
52. c) Vitamin K is used initially to prevent a hemorrhage. An etiology of cholestatic jaundice should be determined. Ursodeoxycholic acid is the preferred therapy in infants with TPN-induced cholestasis.
53. e) Nuts, particularly peanuts
54. d) CT-scan is not a screening tool but may be useful to make a diagnosis. Bronchoscopy is both diagnostic and therapeutic. A rigid bronchoscopy is used to remove foreign body. A flexible bronchoscopy is used in patients with noncopious bleeding.
55. d) The risk of recurrence is about 50% if one of the parents carries the 22q11 deletion.
56. a) Shprintzen (velocardiofacial) syndrome or DiGeorge syndrome has a 22q11 deletion. CATCH 22 is an acronym for both the syndromes.
57. a) Cardiac defects (conotruncal and branchial arch defects) are present.
58. b) Left-sided cardiac obstructive lesions (e.g., a combination of mitral valve, subaortic, aortic valve, and aortic arch) are called the Shone complex.
59. d) Three; deletion of one alpha-globin gene is not detectable hematologically; deletion of two alpha-globin genes results in alpha-thalassemia trait; deletion of four alpha-globin genes results in fetal hydrops.
60. e) Dermatitis; skin is always exposed in radiotherapy.
61. b) Cataracts
62. e) Neuroblastoma; it also causes diarrhea, skin nodules (infants), myoclonus-opsoclonus, and GI or GU obstructions.
63. d) Autosomal dominant
64. e) A dietary restriction of calcium is not recommended because calcium is required for growth and may not reduce the hypercalcuria.
65. a) Vigorous sexual intercourse results in rupture of one of the corporal bodies. Therefore, emergency surgical exploration and repair are indicated.

66. c) Bromocriptine or long-acting cabergoline is used in most patients. Answers (d) or (e) is a surgical procedure used in patients with prolactinoma.
67. c) 14 years
68. c) 12.5-13 years
69. b) 46, XX (70% of cases)
70. e) A child should be NPO.
71. c) 217.39 mL/hour. The maintenance (24 hours) fluid: 100 mL/kg (1st 10 kg) + 50 mL/kg (2nd 10 kg) + 25 mL/kg (remaining kg) = 1,000 + 500 + 500 = 2,000 mL. The fluid therapy per hour for the next 23 hours is:

$$\frac{85 \text{ mL/kg} + \text{maintenance} - \text{bolus}}{23 \text{ hours}}$$

$$= \frac{(85 \times 40) + 2{,}000 - 400}{23}$$

$$= \frac{3400 + 1{,}600}{23} = \frac{5{,}000}{23} = 217.39 \text{ mL/hour}$$

72. c) Ventriculoperitoneal shunt is required for hydrocephalus.
73. c) Patients with Turner syndrome do not usually have SNHL. However, patients with Hunter-Hurler syndrome can present with SNHL.
74. e) Pruritus
75. d) Foot planted with the lateral fibula moving towards the ground (i.e., inversion)
76. c) Hot compress is not used in Sever disease (calcaneal apophysitis). Application of ice and relative rest are other therapies.
77. a) Physostigmine should **not** be used because it can cause seizures and dysrhythmias. **Previously**, physostigmine was used as an antidote for TCA (tricyclic antidepressants) poisoning. Sodium bicarbonate is used to treat and prevent dysrhythmias. Serum alkaline pH (7.45-7.55) should be achieved. If sodium bicarbonate therapy fails to control dysrhythmias, lidocaine is used. Hypotension usually responds to intravenous fluid but norepinephrine drips may be required. ECMO (extra corporeal membrane oxygenation) is **not** useful because TCAs have a high degree of protein binding and large volume of distribution.
78. e) RSV immune globulin therapy is **not** indicated during an acute RSV bronchiolitis. Ribavirin is used in infants with chronic lung disease or congenital heart disease. Corticosteroids are widely used but they are not indicated for previously healthy infants with RSV bronchiolitis. Nebulized epinephrine may be more effective bronchodilators than that of beta-agonist. Sedatives should **not** be used. An infant may prefer sitting with head and chest elevated (30-degree-angle) and neck extended.
79. e) Mesenteric arteritis can occur in patients with **postcoarctectomy syndrome.** A patient may develop bowel necrosis and small bowel obstruction. A patient improves with antihypertensive medication (e.g., nitroprusside, esmolol, captopril). A surgical exploration of the abdomen is rarely indicated.
80. c) Arteriovenous fistulas. In a patient with high-output cardiac failure, cardiac output is more than normal and myocardial abnormalities are absent.
81. b) Hypotension does not occur. However, a recombinant human erythropoietin can cause hypertension.
82. e) Torsion of a left appendix testis appears with a 'blue dot sign' and 3-5 mm mass on upper pole of a testis.
83. e) Apthous ulcers in vulva can be treated with a topical corticosteroid and if necessary, a topical anesthetic is used.
84. b) In patients with McCune-Albright syndrome, x-ray reveals a fibrous dysplasia of bones and thickening of orbital bones.
85. e) Candidiasis occurs first, hypoparathyroidism (usually after 3 years of age), occurs second, and then, Addison disease (usually after 6 years of age).
86. a) About 12-20% of energy should come from proteins. High-protein intake can cause diabetic nephropathy. About 6-8% of energy should come from polyunsaturated fats. A ratio of polyunsaturated and saturated fats is increased to 1.2 : 1.0 (usual ratio is 0.3 : 1.0). A daily cholesterol intake is about 300 mg. An excessive use of salt should be avoided.
87. e) Hydrocephalus (90% of cases); answers (a), (b), (c), and (d) are also associated abnormalities.
88. a) Acetaminophen or ibuprofen. Chlorpromazine is used in patients with severe, intractable migraine attacks (i.e., status migrainosus) that are unresponsive to analgesics, antiemetics (e.g., dimenhydrate) and ergotamine preparations. Sumatriptan is **not** licensed to use before 18 years of age. However, sumatriptan may be effective in adolescents.
89. e) Sural nerve biopsy is diagnostic. Motor and sensory nerve conduction velocities are reduced. EMG and muscle biopsy are **not** required to make the diagnosis. Serum creatine kinase levels are normal. CSF proteins may be elevated but absence of cells.

90. c) Otitis media
91. e) Marfan syndrome patients with progressive mitral valve prolapse appear with arrythmias, endocarditis, cardiac failure, or thromboemboli.
92. a) Aortic root dilatation
93. e) A dimple that has increased distance from the anus (more than 2.5 cm) or associated with hemangioma increases the possibility of spinal dysraphism.
94. a) Topical antibiotic therapy is **not** necessary in a patient with staphylococcal scalded skin syndrome (Ritter disease). Clindamycin may be added with nafcillin to inhibit the production of bacterial proteins (toxins).
95. e) Deferoxamine is the chelating agent for iron poisoning. Iron is radiopaque.
96. c) Neuroblastoma
97. d) 9-24 months of age
98. b) 4-7 months of age
99. e) After 8 weeks (between 8-12 weeks) of age
100. d) 5 weeks of age
101. e) Recombinant human DNase therapy reduces viscosity of purulent bronchial debris and resolves atelactasis. This medicine is used in a nebulized form for nonintubated patients. This medicine is administered through the endotracheal tube for intubated patients. This medicine is recommended for patients with persistent atelactasis and cystic fibrosis.
102. a) An objective of mechanical ventilation is **not** to normalize arterial blood gas tension but to maintain adequate gas exchange (i.e., some degree of hypoxia, O_2 saturation 85-90%; moderate hypercarbia, PCO_2 60-80 mm Hg are acceptable if the patient's condition is stable).
103. d) Haemophilus influenzae and Streptococcus pneumoniae may be cultured from throat but their role in causing pharyngitis is not clear. Viruses are the most common cause of pharyngitis. However, group A-beta-hemolytic Streptococcus (GABHS) is the most common bacterial cause of pharyngitis.
104. a) SPE-A is strongly associated with scarlet fever; SPE-B and SPE-C are also associated with scarlet fever.
105. b) Autosomal dominant; Romano-Ward syndrome is a common long Q-T syndrome but some cases are autosomal recessive.
106. c) Cardiac
107. c) Pacifier (dummy) use significantly reduces the risk of SIDS in infants when used routinely and during sleep. The mechanism is unknown. It may be due to a direct effect of pacifier or associated infant or parental behaviors. Breast feeding is recommended for many advantages but is not recommended to reduce the SIDS. Answers (b), (d), and (e) can increase a risk of SIDS.
108. c) 2-4 months of age.
109. c) "Steeple sign" represents typical subglottic narrowing that is present in a patient with croup. This sign may be absent in croup or may be present in a normal child or a patient with subglottic stenosis.
110. b) Epiglottitis
111. a) A stool's pH should be more than 6 in a patient with secretory diarrhea.
112. d) Stool volume is less than 200 mL/day in a patient with osmotic diarrhea.
113. e) Testicular atrophy is noted up to 30% of patients with an incarcerated inguinal hernia.
114. c) In preterm infants, the inguinal hernia should be repaired before discharge home from the nursery (i.e., between 1800-2000 grams).
115. a) The chromosome 15q is involved in patients with Aagenaes syndrome.
116. d) Byler disease does **not** have bile duct paucities and extrahepatic features unlike Alagille syndrome. Byler disease is a severe form of progressive intrahepatic cholestasis. Cirrhosis develops gradually. Byler disease causes rickets.
117. d) Sore (or scratchy) throat
118. e) Symptomatic therapy is indicated for patients with a common cold. Please remember, a change in color and consistency of the nasal secretions does **not** indicate a sinusitis or bacterial infection.
119. a) Rhinovirus; the presence of polymorphonuclear leukocytes does **not** mean a bacterial superinfection.
120. e) Allergic rhinitis
121. e) Valproic acid is the preferred therapy for patients with Landau-Kleffner syndrome. This syndrome should be suspected when sleep EEG is also normal. PET scan may reveal either unilateral or bilateral hypometabolism and hypermetabolism in LK syndrome. Other treatment in LKS includes speech therapy and a course of prednisone. Methylphenidate is used in patients with severe hyperactivity and inattention.

122. c) Subpial transection is indicated in LK syndrome when medical management fails.
123. e) ABR should be performed if a child failed OAEs testing. OAEs are absent if a hearing loss is more than 30-40 dB.
124. b) Paranasal sinusitis is the most common cause of orbital cellulitis in children. Answers (a), (c), (d), and (e) also can cause orbital cellulitis.
125. d) Tuberous sclerosis
126. b) Preceding 2-3 months
127. e) Thalassemia and other conditions have elevated fetal hemoglobin levels that falsely reduce the Hb_{A1C} values.
128. d) Sickle cell disease
129. a) Normal (less than 6%) HbA_{1C}; a good control (6-8.5%); a fair control (9-10%); a poor control (11% and above).
130. d) Rhabdomyomas are present at the apex of left ventricle. Rhabdomyomas can cause arrythmia and congestive cardiac failure.
131. c) Hamartomas or polycystic kidney disease can cause pain, hematuria, and in some cases, renal failure.
132. b) Angiomyolipomas can produce cystic or fibrous pulmonary changes resulting in spontaneous pneumothorax.
133. e) Subarachnoid hemorrhages (traumatic or nontraumatic)
134. e) Purtscher retinopathy; Purtscher-like fundus is also noted in acute pancreatitis, SLE, and childbirth.
135. d) Elevated serum alkaline phosphatase activities are noted first; serum PTH levels is usually normal; answers (a), (b), (c), and (d) are also noted in familial hypophosphatemia. Increased urinary excretion of phosphate is due to a defect in renal tubular phosphate reabsorption probably secondary to failure of PHEX (phosphate-regulating gene with homologies to endopeptidases on the X chromosome) to cleave and decrease F6F23 action.
136. e) Bowing of lower extremities are smooth; answers (a), (b), (c), and (d) are noted in patients with calcium-deficient ricket. Familial hypophosphatemia (a pure phosphate-deficient ricket) also manifests with wadding gait, coxa vara, genu varum, genu valgum, and short stature.
137. c) Erythromycin. Tonsillectomy is curative therapy.
138. c) CT scan of an affected area or needle aspiration and culture can make the diagnosis of peritonsillar abscess.
139. e) A third-generation cephalosporin and ampicillin-sulbactum or clindamycin; surgical drainage is indicated in a patient with respiratory distress or failure to improve with antibiotic therapy.
140. e) Surgical drainage and a third-generation cephalosporin and clindamycin or ampicillin-sulbactum
141. d) ECG can reveal long Q-T syndrome.
142. d) Long Q-T syndrome; a heart-rate corrected Q-T interval of more than 0.47 second is highly indicative of long Q-T syndrome and more than 0.44 second is suggestive of long Q-T syndrome.
143. e) A patient with myxoma appears with fainting spells and have a positional character of murmur. Myxomas should be removed completely.
144. b) Left atrium (75% of cases); these smooth, pedunculated masses arise from an interatrial septum and protrude into the left atrium.
145. d) Overhydration; however, dehydration causes stress ulcers.
146. e) CT scan results are more sensitive and specific than that of ultrasonography.
147. a) Intravenous morphine should be used in patients with acute appendicitis to control the abdominal pain even before the diagnosis is confirmed. Morphine therapy does not delay the diagnosis.
148. a) PFT **rarely** makes a diagnosis. PFT can detect a functional impairment in patients with a normal physical examination but minor complaint. PFT is useful in determining responses of a bronchodilator in patients with an obstructive lung disease.
149. e) A deletion of a single **phenylalanine** residue at amino acid 508.
150. e) Unknown
151. b) Trisomy 18 (90% of cases); trisomy 21 (50% of cases); Turner syndrome (40% of cases)
152. e) Transposition of great vessels and left-sided obstructive lesions (e.g., aortic stenosis, hypoplastic left heart syndrome) are more common in boys than in girls.
153. d) Left upper lobe
154. a) Measure blood pressures in both lower extremities. In a normal person, systolic blood pressure in legs is 10-20 mm Hg higher than in arms. In patients with a coarctation of the aorta, blood pressures in lower extremities are lower than in upper extremities.
155. e) Breast bud is the first sign of puberty in girls.

156. d) Enlarged testes (more than 3 cm in volume or 2.5 cm in longest diameter) and thinning of the scrotum are the first signs of puberty in boys.
157. d) In females, pubic hair appears 6-12 months after appearance of breast buds.
158. c) At least one sign of puberty is present in approximately 95% of cases by 12 years of age.
159. a) Temperament problems can occur due to overtreatment with L-thyroxine. Craniosynostosis is a common problem. In older children (8-13 years), pseudotumor cerebri rarely occurs within the first 4 months of treatment.
160. a) Duration of inspiration is reduced. Respiratory rate is increased. Inspiratory muscles are accessory muscles. Retractions are present.
161. a) Duration of inspiration is prolonged. Inspiratory muscles are accessory muscles. Retractions are present. Amplitude of respiratory movements are normal or decreased.
162. a) Duration of inspiration is unchanged. Both inspiratory and expiratory (abdominal) muscles are accessory muscles. Retractions are present. Amplitude of respiratory movements are either normal or reduced.
163. e) Positive posteroanterior and lateral soft tissue x-ray of the neck (92% of cases); answer (d) is present in 90% of cases; answer (b) is present in 60% of cases; answer (c) is present in 58% of cases; answer (a) is present in 50% of cases.
164. e) Vascular ring causes brassy cough. Brassy cough is also noted in patients with tracheitis or habit cough. Brassy cough and stridor are noted in patients with a laryngeal obstruction or pertussis.
165. e) Chlamydia pneumonitis causes staccato cough.
166. d) Habit cough disappears during sleep.
167. e) Cutaneous lesions are present in 50% of cases.
168. d) Aortic insufficiency (50-90% of cases) is due to a prolapse of aortic valve into a defect.
169. b) Chromosome 12
170. e) Asymptomatic
171. e) Mitral insufficiency
172. e) Metronidazole does not cause folic acid deficiency. However, primidone causes folic acid deficiency resulting in megaloblastic anemia.
173. b) Wilson disease causes hemolytic anemia secondary to the toxic effects of free copper on RBC membranes.
174. e) Osteosarcoma
175. b) Ewing sarcoma
176. e) Streptococcus pneumoniae; gram-negative bacteria (e.g., E. coli) also causes peritonitis.
177. a) Retinoblastoma is **not** present; Lowe syndrome also appears with cataract, blindness, tantrum, stubbornness, obsession, and repetitive behavior.
178. b) Teratoma appears with calcification in plain abdominal x-ray.
179. a) Dysgerminoma
180. d) Surgical excision is usually followed by chemotherapy.
181. d) Amenorrhea or oligomenorrhea
182. e) Menarche is usually delayed about 3 years in ballet dancers. Therefore, a follow-up visit after 6 months is recommended.
183. e) Idiopathic is the most common cause of gonadotropin-dependent (true) precocious puberty.
184. e) Medicational precocity is due to a rapid absorption of testosterone gel that is widely used for the treatment of male hypogonadism.
185. e) An increased risk of premature adrenarche and metabolic syndrome is noted in SGA. This is due to an increased insulin resistance and reduced beta-cell reserve. Insulin is a growth factor for a fetus.
186. d) Premature pubarche (adrenarche) means the appearance of sexual hair before 8 years of age in girls and before 9 years of age in boys without other evidence of maturation. They are slightly advanced in height and osseous maturation.
187. c) Lipohypertrophy or subcutaneous scar formation occurs due to repeated subcutaneous injections at the same site. Lipohypertrophy causes poor absorption of insulin resulting in hyperglycemia.
188. e) Opthalmologist should examine a child with **type 1** diabetes mellitus within 3-5 years after the onset of diabetes but not before 10 years of age.
189. a) Opthalmologist should examine a child with **type 2** diabetes mellitus shortly after the diagnosis is established, regardless of symptoms.

190. b) Opthalmologist should examine children with type 1 or type 2 diabetes mellitus as soon as possible if they have visual symptoms.
191. d) Brainstem dysfunction
192. c) Phenobarbital
193. a) Brainstem injury at a level of superior colliculi produces decerebrate rigidity (i.e., marked extension of both upper and lower extremities).
194. e) 5-10 beats of symmetric clonus are normal; a sustained or asymmetric clonus is abnormal.
195. e) Parachutte reflex persists throughout life.
196. e) Make sure that a child has a seizure disorder and not a condition that mimics seizures (e.g., tics, breath holding, benign peroxysmal vertigo, cough syncope, familial choreoathetosis, pseudoseizures, night terror, narcolepsy, rage attack, benign myoclonus of infancy, and hereditary chin trembling).
197. e) Hexosaminidase A
198. e) Adrenoleukodystrophy is an X-linked recessive disorder.
199. a) Renal ultrasonography should be performed to rule out Wilms tumor. This screening test should be performed every 3 to 6 months until 5 years of age. Wilms tumor usually appears before 3 years of age.
200. d) Partial deletion of a short arm of chromosome 11
201. b) 6 months of age
202. b) 6 months of age
203. b) 15 months of age
204. c) 18 months of age
205. c) 17 months of age
206. a) NBAS is a poor predictor of future developments. NBAS also estimates a state organization and self-regulatory ability from birth up to 2 months of age.
207. b) Conversion disorder is the diagnosis for this patient. A sudden onset of symptoms, normal opthalmologic examination, and family history of similar illness are characteristics of a conversion disorder.
208. e) Reassurance; the boy's mental age is 4 years. Enuresis is normal until the mental age of 5 years. The diagnosis is made when voiding occurs twice a week for at least 3 consecutive months or a child is distressed due to voiding.
209. a) Arrythmias; other side effects of imipramine are postural hypotension, dry mouth, urinary retention, drowsiness, confusion, constipation, seizures, and elevated liver enzymes.
210. d) 9 hours per night
211. a) A mother is usually less concerned about the severity of a child's condition.
212. c) Sepsis (50% of cases); pneumonia (30% of cases) and meningitis (15% of cases)
213. b) Bacteremia (45-60% of cases); meningitis (25-35% of cases)
214. d) Type III
215. e) Type IV is less common; type V is more common.
216. c) Gonorrhea
217. d) Urethra
218. c) Cervix
219. a) Vulva-vagina
220. e) Ceftriaxone (50 mg/kg in a single dose intramuscularly, maximum 125 mg); cefotaxime (100 mg/kg in a single dose intramuscularly) is an alternative therapy. Cefotaxime is recommended in infants with jaundice.
221. a) Human herpes virus type 2 rarely produce symptoms similar to those of gonorrhea.
222. e) Pseudomonas aeruginosa
223. d) Malassezia furfur
224. a) Histoplasmosis (Histoplasma capsulatum) infections are common in areas that are heavily contaminated with bird droppings or decayed wood.
225. b) Herpes gladiatorsum is an HSV infection of a superficial abrasion. This lesion is also common **in wrestlers.** Herpetic whitlow is an HSV infection after minor trauma about the nails resulting in an extremely painful, deep-seated and vesicular spreading lesions.
226. d) During delivery

227. c) Negri body is a cytoplasmic inclusion noted in neurons. It consists of clumped viral nucleocapsid.
228. d) Antimalarial therapy
229. b) Oral candidiasis
230. e) S. pneumoniae
231. b) Cerebral atrophy (85% of cases)
232. e) Direct HIV-infection of the intestine
233. e) Nephrotic syndrome is characterized by edema, hypoalbuminemia, proteinuria, azotemia, and normal blood pressure.
234. e) Adenovirus
235. e) Asymptomatic; a rotavirus can cause NEC. The common clinical manifestations are fever, vomiting, and watery diarrhea.
236. a) Lesions do not become malignant. Human papillomavirus causes laryngeal papillomatosis.
237. b) Human papillomavirus
238. e) Latent infection is diagnosed by the detection of HPV DNA without clinical manifestations.
239. e) Increase amount of fluid or sugar in formula.
240. b) 1 year of age
241. b) 6 months of age
242. c) 8–9 months of age
243. b) 24 months of age
244. c) 1,600 kcal/day
245. b) 2,200 kcal/day
246. c) 2,800 kcal/day
247. c) Vitamin D toxicity can cause calcification of soft tissues (e.g., heart, kidneys, stomach, bronchi, and blood vessels).
248. e) Vitamin A toxicity
249. c) 4-6 months of age despite the fact that human milk iron is well absorbed.
250. d) Lactoferrin inhibits the synthesis of E. coli in the intestine. The lower pH of the stool of breast-fed infant decreases E. coli and increases lactobacilli and bifidobacteria.
251. c) 24 hours
252. d) 30 days
253. d) 24 hours of age
254. d) 1/12 (i.e., 8.3%)
255. e) Omphaloceles are associated with Beckwith-Wiedemann syndrome (**not** Down syndrome).
256. e) Erection of penis is commonly noted and has no significance.
257. c) Turner syndrome
258. e) Unknown; lesions and follicles disappear within 2-4 days.
259. b) Immediate opthalmologic consultation is indicated in patients with leukokoria (white pupillary reflex)
260. a) Infantile glaucoma appears with corneal edema, corneal enlargement, ocular enlargement, conjunctival redness, and visual impairment. The classic triad is tearing, photophobia, and blepharospasm. Leukokoria is also noted in patients with persistent hyperplastic primary vitreous.
261. c) Bronchoalveolar
262. a) Vomiting or nasogastric losses usually cause metabolic alkalosis.
263. c) Home
264. b) Firearms
265. c) Drugs
266. e) Handguns are the most commonly used firearms in homicides. Homicides are the most common cause of death among nonwhite teenagers.
267. e) Infections occur later and do not occur immediately. Other immediate complications of central venous catheters are air embolism, bleeding, apnea, airway obstruction, over sedation, shearing of vessels, or intravascular loss of guidewire.
268. d) Cardiac tamponade is a life-threatening complication. This is most likely due to a intra-atrial catheter.

269. c) 18 mm. The formula is:

$$\text{Uncuffed ETT size (mm)} = 16 + \frac{\text{Age in years}}{4}$$

$$= 16 + \frac{8}{4} = 18 \text{ mm}$$

270. d) All of the findings are characteristic of an early septic shock.

A patient with a **hypovolemic shock** has an increased SVR, decreased CO, WP, and CVP, normal or decreased MAP.

A patient with an **obstructive shock** has an increased SVR, WP, and CVP, decreased CO, and normal or decreased MAP.

A patient with **distributive shock** has an increased CO, decreased SVR, and normal or decreased MAP, WP, and CVP.

A patient with a **late septic shock has** an increased WP, decreased CO, SVR, and MAP, and normal or increased CVP.

A patient with a **systolic cardiogenic shock** has an increased SVR, WP, and CVP, decreased CO, and normal or decreased MAP.

A patient with a **diastolic cardiogenic shock** has an increased SVR, WP, and CVP, and normal CO and MAP.

A patient with an **early septic shock** has a normal, decreased, or increased MAP.

Please remember, WP, CVP, and pulmonary artery diastolic pressures are the same.

271. c) Cardiac output (CO) is increased in a distributive shock and early septic shock. Cardiac output is normal in a diastolic cardiogenic shock.

272. c) SRV is decreased in an early septic shock, late septic shock, and distributive shock.

273. a) CVP is decreased in an early septic shock and hypovolemic shock. CVP is normal or decreased in a distributive shock. CVP is increased or normal in a late septic shock.

274. a) Late septic shock. MAP is either normal or decreased in hypovolemic shock, cardiogenic (systolic, diastolic) shock, obstructive shock, and distributive shock. MAP is either normal, decreased, or increased in an early septic shock.

275. a) Infectious pneumonia and sepsis are the most common causes of ARDS. Other risk factors are shock, multiple transfusions, trauma, pulmonary contusion, near-drowning, drug overdose, reperfusion injury after lung transplantation, and acute pancreatitis.

276. b) 1-4 years of age (37% of cases); next group is 15-19 years of age (29% of cases)

277. b) 7-15 months of age (86% of cases)

278. d) Inadequate supervision by parents; they overestimated their child's abilities or coordination.

279. a) Bathtub

280. e) Swimming poll

281. a) Freshwater

282. a) Most submersion events occur when there is a brief lack of supervision (i.e., less than 5 minutes); up to 80% of children are hospitalized for at least 24 hours.

283. d) An endotracheal tube can be maintained for months without tracheostomy. If necessary, a tracheostomy should be performed electively and delayed until burns at and near the site of tracheostomy have healed. Inhaled corticosteroid therapy may be useful. A patient with severe carbon monoxide poisoning needs hyperbaric oxygen therapy. A high-frequency ventilation is indicated when PO_2 below 90% when on Fio_2 between 90-100% and PEEP of at least 12.5 cm in a conventation ventilator therapy.

284. e) Redness and blisters on the penis can occur. EMLA is a topical eutectic mixture of lidocaine and prilocaine.

285. a) FISH cannot be used as a screening tool. FISH is used to answer specific questions. FISH can identify specific DNA sequences in different recognizable diseases. FISH cannot provide information regarding the physical state of DNA or chromosome segment.

286. c) Phenotypically normal family members do **not** transmit the disease to their children. Autosomal dominant inheritance has a male-to male (i.e., father to son) transmission that is absent in X-linked disorders because father gives only Y-chromosome to his son.

287. b) The patients with Klinefelter syndrome are relatively tall and have delayed secondary sexual development.

288. a) Autosomal recessive; the patients with this syndrome have a reduced number of melanosomes. These melanosomes are large in size (macromelanosomes).

289. a) MSUD (Maple Syrup Urine Disease)

290. d) Beta-hexosaminidase A isozyme

291. e) Beta-hexosaminidase A and B isozymes
292. e) NEC is **not** a major cause of mortality in full term infants. Other major causes are trauma and infections.
293. d) A third fontanel is present in Down syndrome (trisomy 21) and preterm infants.
294. a) Achondroplasia causes a large anterior fontanel.
295. e) Klinefelter syndrome has a normal anterior fontanel.
296. b) Head compression
297. e) Cord compression
298. a) Hypoxemia, maternal hypotension, and excessive uterine activities cause late decelerations. A fetal hypoxemia occurs repeatedly due to uterine contractions.
299. e) Prednisone
300. a) Penicillamine
301. b) Chorionic villus sampling
302. b) By 35 weeks of gestational age, L:S ratio is 2:1 that indicates lung maturity.
303. e) Nd:YAG laser ablation of the anastomosis or cord occlusion in utero can be used to treat cardiac failure in the surviving twin.
304. e) In Erb-Duchenne paralysis, the injury occurs in the 5th and 6th cervical nerves resulting in adduction and internal rotation of the arm with pronation of the forearm.
305. b) **Hydrocephalus is absent;** congenital rubella syndrome also includes microcephaly and blindness.
306. e) No organism is usually identified; rotavirus can cause NEC.
307. e) Alcohol inhibits the transfer of zinc and essential amino acids to the fetus. Both are necessary for protein synthesis resulting in IUGR (Intra Uterine Growth Retardation) of the fetus.
308. e) Noncystic hyperplasia
309. a) Hyperactive behavior is noted in patients with FAS.
310. d) Prader-Willi syndrome (50% have a deletion of chromosome 15). Homologs of Drosphila developmental control genes also cause Pallister-Hall syndrome, postaxial polydactyle, and holoprosencephaly.
311. c) S. epidermidis (48% of cases)
312. e) Most suicidal attempts by adolescents are not successful; they also have an increased risk of behavioral disturbances and impaired social skills.
313. e) Referring to a psychiatrist is important in the assessment of every teenager who attempts suicide. The psychiatric evaluation can be done as an outpatient referral or hospitalization. **Please remember,** a suicidal ideation alone is **not** necessarily a risk factor for suicidal behavior. The risk is very serious when there is a specific plan.
314. a) A hospitalization cannot prevent repeated attempts and ultimate completion of a suicide when there are three most serious risk factors (e.g., substance abuse, mood disorder, and prior suicide attempt).
315. d) Alcohol; the use of alcohol is followed by cigarettes, marijuana, MDMA, and anabolic steroids in an order of decreasing numbers. However, the use of MDMA (Ecstasy) and anabolic steroids are increasing and alcohol, cigarettes, and marijuana are decreasing.
316. e) Phencyclidine (angel dust, sternyl, 'hog', 'peace pill', 'sheets') overdose can cause coma without a respiratory depression **unlike** opiates. PCP overdose can also causes hypertension, hypotension, psychosis, hypothermia, hyperreflexia, muscle rigidity, and death. PCP overdose patients do **not** respond to naloxone.
317. d) Acidification of the urine can enhance the exertion of PCP. The patient should be placed in a darkened, quiet room on a floor pad to avoid injuries.
318. c) Cocaine use needs only supportive care.
319. a) Methadone is the preferred therapy for detoxification of opiates. This boy has symptoms and signs of opiate withdrawal or the abstinence syndrome. A short course of diazepam is useful for the treatment of heroin detoxification. **The earliest sign of opiate withdrawal is yawning.**
320. c) Intravenous naloxone is used in patients with opiate overdose syndrome. Adequate ventilation and oxygenation should be maintained.
321. e) MDMA (methylenedioxymethamphetamine) or 'X' or Ecstasy is a hallucinogen. This drug is popular at 'raves', all night dance parties, and is also known as 'club drugs'.
322. e) Reassurance because the condition is benign.
323. b) A fibroadenoma does not change in size during a menstrual cycle unlike a cyst.

324. a) S. aureus
325. c) Fat; a minimal fatness of 17% of body weight is needed for the onset of menstruation and minimal fatness of 22% of body weight is needed for maintenance of regular ovulatory cycles.
326. e) Phenytoin does not cause gynecomastia.
327. b) Cervical cancer can develop in the future in a girl with HPV infection.
328. c) Bone marrow transplantation is a preferred therapy for patients with SCID (severe combined immunodeficiency) syndrome. Gene therapy is useful in X-linked SCID and hopefully will be useful in the future.
329. e) Adenosine deaminase (ADA) deficiency appears with a very low absolute lymphocyte count (less than 500/mm^3) and skeletal abnormalities. Bone marrow transplantation is a preferred therapy.
330. b) S. aureus
331. d) S. aureus
332. a) S. aureus is the most common organism; answers (b), (c), (d), (e), and aspergillus also cause infection in patients with CGD.
333. e) Shwachman–Diamond syndrome
334. e) Epicutaneous skin tests
335. a) Sleep well without disturbance due to asthma
336. a) Asthma
337. a) All young children who experience wheezing, **only a minority** of them will develop asthma in later childhood.
338. d) Spirometry measures airflow and lung volumes during a forced expiration.
339. a) Histone
340. a) Sm
341. e) **Group A Streptococcus** infection is associated with erythema nodosum.
342. d) Ulcerative colitis causes erythema nodosum.
343. a) Antibodies to Sm antigen is found in SLE. Biopsy of lips or glands reveals foci of lymphocytic infiltrations. Sjogren syndrome is evaluated by an abnormal **Schirmer test** (i.e., abnormal tear production). This syndrome appears with xerophthalmia (dry eye, or keratoconjunctivitis sicca), xerostomia (dry mouth), and abnormal connective tissue disease features.
344. b) Lungs
345. b) A tissue biopsy demonstrates the characteristic noncaseating granulomatous lesions.
346. e) Myocarditis (50% of cases) manifests by tachycardia and decreased ventricular functions. Coronary artery aneurysms (25% of cases) develop in untreated patients during the second and third week of illness.
347. c) In acute stage of Kawasaki disease, the preferred therapy is a combination of intravenous immunoglobulin 2 grams/kg over 10-12 hours with aspirin 80-100 mg/kg/day (anti inflammatory dose) divided every 6 hours orally until 14th illness day.
348. b) Aspirin 3-5 mg/kg once daily (antithrombotic dose) until 6-8 weeks after the onset of illness.
349. e) Tissue plasminogen activator, streptokinase or urokinase should be given under supervision of a pediatric cardiologist. Abciximab may be useful in patients with a giant coronary aneurysms or possible thrombosis.
350. e) Aspirin (3-5 mg/kg) once daily orally with or without dipyridamole (4-6 mg/kg/day) divided two or three doses orally. Warfarin may be added in patients who have a high risk of thrombosis.
351. b) Repeat IVIG (2 grams/kg)
352. e) The use of corticosteroids is controversial. However, it is used when a patient does not respond to two doses of IVIG.
353. d) Influenza vaccine
354. b) MMR and varicella vaccines should be delayed for 11 months because presence of specific antiviral antibodies in IVIG may interfere with the immune responses to parental live-virus vaccines.
355. a) Churg-Strauss syndrome is usually not associated with a destructive upper airway disease.
356. e) Ileoileal, barium enema is both diagnostic and therapeutic
357. e) Biopsy of involved skin sites reveals leukocytoclastic angiitis. Renal biopsy may reveal IgA mesangial deposition and occasionally, IgM, fibrin, and C3. HSP is usually diagnosed clinically by a dependent edema, rash, arthritis, abdominal pain, and renal involvement.
358. e) S. aureus releases toxin resulting in tachycardia.
359. e) Amphotericin and removal of the catheter are indicated in catheter-related fungemia.

360. e) Vancomycin, repeat the blood culture, and keep the central line. If the blood culture remains positive after 72 hours of antibiotic therapy, or if the child is unstable, the central line should be removed. S. epidermidis is usually resistant to nafcillin and ampicillin. There is no need to remove the catheter immediately. "Antibiotic lock" or "dwell" therapy (i.e., inject a solution of high concentration of an antibiotic that remains in the catheter for up to 24 hours) may be useful.

361. e) In patients with a colonization of VA shunt, CSF obtained from a ventricular or lumbar puncture is **usually sterile** but the organism is isolated from a shunt reservoir. The signs of ventriculitis is usually absent and the CSF findings are mildly abnormal. Blood culture is usually positive in VA shunt colonization but negative in VP (ventriculoperitoneal) shunt colonization. Shunt nephritis is a hypocomplementemic glomerulonephritis due to antigen-antibody complex deposition in the glomeruli. The patient with a shunt nephritis appears with hypertension, microscopic hematuria, anemia, high BUN and creatinine levels.

362. b) Vancomycin and keep the shunt because there is no shunt infection. Meningitis does **not** mean a shunt infection.

363. e) An antibiotic (e.g., vancomycin or nafcillin) therapy and removal of the shunt are indicated in a patient with VP shunt and wound infection.

364. b) M type 52 is **not** nephritogenic. The M types (49, 55, 57, and 60) commonly associated with skin infections **rarely** cause pharyngitis, and the M types commonly associated with pharyngitis **rarely** cause skin infections.

365. d) M type 12 is nephritogenic.

366. a) S. aureus; **previously, the answer was** S. aureus for a bullous and group A Streptococcus for a nonbullous impetigo.

367. e) Erysipelas is characterized by a sharply defined and slightly elevated border. In cellulitis, the border is not sharply defined. In an insect bite, there is a bite mark in the center and surrounded by redness.

368. e) Group A Streptococcus

369. e) Culture obtained by needle aspirate of an affected area.

370. a) Linezolid; answer (e) drug is sensitive to E. faecium but inactive to E. faecalis.

371. e) C. jejuni; Mycoplasma pneumoniae infection also causes this G-B syndrome.

372. b) Two days after the onset of antibiotic therapy to prevent the spread of bubonic plague to pneumonic plague.

373. a) IM streptomycin is a preferred therapy for bubonic plague.

374. a) IV chloramphenicol (60-100 mg/kg/day divided every 6 hours); streptomycin has a poor penetration in CSF.

375. c) Chloramphenicol or tetracycline

376. d) A 7-day course of doxycycline or tetracycline is recommended. Doxycycline is a preferred therapy for children over 8 years of age.

377. e) Contacts of an **uncomplicated** bubonic plague do not require any treatment.

378. d) Clarithromycin, or azithromycin can erradicate 100% cases of Mycoplasma pneumoniae infections. Erythromycin or tetracycline is also an effective therapy.

379. d) Stevens-Johnson syndrome is due to a Mycoplasma pneumoniae infection.

380. b) Coxsackievirus A16 is the most common organism in patients with a hand-foot-and-mouth disease. Enterovirus 70 infections cause acute hemorrhagic conjunctivitis.

381. e) Enterovirus 71 can cause a severe form of hand-foot-and-mouth disease (i.e., associated aseptic meningitis, encephalitis, and paralysis).

382. a) Enteroviruses (e.g., coxsackieviruses B2-B5, echoviruses 4,6,7,9,11,16, and 30, enteroviruses 70 and 71).

383. d) "Ampicillin rash" is a typical finding in patients with Epstein-Barr virus infection when ampicillin or amoxicillin is used.

384. e) Epstein-Barr virus infectious mononucleosis; Alice in Wonderland syndrome (metamorphopsia)means perceptual distortions of sizes, shapes, and spatial relationship.

385. e) Subcapsular splenic hemorrhage or splenic rupture occurs during the 2nd week of the illness but it is not common in children. Answers (a), (b), (c), (d) are also complications of EBV infectious mononucleosis.

386. e) Subcapsular hepatic hemorrhage does not occur.

387. a) Suicide and motor vehicle accidents are most common in children who are white and nonpoor.

388. e) Three-fold increase in weight and two-fold increase in length

389. c) 6-9 feedings/day

390. e) 80-90 mL/feeding

391. b) Two-thirds of 4-6 years old children except for milk

392. e) Mother should stop ingesting spices when there is a **strong correlation** between spices and diarrheal symptoms. A maternal ingestion of chocolate, condiments, cabbage, berrier, tomatoes, and onion can produce gastric distress and loose stools in a breast-fed infant.
393. c) In children, obesity is usually associated with tall stature, slightly advanced bone age, and somewhat early puberty.
394. d) Type 2 diabetes; the child has acanthosis nigricans which is associated with insulin resistance and a higher risk of developing type 2 diabetes.
395. c) Inspection only; if necessary BMI can be plotted on a BMI growth chart.
396. e) A serum electrolytes test is not indicated. A serum leptin level is useful to make the diagnosis of leptin deficiency or resistance. Hypothyroidism and hypercortisolemia can be ruled out. A study to test for sleep apnea may be necessary.
397. e) Hyperthyroidism is **not** a complication of obesity. Other complications of obesity are infertility, degenerative joint disease, anxiety, depression, cancer, and discrimination in social life.
398. a) Computer games and TV viewing should be decreased because energy expenditures are reduced in both conditions. Some children prefer to eat during watching TV shows.
399. d) Education and prevention; answers (b), (c), and (e) are effective as well.
400. d) Vitamin B_6 toxicity
401. c) Thanatophoric dysplasia; the cloverleaf skill deformity is known as kleeblattschadel. All the clinical manifestations of this child are characteristics of thanatophoric dysplasia.
402. a) This is a characteristic clinical manifestation of achondroplasia.
403. b) Autosomal dominant.
404. d) Chromosome 15 (15q21); abnormal biosynthesis of fibrillin-1 is located in chromosome 15.
405. e) Corneal opacity is absent in Marfan syndrome; ocular abnormalities are due to connective tissue defects.
406. e) 4 hours or more after ingestion; a level obtained before 4 hours cannot determine the severity of an overdose.
407. e) **Between 24-48 hours** after acetaminophen ingestion, all clinical symptoms (e.g., anorexia, nausea, vomiting, pallor, diaphoresis) that were present between ¼ hours to 24 hours resolve. The patient usually develops right upper quadrant pain, oliguria, elevated LFTs and PT. A plasma acetaminophen level indicates the severity of acute ingestion.
408. b) 11 beta-hydroxylase deficiency causes hypertension.
409. a) Adrenal medulla (90% of cases)
410. d) Chromosome 17q
411. b) Reduced left temporal lobes gray matter volumes. The volume is less reduced in patients who are treated with testosterone.
412. c) X-linked short arm (X_p)
413. e) Reassurance; spontaneous regression occur usually within a few months. The boy has a physiologic pubertal gynecomastia. Answer (a) has an antiestrogenic effect but has many side effects. Answers (b) and (c) are aromatase inhibitors. Surgery is rarely indicated.
414. a) Women who received valproate for epilepsy before 20 years of age can develop PCOS. They have elevated testosterone levels but normal LH levels. PCOS is also called Stein-Leventhal syndrome.
415. e) In reproductive years, this syndrome is the most common cause of anovulatory infertility.
416. c) XY pure gonadal dysgenesis (Swyer syndrome). Answer (a) appears with a slightly ambiguous genitalia. Answer (b) appears with nephropathy, ambiguous genitalia, and bilateral Wilms tumor. Answer (d) appears with Wilms tumor, aniridia, genitourinary malformation, and retardation. Answer (e) appears with anterior bowing of the femur and tibia, and malformation of other organs. About 75% of reported 46, XY patients have complete female external and internal genitals. All of the above conditions have a 46, XY intersex.
417. b) Pineal hyperplasia is a feature of this syndrome. This patient lives beyond 1 year of age.
418. e) IUGR is a feature of leprechaunism. Most patients die within 1st year of life.
419. d) Skull x-ray can make the diagnosis; bone scan is used in difficult cases. The diagnosis is scaphocephaly.
420. a) Increased intracranial pressure or hydrocephalus is absent in scaphocephaly. The patients have a normal neurological examination.
421. b) Seizure activities are associated with an elevation of the blood pressure.
422. e) Aicardi syndrome
423. a) Generalized myoclonic seizures
424. d) Drug withdrawal seizures in newborns myoclonic or frank clonic seizures. Drugs are methadone, heroin, barbiturates, and benzodiazepines. Therefore, urine toxicology test should be performed.

425. d) Smallpox; this boy has a characteristic presentation of smallpox. The synchronous nature of the rash with a centrifugal (away from center of a body) distribution can distinguish smallpox from chickenpox that rashes are nonsynchronous and centripetal (toward center of a body). The survivors of smallpox develop disfiguring and de-pigmented scars over the affected areas. Patients who are exposed to lewisite (blistering agent) experienced immediate pain, cutaneous vesicles, and injuries to eyes and airways.

426. e) Nonvenomous snakes have a rounded head and rounded pupil. Therefore, reassurance and local wound care are indicated because they have no fangs. Venomous snakes have a triangular-shaped head, elliptical pupil, and fangs (e.g., pit vipers, or Crotalidae). These are the most common poisonous snakes in USA.

427. e) Applying ice to the site of injury or using excision and suction is contraindicated because it causes more tissue damage.

428. e) Paralysis and respiratory failure are the most common complications. Antivenin is only effective if given before to the onset of symptoms but it cannot reverse the symptoms once started. The patient may remain asymptomatic for a few hours.

429. b) VSD (about 50% of cases)

430. e) Congenital absence of the pulmonary valve produces a syndrome that manifests with signs of an upper airway obstruction. Marked aneurysmal dilatation of the main and right or left pulmonary artery resulting in compression of the bronchi that causes wheezing and recurrent pneumonia. Cyanosis may be absent, mild, or moderate. This syndrome may be associated with TOF.

431. b) William syndrome has a deletion of elastin gene on chromosome 7q.

432. a) Balloon valvuloplasty

433. e) Subvalvular aortic stenosis may become apparent after a successful repair of other cardiac defects (e.g., VSD, PDA, or coarctation of aorta).

434. a) Konno procedure (i.e., obstruction of a left ventricular outflow tract can be relieved by borrowing space anteriorly from a right ventricular outflow tract).

435. d) Pulmonary atelactasis can occur in asthma, pneumonia, and trauma. Massive collapse of one or both lungs most commonly occurs after a surgery. The most common site of atelactasis is the right upper lobe.

436. c) Nausea is absent in hemoptysis.

437. d) Frothy blood is absent in hematemesis.

438. c) Right upper lobe abscess. This is a characteristic x-ray finding of a lung abscess.

439. c) Lung CT scan is better than a chest x-ray.

440. a) A secondary lung abscess is more common on the left side.

441. d) Single atrium is not present; other cardiac conditions are single ventricle, pulmonic stenosis, and pulmonary atresia.

442. e) Blalock-Taussig shunt or total repair is performed in patients with a tetralogy of Fallot. This patient has a high right ventricular pressure 40/6 mm Hg (normal 25/3 mm Hg), low pulmonary artery pressure 5 mm Hg (normal 25/10 mm Hg), reduced left ventricular saturation 80% (normal 94-100%), and reduced aortic saturation 80% (normal 94-100%).

443. b) Arterial switch (Jatene) operation is the preferred procedure for transposition of great vessels. However, Rashkind balloon atrial septostomy is the initial procedure of choice. This patient has a high right ventricular pressure 100/8 mm Hg (normal 25/3 mm/Hg), high pulmonary artery pressure 40/2 mm Hg (normal 25/10 mm Hg), decreased left ventricular pressure 40/2 mm Hg (normal 100/8 mm Hg).

444. a) Repair of VSD is indicated. This patient has an increased right ventricular pressure 35/5mm Hg (normal 25/3mm Hg), increased right ventricular saturation 80% (normal 74%), and increased pulmonary artery saturation 80% (normal 74%).

445. e) Correct hyponatremic dehydration.

446. d) Correct hypernatremia over 48 hours.

447. c) The patient should be admitted because the home-made formulas result in salt poisoning to this child.

448. a) Give excessive fluids, then DDAVP in a patient with diabetes insipidus.

449. d) Furosemide, hydrochlorthiazide, and bumetanide cause hypokalemia. Furosemide also causes metabolic alkalosis.

450. e) Nifedipine causes facial flushing and tachycardia.

451. a) Enalapril and diazoxide cause hypotension; enalaprilat causes transient hypotension; prazocin causes orthostatic hypotension.

452. a) Clonidine causes sedation, constipation, rebound withdrawal, and hypertension.

453. b) Vitamin B_{12} deficiency can occur in breast-fed infants whose mothers are vegans or themselves have pernicious anemia.

454. a) Macrotytic anemia is present; Pearson's syndrome is a unique variant of congenital sideroblastic anemias that are microcytic.

455. c) 1.0;
Reticulocyte index = reticulocyte% x $\frac{\text{observed hematocrit}}{\text{normal hematocrit}}$ x $\frac{1}{\mu}$
(μ is a maturation factor related to the severity of the anemia)

456. d) 3-4 ; a maximum of 6-8 corresponds to a maximal marrow response.

457. d) Hereditary spherocytosis is diagnosed by a positive family history, large number of spherocytes in peripheral blood smear, reticulocytosis, and splenomegaly.

458. e) Reassurance; the average heart rate in newborns ranges from 120 to 140 beats per minute and may increase up to 170+ beats per minute during crying.

459. e) Reassurance; the heart rate can drop to 70-90 beats per minute during sleep. When the baby is awake heart rate goes above 100-120 per minute.

460. e) Reassurance; the heart rate can normally drop up to 40 beats per minute in athletic adolescents.

461. e) A 16-years-old athlete's heart rate up to 40 beats per minute is normal.

462. d) Differential cyanosis is noted in coarctation of aorta, interrupted aortic arch, and persistent pulmonary hypertension (PPHN).

463. a) Transposition of great arteries

464. e) Prominent venous plexus in lips

465. e) Prominent venous plexus on the forehead.

466. d) Unwrapped and cold extremities (i.e., acrocyanosis)

467. a) S. epidermidis is common in the presence of an indwelling central venous catheter or prosthetic valve. For a native valve, the common organisms are viridans group streptococci (e.g., S. mutans, S. sanguis, S. mitis), S. aureus, group D Streptococcus (enterococcus) (S. bovis, S. faecalis).

468. a) S. aureus

469. a) Viridans group streptococci (e.g., S. mutans, S. sanguis, S. mitis)

470. a) Group D streptococcus (enterococcus)(e.g., S. bovis, S. faecalis)

471. e) Group D streptococcus (enterococcus) (e.g., S. bovis, S. faecalis)

472. b) Pseudomonas aeruginosa or Serratia marcescens

473. c) Staphylococcus epidermidis

474. d) Poor dental hygiene

475. e) Repair of a simple ASD or closure of PDA almost eliminates the risk of developing endocarditis. A surgical correction of a congenital heart disease can reduce but does not eliminate the risk of endocarditis except the two conditions mentioned above.

476. d) Tricuspid regurgitation (TR) is **not** a preoperative condition and does not produce infective endocarditis. TR is common in newborns with a perinatal asphyxia secondary to transient papillary muscles dysfunction. TR is a self-limiting condition. However, mitral valve prolapse, bicuspid aortic valves, PDA, ASD, and other anatomical cardiac defects, especially involving the left side of the heart can develop infective endocarditis.

477. d) The patients with congenital hypoplastic anemia (Diamond-Blackfan anemia) may appear clinically with short stature, craniofacial abnormalities, or defects in upper extremities (e.g., triphalangeal thumbs). Answer (c) should be ruled out by a PCR study. Answer (e) patients usually manifest after 6 months of age.

478. b) Fetal hemoglobin levels are elevated; folic acid and vitamin B_{12} levels are normal; thrombocytosis or thrombocytopenia is noted; bone marrow chromosome studies are normal unlike in Fanconi anemia.

479. b) **Corticosteroid;** the patients who do not respond to corticosteroid therapy, **transfusions** at intervals of 1-2 months are indicated to maintain a normal growth and development, and a chelating agent (e.g., **deferoxamine,** deferiprone) is used to avoid iron overload; **stem cell transplantation** is indicated if above therapies fail.

480. d) Gliomas are common between 2-5 years of age. Medulloblastomas and primitive neuroectodermal tumors (PNET) are common in less than 1 year of age.

481. e) Non-Hodgkin lymphomas, gliomas, and acute lymphoid leukemias are more common between 2-5 years of age. Testicular and ovarian cancers are more common during puberty.

482. d) Osteosarcomas; a therapeutic radiation to the brain causes brain **cancers.** Ionizing radiation therapy can also cause ALL (acute lymphoid leukemia).

483. a) Non-Hodgkin lymphomas (2-5 years of age) and Hodgkin lymphomas (6-18 years of age) are associated with E-B virus infections.

484. a) Optic gliomas

485. a) Li-Fraumeni syndrome is associated with osteosarcomas and rhabdomyosarcomas. Langerhans cell histiocytosis is also associated with ALL.

486. a) Beckwith-Wiedemann syndrome is associated with Wilms tumor and hepatoblastomas.

487. d) Osteosarcoma

488. e) Urethrorrhagia (i.e., urethral bleeding without urine) is associated with dysuria and blood spots on underwear after voiding. Urethrorrhagia begins condition.

489. d) Posterior urethral valve presents with hydronephrosis, dilated-thickened urinary bladder, and dilated ureters. The most common cause of gross hematuria is UTI; other causes are postinfectious glomerulonephritis, thin glomerular basement membrane disease, trauma, tumor, urolithiasis, hypercalcuria, meatal stenosis, perineal irritation, and coagulopathy.

490. e) Sacrococcygeal

491. e) Polyostotic disease, precocious puberty, and skin pigmentation.

492. c) Osteoid osteomas

493. e) A night pain that awakens the child and is not relieved by aspirin usually suggest a malignancy.

494. e) 5 years of age and once during the second decade of life.

495. e) A false-positive blood in the urine can occur during menstruation, alkaline urine with a pH more than 9, or contamination with an oxidizing agent used to clean the perinium before obtaining the specimen.

496. e) Normal children between 4-12 years of age excrete more than 100,000 RBCs per 12 hour periods. This condition worsens with a fever or exercise.

497. a) Hyperthyroidism does **not** occur in patients with cystinosis. They usually have **hypothyroidism.**

498. b) Leukocyte cystine content is a diagnostic study; the presence of cystine crystals in the cornea is suggestive of cystinosis.

499. a) CRF patients respond to immunization suboptimally.

500. d) Rejection (50% of cases); any glomerulopathy can develop in the graft. However, focal segmental glomerulosclerosis is the most common.

501. c) Congenital renal disease (53% of cases) and obstructive processes are common in less than 5 years of age; glomerulopathies are common between 13-17 years old.

502. a) Latex allergy (about 50% of cases)

503. d) IgE-mediated latex allergy is due to a repeated exposure to latex allergen.

504. c) Latex allergy

505. e) Reassurance; a penile length normally should be at least 1.9 cm. The mean length of a newborn penis is 3.5+0.7 or 3.5-0.7 cm and 1.1+0.2 or 1.1-0.2 cm in diameter.

506. a) Hypothalamus fails to produce an adequate amount of gonadotropin-releasing hormone (e.g., Prader-Willi syndrome, Kallmann syndrome, and Lawrence-Moon-Biedl syndrome).

507. e) Assessment of **anterior** pituitary function and testicular function are indicated.

508. a) S. aureus, phage group II, type 71.

509. b) **Lichen sclerosus**; this is a characteric presentation. Sometimes, vesicles and bullae with hemorrhages may present over the vulva.

Lichen planus lesions are characterized by angular, violaceous, flat-topped papules and **mimic leukoplakia.**

Lichen simplex chronicus appears with **white, hypertrophic, edematous** lesions over the vulva due to persistent rubbing and scratching.

Vulvar psoriasis appears with **white scaly** patches, especially on the mons pubis.

Atopic dermatitis appears with erythematous, intense pruritus, papules, vesicles associated with **oozing and crusting.**

510. b) Sexual abuse; HPV types 16 and 18 are associated with malignant and premalignant lesions of the vulva. HPV types 6, 11, 16, and 18 cause anogenital lesions.

511. e) More than 35%

512. b) 7-22%; the risk is somewhat higher in Crohn disease than in ulcerative colitis.

513. a) Oral metronidazole is used for patients with 'pouchitis'. Loperamide is used to decrease the frequency of stool. Sulfasalazine is used as a first line of therapy in patients with a mild disease (UC).

514. e) Aseptic necrosis of the **head** of the femur, osteopenia, infection, and cosmetic effects

515. e) Aminosalicylate enemas are used especially to treat proctitis. Hydrocortisone enemas can also be used for patients with proctitis.
516. a) Rectum
517. e) A flexible sigmoidoscopy and biopsy can confirm the diagnosis. Colonoscopy can use to detect the extent of disease and to rule out Crohn colitis. A colonoscopy is contraindicated during fulminant colitis because of the risk of toxic megacolon or perforation. Barium enema should **not** be considered as a diagnostic study.
518. c) UC appears with diffuse lesions. The segmented lesions are noted in Crohn disease.
519. a) Terminal ileum; Crohn disease most commonly involves ileum and the colon (ileocolitis).
520. e) Noncaseating granulomas are also noted in sarcoidosis; this characteristic finding often is absent. Nonspecific inflammatory changes are commonly noted in patients with Crohn disease.
521. e) Growth failure with delayed bone maturation and delayed sexual development may occur 1 to 2 years **before** the other clinical manifestations.
522. c) Oral corticosteroids (e.g., prednisone, 1-2 mg/kg/day, maximum 40-60 mg)
523. e) Neuropathy with paresthesias can develop; metronidazole should be stopped.
524. a) Food-induced enterocolitis is a non-IgE mediated disorder. Other IgE-mediated disorders are angioedema, atopic dermatitis (eczema), rhinoconjunctivitis, systemic anaphylaxis. Gastrointestinal anaphylaxis manifests with nausea, vomiting, diarrhea, and/or cramping abdominal pain due to ingestion of an allergen (e.g., milk, soy, egg, peanut, fish, cereal).
525. b) Oropharyngeal itching or tingling and angioedema of the lips, tongue, palate, and throat are manifestations of oral allergy syndrome.
526. e) Reassurance; a palpable liver 2cm below the right costal margin is normal for children.
527. e) Reassurance; a palpable liver 3.5cm below the right costal margin is normal for newborns.
528. e) Riedel lobe(i.e., the lower edge of the right lobe of the liver extends downwards) is noted in some normal people.
529. b) 2-3 mg/dL
530. e) Over 5 mg/dL
531. e) Chronic liver disease
532. e) Normal; an elevated alkaline phosphatase level is noted in rapidly growing adolescents.
533. d) Increased echogenicity is noted in patients with fatty infiltration and mass lesions. 'Triangular cord sign' means triangular/tubular-shaped echogenic density at the bifurcation of the portal vein due to fibrous remnants at the porta hepatis.
534. a) Autosomal recessive
535. e) Kayser-Fleischer ring in the cornea occurs due to accumulation of copper.
536. c) Chromosome 13
537. d) Hepatic manifestations; after 20 years of age, neurologic manifestations predominate. Psychiatric disorder can occur.
538. d) Hepatoblastoma does **not** occur; other hepatic manifestations may include cryptogenic cirrhosis, ascites, edema, portal hypertension, varicel hemorrhage, or other side effects of hepatic malfunction (e.g., coagulation defect, amenorrhea, delayed puberty).
539. e) Neurologic; Kayser-Fleischer rings may be **absent** in younger patients with liver disease.
540. b) Fanconi syndrome
541. e) Disk batteries cause pain and local tissue destructions within a matter of hours.
542. e) Toxic shock syndrome most commonly occurs from nasal surgical packing.
543. e) Suctioning the secretions is indicated; the foreign body is usually located behind the secretions; often a topical decongestant and headlight are needed to remove the foreign body.
544. e) Trauma from delivery.
545. e) Immediate realignment by an ENT specialist
546. e) The arterial supply in sequestration comes from systemic arteries, especially from the aorta and venous drainage returns to the right atrium, especially through inferior vena cava.
547. e) Productive cough, sinusitis, and otitis media are present in almost all patients; about 50% of patients have Kartagener syndrome (i.e., situs inversus, otitis media, chronic sinusitis and airway disease leading to **bronchiectasis).** Primary ciliary dyskinesia is known as immotile cilia syndrome.
548. e) Unknown

549. e) Nasal (or bronchial) biopsy or scraping reveals quantitative documentation of missing dynein arms or random orientation of cilia under electron microscopic examination.
550. c) Obstructive lung disease
551. e) 350 mL/kg/minute
552. e) 3 months of life
553. c) 10-15 hours of life
554. b) 50 mm Hg
555. c) Mitral valve prolapse
556. b) TOF or VSD
557. c) Trisomy 21p is cat-eye syndrome. Deletion 5p is cat-cry syndrome (or cri du chat syndrome).
558. a) CMV infections
559. e) Alcohol and tobacco use cause hypertension.
560. e) 'ABO' hemolytic disease occurs in the first few days of life. Unrecognized pulmonary blood loss can also cause anemia that is unresponsive to iron therapy.
561. d) Osmotic fragility test
562. d) Splenectomy is contraindicated. Prednisone is used during acute hemolysis. Iron therapy may be necessary.
563. c) IVIG should be continued throughout the pregnancy. Baby should be delivered by cesarean section.
564. e) Presence of maternal alloantibodies directed against antigens present on fetal platelets that are shared with the father.
565. e) Lymphohematopoietic (44% of cases)
566. c) Renal ischemia causes hypertension in patients with Wilms tumor.
567. a) Cataracts does **not** have increased risk of Wilms tumor; the following conditions that have an increased risk of Wilms tumor are aniridia, von Willebrand disease, and neurofibromatosis (von Recklinghausen disease).
568. b) Autosomal recessive
569. c) Hypokalemia, elevated urinary magnesium levels, absence of recurrent dehydrations, PGE secretions are not increased, normal renin and aldosterone levels, and less prominent growth failure. In contrast, Bartter syndrome appears with growth failure and elevated urinary calcium levels.
570. c) Spastic diplegia. The boy has commando crawls rather than using the normal four-limed crawling movements.
571. b) About 33% cases of spastic hemiplegia have a seizure disorder that usually develops during the first two years of life.
572. c) Spastic diplegia; some patients of spastic quadriplegia have normal intelligence.
573. d) Periventricular leukomalacia, especially in the area where nerve fibers supplying the legs travel through the internal capsule. Answer (a) is noted in athetoid CP secondary to high bilirubin levels. Answer (b) can be noted in extrapyramidal (or athetoid) CP. Answer (c) is noted in patients with spastic hemiplegia. Answer (e) is noted in patients with spastic quadriplegia.
574. b) Tonometry, biomicroscopy (slit-lamp examination), and cycloplegic refraction are performed by an opthalmologist. The basic examination of eyes also includes ocular alignment, general external examination, examination of the media and fundi.
575. d) Visual acuity test and stereoacuity are performed at 3 years of age to diagnose refractive error and amblyopia.
576. b) 2-5 months of age
577. c) Perinatal exposure
578. e) Hepatitis B infection is not a contraindication of breast feeding because HbsAg is present inconsistently in breast milk of infected mothers.
579. e) HBIG and hepatitis B vaccine can eliminate the theoretical risks of transmission of hepatitis B virus through breast milk.
580. d) 9-15 months of age
581. e) The infant is protected.
582. a) Refer to pediatric hepatologist and parents should be counseled.
583. c) Group B Streptococcal sepsis
584. a) Malrotation of the intestine and variable degree of pulmonary hypoplasia are components of the lesion (not associated anomalies) and present in almost all cases.
585. d) Congenital diaphragmatic hernia appears with scaphoid abdomen, decreased breath sounds on the left, and heart sounds are noted on the right side.

586. e) The newborn has passed large amounts of meconium in the delivery room resulting in scaphoid abdomen.

587. a) Immediate surgical repair is **not** indicated because the patient has pulmonary hypoplasia and pulmonary hypertension. Other therapies include **sodium bicarbonate** (to keep pH more than 7.50), **volume infusions** and **dopamine** (to maintain the systemic blood pressure), **inhaled nitric oxide, surfactant, and ECMO** (extra corporeal membrane oxygenation). In patients with refractory pulmonary hypertension, **dipyridamole** can be used to expedite weaning from inhaled nitric oxide therapy. Modest hyperventilation means to keep the PCO_2 25-30 mm Hg that causes pulmonary vasolatation like an alkaline pH and high PO_2.

588. e) Increased GE reflux is noted in almost all patients who have required ECMO therapy.

589. e) Severe perinatal asphyxia does **not** occur in ECMO therapy but occurs during and after the delivery process. ECMO therapy can cause transient and permanent developmental delays.

590. e) Juvenile nasopharyngeal angiofibromas peak in adolescent and preadolescent boys and also noted less than 2 years of age. He has no bleeding disorder, therefore, answers (a) and (c) are wrong. Answer (d) is wrong because the incidence of Kiesselbach plexus bleeding decreases during adolescence.

591. e) CT scan with contrast or MRI is the initial procedure of choice. Arteriography, embolization, and extensive surgery may be required.

592. d) Clindamycin

593. e) Please remember, retropharyngeal nodes involutes after 5 years of age. Retropharyngeal abscess is common in less than 3-4 years of age and presents with bulging of posterior pharyngeal wall in less than 50% of cases. The patient may also appear with stridor, respiratory distress, and refuse to move the neck.

594. e) Left lateral pharyngeal abscess sometimes displaces the left tonsil.

595. a) Right peritonsillar abscess; this is common in **adolescents.** There is usually the recent history of acute tonsillopharyngitis. **An assymmetric tonsillar bulging is diagnostic.**

596. b) Acute epiglottitis; less common in the USA due to H. influenzae type b vaccinations but still common in unimmunized or underimmunized children between 2-4 years of age.

597. a) The patients with spasmodic croup presents without fever and viral infections. The allergy and psychological factors are important. The children are usually symptomatic during the evening and nights. Laryngoscopy usually reveals pale, watery edematous larynx **but normal epithelium.** In acute infectious laryngotracheobronchitis, the laryngeal epithelium appears erythematous, edematous, and destroyed.

598. e) S. aureus; answers (a) and (b) also cause bacterial tracheitis.

599. e) Parainfluenza viruses (types 1, 2, and 3) are responsible for 75% of cases.

600. e) H. influenzae type b

601. c) Streptococcus pyogenes, S. pneumoniae, and S. aureus are the most common organisms.

602. e) Parainfluenzae viruses (types 1 and 2); type 3 causes bronchiolitis and pneumonia.

603. c) Croup

604. d) An expected mental retardation (2.5% of the population) is higher than observed mental retardation (1.1% of all school children) because it is more difficult to diagnose mild mental retardation.

605. b) A protein requirement is 9.3 grams/day.

606. d) A fat requirement is 30 grams/day.

607. e) Breast milk contains LC-PUFA.

608. e) Give the child to the mother until he stops crying, then examine.

609. e) At least 24 hours

610. c) Happy and relaxed mother

611. e) Otitis externa is not decreased. Breast feeding also decreases occult blood loss and atopic eczema.

612. d) Breast feeding does not decrease jaundice.

613. e) Genital culture positive for herpes is **not** a contraindication for breast-feeding. Mother should wash her hands before breast feeding. Breast-feeding is allowed in mastitis. Other contraindications to breast-feeding are active TB, typhoid fever, neurosis, and psychosis.

614. e) Central pontine myelinolysis syndrome manifests with confusion, agitation, flaccid or spastic quadriparesis, and death. This is common in patients who are treated for chronic hyponatremia than for acute hyponatremia. This is rare in children. The sodium should not be corrected more than 12 mEq per day.

615. c) Aldosterone increases sodium absorption and potassium excretion in the cortical collecting ducts.

616. d) Peaking of the T waves; Answers (a), (b), (c), (d) and asystole are also noted in hyperkalemia.
617. d) Cardiac toxicity appears before the clinical manifestations (e.g., weakness, tingling, and numbness).
618. c) "Mr. Yuk" stickers are attractive to children younger than 3 years. Phone numbers of pediatricians are also useful. **First,** poison control center should be notified before the ingestion of syrup of ipecac.
619. a) Child-resistant packaging closure did **not** work properly in 65% of cases; answer (b) is correct in 20% of cases; answer (e) is correct in 18% of cases.
620. d) Parent should **not** buy larger helmets. Parents should buy appropriate size helmets those with a firm polystyrene liner.
621. a) Formal driver education courses are ineffective in decreasing collisions because it allows teens to drive. Graduated licensing laws consist of three steps (e.g., initial restrictions of number of passengers and late night driving hours) and reduce the fatal crashes as much as 50%.
622. b) Respiratory failure
623. d) Amrinone is a peripheral vasodilator like dobutamine.
624. e) High dose of dopamine causes vasoconstriction. Answers (a), (b), (c), and (d) also reduce the afterload.
625. e) Hemorrhagic shock encephalopathy syndrome.
626. e) Interstitial and alveolar edema; this boy developed ARDS (acute respiratory distress syndrome) due to aspiration of gastric fluid contents. The onset of ARDS is very sudden with aspiration and gradual with acute neurologic injury. ARDS can occur due to an infection.
627. c) To keep the low tidal volume (6-7 mL/kg) resulting in permissive hypercapnia ($PaCO_2$ 55-70 mmHg). Increased PEEP recruits alveoli and improves oxygenation by reducing intrapulmonary shunting. PEEP is gradually increased (2-4 cm H_2O) in order to achieve the oxygen requirements (FiO_2) less than 60% and to prevent tissue hypoxia (PaO_2 55-80 mm Hg, oxygen saturation 88-95%). A high PEEP (above 15 cm H_2O) decreases venous return and reduces cardiac output. A high tidal volume (10-15 mL/kg) or high PIP (more than 30 cm H_2O) cause barotrauma, volutrauma, air-leak syndromes, and increased release of inflammatory cytokines.
628. e) Pneumatosis intestinalis occurs in NEC.
629. a) Biliary atresia
630. c) CNS
631. e) Carboxyhemoglobin levels (HbCO); mild (less than 20% HbCO), moderate (20-40% HbCO), and severe (40-60% HbCO).
632. e) Below 35° C
633. a) 0-1 year of age, especially less than 1 month of age.
634. d) Chromosome 17
635. b) Autosomal dominant
636. e) Head MRI or CT scan is **not** indicated unless the patients have CNS involvement. However, blood pressure measurements should be part of yearly physical evaluation.
637. d) Incontinentia pigmenti is X-linked dominant inheritance. Other multifactorial inheritance are cleft lip with cleft palate and isolated cleft palate.
638. d) X-linked dominant
639. b) 3-5%
640. d) 18%
641. c) 5%
642. b) 4%
643. b) 9%
644. c) Phenylketonuria
645. c) Hawkinsinuria
646. e) Gaucher disease type 1
647. c) 50 mg/dL; a serum glucose level less than 50 mg/dL is considered hypoglycemia.
648. e) Facilitated diffusion (carrier-mediated process)
649. b) Plasma free fatty acids are **less** than 1.5 mmol/L
650. e) Ketotic hypoglycemia occurs in children between 18 months and 5 years of age and resolves spontaneously by 8-9 years of age. They may have seizures or become comatose by midmorning. Sometimes, children did not get breakfast because parents were sleeping late resulting in hypoglycemia.

651. e) Reduced plasma alanine levels; plasma insulin concentrations are low (5-10 μU/mL or less), therefore the hypoglycemia secondary to hyperinsulinemia is excluded.
652. d) Adrenal hemorrhage; it may be due to trauma, anoxia, or severe stress. It occurs in infants of a diabetic mother, LGA, or after a breech delivery.
653. e) Reassurance; this is normal periodic breathing that persists up to 36 weeks gestational age in preterm infants. Periodic breathing is also noted intermittently in full-term infants during sleep in the first months of life.
654. b) Renal vein thrombosis
655. e) Small left colon syndrome
656. e) Familial hyperinsulinemic hypoglycemia (previously called nesidioblastosis); the newborn is very large and develops hypoglycemia that is unresponsive to all medical therapies.
657. b) Islet **beta cell K_{ATP} channel** (either the sulfonylurea receptor or the Kir 6.2 inward rectifier K^+ channel)
658. e) Suspected hypertension (BP is above 95th percentile)
659. c) A follow up examination after 6 months is recommended (BP is between 90th and 95th percentiles).
660. e) BP should be measured on three separate occasions prior to further interventions (BP is less than 90th percentile).
661. c) Amphetamine overdose
662. e) Normal vaginal discharge; a pH less than 4.5 indicates either candida or normal vaginal discharge; a pH more than 4.5 in a vaginal discharge indicates trichomonas or bacterial vaginosis.
663. e) Bacterial vaginosis; clue cells are absent in trichomonas infections. Trichomonads are present in trichomonas infections. Mycelia is present in candida infections.
664. e) CH_{50} measures the intactness of the entire complement pathways. Extremely low CH_{50} values are characteristic of genetic deficiencies in the complement system.
665. e) A delay or improper transport of the specimen to the laboratory is the most common cause of abnormal CH_{50} values.
666. a) Selective IgA deficiency
667. a) Chediak-Higashi syndrome (CHS) is an autosomal recessive disorder. CHS has a tendency to develop severe lymphoma-like syndrome.
668. c) DHR detects oxidant production because it increases fluorescence when oxidized by hydrogen peroxide. Nitroblue tetrazolium (NBT) dye test is widely used but DHR test is more accurate and replaces the NBT test.
669. c) Maculopapular
670. d) IgE-mediated. However, usually insect bites (e.g., mosquitoes, flies, fleas) are **not** an allergic response but a localized skin reaction. **Occasionally,** insect bites can cause immediate or delayed hypersensitivity reactions.
671. a) Allergic rhinitis; this patient has seasonal allergic conjunctivitis that is typically associated with allergic rhinitis and triggered by ragweed or grass pollens.
672. d) Atopic dermatitis is present is almost all patients with atopic keratoconjuncitivitis that is the diagnosis in this patient. A large number of patients also have asthma.
673. e) Staphylococcal blepharitis
674. b) Staphylococcus aureus
675. c) Penicillin G
676. d) Ampicillin and gentamicin are used for syngergistic bactericidal activities.
677. a) Term delivery occurs in late onset neonatal listeriosis; preterm delivery, low birthweight, and obstetric complications are also the characteristic features of early onset of neonatal Listeria infections (i.e., less than 5 days).
678. c) Mortality rate is less than 10%; term delivery, uncomplicated pregnancy, and nosocomial outbreaks are also the characteristic features of late onset of neonatal Listeria infection (i.e., 5 days or more)
679. c) Neisseria meningitidis causes acute meningococcemia that initially mimic viral illness.
680. a) Fever (71% of cases); petechiae and/or purpura (49% of cases), hypotension (42% of cases), vomiting (34% of cases), and lethargy (30% of cases) are also noted.
681. e) Nasopharynx; isolation of the organism from nasopharynx does not indicate an invasive disease.
682. a) Penicillin G; cefotaxime or ceftriaxone is an alternative therapy and generally is part of initial empiric regimens. Chloramphenicol is used in patients who are allergic to beta-lactam antibiotics.
683. b) S. Typhi enteric fever; the characteristic features are relative bradycardia, unremitting high fever (stepwise fashion), and **rose spots** (rash on the lower chest and abdomen).

684. a) Blood culture (40-60% of cases); stool and urine cultures are positive after the 1st week; bone marrow culture becomes positive during later stages of the disease when the blood culture is negative.

685. e) Bone marrow (85-90% of cases) and is less influenced by prior antibiotic therapy.

686. e) Shigella sonnei

687. a) Shigella sonnei is the most common cause of bacillary dysentery. However, Shigella dysenteriae serotype 1 infections can occur in massive epidemics. Contaminated food (e.g., salad) and water are important vectors.

688. d) Neurologic findings (40% of hospitalized children) are convulsions, nuchal rigidity, confusion, lethargy, headache, and hallucinations.

689. e) Unknown; Shiga toxin does not cause neurologic manifestations. Answers (b), (c), and (d) may be associated findings.

690. c) A regimen of INH and rifampin for 6 months plus first 2 months of treatment with pyrazinamide (PZA).

691. e) A regimen of INH, RIF, and PZA for the first 2 months followed by INH and RIF for a total duration of at least 9 months. A fourth drug (e.g., ethambutol or streptomycin) should be added for disseminated TB and when drug-resistance is suspected.

692. d) The primary drug resistance occurs when the patient is infected with Mycobacterium tuberculosis that is already resistant to a particular medication (e.g., INH or RIF). Answer (d) is an important cause of secondary drug resistance.

693. a) A regimen of RIF, PZA, and EMB for 9 months is usually adequate. When resistance to INH and RIF occurs, the total duration of therapy should be 12-18 months, and twice-a-week regimen should not be implemented. The patient with drug-resistance tuberculosis should be managed by an expert in this field.

694. e) Chlamydia pneumonia; the chest X-ray appears worse than the patient's clinical conditions.

695. c) Nasopharynx; infants also develop conjunctivitis and pneumonia.

696. c) **PDA (patent ductus arteriosus),** pulmonary artery stenosis, and myocarditis are present in patients with congenital rubella syndrome. However, the most common clinical manifestation is **IUGR (intrauterine growth retardation)**. Other clinical features may include micropthalmia, hepatitis, meningoencephalitis, thrombocytopenic purpura, pneumonia, and mental retardation.

697. b) Repeatedly waking the child to take him/her to the bathroom is **not** useful and may cause anger. Enuretic children are more difficult to awaken than nonenuretic age-matched children.

698. b) After 4 years of age

699. c) 4-6 months of age; complementary food, (e.g., cereals, vegetables, fruits, meats, and eggs) should be started; one food should be given at a time, the 2nd food should be spaced at least 3-4 days to detect food related adverse effects.

700. e) Cereals, vegetables, fruits, meats, and finally eggs; the orders are not very important.

701. e) Colic; colic rarely persists after 3 months of age.

702. e) The use of carminatives before feeding **cannot** prevent the colic attacks. Sedation is occasionally indicated in infants with prolonged attacks. Temporary hospitalization is indicated in extreme cases. Colic attacks can be prevented by burping, proper feeding techniques; physicians should be supportive and sympathetic.

703. b) Bleeding

704. b) Jaundice

705. e) Hypoparathyroidism occurs in the neonate due to hyperparathyroidism in the mother secondary to parathyroid adenoma. Maternal hypercalcemia causes suppression of fetal parathyroid glands resulting in hypocalcemic tetany that usually develops during the first 3 weeks of life.

706. e) Treat the underlying cause (e.g., oxygen therapy for patients with hypoxia and metabolic acidosis; fluid therapy for patients with dehydration and metabolic acidosis; antibiotics therapy for patients with infection and metabolic acidosis). Sodium bicarbonate is used if metabolic acidosis persists (base deficit is –10.0 or more) even after the underlying cause has been corrected or the cause is unknown. THAM solution is used when there is metabolic acidosis and hypernatremia.

707. d) The use of sodium carbonate in patients with DKA and lactic acidosis is controversial. Other conditions in which sodium bicarbonate is used are methanol intoxication, propionic acidemia, chronic metabolic acidosis (e.g., renal tubular acidosis, chronic renal failure).

708. e) Respiratory acidosis should be corrected first with ventilator therapy before the correction of metabolic acidosis because sodium bicarbonate metabolized to carbon dioxide that rapidly diffuses the blood-brain barrier and causes CNS acidosis. Intravenous carbicarb therapy has an advantage to sodium bicarbonate therapy in patients with respiratory insufficiency and metabolic acidosis because carbicarb produces less carbon dioxide.

709. c) **Less than 60 mm Hg** in a full-term newborn is considered low BP.

710. b) **Less than 70 mm Hg** from 1 month to 1 year of age is considered low BP.

711. b) **Less than 80 mm Hg** in a 5 year old child is considered low BP; the formula:
Less than 70 mm Hg + 2 x age from 1-10 years.

712. c) **Less than 90 mm Hg** in children older than 10 years of age is considered low BP.

713. e) Reassurance because all findings are the upper limit of normal for a 12-year-old child. However, exercise is good for all healthy children and weight loss is indicated in obese children.

714. a) Within 1 hour

715. d) Reassurance; most infants pass one or more stools per day but some infants pass stool with normal consistency every 36-48 hours.

716. e) A rectal examination should be performed. A finger dilatation is useful in spastic or tight anal sphincters that causes constipation.

717. b) Serum phosphorus levels are always low (less than 4 mg/dL); serum calcium levels are either normal or low.

718. d) Normal; answers (a), (b), (c), and (d) represent a 10% dehydration. A mild dehydration (3-5%) is manifested by a normal pulse rate or tachycardia, decreased urine output, thirst, and normal physical examination.

719. e) Hypotension is absent in moderate dehydration (7-10%); other findings in patients with moderate dehydration are tachycardia, lethargy, little or no urine output, sunken fontanel, sunken eyes, dry mucous membranes, cool, and delayed capillary refill.

720. c) Urine output is **absent** in patients with severe dehydration (10-15%); other findings in patients with severe dehydration are rapid pulse rate, no tears, tenting of the skin, very delayed capillary refill, cold skin, very sunken eyes, and very sunken fontanel.

721. b) 5-9 years of age.

722. c) **In the rear seat facing backward**; this position is recommended for infants younger than 1 year of age or weighing less than 20 lbs. Infants weighing less than 20 lbs either use an infant seat or be placed in a 'convertible' infant-toddler child restraint device.

723. d) **In the rear seat facing forward**; use either convertible or toddler seat.

724. d) 13 years of age; children younger than 13 years of age should never sit in the front seat, especially if the airbag is present.

725. b) **Cardiogenic shock**; this is a characteristic presentation of a cardiogenic shock.

726. b) **Septic shock**; warm extremities are due to peripheral vasodilatation; bounding pulses and tachycardia are due to high stroke volume and wide pulse pressure. This is a characteristic presentation of a septic shock.

727. a) **Hypovolemic shock**; a supine hypotension and **tachycardia are hallmarks of** hypovolemia. The patients with an early hypovolemic shock may appear normal or only mildly cool distal part of the extremities. This is a characteristic presentation of a hypovolemic shock.

728. c) Laryngospasms

729. e) Nausea and vomiting (40-50% of cases) and up to 80% of cases in high-risk patients. Answers (a), (b), (c), and (d) are also postoperative complications of anesthesia.

730. d) Metabolic acidosis occurs; death occurs (70% of cases) due to shock and cardiac dysrhythmias with unresponsive ventricular fibrillation. This syndrome is familial.

731. b) Succinylcholine also causes neuroleptic malignant syndrome like inhalation anesthesia.

732. d) Six cafe au lait macules **more than 15 mm** in greatest diameter in a postpubertal adolescent; thinning of long bone cortex with or without pseudoarthrosis are also diagnostic features. A first degree relative (parent, sibling, or offspring) with neurofibromatosis 1 is also diagnostic. The individual should have two or more diagnostic features that are mentioned in all choices.

733. c) Prader-Willi syndrome

734. c) Angelman syndrome

735. d) Trisomy 18 (Edwards syndrome)

736. e) Postmature infants usually have paler and thicker skin than term or preterm infant without the presence of anemia.

737. c) Vacuum-assisted (75% of cases)

738. c) All retinal hemorrhage cases resolve by 4 weeks of age; about 85% of cases resolve by 2 weeks of age.

739. c) After 28-30 weeks of gestation

740. e) Thoraco-omphalopagus (28% of cases)

741. e) Pulmonary circulation; next is pulmonary lymphatics.

742. c) 10-20 cm H_2O (ranges from 10-50 cm H_2O); normal breathing only needs 4 cm H_2O pressure.

743. e) Strictures after NEC does not occur by 36 hours of age.

744. c) The patients with colonic atresia appear with constipation at birth.

745. b) Ampicillin

746. d) CMV vaccines are under study; answers (a), (b), and (c) infections can be prevented by maternal immunizations. Toxoplasmosis can be prevented by appropriate diet (i.e., well-cooked meat) and avoidance of exposure to cat feces.

747. e) He has been taking anabolic steroids. The most common oral forms are 17-alpha-methyl derivatives of testosterone and injectable forms are esters of testosterone and 19-nortestosterone.

748. e) Pelvic inflammatory disease

749. e) N. gonorrhoeae and Chlamydia trachomatis are the most common organisms in patients with PID. Answers (a), (b), (c), (d), Streptococci, Peptostreptococcus species, and Bacteroides species also cause PID.

750. e) Large, vacuolated lymphocytes are **atypical lymphocytes**. Answers (a), (b), (c), (d), acute viral illness, CMV, viral hepatitis, and ALL (acute lymphocytic leukemia) cause lymphocytosis.

751. e) Meningococcal meningitis; the patients with a properdin deficiency can also develop dermal vasculitis or discoid lupus.

752. b) Autosomal dominant

753. e) Xerosis or dry skin

754. d) CT-scan of the sinuses is the gold standard for patients with a sinus disease. Sinus diseases are common is patients with asthma. The treatment for occult sinus disease can improve asthma.

755. a) Gastroesophageal reflux, rhinitis, and sinusitis are commonly noted in patients with asthma.

756. d) Intravenous hydration (**not** oral hydration), intramuscular or intravenous H_1 and H_2 antihistamine antagonists, and inhaled beta-agonist are also used in patients with anaphylaxis.

757. e) IgE-mediated

758. a) Food; the plasma beta-tryptase level is usually **not** elevated in food-induced anyphylactic reactions. This is elevated in all other anaphylactic reactions. This is more stable and remains elevated for several hours. The presence of serum IgE antibodies does not make a definitive diagnosis. Plasma histamine levels are unstable and difficult to measure.

759. c) The diagnosis of juvenile ankylosing spondylitis is confirmed when x-ray reveals sacroiliitis.

760. a) This patient has a right hip joint transient synovitis (toxic synovitis). Aspiration of the hip joint is performed by an orthopedic surgeon and usually indicted to rule out suppurative arthritis. The joint fluid in transient synovitis usually reveals absence of bacteria and WBCs. The cause is unknown but may be due to a viral postinfectious arthritis.

761. e) Hepatitis B arthritis-dermatitis syndrome

762. c) 10-28 days after vaccination

763. c) Uncommon in preadolescent children and in males

764. e) Corticosteroids therapy causes osteopenia.

765. d) **Anti-DNA antibody to native DNA in abnormal titer is more specific for lupus and reflects the degree of disease activities.** Elevated ANA titers can be present with or without SLE and in many other conditions (e.g., drug-induced lupus, juvenile arthritis, scleroderma, juvenile dermatomyositis, vasculitis syndrome, chronic active hepatitis, infectious mononucleosis, and hyperextensibility). ANA titer is an excellent screening test. Anti-Smith antibody is noted especially in patients with SLE but does **not** measure disease activities. In an active disease, CH50, C3 and C4 levels are decreased. Hypergammaglobulinemia is also noted in patients with SLE.

766. d) SLE presents with thrombocytopenia (less than 100,000/mm^3).

767. a) SLE presents with **nonerosive** arthritis (i.e., tenderness, swelling, effusion) that involves two or more peripheral joints.

768. e) Group A Streptococcus upper respiratory tract infections are associated with an acute rheumatic fever and rheumatic heart disease.

769. c) M type 4 does not cause recurrence of rheumatic fever.

770. e) M type 2 is uncommon; most common M types are 1, 3, 5, 6, 18, and 24.

771. e) The presence of a fever is a minor criterion. Chorea is also a major manifestation. Sydenham chorea occurs in about 10-15% of patients with acute rheumatic fever.

772. e) The supportive evidence of group A Streptococcus infection in patients with rheumatic fever includes a positive throat culture, rapid streptococcal antigen test, elevated or increasing streptococcal antibody titer. Other minor manifestation is the presence of C-reactive protein. The presence of **two major** or **of one major and two minor** manifestations indicates a high probability of acute rheumatic fever if there were a prior streptococcal upper respiratory tract infection.

773. a) Sialic acid prevents activation of the alternate complement pathway in the absence of type-specific antibody. Therefore, capsular polysaccharide protects the GBS organism from opsonophagocytosis in the nonimmune infants. Type III strain is the most common strain that produces late-onset neonatal sepsis and meningitis.
774. b) Enterococcus faecalis (80-90% of cases).
775. e) A combination of vancomycin and gentamicin is recommended if the enterococcus is sensitive to those medications. Gentamicin is bactericidal but vancomycin is not bactericidal. The same therapy is indicated if the patient is allergic to penicillin. Vancomycin resistant enterococcus should be treated with linezolid.
776. e) Sulfar granules are characteristic of actinomyces.
777. a) Actinomyces israelii
778. a) Penicillin is the preferred therapeutic drug. Answers (b), (c), (d), and (e) can also be used in patients with actinomyces.
779. d) Rickettsia rickettsii infection is more common during the spring through fall. The boy is diagnosed to have RMSF (Rocky Mountain Spotted fever). RMSF occurs due to tick bites.
780. e) G6PD deficiency
781. a) Doxycycline can be used safely in children younger than 9 years because tooth discoloration is dose-dependent and children may not need multiple courses.
782. d) Measles; conjunctival inflammation, especially a transverse line and photophobia suggest measles. Koplik spots appear **after** these manifestations.
783. a) Grayish white dots usually appear opposite the lower molars.
784. d) Serous exudates and proliferation of endothelial cells
785. c) PCR analysis of CSF is a practical diagnostic test for patients with HSV encephalitis. PCR analysis can detect viral DNA in CSF. If this test is negative, brain biopsy may be necessary to make the definitive diagnosis.
786. c) Hypercalciuria (up to 40% of cases) is more common than hypercalcemia.
787. e) Absence of functional calcium-sensing receptors in the parathyroid glands; therefore, parathyroid glands are unable to monitor the extracellular calcium concentration resulting in elevated PTH secretions despite hypercalcemia.
788. a) Autosomal recessive
789. e) Reassurance, thumb sucking is normal in infancy and toddlerhood.
790. e) Malalignment of the teeth
791. b) Praise for substitute behaviors; answer (a) is an alternative therapy. Parents should ignore thumb sucking and praise the child for positive behaviors.
792. e) This boy is dyslexic. ADHD (attention-deficit/hyperactivity disorder) can be present in patients with dyslexia. Dyslexic patients have difficulties in text reading, word recognition, and decoding.
793. a) Dyslexia
794. b) Remediation of the reading problem is useful in patients when dyslexia is diagnosed early in life. Remediation includes early language and phonologic skills.
795. d) Accomodation (e.g., tape recorder, recorded books, tutorial services, and laptop computer with spelling checkers)
796. c) Multiple choice tests are difficult for dyslexic children.
797. e) Lightly pigmented hair along the medial border of the liabia is noted in sexual maturity rating (SMR) stage 2 in early adolescence (i.e., 10-13 years of age). However, **rarely**, premature puberty is noted in female children who were sexually abused.
798. e) Diarrhea is absent in children with sexual abuse.
799. a) Opening size of the hymen has no diagnostic value.
800. e) The child should be re-examined in the **prone knee-chest position** that allows better visualization of the genitalia.
801. e) Reassurance; this is a normal finding in this young children.
802. e) Reassurance; this is Riedel lobe of the liver that is a normal finding.
803. e) Reassurance; breast-fed infants may experience frequent small, loose stools in first 2-3 weeks of life, then may experience infrequent stools i.e., **not to pass any stool for 1-2 weeks** followed by normal, soft stools.
804. e) This girl has **regurgitation;** 80% of patients improve by 6 months of age and 90% of patients improve by 12 months of age.
805. a) Laryngomalacia
806. e) The infants with laryngomalacia has a **low pitched,** inspiratory stridor, that worsens with crying, agitation, and feeding. The infants with vocal cord paralysis, laryngeal web, and laryngeal atresia usually appear with **high pitched** cry.

807. c) Flexible laryngoscopy

808. b) Modified Blalock-Taussig shunt (i.e., Gore-Tex conduit anastomosed side to side from the subclavian artery to the homolateral branch of the pulmonary artery) is the preferred surgical procedure in patients with a tetralogy of Fallot.

809. e) Rashkind balloon atrial septostomy is the initial procedure of choice in patients with transposition of great arteries. Arterial switch (Jatene) operation is the final procedure of choice.

810. e) Osler-Weber-Rendu syndrome (hereditary hemorrhagic telangiectasia type 1) is associated with angiomas of the GI tract, liver, nasal and buccal mucous membranes.

811. c) Mobitz type I (Wenckebach type) is one variant of 2nd-degree heart block.

812. c) Mobitz type II

813. a) Hypopigmentation is absent. The patients with Fanconi anemia also appear with hypopigmentation, cafe-au-lait spots, and hypoplastic thumbs.

814. a) Autosomal recessive

815. e) Turner syndrome does **not** cause aplastic anemia. Fanconi syndrome causes aplastic anemia. Shwachman-Diamond syndrome, appears with neutropenia and thrombocytopenia. However, both conditions progress to pancytopenia.

816. c) X-linked recessive

817. b) **Nephrogenic diabetes insipidus** is diagnosed because the male infant appears with polyuria, hypernatremia, dilute urine, elevated serum osmolality (290 mOsm/kg or higher), and decreased urine osmolality (less than 290 mOsm/kg). **Renal tubular acidosis** manifests with growth failure, metabolic acidosis, non-anion gap, and type IV manifests with hyperkalemia. **Bartter syndrome** manifests with dysmorphic features (e.g., triangular facies, dropping mouth, protruding ears, large eyes with strabismus), severe hypokalemia, metabolic alkalosis, and hypercalciuria. **Gitelman syndrome** (a variant of Bartter syndrome) manifests later in life with muscle cramps and spasms due to hypomagnesemia, hypokalemia, metabolic alkalosis, low urinary calcium, high urinary magnesium, absence of recurrent episodes of dehydration, and less obvious growth failure.

818. a) Potter syndrome manifests with bilateral renal agenesis, cystic renal dysplasia, or obstructive uropathy. Patients with this syndrome have 100% mortalities.

819. c) 51 mL/hour

820. c) 25 mL/min/1.73 m^2

821. b) 3 months of age

822. d) Septo-optic dysplasia or de Morsier syndrome appears with a triad of small anterior pituitary gland, an attenuated pituitary stock, and an ectopic posterior pituitary bright spot.

823. c) Estradiol levels vary from normal to severely elevated (more than 900 pg/mL). FSH levels are also decreased. McCune-Albright syndrome means precocious puberty, abnormal pigmentation, and polyostotic fibrous dysplasia. In boys and girls, during puberty gonadotropin secretion begins, and the response to GnRH becomes pubertal. **True (gonadotropin-dependent)** precocious puberty overrides the previous **gonadotropin-independent precocious pseudopuberty**.

824. a) Precocious puberty is **less** common. Girls with this syndrome have an **asymmetric** ovarian enlargement. In boys, genital development follows the normal pubertal development.

825. e) Long-acting analogs of GnRH is an associated therapy. For girls with persistent estradiol secretion, **aromatase inhibitors** (e.g., testolactone, letrozole or anastrozole) or **antiestrogens** (e.g., tamoxifen) inhibit the effects of estrogen on pubertal and bony maturations. Aromatase inhibitors inhibit the final step of estrogen synthesis.

826. d) Magnesium; this girl has **familial hypomagnesemia with secondary hypocalcemia.** Calcium therapy is not effective. Magnesium therapy promptly corrects hypomagnesemia and hypocalcemia. The serum magnesium level less than 1.5mg/dL (1.2 mEq/L) is abnormal. In idiopathic hypoparathyroidism, serum magnesium level is normal, serum calcium level is low (5-7 mg/dL), and serum phosphorus level is elevated (7-12 mg/dL).

827. a) Pheochromocytoma is a possible diagnosis because of paroxysmal hypertension. However, most patients with pheochromocytoma have sustained hypertension. The patients are free of symptoms between attacks of hypertension.

828. d) MBIG is taken up by chromaffin tissue anywhere in the body and is useful for small tumors that are localized. Most tumors near adrenal glands are diagnosed by ultrasonography, CT, or MRI study. Answers (c) and (e) findings are present in patients with pheochromocytomas, and neuroblastomas. Catecholamine levels are higher in pheochromocytomas, and dopamine and homovanillic acid levels are higher neuroblastomas. Neuroblastoma does not produce hypertension.

829. c) Surgical removal of the tumor is curative. Answer (d), (e), and intravenous fluids are used preoperatively to control the BP.

830. e) A precipitous drop in BP can occur during and after surgery. This should be avoided by appropriate choice of anesthesia and intravenous fluids.

831. a) Small testes and azoospermia are noted in patients with Sertoli cell-only syndrome (Del Castillo syndrome or germ cell aplasia).

832. d) 47, XXY (80% of cases); answers (b), (c), and (e) are mosaic patterns of Klinefelter syndrome.

833. e) Nonstenotic bicuspid aortic valve (33-50% of cases) is the most common cardiac defect in patients with Turner syndrome.

834. e) Chromosome analysis must be performed in girls with short statures to rule out Turner syndrome. Answers (a), (b), (c), and (d) are performed after the diagnosis of Turner syndrome.

835. d) Retinoblastoma is absent. Mental retardation is present.

836. d) The symptoms of diabetes mellitus (e.g., polyuria, polydipsia, unexplained weight loss, glucosuria, ketonuria) and random plasma glucose is 200 mg/dL and more **or** fasting plasma glucose level is 126 mg/dL and more **or** 2-hour plasma glucose during oral glucose tolerance test (OGTT) is 200 mg/dL and more are the diagnostic criteria of diabetes mellitus.

837. e) Fasting glucose levels 110-125 mg/dL (6.1-7.0 mmol/L) **or** 2-hour plasma glucose levels during the OGTT less than 200 mg/dL but 140 mg/dL and more are diagnostic criteria of impaired glucose tolerance (IGT). A fasting glucose level of 109 mg/dL (6.1 mmol/L) is the upper limit of normal.

838. a) The **palmer grasp begins** at 28 weeks gestational age; fully developed at 32 weeks gestational age; duration is 2-3 months.

839. b) The **parachute reflex begins** at 7-8 months of age; fully developed 10-11 months of age; remains throughout life.

840. b) The **Moro reflex begins** at 28-32 weeks gestational age; fully developed at 37 weeks gestational age; duration is 5-6 months.

841. b) The **tonic neck reflex begins** at 35 weeks gestational age; fully developed at 1 month of age; duration is 6-7 months of age.

842. b) The **rooting reflex (or snout) begins** at 32 weeks gestational age; fully developed at 36 weeks gestational age; less prominent after 1 month of age.

843. e) Hypoxic-ischemic encephalopathy

844. e) Hypoxic-ischemic encephalopathy

845. e) Intravenous pyridoxine (100-200 mg) usually stops seizure activities in patients with **pyridoxine dependency seizure**. Fetal distress could be due to seizure activities in utero. These children need lifelong supplementation of oral pyridoxine (10 mg/day).

846. a) Autosomal recessive

847. d) Lisch nodes (i.e., discrete nodules of the iris)

848. d) Retinoblastoma

849. e) Congenital heterochromia is a finding of Waardenburg syndrome. Heterochromia iridium (two irides have different colors) and heterochromia iridis (one iris contains two different colors) are present.

850. e) Interstitial keratitis manifests between 5-10 years of age in patients with congenital syphilis.

851. d) Hearing test; children between 0-4 months of age should startle to loud music or sounds, quiet to mother's voice, and momentarily stop activity when sound is presented at the level of conversation.

852. b) A 7-12 month old child should correctly localize to sound presented **in any plane.**

853. d) Pseudomonas aeruginosa

854. e) Group A Streptococcus

855. c) Streptococcus pneumoniae

856. a) Staphylococcus aureus

857. a) Pseudomonas aeruginosa

858. d) Herpes zoster oticus (Ramsay Hunt syndrome) patients appear with herpes vesicles in the ear canal and on the pinna, pain, facial paralysis, and sometimes, 8th cranial nerve involvements.

859. e) Pseudomonas aeruginosa; the next common organism is S.aureus.

860. a) Internal femoral torsion; the majority of children have generalized ligamentous laxity.

861. a) Internal tibial torsion is due to normal in utero positioning.

862. e) Clinical measurements are fairly accurate in patients with internal femoral torsion. Other investigations are unnecessary.

863. e) Observation; correction of an abnormal sitting habit usually resolves the torsion and allows normal growth and development.

864. a) Observation

865. a) Williams syndrome (or elfin facies syndrome) has small mandible, failure to thrive during the 1st year of life, mild mental retardation, and typical "cocktail party patter" personality.
866. b) Arrythmias or coronary artery disease
867. a) Supravalvular aortic stenosis and ASD are also present in Williams syndrome.
868. d) Biphosphonates blocks the bone resorption and normalizes serum calcium in patients with an idiopathic hypercalcemia (e.g., Williams syndrome, familial hypocalciuric hypercalcemia).
869. a) Activated charcoal should **not** be used because it does **not** bind with caustics (e.g., acid or alkali); contaminated clothing should be removed, ingested agents should be rinsed from the mouth, keep NPO, intravenous fluids, and do not give prophylactic antibiotics. The use corticosteroids and esophageal stents are controversial.
870. e) Mostly occurs in female; may be due to genetic abnormality of X chromosome ; may be lethal in males during fetal life.
871. a) Agenesis of the corpus callosum
872. b) Laboratory error (low sodium; normal chloride)
873. d) Hyponatremic dehydration (low sodium and chloride; high BUN)
874. e) Pseudohyponatremia (low sodium; very high glucose)
875. c) Hypernatremic dehydration (high sodium, chloride, and BUN)
876. a) Increased ADH secretion (low sodium; chloride, and BUN)
877. b) Diabetes insipidus (high sodium, chloride, BUN; low specific gravity)
878. a) Salt poisoning (high sodium, chloride; normal BUN, specific gravity)
879. e) Maintenance salt was not given (low sodium, chloride; normal BUN, specific gravity)
880. c) Acute renal failure (low sodium; high potassium and BUN)
881. d) Congenital adrenal hyperplasia (low sodium, chloride; high potassium)
882. e) Renal failure
883. b) Diabetes mellitus
884. c) Wilson disease
885. c) Normal
886. e) Otitis media (conductive hearing loss)
887. a) CMV (sensorineural hearing loss)
888. b) Mixed hearing loss
889. c) Rheumatic fever
890. e) Lyme disease
891. a) Cefaclor (mostly urticarial lesions)
892. b) Kawasaki disease
893. d) Sarcoidosis
894. b) Lymphoid tissue (e.g., tonsil, spleen)
895. a) Neural tissue (e.g., brain, skull)
896. d) General growth (e.g., liver, bone, blood volume)
897. e) Genital growth (e.g., testes, ovary, uterus)
898. c) Thymus
899. c) Constitutional short stature
900. e) Genetic short stature
901. d) Hypothyroidism
902. b) Craniopharyngioma
903. a) Congenital adrenal hyperplasia
904. b) Respiratory acidosis (high PCO_2, bicarbonate; low pH)
905. a) Respiratory alkalosis (low PCO_2, bicarbonate; high pH)
906. c) Metabolic alkalosis (normal PCO_2; high pH, bicarbonate)
907. d) Metabolic acidosis (low PO_2, PCO_2, pH and bicarbonate)

908. e) Compensated respiratory acidosis (high PCO_2, bicarbonate; normal pH)
909. e) Optic nerve
910. c) Optic chiasma
911. d) Right optic tract
912. a) Left optic tract
913. b) Lateral geniculate body
914. c) Normal
915. a) Sickle cell disease
916. e) Sickle cell trait
917. b) Hemoglobin SC disease
918. d) Thalassemia major
919. a) Beta thalassemia minor
920. e) Alpha thalassemia trait
921. c) Iron deficiency anemia
922. d) Sickle beta thalassemia
923. b) Sickle alpha thalassemia
924. e) Prolonged expiration phase (i.e., obstructive type) e.g., BPD, asthma, bronchiolitis, emphysema, and meconium aspiration.
925. d) Reduced inspiratory and expiratory phases (e.g., restrictive type) e.g., RDS, pneumothorax, pneumonia, collapse, diaphragmatic hernia, persistent pulmonary hypertension due to collapse, pulmonary interstitial emphysema, and TB.
929. e) Hypochromic microcytic
930. d) Heinz bodies
931. c) Macrocytic anemia
932. a) Target cells
933. b) Schizocytes
934. e) Double peaks, prenatal peak is due to rapid growth of neurones and postnatal peak is due to rapid growth of glia.
935. c) Peaks within few months after birth.
936. a) Peaks around 4-5 months of age.
937. b) Increased polymorphs, increased protein, decreased glucose
938. d) Increased lymphocytes, increased protein, decreased glucose
939. c) Increased monocytes, increased protein, decreased glucose
940. a) Increased lymphocytes increased protein, normal glucose
941. e) First, increased lymphocytes then polymorphs, increased protein, and normal glucose unless abscess ruptures.
942. d) Protein 6%, fat 50%, carbohydrate 44%
943. e) Protein 20%, fat 50%, carbohydrate 30%
944. a) Protein 15%, fat 35%, carbohydrate 55%
945. c) RSV
946. d) Parainfluenza viruses
947. e) Rhinoviruses
948. b) Viruses
949. a) Staphylococcus aureus
950. e) High in carbohydrates; low in fats and proteins
951. d) Bacteria is destroyed; casein broken down
952. c) Fat broken down and easily digested
953. b) Softer casein and less allergenic lactalbumin
954. a) Low in vitamin D, iron, sodium, and folic acid. More in potassium, chloride, linoleic and arachidonic acids
955. e) Above and medial to eyes
956. a) Suboccipital area

957. b) Temporal areas and eyes
958. c) Trigeminal areas particularly mastoid
959 d) Over maxilla and teeth
960. b) Increase last P.M. dose of NPH insulin
961. c) Increase this A.M. dose of regular insulin
962. d) Increase this A.M. dose of NPH insulin
963. e) Increase this P.M. dose of regular insulin
964. a) Decrease this P.M. dose of regular insulin
965. c) Brassy (e.g., tracheitis, habit cough)
966. e) Staccato (e.g., chlamydia pneumonitis)
967. a) Cough with stridor (e.g., laryngeal obstruction, pertussis)
968. b) Disappears with sleep (e.g., habit cough, mild hypersecretory states such as in cystic fibrosis and asthma)
969. d) Nocturnal cough (e.g., upper or lower respiratory tract allergic reaction, or both; sinusitis)
970. e) Loose (discontinuous), productive (e.g., bronchitis, asthmatic bronchitis, bronchiectasis, cystic fibrosis)
971. a) Most severe on awakening in morning (e.g., cystic fibrosis, chronic bronchitis, bronchiectasis).
972. d) Tight (wheezy) (e.g., reactive airways)
973. c) Paroxysmal (with or without gagging and vomiting) (e.g., pertussis syndrome, cystic fibrosis, foreign body)
974. b) With vigorous exercise (e.g., exercise-induced asthma, bronchiectasis, cystic fibrosis)
975. c) Cataracts and PDA (patent ductus arteriosus)
976. e) Periventricular calcifications
977. a) Limb hypoplasia
978. d) Hydrocephalus
979. b) Hydrops
980. b) Carditis
981. a) Deafness
982. d) Nephrotic syndrome
983. c) Rhinitis
984. a) Increased iron absorption from GI tract
985. b) Decreased iron absorption from GI tract
986. a) Increased iron absorption from GI tract
987. b) Decreased iron absorption from GI tract
988. c) Prostaglandin infusions cause apnea
989. e) Beckwith-Wiedemann syndrome
990. a) Gastroschisis
991. b) Sensorineural hearing loss
992. d) Sturge-Weber disease
993. b) Broad thumbs
994. e) Cystic hygroma
995. a) Conductive hearing loss
996. c) Moonlike face
997. d) "Greek helmet" facies
998. e) Arterial switch (Jatene); Rashkind balloon atrial septostomy is the initial procedure of choice.
999. b) Norwood procedure
1000. a) Blalock-Taussig shunt
1001. d) Starnes procedure
1002. c) Balloon valvuloplasty
1003. b) Sudden death

1004. a) Well-developed, well-nourished child
1005. d) Scoliosis
1006. c) "Snowman sign" (figure eight)
1007. e) ECG reveals a characteristic left axis deviation that is also noted in endocardial cushion defects.
1008. e) Optic neuritis
1009. d) Vestibular damage
1010. c) Body fluid turns orange
1011. b) Peripheral neuritis is uncommon in children.
1012. a) Elevated uric acid levels